

**FUTURE  
OF BANKING**

**AFTER THE YEAR 2000**

**IN THE WORLD AND IN THE CZECH REPUBLIC**

**X  
FINANCE AND BANKING**



**2005**

**KARVINÁ  
CZECH REPUBLIC**



**SILESIA SILESIANA OPATENSIS**  
**SILESIAN UNIVERSITY OPAVA**

**SCHOOL OF BUSINESS ADMINISTRATION KARVINÁ**

# **FUTURE OF BANKING**

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## **X**

# **Finance and Banking**

**PROCEEDINGS FROM THE INTERNATIONAL CONFERENCE**

**KARVINÁ**  
**CZECH REPUBLIC**

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## **Introduction**

In September 2005, the tenth annual International Conference on Finance and Banking, *Future of Banking after the Year 2000 in the World and in the Czech Republic*, took place at the School of Business Administration, Silesian University, in Karviná. Every year it focuses on a specific development in the banking and financial sector. This year, mainly because of the 15<sup>th</sup> anniversary of the School of Business Administration, and 10<sup>th</sup> anniversary of the conference itself, the theme was unspecified and all papers focused on financial and banking topics were considered for presentation. The conference hosted 209 participants from 35 countries and 5 continents.

The conference was introduced, as in the past years, by invited keynote speakers, who were very reputable and respected figures in the finance field. The first speaker was Jan Frait, member of the Bank Board of the Czech National Bank with the paper “Prices and Asset Monetary Policy”. The second speech was delivered by Reint Gropp, deputy head of Division European Central Bank (ECB). He explained the importance of financial research at the ECB. The next presenter was Iikka Korhonen from the Institute for Economies in Transition, Bank of Finland. He described contemporary development of the current euro area and solving the future eastern enlargement of it. The last was Jan Juchelka, head of the Executive Committee, National Property Fund with the topic “Is it time to Abolish Transformation Institutions?” All presentations very nicely covered a broad range of contemporary finance issues. The plenary session was followed by panel discussion. Participants discussed various topics related to the prior presentations (central bank research, privatisation, Maastricht criteria, etc.).

In the afternoon and the following day, the meeting of registered participants was divided into several sections: Banking, Banking and Financial Risks Management, Financial Systems and Markets, Central Banking and Monetary Policy, Public Finance, Rating and Audit, International Finance, Corporate and SME's Financing, Empirical Analyses of Financial Markets, Insurance, Business Administration, Equity and Options Markets, International Economy and Finance, Banking Services and Payment Systems, Public Finance and Anti Money Laundering, Audit and Accounting, Collective Investment and Financial Consultancy, European Union and Regional Policy. Most of over 200 participants, including foreign guests, presented their papers. After every paper very interesting and meaningful ideas surfaced in the discussion. There was a supportive and friendly environment in all sections.

The majority of the papers presented at the Conference are included in these Proceedings. They are also published on the University website and can be found at [www.opf.slu.cz/pb2000/proceedings2005.pdf](http://www.opf.slu.cz/pb2000/proceedings2005.pdf). The differing views of the participants are reflected by the various topics covered. Presentation of ideas and views were the main contribution of the conference, which included not only the practical application of the subject but also directed scientific activities of universities both in the Czech Republic and abroad. That is why the conference is known as a regular meeting place of banking experts as well as academic and scientific specialists.

For the seventh year in a row, graduates of the School of Business Administration of Silesian University took part in the conference. The School of Business Administration was founded in 1990, and today has more than 2000 students in attendance. Most of the graduates who majored in Finance, or Banking, or Corporate Finance work primarily in the finance sector. Some of them are employed in well-known banking, leasing, insurance, audit, and

other financial firms and institutions, as well as in non-financial companies. It was a great pleasure to have the opportunity to welcome again our graduate, Jan Juchelka, as our guest speaker this year. He was a guest speaker at the conference four years ago. As a chairman of the National Property Fund of the Czech Republic, he is one of the most well-known graduates of the School of Business Administration in the Czech Republic and abroad.

We expect the next conference to be held in two years, during October 2007. All of this year participants, as well as participants of the previous nine conferences, are invited to come again. We will do our best to arrange a friendly and warm environment for you. We believe all participants bring new ideas and methods, which will move forward research and practice in finance and banking.

Stanislav Poloucek  
School of Business Administration  
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Karvina, 20<sup>th</sup> December 2005

# *Banking*

# ESTONIAN BANKING SYSTEM DEVELOPMENT, 1995-2004

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## **Abstract**

*Banks and other financial institutions are a unique set of business firms whose assets and liabilities, regulatory restrictions, economic functions and operation make them an important subject of research. Banks' performance monitoring, analysis and control deserve special attention in respect to their operation and performance results from the viewpoint of different audiences, such as investors/owners, regulators, customers, and management. This article presents some historical notes on the development of the Estonian banking system and the capital structure of banks. Different versions of financial ratio analysis are applied for bank performance analysis using financial statement items as initial data sources. The use of a modified version of DuPont financial ratio analysis, and using econometric models are discussed. Empirical results of the Estonian commercial banking system performance analysis are also presented.*

**Keywords:** *entrepreneurship, bank performance, DuPont analysis, econometric models*

## 1. Introduction: Theoretical Background and Overview of Related Literature

Problems concerning the soundness of the banking and financial systems has become more important in all countries over the recent years. The financial sector, and especially the banking system, is vulnerable to systemic crises, which has led to the creation of costly safety nets as depositor insurance schemes with the well-known moral hazard problem. It is argued that there is increasing evidence that banks are “black boxes” due to the weak transparency and banks’ unwillingness to disclose information (Hyytinen and Takalo, 2002 and 2003). To measure banks’ creditworthiness and risk exposures is a complicated issue and it is not easy to interpret banks’ accounting data. Kaminsky and Reinhart (1999, p. 476) argued that “Indicators of business failures and non-performing loans are also usually available only at low frequencies, if at all; the latter are also made less informative by banks’ desire to hide their problems for as long as possible.” This means that it is necessary to use all available financial information from the official financial statements of banks as fully and comprehensively as possible for making financial analysis of banks’ performance.

The contemporary banking crises can be classified mostly as “growth crises”, which are characterized by economic deregulation and liberalization, removal of cross-border restrictions on capital flows, and increased competition in the financial sector. Based on a newly constructed cross-country database of financial liberalization, Abiad and Mody (2003) examined the experience of 35 countries over the period 1973–1996 to analyze underlying causes of financial sector reforms. They found that liberalization is a combination of discrete changes in response to economic and political “shocks”, reinforced by a self-sustaining dynamics (they called it “learning”). They draw five specific conclusions about what produce changes (reform):

- Countries whose financial sectors are fully repressed (unliberalized) are the ones with the strongest tendency to maintain their policy stance and hence remain closed and highly regulated. But, initial reforms cause changes that make further reforms necessary.
- Regional diffusion effects appear to be important – the further a country’s stage of liberalization is from that of the regional leader, the greater is the pressure to liberalize.
- Shocks to the economic environment (a new government; decline in US interest rates) play an important role in weakening the *status quo* and making reforms possible.

- Crises do trigger action, but not always is the direction of reform – balance of payments crises raise the likelihood of reform; banking crises have the opposite effect.
- Among variables representing ideology and structure, only trade openness appears related to the pace of reform. Not important: presidential or parliamentary regimes, right- or left-wing governments, and the legal system prove not to be influential either.

It is evident that to study results of financial sector reform and restructuring, a profound performance analysis is needed. The traditional financial ratio analysis is mainly used for bank performance analysis. We can find different versions of this approach from various textbooks about banking and financial institutions. Different versions of DuPont financial ratio analysis (see Cole, 1973) seem to be more promising for banks' and other financial institutions' performance analysis (see, for example, Dietrich, 1996). The focus of financial analysis for the management of any bank (or the banking sector as a whole) should be on the efficiency of performance of the bank measured from the viewpoint of investors/owners' income maximization. More widely, all stakeholders have to be interested in the performance of the bank. The concept of a "stakeholder monitor" is useful in designing performance analysis of any bank. This concept was developed by David Llewellyn (see Llewellyn, 2002; Llewellyn and Mayes, 2003). We agree with the suggestion that "Stakeholders, as the name implies, have something in stake in the relative success or failure of the firm. Those who participate in the process of observing the behavior of the firm and forming judgements in the light of it can be described as "monitors". Such monitors may have access to both market and private information. Combining these ideas, "Stakeholder monitors" are all those agents who have an interest in the outcome of the monitoring process" (Llewellyn and Mayes, 2003, p. 11). The incomplete list of "stakeholder monitors" includes: supervisory agencies, rating agencies, market traders, shareholders, board of directors, debt-holders, depositors, managers, borrowers, employees.

In carrying out bank performance analysis, it is important to emphasize that banks differ in their corporate governance from firms in other, less regulated industries. These differences, in turn, present their own challenges for bank managers, regulators, depositors, investors, and other stakeholders. "Bank managers live in a more complex environment than their peers in industry due to bank regulations. In addition to the demands placed on them by shareholders, regulators have strong incentives to influence managerial action, and this may be in conflict with shareholder demands" (Harm, 2002, p. 5). Governance is a set of mechanisms with which the

providers of capital and other stakeholders are defending their interests against the firm. The firm is run by managers, and this is a point where conflicts of interests start. Harm (op. cit., pp. 109–128) presents also an excellent survey of recent literature (both theoretical and empirical).

Macey and O’Hara (2003) argue that bank officers and directors should be held to broader (if not higher) set of standards than their counterparts in less regulated non-financial firms, and banks pose special corporate governance problems. Kose and Qian (2003) consider another important theme in the corporate governance of banks – the effect of the incentive features built into the compensation schemes of bank managers. Adams and Mehran (2003) focus also on the differences between the corporate governance of banks and manufacturing firms and support the theory that governance structures are industry-specific. In general, the components of firm’s governance structure are determined by various factors, which all will influence also performance analysis aims and techniques: the nature and structure of firm’s assets and liabilities (leverage, share of financial assets, business risk, cash-flow patterns), firm size, industry, regulations, etc.

For performance analysis mainly various measures of rates of return are used. We fully agree with the opinion that “Relying too heavily on just a few indicators of bank profitability can be misleading. While ROA, ROE, and interest margin (and non-interest expenses) to gross income remain the key measures, they should ideally be supplemented by the analysis of other operating ratios” (Sundararajan et al., 2002, p. 20). In this article, we present one of the possible approaches to such financial analysis using the modified version of DuPont analysis (see Cole, 1973), which is similar to Dietrich’s (1996) approach (see also Vensel, 2001). We have selected the following years for empirical analysis of the Estonian banking system performance:

1994 – the first year of macroeconomic stabilization after the currency reform in June 2002 and after resolution of the first banking crisis in Estonia;  
1997 – extraordinarily optimistic year, the first unsuccessful attempts of Estonian banks to expand into Russian and Baltic countries’ markets, “bubble” of the Tallinn Stock Exchange;  
2000 – the second phase of macroeconomic stabilization and resolution of the second banking crisis in Estonia;  
2001–2002 – last years before accession to the EU.

The most important recent developments in the Estonian banking system are presented in the next section (some historical notes; banking crises and banks’ rehabilitation; structural developments). Then, a modified methodology of DuPont financial ratio analysis and empirical results of the

Estonian banking system performance are discussed. The paper ends with some concluding remarks.

## **2. Development of the Estonian Banking System**

The first commercial bank (Tartu Commercial Bank) on the territory of the former Soviet Union was established in Estonia in 1988. This bank went bankrupt and was liquidated in 1992–1993. As there was a great demand for banking services by the emerging private sector, the maximum number of commercial banks operating simultaneously in the small Estonian banking market was 42 in 1992. Some of them were liquidated during the banking crises in 1992–1994 and in 1998–1999, and some of them were merged into larger commercial banks. In 1998, a wave of mergers and restructuring took place in the Estonian banking sector. After the completion of these mergers, Scandinavian banks started to show greater interest in the Estonian banking market. As a result, *Swedbank* acquired 56% of *Hansapank* and *Skandinaviska Enskilda Banken* (SEB) acquired 32% of the Union Bank of Estonia. We may conclude that the Estonian banking sector became healthier when Swedish banks and other Nordic investors joined the circle of bank owners, improving the future outlook of the banking system. So when during the first banking crisis in 1992–1994, Estonia had to resolve the problems by itself, then during the second banking crisis in 1998–1999, foreign banks also helped and supported to get over the crises.

Estonia has experienced two serious banking crises during the about 12-years period of its banking sector development and restructuring, the first crisis in 1992–1994 and the second in 1998–1999. The first banking crisis occurred during the hard period when drastic economic restructuring was started and when production output was reducing dramatically and the country underwent a period of hyperinflation. The characteristic feature of the first banking crisis in Estonia was that it was caused by internal reasons and it was overcome with Estonia's own resources and management skills. The main causes of this banking crisis were severe problems in the whole economy, poor bank management and lack of professional skills, weak supervision both from the side of the central bank and owners. The depositors' losses in the banking crisis were large, the money supply decreased, many loans were depreciated, and the trustworthiness of the banking system fell significantly.

Looking back, it is possible to establish some signs of the banking crisis in 1998–1999:

- (1) Estonian banks took extraordinarily high financial risks through investment companies and their subsidiary companies to get large profits via speculating in securities market – rapid fall in prices on the share market in autumn 1997 reduced significantly banks' profits and at the end of 1997 and in 1998 almost all banks operated at losses;
- (2) Banks held a very high negative level of gap (interest rate sensitive liabilities exceeded significantly rate-sensitive assets) for earning excessive profits in the environment where interest rates steadily decreased during the previous years and they were not able to adjust to changed environment with increasing interest rates from the second half-year of 1997;
- (3) Commercial banks absorbed heavily into non-banking business – for example, the later bankrupted Land Bank of Estonia owned seven subordinate establishments and related companies, which dealt with leasing and investing, and with anything else but banking (hotels, processing agricultural products, broadcasting etc.); also other banks were absorbed in risky non-banking business;
- (4) The decision to expand to the Eastern market (Russia and other Baltic States), where the interest rates and possible profitability seemed to be higher, was also too risky and premature, especially in the framework of the Russian crisis in 1998;
- (5) There were various disputes and conflicts of interests between the owners and management, which led to wrong (mismanagement) decisions. Good examples should be the Land Bank of Estonia and the Estonian Investment Bank – for example, the shareholders of the Investment Bank intended to sell the bank to the German Schleswig-Holstein Bank in autumn 1997, but the top executives threatened to hand in a collective resignation and so the bank was sold to them;
- (6) Sometimes there were inadvisable relations between the bank management and political powers, and corresponding political pressure – a typical “political” bank was the Land Bank of Estonia where almost all financial risks were ignored and later the Government lost its deposits in the bank amounting to more than 800 million Estonian kroons, EEK (more than 50 million euros).

The authors are of the opinion that the currency board arrangement helped to resolve banking crises rapidly and mostly effectively without very large rehabilitation costs in Estonia. The main instruments for anticipating banking crises are tightening of prudential requirements and strengthening of banking supervision. Recent changes in the operational framework for monetary policy and banks' prudential ratios in Estonia were aimed at

enhancing financial stability and increasing the liquidity buffers of the financial system. In short-term, the priority focused on restoring foreign investors' confidence in Estonian economic viability.

We may argue that the currency board arrangement practically did not help banks that were in trouble because its resources are intended for guaranteeing the local currency and the central bank is not acting as the lender of the last resort. The currency board is not able to avoid banking crises and cannot guarantee a “soft landing” and rehabilitation of banks in trouble. At the same time, the currency board arrangement supported and strengthened the discipline and responsibility of the main actors – banks, the central bank, depositors, and the Government. A stable currency and presence of respective financial safety net compensated for the absence of classical lender-of-last resort facility and ensured the development of a generally reliable banking sector.

**Table 1 Ownership Structure of Estonian Banks, %**

Year	Estonian Owners				Non-Resident Owners			
	Public Sector	Legal Persons	Individuals	Total	Banks	Legal Persons	Individuals	Total
1996	12.0	NA	NA	62.8	10.3	NA	NA	37.2
1997	4.2	41.6	11.3	57.1	22.7	19.6	0.6	42.9
1998	13.6	22.3	8.6	44.5	45.5	9.5	0.5	55.5
1999	11.6	15.2	11.0	37.6	52.6	8.9	0.7	62.2
2000	0.0	6.8	9.3	16.1	67.0	16.7	0.2	83.9
2001	0.0	5.6	8.5	14.1	63.3	22.3	0.3	85.9
2002	0.0	5.2	8.1	13.3	79.0	7.6	0.1	86.7

*Source: Estonian Bank*

The structure of the Estonian banking sector has changed fundamentally during the last years. Today, the banking system is highly concentrated and two Swedish-owned banks dominate in the market. The consolidation process continued throughout the second banking crisis in 1998–1999 and resulted in fundamental bank reorganizations. We can notice all three worldwide trends in the financial consolidation process also in the Estonian market: domestic consolidation, foreign entry and cross-border consolidation, and the formation of financial conglomerates and bank assurances. The ownership structure of Estonian banks is presented in Table 1. The dependence of the Estonian banking system on the developments in

international financial markets and on foreign investors' preferences has deepened from year to year. In the course of the restructuring process, foreign banks increased their share in equity capital from 10.3% in 1996 to 79% at the end of 2002. The total share of non-resident owners had risen to 86.7% by the end of 2002.

### 3. DuPont Financial Ratio Analysis

The starting point of bank performance analysis is to calculate the book rate of return on equity,  $ROE$

$$ROE = \frac{\text{Earnings After Taxes, } EAT}{\text{Book Value of Equity, } BVE} \quad (1)$$

which consists of three components:

- pull-through,  $U$

$$U = \frac{\text{Earnings After Taxes, } EAT}{\text{Earnings Before Taxes, } EBT} \quad (2)$$

- financial leverage,  $LEV$

$$LEV = \frac{\text{Total Assets, } TA}{\text{Book Value of Equity, } BVE} \quad (3)$$

- return on total assets,  $ROA$

$$ROA = \frac{\text{Earnings Before Taxes, } EBT}{\text{Total Assets, } TA} \quad (4)$$

These financial ratios form the multiple factor system

$$ROE = \frac{EAT}{EBT} \times \frac{TA}{BVE} \times \frac{EBT}{TA} = \frac{EAT}{BVE} \quad (5)$$

Changes in  $ROA$  are usually the cause of the most important changes in banks' performance and need a more detailed analysis. The other financial ratios such as components of  $ROE$ , pull-through ( $U$ ) and financial leverage ( $LEV$ ), reflect tax treatment and capitalization rate, and they usually change less.  $ROA$  may be divided into the following components:

- bank burden,  $B$

$$B = \frac{\text{Net Non - Interest Revenue, } NNIR}{\text{Total Assets, } TA} = \frac{NIR - NIE}{TA} \quad (6)$$

where  $NIR$  - non-interest revenue;

*NIE* - non-interest expense;

- earning assets ratio, *EAR*

$$EAR = \frac{\text{Earning Assets, } EA}{\text{Total Assets, } TA} \quad (7)$$

- net interest margin, *NIM*

$$NIM = \frac{\text{Net Interest Revenue, } NIR}{\text{Earning Assets, } EA} = \frac{IR - IE}{EA} \quad (8)$$

where *IR* - interest revenue;

*IE* - interest expense,

Financial ratios (6-8) form a factor system

$$ROA = \frac{NNIR}{TA} + \frac{EA}{TA} \times \frac{NIR}{EA} = \frac{NNIR + NIR}{TA} = \frac{EBT}{TA} \quad (9)$$

For a more detailed analysis, *NIM* may be divided into the following three components:

- return on earning assets, *REA*

$$REA = \frac{\text{Interest Revenue, } IR}{\text{Earning Assets, } EA} \quad (10)$$

- cost of liabilities, *COL*

$$COL = \frac{\text{Interest Expense, } IE}{\text{Liabilities, } L} \quad (11)$$

- liabilities to earning assets ratio, *LEA*

$$LEA = \frac{\text{Liabilities, } L}{\text{Earning Assets, } EA} \quad (12)$$

which form the factor system

$$NIM = \frac{IR}{EA} - \frac{IE}{L} \times \frac{L}{EA} = \frac{IR - IE}{EA} = \frac{NIR}{EA} \quad (13)$$

Initial financial information for Estonian banking sector performance analysis (1994–2002) is presented in Table 2 on the basis aggregated consolidated financial statements published by the Bank of Estonia.

**Table 2 Simplified Consolidated Financial Statements of the Estonian Banking System (million kroons)**

<i>Income Statement Data</i>	1997	2000	2001	2002	2003	03/97	03/02
Interest Revenue, IR	2658.5	3744.2	4308.1	4253.5	3868,7	1,453	0,975
Interest Expense, IE	1217.5	1811.9	2125.7	1883.0	1708,2	1,403	1,009
Net Interest Revenue, NIR = IR – IE	1444.1	1932.3	2182.4	2370.5	2160,5	1,496	0,949
Non-Interest Revenue, NOIR	3272.0	2065.6	2895.1	2613.4	2716,2	1,604	1,000
Non-Interest Expense, NOIE	3644.4	3384.8	3373.7	3769.1	2547,5	1,233	0,994
Net Non-Interest Revenue, NNIR = NOIR – NOIE	-372.4	-1319.2	-478.6	-1155.7	-168,7	0,451	-1,120
Earnings Before Taxes, EBT = NIR + NNIR	1068.9	613.1	1703.8	1214.8	2717,5	2,539	1,212
Earnings After Taxes, EAT	963.1	613.1	1683.4	1153.2	2562,5	28.20	0.685
<b>Balance Sheet Data</b>							
Cash and Reserves, R	3203.8	6578.0	6212.3	5166.2	5100,3	1,654	1,033
Earning Assets, EA	25817.0	42019.6	53544.0	66827.5	78098,7	3,258	1,197
Fixed and Other Assets, FA	2743.1	3847.3	3358.7	3054.9	2604,4	0,978	0,868
Total Assets, TA = R+EA+FA	31763.9	52444.9	63115.0	75048.6	85803,4	2,884	1,173
Liabilities, L	28562.7	45164.2	54936.0	65549.2	72504,9	2,714	1,160
Book Value of Equity, BE	3201.2	7280.7	8179.0	9499.4	13298,5	4,377	1,248

Source: The Bank of Estonia Annual Reports

Using initial data from Table 3 (the balance sheet data are averaged), results of DuPont financial ratio analysis are presented in Table 3.

**Table 3 Financial Ratio Analysis of Estonian Commercial Banks (1997–2003)**

<b>Financial Ratio</b>	<b>1997</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>03/97</b>	<b>03/02</b>
<i>Book Rate of Return, %</i> , $ROE = EAT/BE$	30.09	8.59	20.58	12.14	19,26	0,606	0,936
Pull-through, %, $U = EAT/EBT$	90.10	100.0	98.80	94.93	94,30	1,047	0,965
Financial Leverage, $LEV = TA/BE$	9.92	7.203	7.717	7.90	6,43	0,657	0,937
<i>Return on Total Assets, ROTA = EBT/TA</i>	3.365	1.192	2.700	1.619	3,167	0,88	1,033
<i>Components of ROTA, <math>ROTA = B + EAR \times NIM</math></i>							
Burden, %, $B = NNIR/TA$	-1.172	-2.493	-0.755	-1.540	-0,197	0,157	-0,961
Earning Assets Ratio, %, $EAR = EA/TA$	81.28	80.12	84.84	89.05	91,02	1,129	1,021
Net Interest Margin, %, $NIM = NIR/EA$	5.594	4.599	4.076	3.547	2,766	0,460	0,665
<i>Components of NIM, <math>NIM = REA - COL \times LEA</math></i>							
<i>Return on Earning Assets, REA = IR/EA</i>	10.30	8.921	8.046	6.365	4,954	0,446	0,814
Cost of Liabilities, %, $COL = IE/L$	4.263	4.012	3.869	2.873	2,356	0,517	0,870
<i>Liabilities to Earning Assets Ratio, <math>LEA = L/EA</math></i>	1.106	1.075	1.026	0.981	0,928	0,833	0,969

*Source: Authors' calculations*

## 4. Econometric Modelling

As far as we know, nobody has earlier used the existing information about banks to construct production function type econometric models treating banking as a separate sector of a country (Aarma and Vainu, 2003). One can ask what is the production or product of a bank? In our opinion the product of the bank is the amount of the services, the volume of which can be measured by the total income of the bank what is the measure of the amount of production.

We selected the total income of the banks ( $y$ ) as the output variable (dependent variable) and used profit earning assets ( $x_1$ ), equity ( $x_2$ ), liabilities ( $x_3$ ) and fixed assets ( $x_4$ ) as factors (independent variables). The time series were treated as consisting of three components:

$$y(t) = f(t) + h(t) + e_t \quad (14)$$

where  $y(t)$  – the actual time series;  
 $f(t)$  – the linear trend in the time series;  
 $h(t)$  – the harmonious component in the time series;  
 $e_t$  – residuals.

The harmonious component is determined as Fourier's series:

$$h(t) = a_0 + \sum_{j=1}^k (a_j \cos \alpha + b_j \sin \alpha), \quad \alpha = j \frac{t2\pi}{T} \quad (15)$$

where  $j$  – the number of harmonious component,  
 $t$  – time,  
 $T$  – length of the time series (the number of periods).

We chose the power function as the type of the model.

$$y = ax^\alpha z^\beta, \quad \alpha + \beta = 1. \quad (16)$$

To estimate the parameters  $a$ ,  $\alpha$  and  $\beta$  with the method of least squares it was first necessary to find logarithms of the primary data. Then, according to the rules of analyzing time series, we checked the existence of trend and harmonious component in the time series of the logarithms of the selected parameters and got next results.

*Trendlines:*

$$\ln y = 6,2067 + 0,0398t \quad (17)$$

$$\ln x_1 = 9,25 + 0,0612t \quad (18)$$

$$\ln x_2 = 7,0659 + 0,0738t \quad (19)$$

$$\ln x_3 = 9,4373 + 0,0542t \quad (20)$$

$$\ln x_4 = 7,0913 + 0,3206 \ln t \quad (21)$$

*Harmonious components:*

$$u \ln y = \ln y - f(t) = -0,1006 \cos \alpha - 0,0134 \sin \alpha - 0,0421 \cos 2\alpha + 0,0994 \sin 2\alpha - 0,0787 \cos 3\alpha - 0,0696 \sin 3\alpha \quad (22)$$

$$u \ln x_1 = -0,1749 \cos \alpha + 0,0583 \sin \alpha - 0,0850 \cos 2\alpha - 0,0992 \sin 2\alpha \quad (23)$$

$$u \ln x_2 = -0,3193 \cos \alpha + 0,0691 \sin \alpha + 0,0326 \cos 2\alpha - 0,1142 \sin 2\alpha \quad (24)$$

$$u \ln x_3 = -0,1743 \cos \alpha + 0,0514 \sin \alpha - 0,0749 \cos 2\alpha - 0,0861 \sin 2\alpha \quad (25)$$

$$u \ln x_4 = -0,2073 \cos \alpha + 0,0453 \sin \alpha \quad (26)$$

We treated all possible combinations of the factors and obtained only the one model that proved to be statistically significant:

$$\ln y = -2,2884 + 0,0074t - 0,1288 \ln t + 0,087 \cos \alpha - 0,0092 \sin \alpha + 0,0027 \cos 2\alpha + 0,1009 \sin 2\alpha - 0,0787 \cos 3\alpha - 0,0696 \sin 3\alpha + 0,5984 \ln x_3 + 0,4016 \ln x_4 ,$$

what gives finally the next result:

$$y = 0,1014 x_3^{0,5984} x_4^{0,4016} t^{-0,1288} \exp \begin{bmatrix} 0,0074t + 0,087 \cos \alpha - 0,0092 \sin \alpha + \\ + 0,0027 \cos 2\alpha + 0,1009 \sin 2\alpha - \\ - 0,0787 \cos 3\alpha - 0,0696 \sin 3\alpha \end{bmatrix} .(27)$$

## 5. Conclusion

The development of the Estonian banking sector is described by a quite rapid nominal growth of total assets, loan portfolios, net income and other quantitative financial indicators. The capitalization of Estonian banks improved, and the share of non-residents in the share capital increased significantly.

Some most important empirical results of the use of the DuPont financial ratio analysis for the Estonian commercial banking system (1997–2003) are as follows (see Table 3):

- The book rate of return on equity (ROE) decreased during the analyzed period from 31,73% in 1997 to 19,26% in 2003. We can also mention very high volatility of profitability ratios (both ROE and ROA) during the analyzed period. Banks' financial leverage ratio (LEV) decreased substantially due to the central bank's new equity requirements, which forced banks to raise equity or to merge.
- The average return on earning assets (REA) has fallen substantially over the recent years due to the overall falling of interest rates in the Estonian banking market. REA has fallen much faster than average cost of liabilities (COL), i.e. the interest spread decreased considerably over the analyzed period. This change reflects the sharpened competition between banks themselves and with other financial institutions, as for example insurance and investment funds.
- It is possible to treat and analyse a bank as an enterprise. Model (14) shows that the most important factors in development of Estonian banking system have been liabilities (what is the loan resource) and fixed assets.

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# IMPACT OF FOREIGN BANKS' ENTRY ON THE STABILITY AND PERFORMANCE OF BANKS: EVIDENCE FROM THE CEE COUNTRIES<sup>1</sup>

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## **Abstract**

*The aim of the paper is to identify the main effects of foreign banks' entry on the stability and performance of banks in the Central and Eastern European Countries. The FDI theory applied to banking sector is used to distinguish between competition and spillover effects of foreign banks' entry on the behavior of the domestic banking sector. Bank level accounting data from 10 CEE countries is used in empirical analysis. Arellano-Bond dynamic panel data estimation technique used in the regressions. In addition, a summary of a survey based questionnaire conducted in four CEE countries is presented for the qualitative analysis. The results are that foreign banks' entry is likely to reduce the profitability of local banks through the increasing level of competition and foreign banks' entry contributes to the stability of local banking sector in short run.*

**Keywords:** *Bank performance; banking sector stability; foreign bank's entry; transition countries*

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## **1. Introduction**

The internationalization process of firms has been intensively studied since the 1960s. Due to the increase in international capital flows, foreign direct investments and international trade at that time, active development of international banking also began. In the transition countries, international banks have operated only since the beginning of the 1990s, after a significant liberalization of the financial market and elimination of entry barriers. At present foreign banks already have more than 60 per cent of the market in the CEE countries.

Growing foreign ownership in the banking sector raises several interesting questions about the entry process of foreign banks into transition economies. There are no generally accepted theories to explain the internationalization process of banks in the transition economies and its implications. The main reason for this gap in the literature is that foreign bank entry into emerging market has been actual only with the “third wave” of international banks’ activities during the second half of 1990s (Herrero and Simón 2003, p. 3).

The aim of the paper is to identify the effect of foreign banks’ entry on bank performance and stability in the CEE countries.

The reminder of the paper is structured as following: in the second section, the recent foreign bank entry literature is discussed. The effect of foreign banks entry on the performance of banks is discussed in section three. The volatility of credit supply and effect of foreign banks entry on the quality of loan portfolio of local banks is analyzed in section four. In section five the results of questionnaire based survey are presented. Conclusions of the paper are summarized in section six.

## **2. Theoretical aspects of foreign banks’ entry effects**

The first argumentation that greater international financial competition should improve the credit supply is based on the financial liberalization (FL) framework. McKinnon (1973) and Shaw (1973) proposed that there is excess of credit demand in less developed countries and elimination of entry restriction would make it possible for multinational banks to satisfy the excess of credit demand.

Theorists who discuss the impact of FDI underscore the importance of inter-industry and intra-industry spillover effects. The extent of intra-industry spillover effects of FDI on technology transfer depend on a particular local firm’s own ability to innovate and imitate (Glass and Saggi, 1998; Petit and

Sanna-Randaccio 2000). Technology diffusion with FDI is rather a complicated topic. Teece (1977) pointed out several channels for technology run to domestic firms, namely labor flow from foreign to domestic firms, imitation and liberalization (removal of entry barriers to foreign firms).

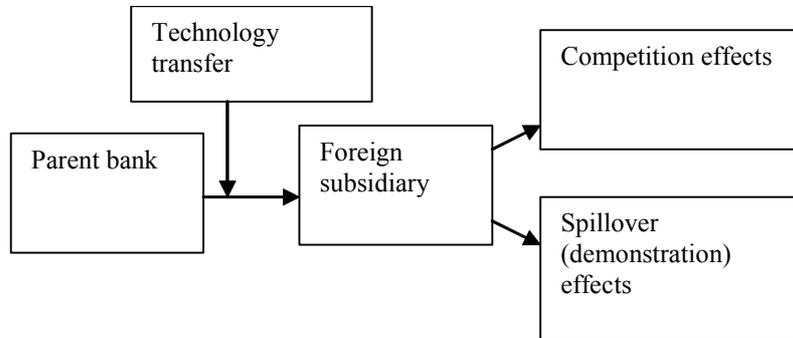
It is also suggested that spill-over effects of foreign entry depend on how much the domestic and foreign banking market differ by their levels of development. This phenomenon is known as the “technology gap hypothesis” which suggests that the spillover effects from FDI to domestic firms will occur only if the technology gap is not overly large and if the country has a minimum required level of human capital (Borensztein *et al* 1998; Kokko 1994; Konings, 1999). An overly large technology gap between the foreign enterprise and domestic firm will lead to the dominance of competition effects. Aitken and Harrison (1999) showed that the productivity of domestic firms was negatively affected by FDI in Venezuela, where the competition effect slightly dominated. The reason was that foreign firms were “market stealers” who forced the domestic firms to produce less, which lead to an increase in the average cost.

Besides the quantity of knowledge transfer, it is important to consider the level of quality of the knowledge transfer. Glass and Saggi (1998) found in their general equilibrium model that host countries with a higher technology gap receive lower technological quality with FDI. The capability to imitate and accept technology transfer is known as “absorptive capacity”. Countries that are able to imitate more and have a more intensive level of local research and development (R&D) receive more high-quality technological FDI. Therefore their conclusion about policy is that host countries should enhance the imitation by supporting local R&D to receive high-quality FDI. Glass and Saggi (1998) found on the example of the oligopoly model that if a host firm (country) has a lower technological level than the source firm (country), then there are at least two rationales for attracting FDI: higher profits of the host firm or a wage premium benefiting workers.

The application of FDI literature into banking sector would mean that the transfer of know-how from parent bank to a subsidiary has both competition and spillover effects on host banking sector (see Figure 1). Foreign subsidiary that operates more effectively due to more modern banking technology taken over from mother banks forces other. There could also be spillover effects – domestic banks can learn from foreign banks. Thus the competition effect can work in two ways: either domestic banks have high absorptive capacity and become more effective (catch-up effect), or if the technology gap is too high then domestic banks are unable to compete with foreign banks and foreign banks will just easily increase their market

shares (market-stealing effect). The technology transfer and local firms' reaction to foreign banks' entry therefore depend on the development of the financial sector.

**Figure 1. Effect of technology transfer on the local banking sector.**



*Source: Compiled by the author.*

A most comprehensive empirical survey about foreign banks entry was carried out by Claessens *et al* (2001) who investigated the relationship between foreign banks entry and the performance of the domestic banking sector in 80 countries. They used panel estimations with 7,900 bank observations for 1988–1995. The main result of the study was that foreign banks tend to have higher profits than domestic banks in the developing countries, while in developed countries foreign banks are less profitable than domestic banks. Their results also indicated that higher foreign bank presence is related with lower profitability, costs and margins of domestic banks.

Hermes and Lensink (2003) developed further the model used by Claessens *et al* (2001). They used bank-level accounting data from 990 banks in 48 countries for the period 1990-1996. Threshold estimations were used to study how foreign banks entry effects are related, in a short term, with the economic development of the countries involved. The results indicate that at a lower level of economic development, foreign banks entry is associated with higher costs and margins for domestic banks. At a higher level of economic development, on the other hand, foreign banks entry has a less significant effect on domestic banks' profitability. This result adds some support to the technology gap hypothesis.

Zajc (2004) analysed foreign banks entry effects on domestic banks in the Czech Republic, Estonia, Hungary, Poland, Slovakia and Slovenia for the period 1995–2000. His results are somewhat different from those presented

by Claessens *et al* (2001). He found that foreign banks entry is associated with lower non-interest income but increases overhead expenses.

Mathieson and Roldos (2001) pointed out two related issues: whether the presence of foreign banks makes systemic banking crises more or less likely to occur, and whether there is a tendency for foreign banks to “cut and run” during the crises periods. In general, it has been suggested that foreign banks can provide a more stable source of credit because branches and subsidiaries of large international banks can draw on their parent (which typically hold more diversified portfolios) for additional funding. Large international banks are likely to have better access to global financial markets and the entry of foreign banks can improve the overall stability of the host country’s banking system (stronger prudential supervision; better disclosure, accounting and reporting practice, etc.).

Bonin and Ábel (2000: 8) addressed that foreign bank entry is a double-edged sword as it is welfare enhancing for the host country’s banking sector as a whole but often threatening to the market position of already weak domestic banks as foreign banks cream skim by taking away good clients.

Cárdenas *et al* (2002) suggest that along with better services and management techniques, there can be also some adverse effects of foreign control. Foreign subsidiaries are often centrally controlled and are supposed to focus only on local market and cut majority of international activities. This can be harmful for stability during a shock in local market as the subsidiary’s asset portfolio is concentrated into local market.

One of the important issues of foreign banks’ entry is a possible reduction of credit in host country. For example Weller (2000) found that foreign bank entry led to reduction of credit supply by Polish domestic banks. Clarke *et al* (2004) concluded that the privatization and foreign bank entry are not negatively associated with the credit supply in Argentina, at least not in long term.

### **3. Effect of foreign bank entry on bank performance in the CEE countries**

#### ***3.1 Data and methodology***

In the current paper I use both bank-level and macro-level data to investigate the relationship between foreign banks entry and banks’ performance. A foreign bank is defined as foreign if it is at least 50 percent foreign owned, i.e. more than 50 percent of its share capital is owned by foreign residents. The study covers the 1995–2001 data of 10 countries:

Bulgaria, Croatia, the Czech Republic, Estonia, Hungary Latvia, Lithuania, Poland, Slovakia and Slovenia. The annual data is used in the following subgroups: bank-level accounting data, foreign banks entry data, the country's specific variables and the banking market development data. A detailed description of all variables used in the analysis is given in Appendix 1.

Bank-level accounting data was obtained from the Bankscope database; panel data for 319 banks during 1995–2001 was used. An important difference between the current and previous studies is that both foreign and domestic banks are included into the sample. Several balance sheet variables and profit statement variables are used. First, I use two variables measuring the income of banks: net interest margin (NIM) and non-interest income to total assets (OOITA). Second, a bank's profitability is characterised by the ratio of its before-tax profits to total assets (PTPTA). Third, a bank's costs are measured by two variables: overhead costs to total assets (OHTA) and loan loss provisions to total assets (LLPTA). These variables are calculated on the basis of the bank's income statement and balance sheet. The following internationally comparable accounting identity is used:

$$PTPTA = NIM + OOITA - OHTA - LLPTA \quad (1)$$

The bank-specific exogenous variables are as follows: short-term and long-term deposits and other funding to total assets (CSTFTA), equity ratio to total assets (ETA), and non-earning assets to total assets (NEATA).

I use two different foreign entry variables: the share of foreign banks' assets in the total banking market assets (FSA), and the ratio of foreign banks to the total number of banks (FBSN). Since Bankscope covers about 90% of the banks on the market and the precise ownership structure of a bank is described only in the last reporting period, it is not possible to calculate foreign ownership by aggregating the data of the reporting banks, because of the danger to either overestimate or underestimate the proportion of foreign ownership on the market. The possibility to overestimate foreign ownership comes from the fact that foreign banks are more active internationally and also provide data more actively to Bankscope. The possibility to underestimate foreign ownership in some countries is also quite high because Bankscope does not cover branches of foreign banks, and therefore the countries where the main foreign bank entry mode has been branching tend to significantly underestimate foreign ownership on the market. The problem of data is more relevant for small countries like Estonia, Latvia and Lithuania, where the number of banks is small, and the absence of even two or three banks from the database may significantly affect foreign ownership data. To overcome these problems, different sources of data was used. Foreign banks'

share in the total assets (FSA) data was drawn from Bankscope and national central banks, while foreign banks' share in the total number of banks (FBSN) was obtained from the EBRD Transition Report 2003.

The development of the banking sector is characterised by the ratio of domestic private credit to the GDP (DCGDP). This is a widely used measure of banking sector development, used also by Hermes and Lensink (2003). Another banking-market-specific variable used is the concentration index, calculated as the ratio of three biggest banks' assets to total banking market assets in the given country (CONC). Market concentration data is obtained from the database provided by the website of Asly Demirgüç-Kunt from Worldbank. The DCGDP data is from the EBRD Transition report 2002.

Three country-specific variables are included. Similarly to Claessens *et al* (2001), Hermes and Lensink (2003), and Zajc (2004) real GDP growth (GDPG), GDP per capita (INCOME, in logarithm) and inflation rate (CPI) are included as indicators of macroeconomic development. All country variables were obtained from the EBRD Transition Report 2002. The sample is unbalanced because of lack of data for some banks in some periods. The number of observations varies between 884 and 1041.

Next the short-term relationship between foreign banks entry and bank performance is tested empirically. The analysis starts with the empirical model which is similar to that used by Claessens *et al* (2001):

$$\Delta I_{ijt} = \alpha_0 + \beta_j \Delta FS_{jt} + \delta_{ij} \Delta B_{ijt} + \gamma_j \Delta X_{jt} + \varepsilon_{ijt} \quad (2)$$

where  $I_{ijt}$  is a vector of dependent variables for bank  $i$  in country  $j$  at time  $t$ ,  $FS_{jt}$  is a measure of foreign bank penetration in country  $j$  at time  $t$ ,  $B_{ijt}$  is a set of bank-specific variables for bank  $i$  in country  $j$  at time  $t$ .  $B_{ijt}$  is included into the equation as a set of control variables.  $X_{jt}$  is a vector of country variables in country  $j$  at time  $t$ .

Then the initial empirical model characterised by equation 2 is developed further, adding banking market development variables and an interactive term of foreign banks entry and banking market development; the same methodology was also used by Hermes and Lensink (2003). The model involving banking sector development and interactive term is as follows:

$$\Delta I_{ijt} = \alpha_0 + \beta_j \Delta FS_{jt} + \gamma_j \Delta FS_{jt} \times DCGDP_{jt} + \delta_{ij} \Delta B_{ijt} + \phi_j BMD_{jt} + \varepsilon_j \Delta X_{jt} + \varepsilon_{ijt} \quad (3)$$

$DCGDP_{jt}$  is a proxy for banking market development in country  $j$  at time  $t$ ,  $FS \times DCGDP$  is a variable that has been created by interacting the foreign banks entry variable with the banking market development variable. The interactive term is included to test whether foreign entry effects in a particular country depend on the level of development of that country's

banking market. It can be expected that foreign banks entry has a more relevant impact in the early stage of internationalisation and to be lower when the banking market in the target country is well-developed. It may even be the case that the sign of the coefficient of  $FS$  changes from negative to positive or vice versa. The banking market development variables are expected to have a negative effect on the cost and income of a bank.

Finally, an interactive term of foreign banks entry and bank market share is included into the equation. Banks with different market shares may react differently to foreign banks entry. I suggest that smaller banks react more actively, because they are more flexible to changes in market conditions and have to adjust themselves more readily in order to be competitive. The model is as follows:

$$\Delta I_{ijt} = \alpha_0 + \beta_j \Delta FS_{jt} + \gamma_j \Delta FS_{jt} \times MSHARE_{jt} + \delta_{ij} \Delta B_{ijt} + \varphi_j BMD_{jt} + \varepsilon_j \Delta X_{jt} + \varepsilon_{ijt} \quad (4)$$

where  $FS \times MSHARE$  is a variable that has been created by interacting the foreign banks entry variable with the banking market development variable.

### 3.2 Estimation results and discussion

Two variables are used to measure foreign banks' presence: the number of foreign banks as the share of the total number of banks (FBSN) and foreign banks' share in the total assets of the banking market (FSA). An interactive terms with private credit to the GDP (DCGDP) and the bank market share (MSHARE) are also included. Five bank performance measures (ALINT (interest income on interest earning assets), PTPTA, OOITA, OHTA and LLPTA) are the main dependent variables. Stata SE 8 is used for estimations.

Compared with Claessens *et al* (2001), who used a fixed effects model, the methodology for estimating regression coefficients is somewhat different. The Arellano-Bond linear, dynamic panel data estimation technique is implemented which enables to use a lagged term of dependent variable as exogenous variable, and instrumental variables (Arellano and Bond, 1991) to reduce the endogeneity problem and get more consistent estimates. To reduce the heteroskedasticity that is often the problem in micro level panels, robust standard errors are reported (see Stata, 2003). Robust standard errors are higher and therefore relationships are statistically less significant.

It is a general assumption that foreign banks entry at time  $t$  is exogenous, i.e. FBSN or FSA do not depend on bank-specific variables at time  $t$  (Zajc, 2004). In practice, foreign banks entry may be associated with timing, thus a bank enters the market in year  $t$  because of the market

conditions in period  $t$ . It may be the case that foreign banks are entering by acquisition at time  $t$  because of the crisis period of a single bank or the whole banking market in order to acquire banks at a low price. It can be argued that this makes foreign banks entry partly endogenous. The endogeneity problem here is not very strong, because in most cases the bank's name changes after the merger, and the bank that was acquired, for example, because of negative profit and low price, drops out from period  $t$  estimation as all variables are in first differences. Nevertheless, some endogeneity may remain, because sometimes foreign banks consider the average performance of the whole market in period  $t$  when making entry decisions.

To reduce possible endogeneity problems in estimations, it is suggested that levels of lag operators can be used (Stata, 2003). Levels of lag operators of foreign bank entry variables (1 period lag of FBSN and FSA) are included as instrument variables.

An important difference between this study and previous works is that I analyse foreign banks entry effects on both foreign and domestic banks' performance. The first differences of variables ensure that the observations of a foreign bank entering the market at time  $t$  are not included. Yearly time dummies (1996–2001) are included into the estimations, while regression coefficients of time dummies are not reported. Arellano-Bond estimations include also tests of autocorrelations AR(1) and AR(2) that are not reported. Autocorrelation was not significantly present in the regressions except for ALINT.

The estimation results with FBSN as the foreign banks entry variable are given in Table 1.

**Table 1 Foreign bank entry (FBSN) effect on banks' performance**

Variable	D(ALINT)	D(PTPTA)	D(OOITA)	D(OHTA)	D(LLPTA)
LD(DEP)	0.0185 (0.0238)	0.1898 (0.1304)	0.0217 (0.0961)	0.3240 (0.2795)	0.2061* (0.1096)
D(FBSN)	-0.1277*** (0.0387)	-0.0252 (0.0408)	-0.0583 (0.0713)	-0.0024 (0.0503)	-0.0700* (0.0409)
D(NEATA)	0.1109* (0.0603)	0.0355 (0.0414)	0.4998* (0.2979)	0.4282 (0.3328)	-0.0251 (0.0773)
D(ETA)	-0.1535 (0.1027)	0.3968*** (0.1310)	-0.0244 (0.3568)	-0.2211 (0.3459)	0.0100 (0.0964)
D(CSTFTA)	-0.0242 (0.0345)	0.0543 (0.0369)	0.1437 (0.0886)	0.0100 (0.0767)	0.0498 (0.0416)
D(MSHARE)	0.1722 (0.1698)	0.2006* (0.1089)	-0.6116** (0.3001)	-0.6354* (0.3334)	-0.1750* (0.1032)
FD	0.0119 (0.0147)	-0.0347 (0.0295)	0.0086 (0.0579)	0.0347 (0.0677)	0.0249 (0.0226)
D(DCGDP)	-0.0247** (0.0295)	0.0574 (0.0505)	0.5085*** (0.1736)	0.5294* (0.3165)	0.1648*** (0.0610)
D(GGDP)	-0.4700*** (0.1669)	-0.0125 (0.1186)	-0.3006** (0.1462)	-0.4822* (0.2508)	-0.0464 (0.1218)
D(LNIN-COME)	0.0039 (0.0440)	-0.0072 (0.0488)	-0.2695** (0.1293)	-0.2694* (0.1454)	-0.0651 (0.0519)
D(CPI)	-0.0036 (0.0033)	0.0051 (0.0043)	0.0344 (0.0266)	0.0103 (0.0259)	0.0026 (0.0018)
D(MMR)	0.0322 (0.0480)	-	-	-	-
Nr. Obs	1036	1041	1035	2021	895
F-Statistic	4.13	2.91	2.08	1.29	2.60

Source: author's calculations. Note: \* – significant at 10% level, \*\* – significant at 5% level, \*\*\* – significant at 1% level.

Foreign banks entry variable FBSN has a statistically significant and negative effect on banks' average interest rate on earning assets and loan loss provisions (LLPTA). The author tested the foreign banks entry effect also on the banks' net interest margin, but found no statistically significant relations. Therefore ALINT was used to analyse the effect on interest revenues. It seems that foreign banks entry has a significant effect only on interest income of interest earning assets and not on interest expenses. Hermes and Lensink (2003) found a positive and significant effect of FBSN on non-interest income, whereas Zajc (2004) found similar results. A negative relationship with profitability measures indicates that foreign banks entry enhances the level of competition in the banking sector.

A negative relationship between FBSN and LLPTA shows that foreign banks entry leads to more strict lending policies of the local banks. FBSN is not statistically associated with profits, overhead costs and non-interest income of banks. The banking market concentration index was

excluded from the regression equations because of no significant effect on any dependent variables.

FSA has a somewhat different effect on bank performance. The estimation results in Table 2 show that FSA has a negative effect on the average loan interest rate and a positive effect on loan loss provisions. FSA reflects the relative size of foreign banks versus domestic banks.

**Table 2 Foreign banks entry (FSA) effect on bank performance**

Variable	D(ALINT)	D(PTPTA)	D(OOITA)	D(OHTA)	D(LLPTA)
LD(DEP)	0.0167 (0.0223)	0.1809 (0.1274)	0.0537 (0.1099)	0.3541 (0.2848)	0.2162** (0.1112)
D(FSA)	-0.0417** (0.0168)	-0.0203 (0.0145)	0.0512 (0.0340)	0.0617 (0.0478)	0.0251** (0.0117)
D(NEATA)	0.1116* (0.0594)	0.0379 (0.0425)	0.5076* (0.3065)	0.4375 (0.3451)	-0.0253 (0.0791)
D(ETA)	-0.1648 (0.1036)	0.3966*** (0.1315)	-0.0321 (0.3647)	-0.2304 (0.3555)	0.0101 (0.0957)
D(CSTFTA)	-0.0285 (0.0316)	0.0495 (0.0370)	0.1345 (0.0889)	-0.0029 (0.0796)	0.0469 (0.0403)
D(MSHARE)	0.2048 (0.1695)	0.2166 (0.1135)	-0.6168** (0.3141)	-0.6512* (0.3422)	-0.1766* (0.0963)
FD	0.0125 (0.0193)	-0.0284 (0.0308)	-0.0067 (0.0539)	0.0227 (0.0648)	0.0140 (0.0187)
D(DCGDP)	0.0088 (0.0340)	0.0598 (0.0472)	0.5347*** (0.1814)	0.5350 (0.3362)	0.1897*** (0.0641)
D(GGDP)	-0.4745*** (0.1681)	-0.0120 (0.1133)	-0.3154** (0.1453)	-0.4654** (0.2470)	-0.0700 (0.1092)
D(LNIN-COME)	0.0280 (0.0447)	0.0018 (0.0503)	-0.2905** (0.1367)	-0.2909** (0.1591)	-0.0675 (0.0523)
D(CPI)	-0.0028 (0.0031)	0.0054 (0.0043)	0.0347 (0.0261)	0.0104 (0.0264)	0.0037* (0.0020)
D(MMR)	0.0703 (0.0463)	-	-	-	-
Nr. Obs	1023	1028	1022	1009	884
F-Statistic	3.63	3.57	1.75	1.26	2.88

Source: author's calculations. Note: \* – significant at 10% level, \*\* – significant at 5% level, \*\*\* – significant at 1% level.

The estimation results indicate that if entering foreign banks are comparatively larger than the local banks, then due to the increasing competition on the loan market, the banks offer better loan conditions to firms and this could result in increasing loan losses. From other explanatory variables, MSHARE is negatively associated with overhead costs and non-interest income and positively associated with profits. The results indicate that bigger banks are able to achieve some economies of scale.

The estimation results with interactive term with foreign ownership (FBSN) and banking sector development are given in Table 3. The results

indicate that the development of the banking sector has some effect on short-term foreign banks entry effects. As concluded above, foreign banks entry is generally associated with decreasing interest incomes. Estimations with interactive term FBSN\*DCGDP show that in more developed banking markets this fall in interest revenues is lower, because interest rates are already more converged with developed markets.

FSA\*DCGDP has a significant effect on average loan interest rates, pre-tax profits and non-interest incomes. Foreign banks entry reduces the profitability of the local banks, but in more developed markets this fall is lower because the entering bank does not have such a high competitive advantage as in less developed countries.

**Table 3 Foreign banks entry (FBSN) effects: role of the banking market development**

Variable	D(ALINT)	D(PTPTA)	D(OOITA)	D(OHTA)	D(LLPTA)
LD(DEP)	0.0165 (0.0220)	0.1916 (0.1302)	0.0450 (0.1183)	0.3229 (0.2899)	0.2013* (0.1095)
D(FBSN)	-0.2293*** (0.0820)	0.0617 (0.0790)	0.3104 (0.2312)	0.3382* (0.2036)	-0.0388 (0.0845)
D(FBSN* DCGDP)	0.3620** (0.1768)	-0.2922* (0.1644)	-1.2258** (0.5979)	-1.1266* (0.6814)	-0.1072 (0.1862)
D(NEATA)	0.1008* (0.0609)	0.0408 (0.0413)	0.5233* (0.3022)	0.4417 (0.3260)	-0.0251 (0.0786)
D(ETA)	-0.1497 (0.1008)	0.3929*** (0.1316)	-0.0455 (0.3722)	-0.2406 (0.3540)	0.0091 (0.0972)
D(CSTFTA)	-0.0233 (0.0341)	0.0535 (0.0371)	0.1394 (0.0892)	0.0075 (0.0757)	0.0491 (0.0414)
D(MSHARE)	0.1581 (0.1731)	0.2099** (0.1043)	-0.5791** (0.2922)	-0.6052* (0.3291)	-0.1727* (0.1021)
FD	0.0083 (0.0146)	-0.0345 (0.0291)	0.0094 (0.0609)	0.0362 (0.0699)	0.0253 (0.0225)
D(DCGDP)	-0.1552** (0.0751)	0.1395 (0.0858)	0.8693*** (0.3375)	0.8543* (0.5093)	0.1952* (0.0925)
D(GGDP)	-0.4254*** (0.1514)	-0.0146 (0.1196)	-0.3061** (0.1466)	-0.4932** (0.2479)	-0.0561 (0.1268)
D(LNIN- COME)	0.0191 (0.0463)	-0.0013 (0.0468)	-0.2621** (0.1269)	-0.2606* (0.1431)	-0.0610 (0.0518)
D(CPI)	-0.0063 (0.0041)	0.0067 (0.0042)	0.0404 (0.0287)	0.0164 (0.0277)	0.0033* (0.0018)
D(MMR)	0.0702* (0.0402)	-	-	-	-
Nr. Obs	1036	1041	1035	1021	895
F-Statistic	4.02	2.97	1.85	1.2	2.63

Source: author's calculations. Note: \* – significant at 10% level, \*\* – significant at 5% level, \*\*\* – significant at 1% level.

The development of the banking market has also some effect on banks' overhead costs. The results indicate that in countries with a lower level of financial sector development, foreign entry is more related with higher overhead costs, but for countries with a higher level of financial sector development, foreign entry causes less and less extra costs for banks because the banking system is already developed and fewer additional investments are needed to upgrade the banking equipment.

The results show that foreign banks entry reduces non-interest incomes of the local banks, but the coefficient may turn positive in more developed markets, where competition is more intense. One reason for the limited role of the banking sector development on foreign entry effects can be the homogenous sample of countries.

Generally, lags of difference of dependent variables do not have statistically significant coefficients. From among other explanatory variables, the ratio of bank equity to total assets is positively correlated with bank profits.

Next, the interactive term with foreign banks entry variable and a bank's market share is introduced. It can be expected that small banks react to foreign banks entry somewhat differently from big banks. Obviously, banks having a bigger market share react less to foreign banks entry. This can be so because firstly, they are too big to react so quickly and secondly, banks with high market shares may care less about foreign entry, because it affects them less than small banks.

The estimation results in Table 5 show that the role of the bank's market share in foreign entry effects is very limited. The interactive term  $FBSN * MSHARE$  has a statistically significant negative effect on non-interest income and loan loss provisions. Bigger banks tend to have lower loss provisions, indicating that they have comparably more creditworthy clients and/or a better credit risk policy. No significant coefficients for  $FSA * MSHARE$  was found, therefore those results are not reported.

**Table 4 Foreign banks entry (FSA) effects: role of the banking market development**

Variable	D(ALINT)	D(PTPTA)	D(OOITA)	D(OHTA)	D(LLPTA)
LD(DEP)	0.0160 (0.0220)	0.1805 (0.1264)	0.1391 (0.1446)	0.4027 (0.3073)	0.2184** (0.1117)
D(FSA)	0.0651* (0.0347)	-0.1366*** (0.0387)	-0.3075** (0.1248)	-0.2444 (0.1864)	-0.0235 (0.0409)
D(FSA*)	-0.3371*** (0.1066)	0.3512*** (0.1135)	1.0882** (0.4342)	0.9311 (0.6640)	0.1476 (0.1287)
DCGDP)	0.1103* (0.0588)	0.0382 (0.0414)	0.5074 (0.3104)	0.4342 (0.3474)	-0.0266 (0.0779)
D(ETA)	-0.1665 (0.1036)	0.3948*** (0.1309)	-0.0314 (0.3819)	-0.2306 (0.3653)	0.0114 (0.0960)
D(CSTFTA)	-0.0282 (0.0314)	0.0492 (0.0368)	0.1318 (0.0914)	-0.0064 (0.0820)	0.0469 (0.0402)
D(MSHARE)	0.2130 (0.1696)	0.2043* (0.1106)	-0.6698** (0.3350)	-0.6962* (0.3746)	-0.1838* (0.0989)
FD	0.0109 (0.0167)	-0.0286 (0.0376)	0.0019 (0.0389)	0.0301 (0.0564)	0.0144 (0.0166)
D(DCGDP)	0.1894*** (0.0738)	-0.1690*** (0.0569)	-0.1452** (0.1361)	-0.0507 (0.1324)	0.0989 (0.0539)
D(GGDP)	-0.4151*** (0.1570)	-0.0095 (0.1121)	-0.3574 (0.1718)	-0.4927** (0.2740)	-0.0690 (0.1094)
D(LNIN-COME)	-0.0017 (0.0450)	0.0530 (0.0491)	-0.1173 (0.0771)	-0.1498* (0.0752)	-0.0476 (0.0459)
D(CPI)	-0.0057* (0.0034)	0.0071* (0.0043)	0.0376 (0.0280)	0.0136 (0.0288)	0.0044** (0.0022)
D(MMR)	0.1173*** (0.0433)	-	-	-	-
Nr. Obs	1023	1028	1022	1009	884
F-Statistic	4.53	3.93	1.32	1.36	3.00

Source: author's calculations. Note: \* – significant at 10% level, \*\* – significant at 5% level, \*\*\* – significant at 1% level.

**Table 5 Foreign banks entry (FBSN) and bank performance: role of a bank's market share**

Variable	D(ALINT)	D(PTPTA)	D(OOITA)	D(OHTA)	D(LLPTA)
LD(DEP)	0.0184 (0.0238)	0.1876 (0.1299)	0.0307 (0.0989)	0.3429 (0.2916)	0.2015* (0.1079)
D(FBSN)	-0.1171*** (0.0415)	-0.0103 (0.0419)	-0.1275** (0.0642)	-0.0816 (0.0822)	-0.1008** (0.0426)
D(FBSN* MSHARE)	-0.1664 (0.2358)	-0.2505 (0.1551)	1.1796* (0.6216)	1.3582 (0.9280)	0.4665*** (0.1414)
D(NEATA)	0.1103* (0.0601)	0.0348 (0.0413)	0.5029* (0.2977)	0.4302 (0.3335)	-0.0236 (0.0760)
D(ETA)	-0.1542 (0.1026)	0.3968*** (0.1310)	-0.0243 (0.3582)	-0.2209 (0.3504)	0.0103 (0.0961)
D(CSTFTA)	-0.0253 (0.0346)	0.0534 (0.0371)	0.1482* (0.0885)	0.0148 (0.0760)	0.0517 (0.0413)
D(MSHARE)	0.2071 (0.2053)	0.2526** (0.1083)	-0.8549** (0.4245)	-0.9185* (0.5143)	-0.2989** (0.1204)
FD	0.0162 (0.0110)	-0.0246 (0.0262)	-0.0401 (0.0380)	-0.0245 (0.0315)	0.0084 (0.0134)
D(DCGDP)	-0.0259 (0.0290)	0.0561 (0.0506)	0.5178*** (0.1736)	0.5461* (0.3270)	0.1717*** (0.0606)
D(GGDP)	-0.4653*** (0.1693)	-0.0080 (0.1194)	-0.3201** (0.1529)	-0.5040* (0.2648)	-0.0542 (0.1203)
D(LNINCO ME)	0.0051 (0.0447)	-0.0054 (0.0488)	-0.2790** (0.1318)	-0.2819* (0.1527)	-0.0721 (0.0521)
D(CPI)	-0.0036 (0.0033)	0.0052 (0.0043)	0.0339 (0.0265)	0.0096 (0.0258)	0.0024 (0.0018)
D(MMR)	0.0335 (0.0484)	-	-	-	-
Nr. Obs	1036	1041	1035	1021	895
F-Statistic	4.27	3.87	2.1	1.24	2.59

Source: author's calculations. Note: \* – significant at 10% level, \*\* – significant at 5% level, \*\*\* – significant at 1% level.

A summary of results and comparison with other studies is given in Table 6. The results are consistent with earlier studies, having, however, some differences. It can be generalised that foreign banks entry is negatively correlated with the income variables (ALINT, PTPTA and OOITA) and foreign banks entry is also negatively associated with loan loss provisions. Overhead costs are positively correlated with FBSN, but the increase is less important for countries with higher DCGDP, therefore the results support the technology gap hypothesis. Hermes and Lensink (2002, 2003) and Zajc (2004) have also found positive and significant effects of foreign banks entry on overhead costs. In most studies, foreign banks entry is negatively correlated with non-interest income; Hermes and Lensink (2003) found positive and significant correlation between foreign banks entry and non-interest income.

**Table 6 Summary of the results and comparison with earlier studies**

	Model	Net int. margin; ALINT	Non-interest income	Before tax profit	Overhead expenses	Loan loss provisions
Results	FBSN	–	NS	NS	NS	–
	FSA	–	NS	NS	NS	+
	FBSN	–	NS	NS	+	NS
	FBSN*DCGDP	+			–	
	FSA	+	–	–	NS	NS
	FSA*DCGDP	–	+	+		
	FBSN	NS	–	NS	NS	–
	FBSN*MSHARE		+			+
	FSA	NS	NS	NS	NS	NS
	FSA*MSHARE					
Claessens et al. (2001)	FBSN	NS	–	–	–	NS
	FSA	NS	NS	NS	NS	NS
Hermes and Lensink (2003a)	FBSN	+	+	–	+	+
	FBSN*DCGDP	–	–	+	–	–
Hermes and Lensink (2003b)	FBSN	+	+	–	+	+
	FBSN*GDPPC	–	–	+	–	–
	FSA	+	+	–	+	+
	FSA*GDPPC	–	–	NS	NS	–
Zajc (2004)	FBSN	NS	–	–	+	NS
	FSA	–	–	–	+	NS

*Note:* + indicates a significant positive correlation

– indicates a significant negative correlation

NS indicates a relationship that is not statistically significant

Source: Author, Claessens et al. (2001), Hermes and Lensink (2003 a,b), Zajc (2004)

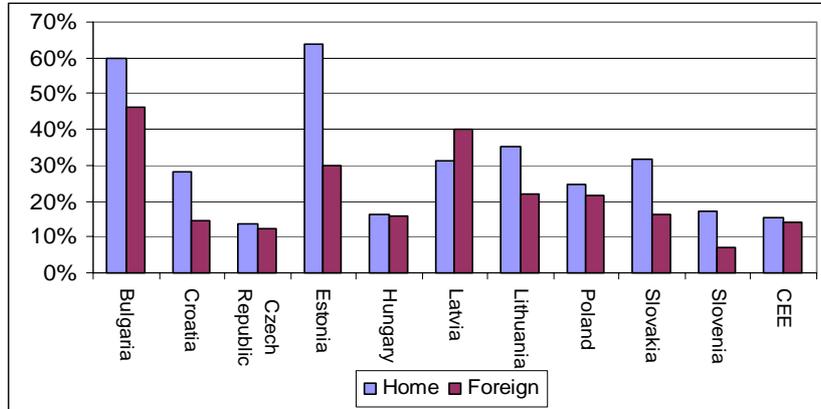
## 4. Effect of foreign bank entry on the stability of banks in the CEE countries

### 4.1 The stability of credit growth

One of the main issues of banking market development in transition countries is the level of financial intermediation and the credit to private sector. Despite the rapid growth of banking markets in transition countries, the level of the financial intermediation remains relatively low, compared with Euro area, where the average bank credit to private sector to GDP ratio is about 150% (ECB 2002).

To analyse, whether foreign banks have more stable credit supply growth in the CEE countries, the mean values and standard deviations of the credit growth in each country were calculated. The credit growth is calculated based on bank level data from Bankscope database. Bank market shares are used as weights to calculate the average credit supply growth. The standard deviation of credit growth of foreign and domestic banks in 1995 to 2003 is given in Figure 2. The volatility of credit growth among foreign and domestic banks has been quite equal. The average standard deviation of the credit supply growth in the CEE countries for domestic banks is 0.15 and 0.14 for foreign banks respectively. Nevertheless Figure 2 shows that in majority of the CEE countries the volatility of credit supply is lower than in domestic banks.

**Figure 2. The standard deviation of credit growth in the CEE countries.**



*Source: Bankscope 2005, author's calculations*

The conclusion from this section is that foreign banks have contributed to the stability of credit supply in the CEE countries during crises, although the differences of credit supply volatility are not very big and

further studies are required to get deeper understanding of about the effects of foreign banks entry on the credit market stability.

#### ***4.2 Effect of foreign entry on the quality of loan portfolios***

As the analysis showed in section 3, more detailed analysis of foreign banks' entry effect on loan losses of local banks is required, as the results were not stable. Therefore the regressions are recalculated. In the final version of regressions, the only significant bank level independent variable in the regressions is bank market share,  $D(\text{MSHARE})$ . The accounting variables did not have statistically significant effect on the dependent variable  $D(\text{LLPTA})$ . This result indicates, that accounting variables do not reflect the credit risk of a bank.

The estimation results in column A (Table 7) indicate that foreign bank entry in terms of number of foreign banks on the market has negative effect on banks' loan loss provisions to total assets. This result is similar to Weller (2000), who showed that in presence of foreign banks' entry, local banks may reduce credit by more strict credit conditions to firms because of comparatively weak financial situation and fear of bankruptcy. The negative relationship between foreign bank entry and banks loan loss provisions can be also interpreted as a positive effect of foreign bank entry on banking market stability.

In column B, the regression results with combination of foreign entry and bank market share ( $D(\text{FBSN}*\text{MSHARE})$ ) is introduced. The regression estimation shows that banks with higher market share have less loan loss provisions to total assets and react less on foreign bank entry. This can be concluded from column B, where the regression coefficient for ( $D(\text{FBSN}*\text{MSHARE})$ ) is positive but the regression coefficients for  $D(\text{FBSN})$  and for  $D(\text{MSHARE})$  are negative.

Foreign bank entry variable  $D(\text{FSA})$  does not have statistically significant effect on banks loan loss provisions in the regressions. The results are reported in column C. The results in column D show that generally domestic banks react similarly to foreign entry as does the full sample. The most significant difference is that the regression coefficient of  $\text{MSHARE}$  in column D is  $-0.449$ , while it is  $-0.11$  in the regression presented in column A. This result indicates that for domestic banks their market share (also size) is an important factor of loan losses. Bigger domestic banks have lower loan loss provisions, i.e. their loan portfolio quality is higher.

**Table 7 Effect of foreign banks' entry on loan loss provisions of banks**

Variable	D(LLPTA) (A)	D(LLPTA) (B)	D(LLPTA) (C)	D(LLPTA) (D)
LD(DEP)	0.159*** (5.59)	0.156*** (5.47)	0.171*** (5.93)	0.1578*** (4.18)
D(FBSN)	-0.076*** (-3.53)	-0.095*** (-4.15)		-0.150*** (-4.00)
D(FSA)			0.018 (1.33)	
D(FBSN* MSHARE)		0.305** (2.11)		
D(MSHARE)	-0.111* (-1.68)	-0.188** (-2.38)	-0.107 (1.60)	-0.449*** (-2.54)
D(DCGDP)	0.184*** (4.30)	0.184*** (4.32)	0.213*** (5.08)	0.2470*** (2.99)
D(CONC)	0.057* (1.80)	0.052* (1.63)	0.039 (1.16)	0.06652 (1.28)
C	0.005 (1.52)	0.003 (1.55)	(-0.003)*** (-2.85)	0.0059* (1.86)
No. of obs.	897	897	886	469
F-Statistic	15.9	14.4	14.69	9.90
Wald Chi2	95.47	100.45	88.13	59.43

*Notes: t – statistics are in parentheses; \* – significant at 10% level, \*\* – significant at 5% level, \*\*\* – significant at 1% level.*

*Source: authors' calculations.*

The regression coefficient for D(DCGDP) is positive in all regressions, indicating, that higher private sector credit is associated with higher loan loss provisions to total assets of banks. The interpretation of this result can be twofold. If we take DCGDP as the indicator of banking market development, like in Hermes and Lensink (2003), then the interpretation would be that are higher average loan loss provisions to total assets of banks in countries with higher banking market development. Another interpretation is that in transitions countries with higher private sector dept to GDP, there are higher average loan loss provisions to total assets of banks.

The result show that banking market concentration D(CONC) is positively associated with banks loan loss provisions to total assets. The economic intuition behind this result is that if there is a high concentration on the market, then there some big banks and other banks are comparatively small and smaller banks have less diversified credit portfolio and higher share of loan loss provisions. Another interpretation for transition countries, where major banks are foreign owned could be, that big foreign banks “cream skim”, focusing on bigger less risky firms and leaving more risky credit projects to smaller domestic banks.

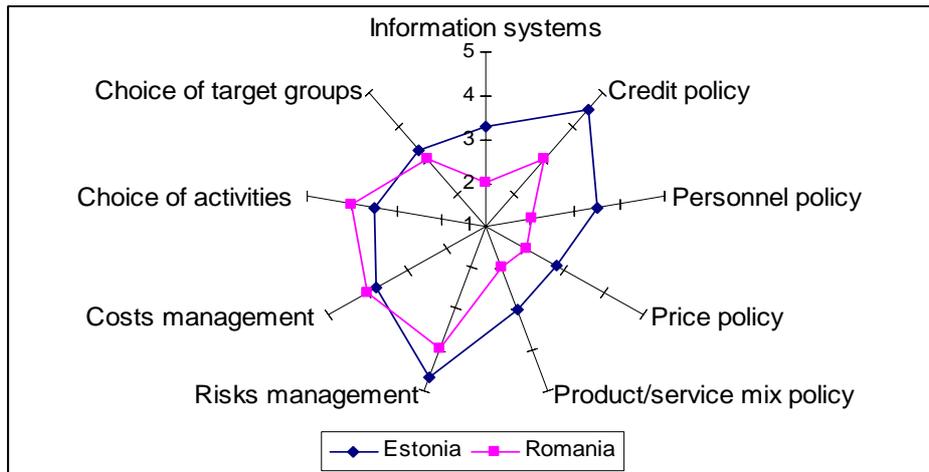
The general conclusion of this section is that foreign bank entry tends to be negatively associated with banks loan loss provisions, indicating that foreign bank entry is contributing to banking market stability of transition countries.

## **5 Results of the survey**

In order to analyze the effect of foreign banks' entry into the CEE countries a survey was carried out. A special questionnaire was designed to study various aspects of banks' internationalization in the CEE countries using the experience and lessons of previous analogous studies (see Konopielko (1999); Kraft and Galac (2000); Pomerleano and Vojta (2001)). A survey of foreign and domestic banks was carried out in 2001–2002 in Estonia, Lithuania, Poland, and Romania; some comparative data were available also from an analogous Croatian (CR) study (Kraft and Galac, 2000).

The transfer of various know-how from foreign banks has been important, especially for foreign-owned banks' management (see Figure 3). The transferred know-how about interest rates, solvency and credit risks management techniques was evaluated by respondents most highly (over 4.0 points by Estonian foreign banks' respondents). Liquidity risk management techniques, information systems, credit policy and personnel policy transfer from foreign banks was also evaluated quite highly by Estonian domestic banks. On the other hand, the average grades given by the responding Polish domestic banks were somewhat different: the transfers of information systems and banking services/products mix policy were considered as the most important know-how transfers from foreign banks (4.3 and 4.2 grades, respectively). This difference between Estonia and Poland can be explained by the technology gap argument. Electronic banking and up-to-date computer technology are considered to be at a much higher level in Estonia than in the other CEE countries and therefore additional know-how transfer from mother banks has not been so relevant. It is even argued that the Estonian e-banking system is more advanced than the corresponding systems in many developed EU countries.

**Figure 3 Evaluations of the adoption of mother bank's policies and systems**

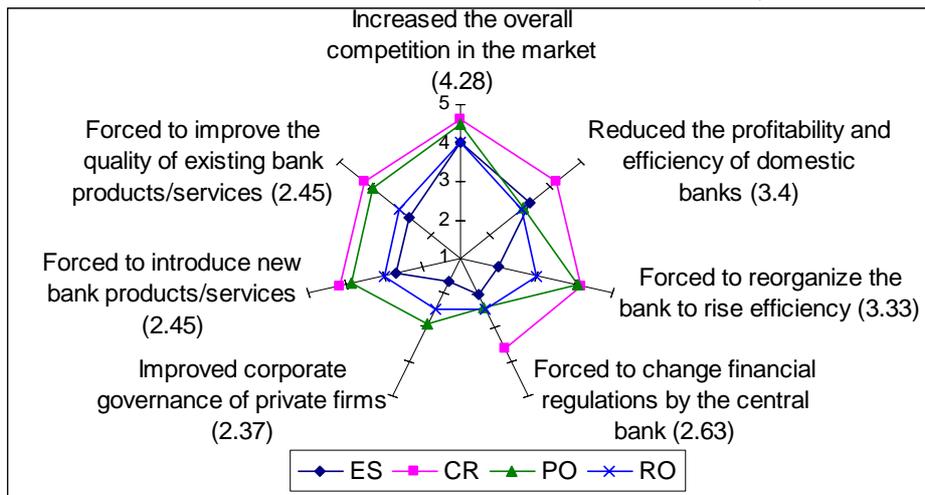


*Source: author's figure*

The impact of foreign banks' entry into the observed CEE banking markets (as evaluated by the responding domestic banks) is presented in Figure 4.

The results show that foreign banks' entry significantly intensified the overall competition in the banking market (average grade 4.0 points in Estonia and Romania, 4.5 in Poland), reducing the domestic banks' profitability and efficiency of operation. All other impacts were evaluated by Estonian respondents as unimportant, among them, surprisingly, even corporate governance of private firms (average grade only 1.7 points).

**Figure 4 Impact of foreign banks' entry into the host country's market (ES – Estonia, CR – Croatia, PO – Poland, RO – Romania)**



Source: author's figure.

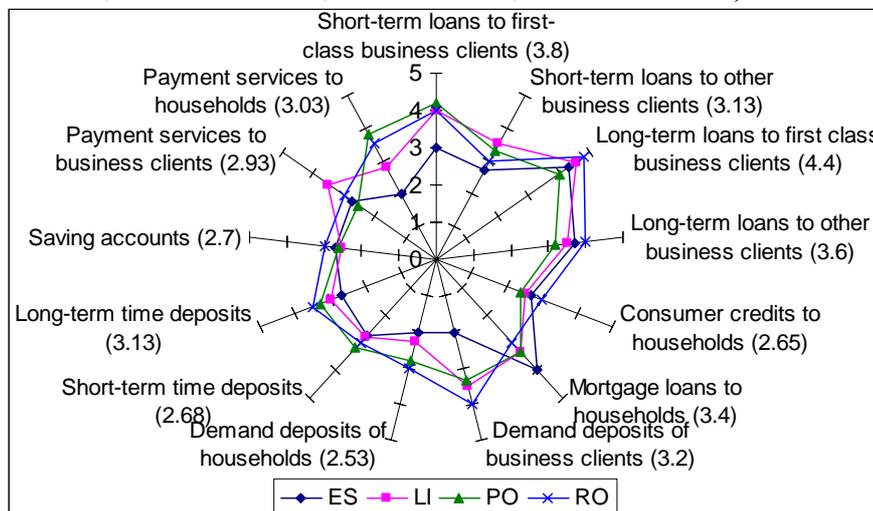
Polish respondents were of the opinion that foreign banks' entry significantly forced banks to reorganize their internal structure in order to raise efficiency (4.1 points), as well as to introduce new banking services/products and improve the quality of the existing banking products and services (both 3.9 points). It is quite interesting that the Croatian respondents evaluated the impact of foreign banks' entry into the Croatian banking market more highly than the respondents from other countries.

It is interesting to note that the average effects of foreign banks' entry were clearly different in different countries. It can be seen in Figure 4 that the importance of different impacts of foreign entry in descending order is as follows: Croatia, Poland, Romania and finally Estonia. Seemingly, the general effect of foreign banks depends on market-specific factors. The Estonian banking market is comparatively more highly developed and so the overall effect of foreign banks has been evaluated to be lower. Therefore, the technology gap hypothesis seems to hold.

The responding domestic banks' evaluations about the degree of competitive pressure resulting from foreign banks' entry are given in Figure 5. Quite clearly, here long-term loans to first-class business clients (average grade 4.4 points) dominated among the other market segments. Mortgage loans to households (average grade 4.0 points) were mentioned as the most important market segments on the Estonian banking market that were influenced by the pressure from foreign banks. The Lithuanian, Polish and Romanian respondents' evaluations were somewhat different: short-term

loans to first-class business clients were mentioned as the more important competitive market segment (average grades respectively 4.0, 4.2 and 4.0 points). The Romanian respondents ranked highly also long-term loans to other business clients and demand deposits of business clients.

**Figure 5 The degree of competitive pressure from foreign banks (ES – Estonia, LI – Lithuania, PO – Poland, RO – Romania)**



Source: author's figure.

## 6 Conclusions

This paper tries to shed light to some aspects of foreign banks entry in the CEE countries. The author suggests that foreign banks' entry can have both competition and spillover effect on domestic banking sector in the CEE countries.

The negative competition effects of foreign banks' entry were weaker in those countries whose banking market was more advanced, indicating that the technology gap hypothesis holds in the CEE banking markets. The entry of foreign banks was positively correlated with the quality of loan portfolios of local banks. This result indicates that there is a positive competition effect of foreign banks' entry also on the stability of domestic banks. Additionally, there were some positive spillover effects of know-how transfer to local banks. The survey results indicate that the main technology spillover from foreign to domestic banks has been in the field of risk management. Therefore there is also a positive spillover effect on the stability of domestic banks. The general conclusion of the paper is that foreign banks entry is

likely to have positive effect to transition banking markets by increasing competition and stability of the banking sector.

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## Appendix 1

### List of variables used in the analysis

Variable	Source	Description
FBSN	Central banks, EBRD	Number of foreign banks as percentage of all banks in a given country and year
FSA	BankScope	Share of foreign banks' assets in total banking market assets in a given country and year
FD	BankScope, bank web sites	Dummy variable with value 1 if bank is foreign-owned and 0 for domestic bank
NIM	BankScope	Net interest income (interest income minus interest expense) over total assets
ALINT	BankScope	Interest income to interest earning assets
PTPTA	BankScope	Before tax profit over total assets
OOITA	BankScope	Non-interest income over total assets
OHTA	BankScope	Total operating expenses (all but interest expenses) over total assets
LLPTA	BankScope	Loan loss provisions over total assets
ETA	BankScope	Equity over total assets
NEATA	BankScope	Non-interest earning assets over total assets
CSTFTA	BankScope	Short- and long-term deposits, and other non-deposit short-term funding over total assets
MSHARE	BankScope	Bank assets to total banking market assets in a given year
GGDP	EBRD	Real GDP annual growth rate
INCOME	EBRD	GDP per capita in US dollars
CPI	EBRD	Annual CPI change
MMR	IFS	End of year money market interest rate
DCGDP	IFS	Private credit to the GDP in a given country and year

*Note: all variables are in percentages except GDP per capita (in US dollars (th.), 1995 prices)*

*Source: Central banks' home pages, EBRD Transition Report 2002, Fitch IBCA's BankScope database, Asly Demirgüç-Kunt, Financial Structure and Economic Development Database, Worldbank, [<http://www.worldbank.org/research/projects/Finstructure/database.htm>]; International Monetary Fund. International Financial Statistics Yearbook 2002.*

# BANKING AND FINANCIAL LIBERALISATION: DO FOREIGN BANKS CONTRIBUTE TO GROWTH?<sup>1</sup>

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## Abstract

*Foreign banks' presence in Central and Eastern Europe has reached a level way above other emerging and EU markets. What is the long-term impact of this special situation on economic growth and stability? Through which channels do foreign banks influence a host country's economy? What are the lessons for other regions? The purpose of this paper is (1) to discuss the challenges that the banking industry in CEE countries was faced with through the massive entry of foreign banks; (2) to describe how this industry has developed under the conditions of increased foreign ownership; (3) to delineate the impact on GDP growth. We find that via direct (price, volume and institutional) and indirect channels (e.g. signalling), foreign banks can contribute positively to financial sector development and economic growth if they follow a prudent, long-term regional strategy.*

**Keywords:** *financial liberalization; foreign banks; financial development; economic growth*

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## 1. Introduction

During the 1990s, one of the most striking structural changes in the financial systems in Central and Eastern Europe (CEE)<sup>2</sup> has been the growing presence of foreign banks. Their entry into the financial structures of these countries significantly altered the business potential in the banking sector, shaped its environment and the development of the aggregate financial system. Beyond the short-term, direct implications: what is the long-term outcome of massive foreign bank entry onto economic growth and stability? Did foreign bank entry accelerate economic development and growth in CEE countries, and if so, how? Given that more than half of the total number of banks in the CEE region are foreign owned now, exceeding the level in comparable emerging markets, the role foreign banks play in CEE countries and their importance for the economic and financial development of these countries is an important issue both for domestic development and beyond.

The aim of this paper is to discuss various channels of influence of foreign bank entry onto the host country financial sector and whether or not this special situation favours economic growth. We begin with a brief characteristic of the banking market of CEE countries, dominated by foreign banks – foreign banks concentration, services offered, their efficiency. Then we analyse the effects that foreign banks have on the development of the financial sector of these countries – starting with the stability, efficiency and improved competition that they provide in the banking sector, and also their influence on domestic banks behaviour and performance. Next we examine if there is any relationship between financial development (affected positively by foreign financial intermediation) and economic development and growth. At the end we present the results of two studies analysing the financing of small and medium enterprises and the role of foreign banks by serving the private and public sector. We conclude that foreign banks with a long-term orientation towards the region contribute positively to economic development of their CEE host countries both directly and indirectly. They directly promote efficiency in the financial sector and provide more stable sources of credit. Together with technology transfer and improved corporate governance, this spills over into attracting further foreign direct and portfolio investment and jointly leads to improved economic growth.

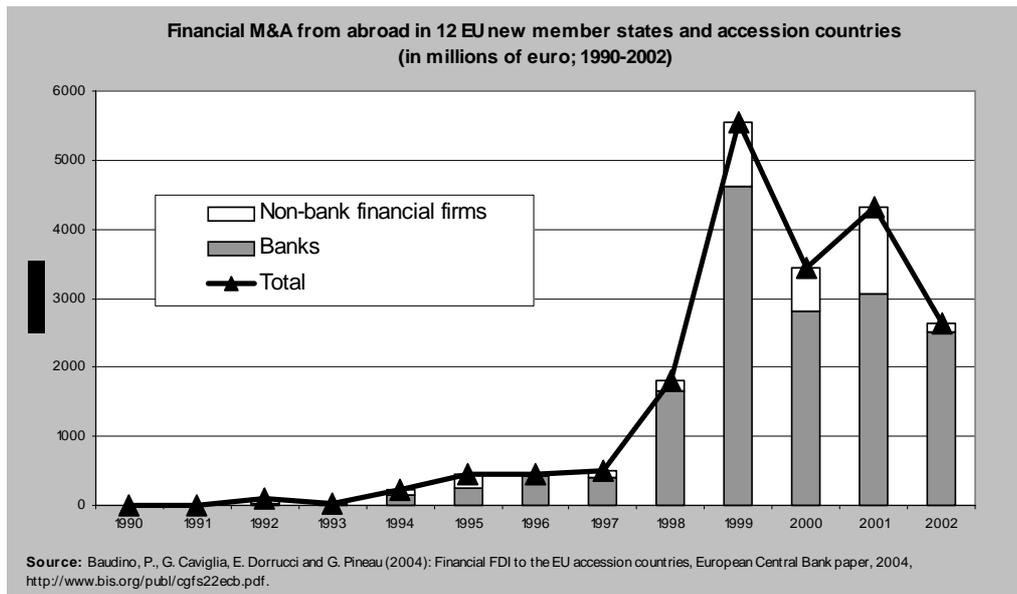
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<sup>2</sup> As foreign bank presence only recently gained in importance in South-Eastern Europe, we focus on the New EU Member States and EU Accession Countries from CEE in the following.

## 2. Foreign banks in CEE

Foreign banks have been active in CEE countries since the early 1990s when many of these countries implemented financial liberalisation policies and eliminated entry barriers allowing foreign banks to set up subsidiaries or to privatise domestic banks. In recent years, progress has been particularly significant in restructuring and consolidating the banking sector. All this has led to a rapid increase of foreign ownership in the banking industry in the second half of the 1990s (Roldos, 2001).

**Figure 1 Financial M&A from abroad in 12 EU new member states and accession countries (in millions of euro; 1990-2002)**



Source: Haiss/Steiner/Eller, 2005

As CEE countries differ in their economic and banking market development, foreign banks entered these countries to different degrees. Hasan and Marton (2003) mention Hungary as a leader in inviting foreign banking institutions during the late 1980s and that within a short period of time the foreign banking sector has become a dominant force in the industry as well as in the economy.

### 2.1 Concentration of foreign banks in CEE markets

Today foreign banks account for more than half of the total number of banks in CEE, and hold more than two thirds of total bank assets (Uiboupin, 2004, 7) and at least three out of the top five banks are foreign-owned

(Baudino/Caviglia/Corrucci/Pineau, 2004, 19). Still, foreign bank presence in these countries is considerably higher than in the old member countries of the European Union. With the exception of Slovenia and Latvia, the banking sector in the New EU Member States (NMS) and the EU Candidate Countries (Croatia, Bulgaria, and Romania) is dominated by foreign banks. In the Czech Republic, Slovakia, Estonia, Lithuania, Croatia and Bulgaria, foreign banks own more than 80 per cent of the banking market. Although the CEE banking market is relatively small with total assets of some EUR 350 billion in absolute terms (by comparison, total assets of banks operating in Austria were some EUR 605 billion at the end of 2003), it is nevertheless a growth market. As Breyer (2004) argues, this above-average growth potential and the higher interest margins than in Western Europe have led Western European banks to invest heavily in the CEE banking sector. In addition to higher economic growth, the low degree of bank intermediation (about a third relative to its Western European equivalent) suggests continuing strong growth potential for banks in CEE in the coming years (Breyer, 2004).

Foreign involvement, though important, is not evenly spread across the CEE region. According to Bonin, Hasan and Wachtel (2005, 32), the foreign share in bank assets in CEE countries in 2000 ranged from highs of 97.4% in Estonia and 84.1% in Croatia to a low of 15.6% in Slovenia. Slovenia has the least amount of foreign participation but the highest relative measures of financial depth, deposit collection, and bank lending (Bonin 2004, 143). In Slovakia and Romania, 42.7% and 46.7% of assets are in banks having majority foreign ownership and in the other CEE countries more than half of the assets are in banks having majority foreign ownership (Bonin/Hasan/Wachtel, 2005, 32). At the same time there is a very small involvement of foreign banks in CIS countries, and especially in Russia (Svetlov, 2002).

Baudino, Caviglia, Corrucci and Pineau (2004, 25) examine the concentration and involvement of EU banking groups in CEE. They find that large Austrian banks are very active in the Eastern expansion - due to several reasons, including the strategic interest of Austria vis-à-vis the so-called Visegrad countries (Czech Republic, Hungary, Poland and Slovakia) and other neighbouring markets. Austrian banks have been among the first participants in the privatisation of the CEE banks and their involvement goes beyond being a by-product of Austria's strong trade relations with many of the New EU Member States. Proximity and early-mover-advantages may play a major role in this regional market approach. Further north, the largest Swedish and Finnish banks found the ground for natural expansion in the Baltic countries. Greek banks concentrated on South-Eastern Europe (SEE), Italian banks followed an active international strategy towards the whole

Central and Eastern Europe (Baudino/Caviglia/Corrucci/Pineau, 2004, 25), with a high degree of involvement also in neighbouring markets. A significant number of foreign banks active in CEE markets hail from Europe's smaller markets, where the prospects for domestic growth are limited. This applies to the three Austrian players (Erste Bank, Bank Austria Creditanstalt and Raiffeisen Zentralbank), the two Benelux players (KBC and ING) and Portugal's Banca Comercial Portuguesa (European Banker, 2004).

## ***2.2 Services offered by foreign banks in CEE***

In CEE countries due to the small size of the respective financial markets, foreign banks seem to have a preference for developing retail banking rather than wholesale activity. In 2001 retail (32%) and commercial banking (34%) were the most developed business lines (Baudino/Caviglia/Corrucci/Pineau, 2004, 30). Conversely, corporate finance, trading and asset management accounts for altogether, only 28% (9.8%, 11.2% and 7% respectively) of the overall business and other banking activities like agency services and retail brokerage are hardly being developed. However, there are significant differences across countries. Wholesale versus retail banking appears to be more balanced in the Czech Republic (21% and 31 %, respectively) and Poland (14% and 25%, respectively), whereas in most of the remaining countries the small size of the domestic money and capital markets contributes to limiting importance of the wholesale activity. Business such as asset management tends to be conducted at the parent company level, owing to economies of scale, predominance of crossover investment on dedicated investment and need to concentrate expertise in units with strong awareness of global trends (Baudino/Caviglia/Corrucci/Pineau, 2004, 31). Foreign banks offer also a range of new products known as Western style consumer goods – consumer credit products, including personal loans, mortgages, store cards, credit cards, auto and retail finance (European Banker, 2004).

## ***2.3 Foreign banks efficiency***

Foreign banks benefit from their involvement in CEE markets, generally enjoying higher levels of growth and profitability than they do in their home markets (European Banker, 2004). Goldberg (2003, 3) argues that foreign banks appear to be more efficient than their domestic counterparts, whether privately or government owned. Bonin, Hasan and Wachtel (2005, 51-52) add that foreign banks are more cost-efficient and also provide better service so that domestic banks are forced to become more efficient and to improve their service as well after foreign entry. Sabi (1996, 179) analysed the performance of foreign and domestic banks in Hungary. They conclude

that compared to domestic banks, foreign banks are more profitable, not exposed to a greater liquidity or credit risk, providing less money for consumer loans, and hesitant to provide long term loans for development purposes (Sabi, 1996, 179). These conclusions may be applied to other transition countries as well. Drawing also on Hungary, Hasan and Marton (2003) conclude that the higher the foreign involvement in bank ownership the lower is the inefficiency. Banks with at least 75% and with 50-75% foreign involvement are the most efficient group. Banks with less than 50% foreign ownership fared substantially lower relative to the groups with over 50% foreign ownership and the group with banks up to 25% foreign involvement is relatively less efficient among the foreign-based groups. So massive-scale foreign involvement seems to be better than low-key-approaches.

### **3. Foreign banks in CEE: Micro/Macro issues**

#### ***3.1 Foreign banks role in the banking industry of CEE countries***

Foreign banks fulfil an important role for the financial stability in CEE countries and effect considerably the development of the banking market and even the overall economic development in these countries. Roldos (2001, 8) considers that foreign bank entry is generally seen as improving the efficiency and stability of local banking system. Foreign banks promote efficiency of the domestic banking sectors. In most cases banks that extend their operations abroad are among the most efficient in their own country, and when such banks start to operate in CEE, they are bound to outperform domestic banks. They improve the quality, pricing, and availability of financial services and are often seen as improving the allocation of credit since they have more sophisticated systems for evaluating and pricing credit risks. As a consequence, those domestic banks that manage to remain active are under pressure to increase their efficiency, thus leading to improved efficiency of the domestic banking system (Baudino/Caviglia/Corrucci/Pineau, 2004, 46).

Uiboupin (2004, 9) argues that the entry of large international banks improve the stability of the host country's banking system because they have better access to global financial markets. Foreign banks' presence helps to achieve even overall financial stability in host countries. Host countries may benefit immediately from foreign entry, if the foreign bank recapitalises a struggling local institution and, in the process, also provides needed balance of payments financing. The better capitalisation and wider diversification of foreign banks, along with the access of local operations to parent funding,

may reduce the sensitivity of the host country banking system to local business cycles and changing financial market conditions. In stress situations, foreign-owned institutions can also provide an alternative location for deposits that does not involve capital outflows (BIS, 2004). The entry of foreign banks can also affect the banking system concentration. In some cases, large foreign banks acquire a significant share of local bank assets by purchasing a local state bank that was being privatized or by acquisition of a large private bank that was in need of recapitalization. The entry of such banks would in turn create pressures on local banks to merge to remain competitive both by capturing economies of scale in back office operations and by being viewed by depositors as offering the same degree of safety and soundness as large foreign banks (Roldos, 2001, 15).

Besides improving financial sector efficiency, foreign banks can provide a more stable source of credit and thus make the banking system more robust to shocks. In times of financial stress local operations of foreign banks are likely to have recourse to additional funding and capital from their head-offices. Roldos (2001, 11) provides an example with Hungary, where head-offices quickly injected capital, when the brokerage subsidiaries of foreign banks suffered large losses in the aftermath of the Russian crisis. While domestic banks contracted their credit and deposits during crisis periods, foreign banks did not show such a procyclical behaviour and thus contributed to a more stable development of bank credit in CEE (De Haas/Van Lelyveld, 2003).

Foreign banks also introduce stronger competition to the local banking market. They exert in some way competitive pressures and demonstration effects on local institutions, often inducing them to reassess business practices, including local lending practices. The result can be better risk management, more competitive pricing, and in general a more efficient allocation of credit in the financial sector as a whole (BIS, 2004). As it is relatively easy for foreign banks to introduce new banking technology and financial innovations, it can be said that host countries benefit from this technology transfers and innovations in products and processes that is commonly associated with foreign bank entry (BIS, 2004). Uiboupin (2004, 10) finds that foreign banks play important role in the improvement of the financial system's infrastructure in the host country – through transfer of good banking practice and know-how, accounting, transparency, financial regulation, supervision and supervisory skills.

The presence of foreign banks may increase the amount of funding available to domestic projects by facilitating capital inflows, diversifying the capital and funding basis and thus attracting foreign direct investments (Uiboupin, 2004, 10). Foreign banks entry may help deepen the inter-bank

market and attract business from customers that would otherwise have gone to foreign banks in other countries. In this way they stimulate the development of the financial markets in the host countries (Uiboupin, 2004, 10). Lensink and De Haan (2002, 214) argue that foreign bank presence may also lead to improvements of bank regulation and supervision, since these banks may demand improved systems of regulation and supervision from the regulatory authorities in the recipient countries. This may then contribute to improving the quality of banking operations of domestic banks. Foreign banks can help encourage consolidation of the banking system, because they have knowledge and experience of other financial activities: insurance, brokerage and portfolio management services (Uiboupin, 2004, 10). These banks may reach and introduce economies of scale and scope beyond the reach of purely local institutions. Cross-border financial conglomerates also induce regional cooperation by the respective financial market supervisors.

Besides all the benefits and positive effects foreign banks have on the local financial market and the overall economic development of the host country, the growing involvement of foreign banks – especially if these are not committed to long-term-regional involvement - gives rise to some concerns. If foreign owners are merely interested in short-term profits from selling non-banking subsidiaries (“asset stripping” as was the case of IPB in the Czech Republic) instead of prudently running a commercial bank, they cause harm to economic growth. The further away their home market is, the easier it is for them to leave.

When integration transforms a domestic institution such that key decision-making and control functions – including strategic planning and risk management – are shifted to the parent, this may backfire onto economic development at large as well. A purely local focus of major banks may reduce the information available to host country supervisors and monetary authorities, and it may interfere with the access of authorities to key firm decision-makers. The reduction in information could become an issue, especially when parent institutions make subsequent strategic changes that significantly affect host country financial markets (BIS, 2004). De Haas and Van Lelyveld (2002, 6) mention that foreign banks may only provide credit to the large and multinational firms, leaving the bad corporate credit risks as well as the retail market and the related payment services to domestic banks. They state also that in some way foreign banks may weaken the position of the less-sophisticated domestic banking system. Domestic banks that are not able to cope with the increased competitive pressures may fail and lead to periods of severe financial instability. Another point that the authors considered is related to the credit supply of foreign banks. If for instance the economic environment in their home countries deteriorates, foreign banks

may lower the credit supply in the host country (De Haas/Van Lelyveld, 2002, 6).

### ***3.2 Foreign banks influence on domestic banks behaviour and performance***

Foreign banks have a strong influence on domestic banks performance and behaviour. Lensink and Hermes (2004) argue that foreign banks may stimulate domestic banks to reduce costs, increase efficiency and increase the diversity of financial services through competition. Domestic banks are pressured to improve the quality of their services in order to retain their market shares. Increased competition may lead to lower interest rate margins and profits (Lensink/Hermes, 2004, 555). In contrary, as result of the increased competition domestic banks react with higher overhead costs because they want to retain their image. This can cause reduced profitability (Uiboupin, 2004, 13), but as already mentioned also improve efficiency and functioning of domestic banks (Lensink/Hermes, 2004, 555).

Foreign bank entry also results in spill-over effects. If foreign banks introduce new financial services, this may stimulate domestic banks to also develop such new services, improving the efficiency of financial intermediation of the domestic financial system (Lensink and Hermes, 2004, 555-556). Foreign banks may also introduce modern and more efficient banking techniques that are new to domestic banks and that might be copied by them. Additionally, foreign banks may help to improve management of domestic banks, especially if foreign banks directly participate in the management of a domestic bank, for example in the case of a joint-venture or a take-over. Foreign banks may demand improved systems of regulation and supervision from the regulatory authorities that will result in improved quality of banking operations. Finally, foreign bank entry may contribute to a reduced influence of the government and influential business and political elites on the domestic financial sector, which may reduce the importance of directed credit policies. All these spill-over effects may contribute to more efficient domestic banking practices, which may help to reduce costs.

Foreign banks may increase the quality of human capital in the domestic banking system in a number of ways. If foreign banks import high skilled bank managers to work in their foreign branches, local employees may learn from the practices of the foreign bank managers. Moreover, foreign banks may invest in training of local employees. Increasing the quality of available human capital for the domestic banking system may again contribute to more efficient domestic banking practices (Lensink/Hermes, 2004, 556).

The effects of foreign bank entry on the performance of domestic banks may depend on the banking market development (Uiboupin, 2004, 15) or even on the level of economic development of the given country, as Lensink and Hermes (2004) stated. At least in the short-term, at lower levels of economic development foreign bank entry leads to increased costs, and perhaps also increased margins of domestic banks. At higher levels of economic development the effects may be less clear: foreign bank entry either has no effects or costs and margins of domestic banks fall. The effect of foreign bank entry on profits of domestic banks at lower levels of development is ambiguous. At higher levels of development profits will decline due to higher competitive pressure (Lensink/Hermes, 2004, 558).

The way domestic banks react to foreign banks entry may depend on their market share as well. Bigger banks probably react less to foreign entry, because they are either too big to react quickly to market conditions, or foreign banks entry is less important to them than to smaller banks. Small banks react to foreign banks entry somewhat differently from big banks (Uiboupin, 2004, 15).

There are a lot of studies carried out to analyse the effects that foreign banks entry have on the performance of domestic banks, on their efficiency and profitability. A most comprehensive empirical survey was carried out by Claessens (2001) who investigated the relationship between foreign banks entry and the performance of the domestic banking sector in 80 countries. They used panel estimations with 7,900 bank observations for the period 1988–1995. The main result is that foreign banks tend to have higher interest margins, profitability, and tax payments than domestic banks in developing countries, while the opposite is true in developed countries. Higher foreign bank presence is related to lower profitability and margins of domestic banks. According to Claessens (2001), foreign bank entry may improve the functioning of national banking markets, with positive welfare implications for banking customers in the long run, and the number of entrants matters rather than their market share. This indicates that the impact of foreign bank entry on local bank competition felt immediately upon entry rather than after they have gained substantial market share (Claessens/Demirgüç-Kunt/Huizinga, 2001).

Hermes and Lensink (2003) developed further the model used by Claessens (2001) using data from 990 banks in 48 countries for the period 1990-1996. The results indicate that at a lower level of economic development, foreign banks entry is associated with higher costs and margins for domestic banks. At a higher level of economic development, on the other hand, foreign banks entry has a less significant effect on domestic banks' profitability." (Uiboupin, 2004, 11). Zajc (2002) analysed foreign banks

entry effects on domestic banks in the Czech Republic, Estonia, Hungary, Poland, Slovakia and Slovenia for the period 1995–2000. His results are somewhat different from those presented by Claessens (2001). He found that foreign banks entry is associated with lower non-interest income but increases overhead expenses (Uiboupin, 2004, 12).

### ***3.3 Foreign banks and economic growth***

Among the many factors examined in the literature as possible determinants of economic growth, the financial sector has recently gained growing attention in this respect. The consensus view is that financial development is associated with superior economic performance: countries with better-developed financial systems have higher levels of per capita real GDP and tend to grow faster. As many empirical studies conclude that foreign banks play an influential role in stimulating financial development, the issue arises to what extent these are spurring economic growth. As they have the incentive, the know-how and expertise to drive financial sector development, they mobilize savings and allocate and redistribute capital for investment. If domestic financial institutions do not perform these functions properly, foreign banks' role in the economy becomes essential. This central notion is developed further in the following.

#### **3.3.1 Financial development and economic growth**

Levine (1996b) argues that the country's level of financial development plays an important role in determining the rate of economic growth as financial development crucially affects the speed and pattern of economic development. He states that there is a positive relationship between financial development and economic growth. The level of financial development will affect growth by altering the economy's saving rate and by influencing the efficiency with which economies allocate resources. Beck, Levine and Loayza (2000) further add that accounting reforms that strengthen creditor rights, contract enforcement, and accounting practices can further boost financial intermediary development and thereby induce a rapid acceleration in economic growth.

#### **3.3.2 Financial sector and economic growth**

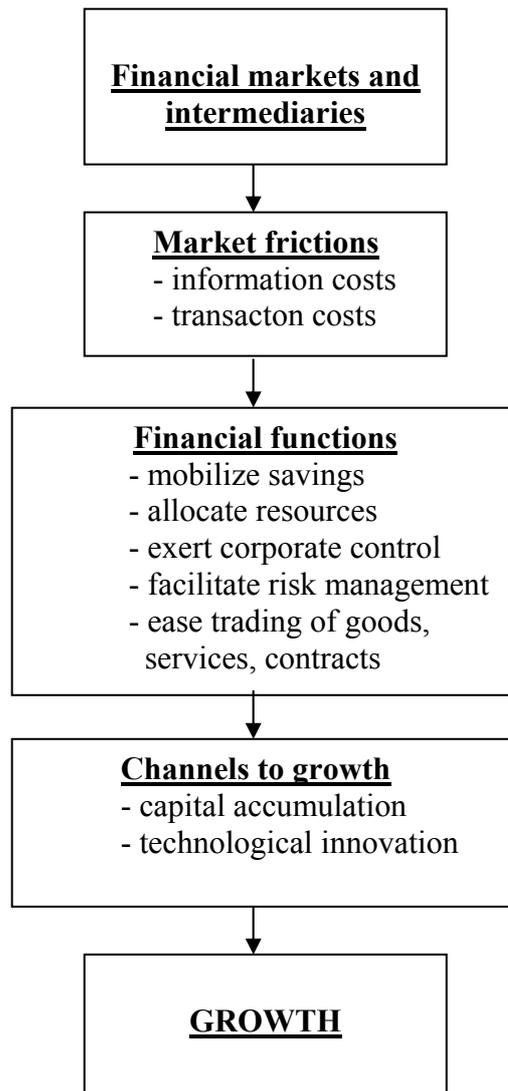
Financial systems are a fundamental feature of the process of economic development and there is strong positive link between the functioning of the financial system and long-run economic growth. Many theoretical and empirical studies prove that a strong financial sector promotes economic growth. Schumpeter (1934) stressed the role of the banking sector

as a financier of productive investments and thus as an accelerator of economic growth. Pagano (1993) suggests three ways in which the development of financial sector might affect economic growth - it can increase the productivity of investments, it reduces transaction costs and thus increases the share of savings, and third the financial sector development can either promote or decline savings. Greenwood and Jovanovic (1990), Levine (1991), Bencivenga and Smith (1991) and Saint-Paul (1992) have all also developed theoretical models to prove that efficient financial markets improve the quality of investments and enhance economic growth (Koivu, 2002, 9). According to Wachtel (2003) the depth of the financial sector and a greater provision of financial services are associated with economic growth (Haiss/Steiner/Eller, 2005, 4-5).

Levine (1996b) argues that financial systems reduce information and transaction costs and influence saving rates, investment decisions, technological innovation, and long-run growth rates. He finds a positive relationship between growth and the quality of the functions provided by the financial system that will be mentioned further down. Countries with larger financial sectors relative to GDP and countries where banks play a larger role relative to the central bank in allocating credit have higher levels of real per capita income and grow faster (Levine, 1996b). As Koivu (2002, 7) shows, CEE countries with developed banking sectors have smaller interest margins and higher economic growth than countries struggling with banking sector reform.

Levine (1996b, 55) states that the financial system is shaped by non-financial developments as well. Legal systems, political changes, national institutions, changes in Telecommunications, computers, non-financial sector policies, institutions, and economic growth itself influence the quality of financial services and the structure of the financial system. Changes in economic activity can influence financial systems as well. According to Levine (1996a) all financial systems provide basic financial services that are crucial for economic activity and long-run economic growth. These services may affect growth through two channels: by increasing the rate of physical capital accumulation or by improving the efficiency with which economies combine capital and labour in production. Specifically, the financial system facilitates transactions, eases risk management, mobilizes saving, allocates savings, and monitors the behaviour of managers after funding projects. Countries with financial systems that are better at providing and performing these financial services are more economically developed and grow at a faster pace than those with less developed financial services (Levine, 1996a).

The following figure, provided by Levine (1996b) can also explain how financial system stimulates capital formation and enhances economic efficiency:



*Source: Levine, 1996b*

Particular market frictions – transaction and information costs - motivate the emergence of financial markets and intermediaries that provide basic financial functions (Levine, 1996b, 6). These financial functions affect economic growth through each of the following channels – capital accumulation and technological innovation. Levine (1996a) concludes that if the financial system stimulates capital formation and enhances economic efficiency, foreign banks may then have an important role in economic

development. Foreign banks that improve the provision of growth-enhancing financial services will promote economic development.

Koivu (2002) examined the link between efficiency and size of the banking sector and economic growth, using panel data from 25 transition countries during the period 1993-2000. She used two variables to measure the level of financial sector development – the interest rate margin (the margin between lending and deposit interest rates) and the amount of bank credit allocated to the private sector. The results show that the interest rate margin is significantly and negatively related to economic growth and the amount of bank credit does not accelerate economic growth. Its value is even negatively related to economic growth and the causality between the growth of credit and real GDP growth is unclear. The main reasons behind this result could be the numerous banking crises the transition countries have experienced and the soft budget constraints that are still prevalent in many transition countries. The findings of this study also support the view that the presence of an efficient banking sector accelerated economic growth in transition economies (Koivu, 2002).

### 3.3.3 Transmission channels from foreign banks to economic growth

Berger (2004) find that larger market shares for foreign banks are associated with better economic performance in terms of faster GDP growth, and higher bank lending to GDP ratios (BIS, 2004, 12). In this respect, Haiss, Steiner and Eller (2005) identified four transmission channels how foreign banks (or more specifically, financial sector foreign direct investment, FSFDI) spur economic growth. They distinguish between price effects (i.e. shrinking interest margins that translate into lower cost of capital for companies), volume effects (more stable, larger credit flows), institutional effects (e.g. well-capitalized banks with sophisticated risk assessment systems have a broader array of investments) and spillover effects.

**Table 1 Financial Sector FDI (FSFDI) - Growth Transmission Channels**

<b>Intermediation/price:</b>	FSFDI ↑	spread ↓	cost of capital ↓	investment ↑	GDP ↑
<b>Intermediation/volume:</b>	FSFDI ↑	credit availability ↑	investment ↑	investment ↑	GDP ↑
<b>Institution building &amp; corporate governance:</b>	FSFDI ↑	bad loans ↓	credit availability ↑	investment ↑	GDP ↑
<b>Signal effects:</b>	FSFDI ↑	FDI & PFI ↑		investment ↑	GDP ↑

*Source: Haiss/Steiner/Eller, 2005*

Increased competition, credit technology transfer that improve productivity and efficiency, and improved risk assessment (that we already mentioned as positive effects from foreign banks involvement) bring down spreads and make financing investments cheaper, thus stimulating investment and economic growth. Foreign banks inject fresh money in the financial sector of host countries and generally stabilize lending. Better risk assessment allows financing of higher risk/return-projects and broader product range allows diversified company finance. All this increases the availability of credit that again means more capital for investment and economic growth. The third transmission channel implies that international accounting standards and better management techniques will reduce bad loans, so that there is more room for “good loans”. Foreign bank entry may attract further foreign direct investment and portfolio foreign by productive and other services sector companies (e.g. large banks will attract their customers - big companies to follow them in new markets). Foreign banks can increase economic growth by raising the increasing capital inflows (Levine, 1996a). Foreign banks can also facilitate capital market growth by helping local companies raise money via stock or bond issuance and will also facilitate the access to international capital markets so that this will again stimulate and accelerate economic growth (Haiss/Steiner/Eller, 2005). Foreign bank presence can also influence economic growth in more indirect ways.

### ***3.4 Foreign banks and Small and Medium Enterprises***

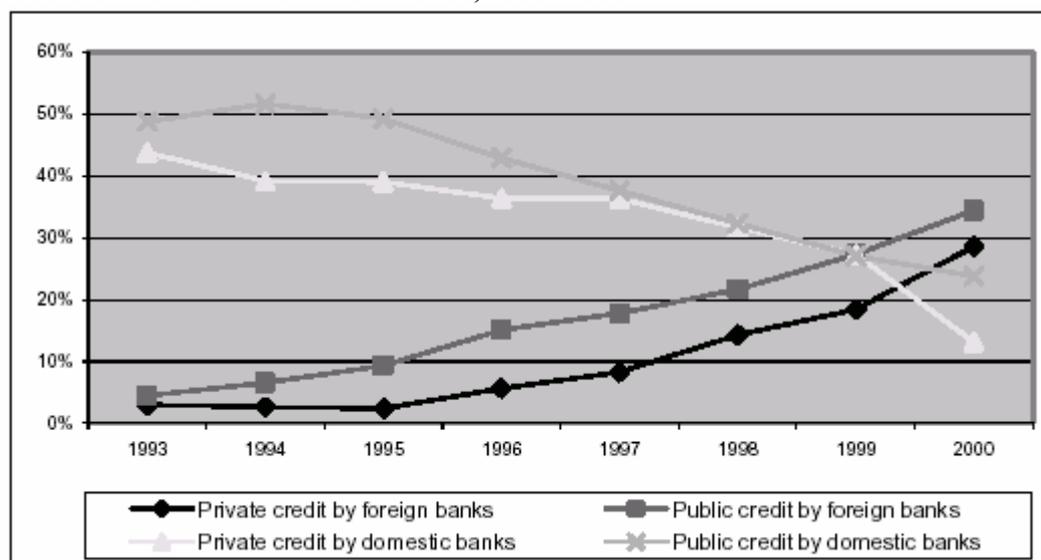
As small and medium sized enterprises (SME) represent around 90 percent of the total firms in the transition countries, they play a major role in their economies. The access to credit is crucial for their survival and as they are significant sources of innovation, their financing contributes significantly to economic development and growth (Cárdenas/Graf/O’Dogherty, 2004, 7). However, De Haas and Naaborg (2005) argue that foreign banks initially focused almost exclusively on multinationals and the largest local corporations or even on serving multinational corporations from their home country, rather neglecting SMEs. The reason for that could be that foreign banks that acquired large regional banks in CEE “inherited” a portfolio focused on large corporate customers or, in the case of former savings banks, retail banking. Other banks entered CEE mainly through greenfield investments with the goal of serving multinational customers. For both types of banks, small business finance remained unimportant during the first half of the 1990s. However, when the transition process advanced, foreign banks started to lend more to SME. This was a consequence from the increased competition in the market for large corporate customers, eroding interest

margins and fees and stimulated foreign banks to start serving SMEs and retail clients as well. Another reason for increasing the lending to SME was that foreign banks improved their ability to efficiently screen and monitor smaller firms (De Haas/Naaborg, 2005).

### 3.5 Foreign banks serving the public and private sector

Besides SMEs, the public sector plays a shrinking, though important role in CEE economies. Naaborg, Scholtens, De Haan, Bol and De Haas (2003) analysed the role played by foreign banks in extending credit to both the private and public sector in comparison with domestic banks over the 1993-2000 period for selected CEE countries (Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovenia). Apparently, foreign banks replaced domestic banks as creditors. In 1993, domestic banks were the primary source of credit for the public and the private sector, while in 2000 foreign banks dominate both markets. Although foreign banks increased their lending to both public and private sector, credit to the private sector is still relatively low and public credit of foreign as well as of domestic banks exceeds private credit (Naaborg/Scholtens/De Haan/Bol/De Haas, 2003).

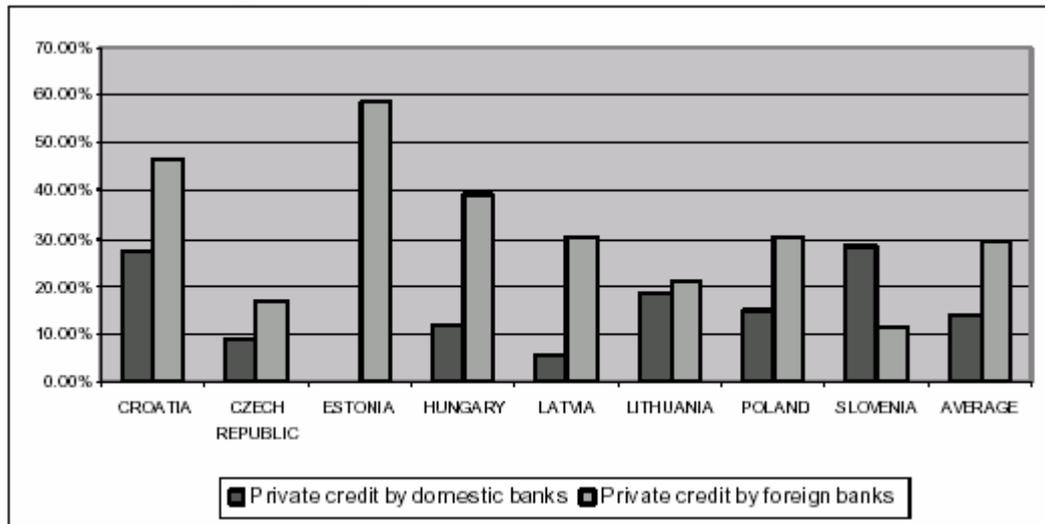
**Figure 2 Credit supply of domestic and foreign banks as share (%) of total bank credit in CEE countries, 1993-2000**



Source: Naaborg/Scholtens/De Haan/Bol/De Haas (2003)

Comparing the fraction of private credit provided by both foreign and domestic banks in some CEE countries, in all countries, except for Slovenia, foreign banks appear to be more involved with lending to the private sector than domestic banks. Still, there are substantial differences among the CEE countries as to the relative importance of private lending by foreign banks. The most extreme case is Estonia, where domestic banks hardly provide credit to the private sector (Naaborg/Scholten/De Haan/Bol/De Haas, 2003).

**Figure 3 Credit to the private sector as share of total bank credit: domestic vs. foreign banks, 2000**



Source: Naaborg/Scholten/De Haan/Bol/De Haas (2003)

As Haiss, Steiner and Eller (2005) conclude credit supply to different target-groups – public and private borrowers, has various impacts on economic development. For example, lending to the public sector may be important to reduce budget deficits and thus promote economic stability whereas credit to the private sector is necessary to further support private investment and thus leading to economic growth. Credit to the private sector is very important for economic development but remains relatively low in CEE. Credit to the public sector may be growth enhancing as well (Haiss/Steiner/Eller, 2005, 5). But growing credit-supply is not enough to guarantee a positive impact on investments because as Mehl and Winkler (2003) stress fast credit growth can also be a warning signal indicating a potential financial crisis.

## 4. Conclusion

The financial systems in CEE countries have experienced a lot of structural changes over the past decade - the increased entry of foreign banks is one of the most impressive and crucial of them. Their involvement has created new challenges for the financial sector in CEE countries and their successful operations have contributed to a lot of positive changes and further development of the financial markets in these countries. Today foreign banks have a strong presence in CEE – they own more than 70 per cent of banking assets in the region and have become major players in the financial systems of these countries. They fulfil an important role for the financial stability there and contribute not only to the development of the financial markets, in particular the banking markets, but also to the overall economic development of these countries.

We conclude that foreign banks promote efficiency in local banking systems. They improve the financial stability of the host country in the way that they provide stable source of credit and thus making the financial sector more stable in time of crises. Foreign banks help also to improve quality, pricing and availability of financial services - directly as providers of these services and indirectly through increased competition. Their presence intensifies competition in the domestic banking markets that results again in improved efficiency and quality of financial infrastructures. Foreign banks may stimulate better regulation and supervision and thus contributing to improved quality of banking operations of domestic banks, and may even attract foreign direct investments. Host countries can benefit from technology transfer, better banking practices and know-how, innovations in products and processes that foreign banks implement. All these spill-over effects contribute to more efficient domestic banking practices, which, in turn, may accelerate economic development and enhance economic growth in these countries.

Well developed financial sector affects economic growth in the way that it increases investments, reduces transaction costs, stimulates capital formation, alters the saving rate and thus promoting or declining savings, and enhances economic efficiency. We argue that if this consensus that financial development and efficient financial sector influence economic growth holds true, prudent foreign banks with long-term regional commitment doing just that will also contribute to economic growth. Both direct channels (price, volume and institutional) as well as indirect channels (e.g. signalling) were identified through which foreign banks contribute to economic growth and stability. More empirical research is necessary to verify these channels.

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# REGULATION OF BANKS IN BOSNIA AND HERZEGOVINA – NEW ORGANIZATIONAL STRUCTURE

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## **Abstract**

*Banks in financial systems, specially in thin one, like as the financial system in Bosnia and Herzegovina (BH), have an important role in financial intermediation between creditors and debtors, implementation of monetary policy and improvement and growth of financial market (money market). Financial system of Bosnia and Herzegovina is “bank dominated” system, which means that in financial system dominated banks (credit institution). For that reason it is an important that financial regulation and supervision conduct in order to enhance a stability promotion and a soundness of the financial sector. Bosnia and Herzegovina is the country, which has a complex social order. Dayton Peace Agreement from 1995, has been organized this country in two entities and in one district. In Bosnia and Herzegovina regulation and supervision of banks has been implemented by the Banking Agencies from two entities, the one in the Federation of Bosnia and Herzegovina (FBiH) and the other in the Republic of Srpska (RS). They conduct financial regulation and supervision in the name of the entities and they are independent in the conduct of financial supervision on territory of their entities. Because of current situation it's vary important to improve organizational structure of bank's regulation and supervision and make good quality system of regulation and supervision unique for complete banking system which is the base of the BH financial system.*

**Keywords:** bank, regulation, separate entities regulation, reform, new organizational structure;

## 1. Introduction

Banks in financial systems, specially in thin one, like as the financial system in Bosnia and Herzegovina (BH), have an important role in financial intermediation between creditors and debtors, implementation of monetary policy and improvement and growth of financial market (money market). Financial system of Bosnia and Herzegovina is “bank dominated”. In table 1 we will show number of banks and assets of banking system through last five years in Bosnia and Herzegovina.

**Table 1 Number of banks and assets of banks in Bosnia and Herzegovina**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>Number of banks</i>	55	48	40	37	33
<i>Assets (in millions EUR)</i>	2187,2	2858,9	3253,8	3942,6	4820,4
<i>Assets of banks in GDP</i>	31,7%	41,4%	47,4%	57,2%	71,8%

Source: [www.cbbh.ba](http://www.cbbh.ba)

In those financial systems dominated banks (credit institution) with some insurance companies, privatisation investment funds and entities pension funds. In table 2 we will present nonbanking financial institutions in Bosnia and Herzegovina.

**Table 2 Number of banks and assets of banks in Bosnia and Herzegovina**

<i>Number of</i>	<b>2004</b>
<i>Banks</i>	33
<i>Pension fund<sup>1</sup></i>	2
<i>Insurance company</i>	29
<i>Privatisation investment fund</i>	24
<i>Micro credit organization</i>	15

Source: Author's calculation.

Because of special nature of banking and banking contracts, regulators have imposed numerous restrictions on their products and geographic activities. Failure to provide these services or breakdown in their efficient provision can be costly to both ultimate source (household) and users (firms) of saving.

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<sup>1</sup> Bosnia and Herzegovina have two public pension funds on entities level and soon we expected to start reform of that system.

For that reason it is very important to create and continually improve good bank's system of regulation. Financial regulation and supervision is conducted in order: to enhance a stability promotion and a soundness of the financial sector, reduce risks in the financial system to enhance transparency of the financial sector and contribute to the prevention of abuse of the financial sector for criminal purposes.

Banks demand deposits, but depositors, as bank's creditors must have confidence that their money is in safe hands. Banks left to their in free banking market will not produce their financial products and services in an efficient manner and the lowest possible cost. Reasons that justify regulation and supervision of bank are: moral hazard, asymmetric information, competition, and monopoly.

Moral hazard is the name given to one kind of risk, which presents possibility that one party in a contract can change their behaviour to the detriment of the other party once the contract, has been concluded. In banking system moral hazard is the risk that banks will engage in activities that are undesirable (immoral) for lenders (depositors).<sup>2</sup>

Problems or the biggest cost which one person can has in process of ensured informations, which need for make business decision, we call asymmetric information. For that reason depositors can't evaluate soundness and security other banks in banking system, as they can evaluate economics effects in make business with that banks.

If a bank or group of banks has monopoly position in that case they can use theirs monopoly position for making monopoly profits on banking market. For that is important that banks have to comply with financial rules and supervisory requirements. Bank's regulation must give answers on next questions:

1. Who is responsible for bank's regulation?
2. Which are relevant source of lows regulation?
3. What are aims of regulation system?
4. Is system of bank's regulation sound and stabile?
5. Is system of bank's regulation effective?
6. Are there problems in system of regulation and how to solved it?

Answers to those questions can give the mark for organizational structure's quality, capability and possibility that system realizes aims of regulation. There are numerous aims in system of regulation, but we will give only the most important of them:

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<sup>2</sup> Mishkin, S. F. The Economics of Money, Banking and Financial Markets, 7th ed., Person Addison-Wesley, Boston, USA, 2004, pp. 181

1. safety of banking system
2. soundness and competitive of banking system
3. consumer protection
4. economic efficiency
5. market structure and competition
6. credit allocation
7. monetary control.

Banking system is sound and safety if banks, which represent parts of banking system, are sounded and safety. In front of bank's supervisors, there is a need for supervision and control size of bank's risks exposure. Supervision is oriented in this case on control procedures for managing of bank's risks and an internal control. Specially, it is important to make clear is one bank able to manage with its risks.

Second goal is a consumer protection, which is an active part in bank's credit business as in deposits business and business with transactions accounts. Regulators must give possibilities to formulate and implement laws about consumer protections from bank's credit discrimination through insuring equal credit possibilities to all consumers, abolished inappropriate credit's costs (different kind of provisions) or interest rate in negotiate in credit business or taking deposits and services electronic fund transfers.

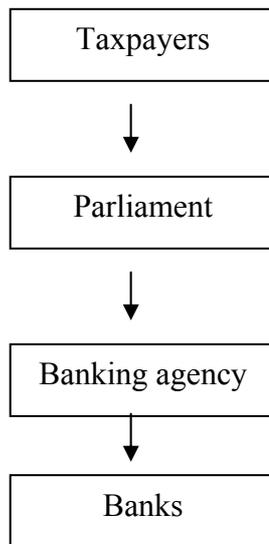
Bank's technical efficiency means giving services with a small possible costs looking in the term of social funds, which are used, in giving services. For banks, we can say that they have allocation efficiency when they form prices for their products on the level of their marginal costs.<sup>3</sup>

Regulation of banks must take in account conflicts aims in banking business, bank's safety and soundness on the one side and efficiency of banking system on the other. We can say how regulation's aim minimizes banks' exposure to the risks in their business (unsystematic risk). Also for regulators are important isolating banks failures to avoid a domino effect within the system (systematic risk). Regularly, country's Parliament represents legal representative of tax's payers (their citizens), supervise bank's regulators which now supervise banks in insurance deposits system. From this fact we can derivate principal – agent model of bank's supervision, which we can shows in figure 1.

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<sup>3</sup> Miler, R. L., Van Hoose, D.D. Modern Money and Banking, Mate, Zagreb, 1997, pp. 229

**Figure 1 Principal – agent model of bank’s supervision**



*Source: Sinkey, J. Commercial Bank Financial Management, Prentice Hall, New Jersey, 2002. pp. 560*

From figure 1 is clear that voters or taxpayers citizens elect Parliament, which makes banking laws, confirms and supervise regulators and deposit insurers. Regulators and deposit insurers than regulate, supervise, insure, and examine depository institutions.

## **2. Banking system in Bosnia and Herzegovina – their characteristics**

Banking system of Bosnia and Herzegovina present Central Bank of Bosnia and Herzegovina, entities banking agencies and commercial banks, which have been existed in two separate banking, sector, Federation of Bosnia and Herzegovina and Republic of Srpska. In this part of the paper we will say something about characteristics of banking system and rule of CBBH in that banking system.

In Bosnia and Herzegovina operate 33 banks. From that number 75% are in foreign private ownership. Banks of Bosnia and Herzegovina like as banks in other transitional countries pass through fazes of banking crises, capitalization and privatisation. Process of globalisation increases performances of banks. In first place we think on diversification of banking

products and services, involved new media as Internet in delivery system of banks and increasing quality of bank's services.

**Table 3 Balance sheet of banking system of Bosnia and Herzegovina at the end of 2004. (000 Euro)**

Assets		Liabilities	
Money assets	1.702.750	Deposits	3.544.669
Securities	13.067	Loans from other banks	1.707
Placements in other banks	56.515	Loans payable	464.063
Loans - net	2.676.021	Other liabilities	201.235
Premises and other assets	210.692	Capital	566.523
Other assets	119.152		

*Source: Authors calculation.*

Major position in banks' liability are deposits, while in banks' assets dominant credits. Share of investment in total value of bank's balance sheet is small. That situation is result of undeveloped money market and existed orthodox currency board. Today commercial banks are one of creators of money as important component of money supply process. For that reason it is important regulate and supervise banks.

### ***2.1 Role of Central Bank of Bosnia and Herzegovina***

Parliament of Bosnia and Herzegovina 1997 established central bank of Bosnia and Herzegovina (CBBH). With aim to formulating and implementing monetary policy CBBH don't have possibility to manage with monetary policy instruments in relation to other central banks. Reason for that position of CBBH is pure (orthodox) currency board system. A currency board is a monetary institution that issues notes and coins fully backed by a foreign "reserve" currency and fully convertible into the reserve currency at a fixed rate and on demand. The reserve currency is a convertible foreign currency or a commodity chosen for its expected stability. The country that issues the reserve currency is called the reserve country. Table 3 lists differences between currency board and a typical central bank.

**Table 3 Differences between typical currency board and central bank**

<b>Typical currency board</b>	<b>Typical central bank</b>
Usually supplies notes and coins only	Supplies notes, coins, and deposits
Fixed exchange rate with reserve currency	Pegged or floating exchange rate
Foreign reserves of 100 per cent	Variable foreign reserves
Full convertibility	Limited convertibility
Rule-bound monetary policy	Discretionary monetary policy
Not a lender of last resort	Lender of last resort
Does not regulate commercial banks	Often regulates commercial banks
Transparent	Opaque
Protected from political pressure	Politicised
High credibility	Low credibility
Earns seigniorage only from interest	Earns seigniorage from interest and inflation
Cannot create inflation	Can create inflation
Cannot finance spending by domestic government	Can finance spending by domestic government
Requires no "preconditions" for monetary reform	Requires "preconditions" for monetary reform
Rapid monetary reform	Slow monetary reform

*Source: Hanke, S., Schuler, K., Currency Board for Developing Countries – A Handbook, Institute for Contemporary Studies, San Francisco, USA, 1994, Access from <http://www.users.erols.com/kurrency/icegrev.html>*

For our analyse of bank regulation it is clear that CBBH don't have possibility to regulate and supervise their banking and financial system.

### **2.1.1 Mission and goals of Central bank of Bosnia and Herzegovina**

The main goals and tasks of the Central Bank are defined by the Law and in accordance with the General Peace Agreement in Bosnia and Herzegovina. Central Bank of Bosnia and Herzegovina maintains monetary stability by issuing domestic currency according to the Currency Board arrangement with full coverage in freely convertible foreign exchange funds under fixed

exchange rate 1 KM: 0,51129 euro. CBBH have must achieve the stability of domestic currency. The basic tasks of CBBH are:<sup>4</sup>

1. formulate, adopt, and control the monetary policy of Bosnia and Herzegovina
2. hold and manage the official foreign exchange reserves of the central bank in a safe and profitable way
3. support and maintains appropriate payment and settlement systems
4. co-ordinate the activities of the BH Entity Banking Agencies which are in charge of bank licensing and supervision.

### **3. Organisational structure of bank's regulation system in Bosnia and Herzegovina**

Bosnia and Herzegovina is the country, which has a complex social order. Dayton Peace Agreement from 1995. has been organized this country in two entities and in one district. In Bosnia and Herzegovina regulation and supervision of banks has been implemented by the Banking Agencies from two entities, the one in the Federation of Bosnia and Herzegovina (FBiH) and the other in the Republic of Srpska (RS).<sup>5</sup> They conduct financial regulation and supervision in the name of the entities and they are independent in the conduct of financial supervision (figure 1). The main tasks of entities agencies, determined by the Law, are:

1. issuing licenses for establishment and performance of banks,
2. issuing licenses for changes of the organizational structure of banks,
3. issuing approvals for appointment of their managing staff,
4. issuing licenses for performing internal payment system,
5. collecting, processing and recording data submitted to agency by banks in accordance with the regulations,
6. supervising banking operations and undertaking appropriate measures in accordance with the Law on Banks, the Law on the Banking Agency and regulations,

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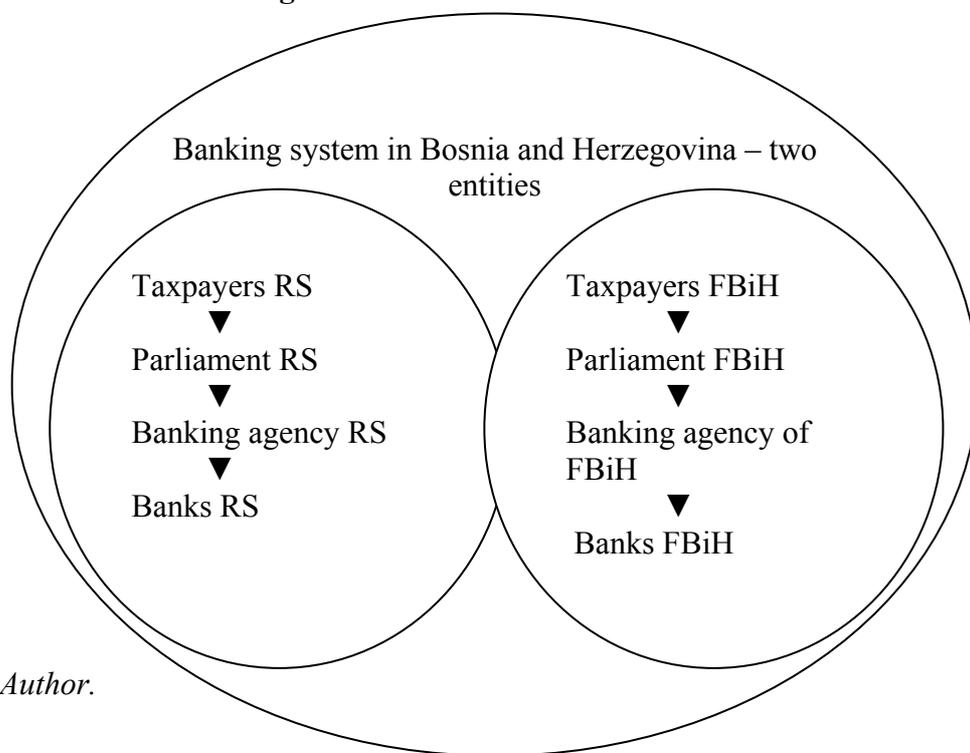
<sup>4</sup> Law of Central Bank of Bosnia and Herzegovina, The Official Gazette, No. 1., 1997.

<sup>5</sup> Law in the Banking Agency of the Federation of Bosnia and Herzegovina, the Official Gazette No. 9/96, 27/98, 20/00 and 45/00; The Law on Banking Agency of Republic Srpska, the Official Gazette of Republic Srpska No. 10/98, 16/00, 18/01, 71/02, 18/03, and 39/03.

7. initiating, managing and supervising the procedure of provisional administration, liquidation, bankruptcy, and rehabilitation of banks,
8. revoking banking licenses in accordance with the Law,
9. issuing decisions regulating banks work,
10. performing evaluation of conditions and issuing approvals to banks regarding new issues of shares, etc.

Practically Bosnia and Herzegovina has got a dual and a separate system of banking regulation and supervision on entities level. It is possible, that in this situation, two separate and independent agencies can bring different roles for the regulation and procedures in bank's supervision.

**Figure 2 Dual principal – agent model of regulation and supervision in Bosnia and Herzegovina**



*Source: Author.*

Bosnia and Herzegovina today has got two valid bank's law<sup>6</sup> and also two supervision's procedures.<sup>7</sup> Impossibility to provide the regulation an

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<sup>6</sup> Low on Banks, the FBH Official Gazette No. 39/98, 32/00; Low on RS Banks, the Official Gazette of RS No. 44/03.

bank's supervision through all territory of the state is the biggest problems because the entity's agencies has been charged to make it only on their own territory. Banking system in Bosnia and Herzegovina is the single system (political impact on work in the entities agencies, majority of large banks are doing business over the entire territory of country through networks of branches, the degree of the foreign ownership in the BH banking system is extremely high and it is necessary for BH to continue the adoption of the international standards in the supervision domain).

So, how to regulate banks which make business through all the territory of state? The Central bank of Bosnia and Herzegovina doesn't have an impact on the regulation and supervision of banks in the country because of the existed currency board in the monetary system. How to find than a solution for these problems in system of regulation and supervision?

#### **4. Organizational structures of regulation systems in the world**

For this purpose we shall make comparison between both the characteristics of the BH regulation system and the characteristics of the systems in other countries. Selected countries are countries with currency boards and countries with central banks. In the United States, the Federal Reserve makes regulation and supervision, but the Office of the Comptroller of the Currency (OCC), the FDIC, and an individual state banking departments also supervise banks. In Germany, the Bundesbank collects and processes banking information, even though the Federal Banking Supervisory Office (FBSO) is the primary regulator, and private accounting firms are responsible for most of the on-site supervision. In Japan, the Ministry of Finance is the chief regulator, but it alternates on-site inspections with the Bank of Japan. It is clear that in different models of organize structures exist in bank's regulation and supervision and financial systems. In the United Kingdom operate Financial Services Authority, which supervised all financial institution in the country. Estonia has the same system like the United Kingdom in supervision but regulating of banks is role of Central bank of Estonia. Only, the National Bank of Lithuania regulates and supervises banks in its country.

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<sup>7</sup> Decision on Minimum Standards for Bank's Capital Management, Decision on Minimum Standards for Bank's Credit Risk Management and Assets Classification, Decision on Minimum Standards for Bank's Risk Concentration Management, Decision on Minimum Standards for Documenting Bank's Lending Activities Criteria for Internal Bank rating by the Banking Agency of entities agencies, Instruction for Preparation of Bank's Balance Sheets and Supporting Forms etc.

According to table 4 we can see how in selected countries there are also different organizational structures of bank's regulation systems. Function of regulation and supervision make central banks, independent banking agency under central bank hand, or we can talk about combination of these two structures.

In some countries there are centralize regulation's systems which supervise all financial activities (England, Estonia). There are two independent banking agencies in Bosnia and Herzegovina which present inappropriate supervision's organizational structure in consideration on the fact that these two agencies can make regulation and supervision only on it's territory – territory of entities in which agencies have it's location.

In continuous attempting countries of region to come closely European Union they faced with need of permanent adaptation to "acquis communautaire" EU in banking regulation and supervision. European Central Bank with euro system systematically supervises structural and cyclical changes in euro era/banking system of EU and the other financial sectors. Aim of these activities is:

1. protection financial system
2. increasing sensitivity on possible socks in financial sector.

**Table 4 Comparison characteristics of regulation system Bosnia and Herzegovina and systems of regulation selected countries**

Countries	Croatia	England	Estonia	Lithuania	Hong Kong	Bosnia and Herzegovina
Regulators/Supervisors	Croatian National Bank  Sector for regulation and supervise	Financial Services Authority  Independent nongovernmental body	Financial Supervision Authority  Finantsinspektsioon  Independent nongovernmental body it operate in coordination with central bank	Central bank of Republic Lithuania	Hong Kong Monetary Authority	1. Banking Agency of Federation Bosnia and Herzegovina FBA,  2. Banking Agency of Republic Srpska ABRS
Institutions under supervision	banks	Credit institutions – banks, insurance companies, investment company, financial markets, pension fund.	Credit institutions – banks, insurance companies, investment company, financial markets, pension fund.	Credit institutions – banks, other legal entities and subsidiary foreign credit institutions which operate on license issued at central bank	authorized institutions: licensed banks, restricted license banks, deposit-taking companies	FBA supervise commercial banks in Federation Bosnia and Herzegovina,  ABRS supervise commercial banks in Republic Srpska
Issuing licenses for establishment and performance of banks	yes	yes	no	yes	yes	yes
Regulation and supervision	yes	yes	yes	yes	yes	yes
Cooperation with other supervisors	yes	yes	yes	yes	yes	yes

## **5. Possible new organizational structures of banks' regulation system in Bosnia and Herzegovina**

Bosnia and Herzegovina must reorganize the banks' regulation and supervision system. There are two possible solutions:

1. establish unique Banking Agency on state level for regulation and supervision of all banks in Bosnia and Herzegovina which will be coordinated with Central bank of Bosnia and Herzegovina (umbrella system) or
2. function of regulation of banks remove from the entities banking agencies to the Central bank of Bosnia and Herzegovina, on that way the process of regulation and supervision of banks in Bosnia and Herzegovina will be closer to practice in other transitional countries and European Union.

The financial system of Bosnia and Herzegovina is so thin and isn't realistic to expect establishing unique supervision on all financial institutions in the financial system but it's important to make good quality system of regulation and supervision on banking system which is the base of the BH financial system.

Advantages of integrated model of regulation banking system on all territory of Bosnia and Herzegovina are:

1. possibility of regulation and supervision banks on all territory of Bosnia and Herzegovina
2. economies of scale
3. economies of scope (one database, unique roles and procedures for all banking system)
4. increase supervisory accountability.

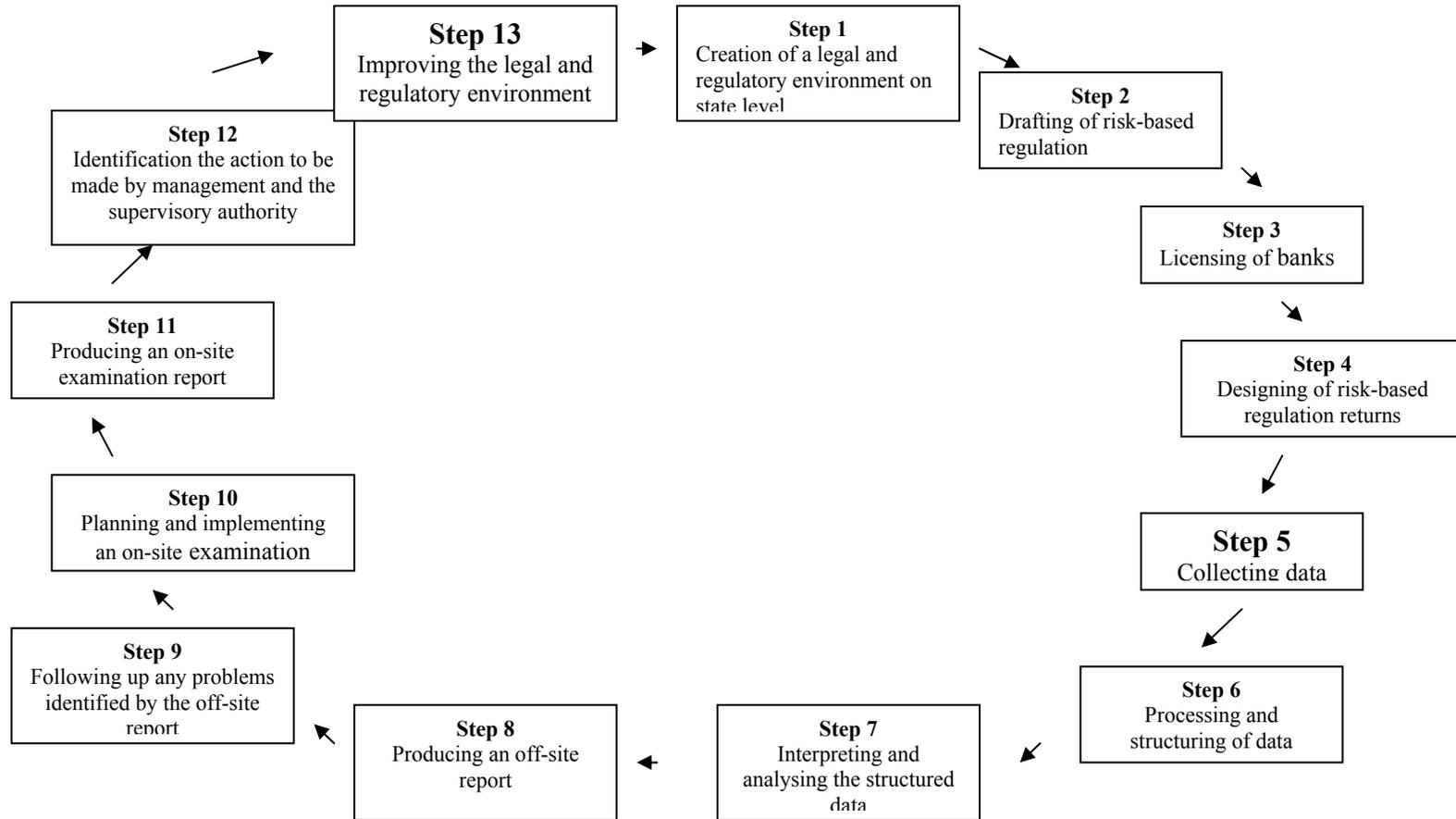
Typical problems in establishing new organizational model of bank's regulation and supervision are:

1. legal constraints – entities governments must change legislations for each banking sector in Bosnia and Herzegovina (bank's laws, laws of banking agencies) which regulate banking
2. departures of experienced personnel – reallocation of personnel and define new roles
3. create integrate IT system, network for new model
4. demoralization of staff of the merged entities
5. identification of strategy plan, mission and aims in new organizational model
6. budgetary problems.

For those showed models of possible organizational forms in regulation and supervision system Bosnia and Herzegovina must have political consent between political parties of two BH entities.

Unique system of regulation and supervision for banks and their branches and affiliates on territory of Bosnia and Herzegovina without barriers on entities level demand unique stage whereby the results of one stage serve as inputs of the next. The final aim of this process is safe, sound, and properly functioning financial intermediation. Figure 3. summarizes the stages of regulation and supervision process.

**Figure 3 The stages of unique bank' supervision and regulation in Bosnia and Herzegovina**



*Source: adopted from Greuning, H., Brajović, S., Analyzing and Managing Banking Risk, The World Bank, Washington, USA, pp. 300*

## 6. Conclusion

Banking industry a recent years in Bosnia and Herzegovina has experienced change. Banks have much more flexibility on the service, which they offer. Many banks offer new services to their clients, banks expanded across the country by opening new branches or making acquisition in an attempt to use their resources efficiently. Those changes in the banking industry of Bosnia and Herzegovina are normal trends for the banks in the world.

But on the other side in Bosnia and Herzegovina the system of banks' regulation and supervision isn't appropriate. In Bosnia and Herzegovina there has been existed two separate and independent entities banking agency while don't exist a regulator for complete banking system on all territory of Bosnia and Herzegovina. Existing organizational structure of bank' regulation and supervision make problems as: two separate regulation systems, two different banking laws, two different supervision procedures and etc. All these problems force authorities to make reorganization of banks' regulation and supervision system.

There are two possible solutions: establish unique Banking Agency on state level for regulation and supervision of all banks in Bosnia and Herzegovina which will be coordinated with Central bank of Bosnia and Herzegovina (umbrella system) or function of regulation of banks remove from the entities banking agencies to the Central bank of Bosnia and Herzegovina. Both models for their implementation need change in legislations, IT systems and solution of problem in financing new organization structures. Political consent of major political parties in Bosnia and Herzegovina is also important.

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# THE BALANCE SHEET STRUCTURE AS THE EXPRESSION OF THE ECONOMICAL STATE OF THE BANK

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## **Abstract**

*The aim of this paper is to define the main differences in the balance sheet structure of failed banks and operating banks in the Czech Republic. The analysis was provided on data from balance sheets and profit and loss statements that were published in the bank's annual reports since 1995. Only universal commercial banks in the Czech Republic are the subjects of conducted research. The selected banks are divided into two groups – failed banks and operating banks. The analysis is aimed at financial relations of the banks with other banks (characterized by two balance's items: receivables from banks and liabilities to banks). In the next step the analysis focuses on financial relations of the banks to clients (characterized by two balance's items: receivables from clients and liabilities to clients). The main differences in a structure of assets and structure of liabilities are defined and graphically interpreted in this paper. The recommendations concerning the balance sheet structure of the analyzed banks are the main result of provided research.*

**Keywords:** bank, assets, liabilities

## 1. Introduction

The monitoring of our banks' economical situation was increased when the Czech Republic joined the common market of the European Union. Billions Czech crowns flow through our banking sector. Many banks were in financial lost and huge sums of non quality receivables were taken to the Czech consolidation agency in spite of this fact. Why? We can find the answers in the banks' economical figures.

## 2. The steps of analysis

The analysis was based on data from balance sheets and profit and loss statements which were published in the bank's annual reports since 1995. Only universal commercial banks in the Czech Republic are the subjects of conducted research. We are not considering the subsidiaries of foreign banks and the specialized institutions: the mortgage banks and the Českomoravská záruční a rozvojová banka, Česká exportní banka and the former Konsolidační banka. Only universal commercial banks, which are significantly focused on the offer of all types of commercial and investment products, are subject of our interest. We do not take into consideration the specialized banks which have a little different object of activity, the purpose of existence and the gain of the financial resources.

Another step was distribution of the banks into two groups - failed banks (the banks which bankrupted in the period 1995 – 2004) and operating banks (the banks which are still running). We considered following total number of banks, number of operating and failed banks in the individual years of analysis.

**Table 1 The number of banks considered in the analysis**

	1995	1996	1997	1998	1999	2000	2001	2002
Operating	16	17	19	19	18	17	15	15
Failed	20	8	7	5	4	2	0	0
Total	36	25	26	24	22	19	15	15

*Source: Author's calculation based on the facts from the Bank supervision of CNB*

We recalculated the data included in balance sheet on the percentage values for every bank in the next step. The percentage value shows the share each balance sheet item on the assets and on the liabilities. We calculated the arithmetic average for both groups operating and failed banks for each year considered in the analysis from percentage values. We have data from failed

banks until 2000. The licenses of the Plzeňská banka and the Union banka were taken away in 2003 but the balance sheet data are not public accessible in 2001 and 2002. We operate with these calculated data in this paper.

### **3. Presentation of results**

We show the most substantial differences between failed banks and operating banks during analyzed years at first. It is especially about the business with banks and non financial clients. It is valid for following text where we consider the average values for operating banks and the average values for failed banks in each year.

#### ***3.1 The relation to other banks***

The most substantial differences in the balance sheet structure between operating and failed banks are shown in the items which express the relation to other banks in the banking sector. It is about the receivables from banks in assets and about the liabilities to banks in liabilities.

The difference between average operating bank and average failed banks fluctuates in individual years in the interval 10 – 30 % in case of the share of receivables from banks on assets. The lower difference is shown in the last analysis years. The difference is even more in interval 20 – 35 % in case of the share of liabilities to banks. Here it is valid that this difference is raising during analyzed years.

It is valid that operating banks used as the source of financing the deposit from other banks in bigger scale. In other words some banks deposited their free financial sources to these operating banks. The higher trustworthiness of these banks on the interbank market can be the reason of it. And it is valid that the operating banks deposited a bigger amount of their free financial sources at the small risk rate to other banks than failed banks at the same time. So their behavior was more cautious.

We show the development of the proportion by the liabilities to banks in detail. The values of this indicator for operating banks are influenced by a big measure by the foreign banks values. Approximately the half of them had their sources made by more than 50 % by liabilities to banks till the year 1998 and the rest of the banks from this group usually did not drop under the 30 % boundary in values of this indicator. The change in banks' behavior has come since the year 1999.

The banks started to rid their deposits from other banks and tried to invest their free financial sources into the more profitable instruments. The

result is that the proportion between liabilities to banks and liabilities is under 20 % by majority of banks from this subgroup of operating banks till the end of the year 2002.

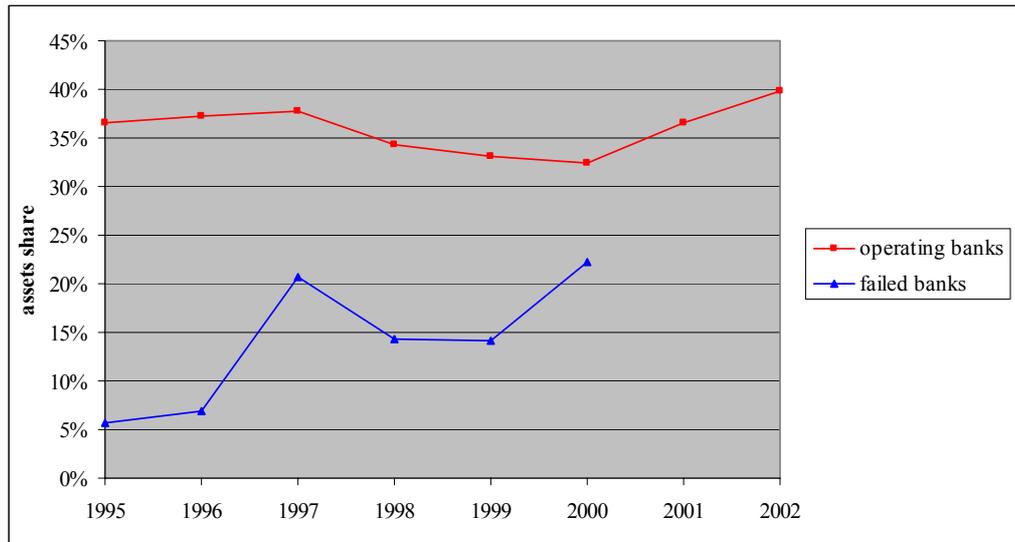
This proportion fluctuated by big banks till the year 1999 (by KB - except one year - usually slightly above 20 %, by CSOB about 30 % and by ČS between 8,5 and 12,5 % - the saving tradition of this institution was shown there). Since the year 2000 we can see the same trend as by the previous subgroup of international banks in the process the proportion decreasing of the liabilities to the banks to the liabilities. One of the most important reasons for it was the decrease of the interest rate. Till the end of the year 2002 these banks hold the deposit from other banks in the level of 5 – 8 % of the liabilities.

In the group of failed banks is clear the trend of decreasing the proportion of the liabilities to the banks thereby how this group bank gradually comes near to bankruptcy. This trend is confirm by the biggest bank from this group – IPB, whose value of the indicator dropped from 29,3 % in the year 1995 to 8,2 % in the year 1999, and further The Union banka (from 22,4 to 5,7 % in the year 2000). The special case is the Plzeňská banka which in last four years did not have any liabilities to the banks this means its indicator was 0 %. The majority of these banks from this group were moving around the average value as mentioned in the graph. The exceptions when the banks had more significant proportion were following: Česká banka and Realitbanka in the year 1995 (54,7 % and 42 %), Zemská bank in the year 1996 (69,9 %) and Pragobanka in the year 1996 and 1997 (25 % and 23,7 %).

From above mentioned it is clear that the bankrupting banks are less engaged in the interbank market. The cause can be that on the interbank market the banks' troubles can be seen usually much earlier than the public is informed and for other banks are these banks aiming to the bankruptcy less trustworthy than other banks.

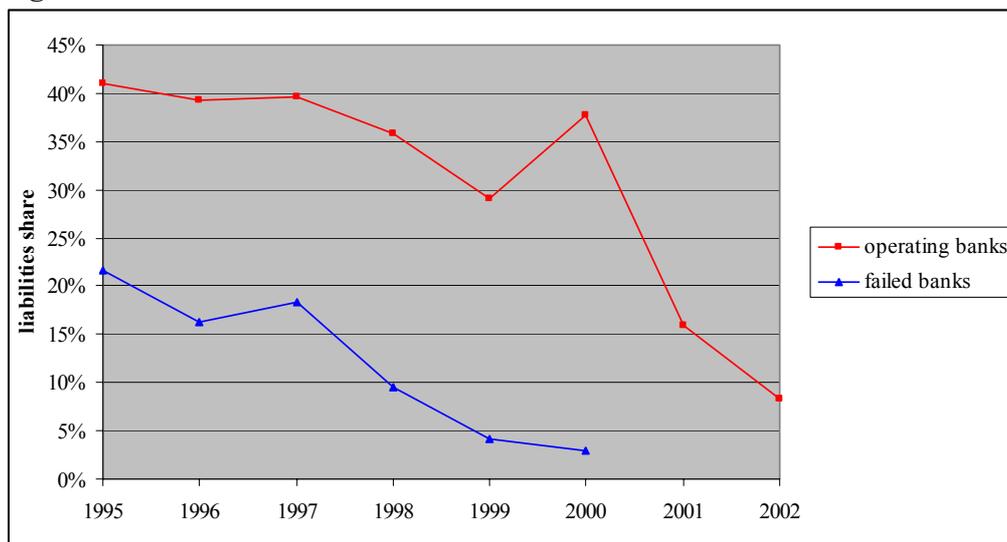
The average values for both these items for given groups of banks are shown in the following graphs.

**Figure 1 Receivables from banks**



Source: Author's calculation

**Figure 2 Liabilities to banks**



Source: Author's calculation

### **3.2 The relationship to the clients**

In this view is shown the more significant difference especially by the liabilities to the clients – this is the clients' deposits by banks. The significant differences between the properly operating and the failed bank in the interval

17 – 35 % are demonstrated till the year 1998. We can explain this by important fact that until this year almost all small banks bankrupted. These banks attracted their clients on the high deposit interest rate. In the year 1999 we have in our analyses just four failed banks, where the Haná Banka had restricted its banking activity and this indicator was just 0,01 %. The indicator for the Plzeňská banka was moving lower than by the properly operating banks and the rest of two failed banks also confirmed their addiction to the clients' deposits (the proportion on the liabilities by the IPB was 68,8 % and by the Union banka was 74,3 %).

On the example of properly operating banks was clearly displayed the trend of the moderate decrease the deposit's proportion on the banks liabilities around 35 % at the first four years and than again the change in the trend and the value of this indicator grew significantly to 60 % in the year 2002. It is valid that some banks achieve up to 70 % of value and the average is put down by banks which put the attention in bigger amount than other banks to the investment banking. In this group the biggest proportion show big Czech banks which traditionally collected the deposits from the petty savers. The lower values are caused by the international banks which did not promise high deposit interest rate as the failed banks.

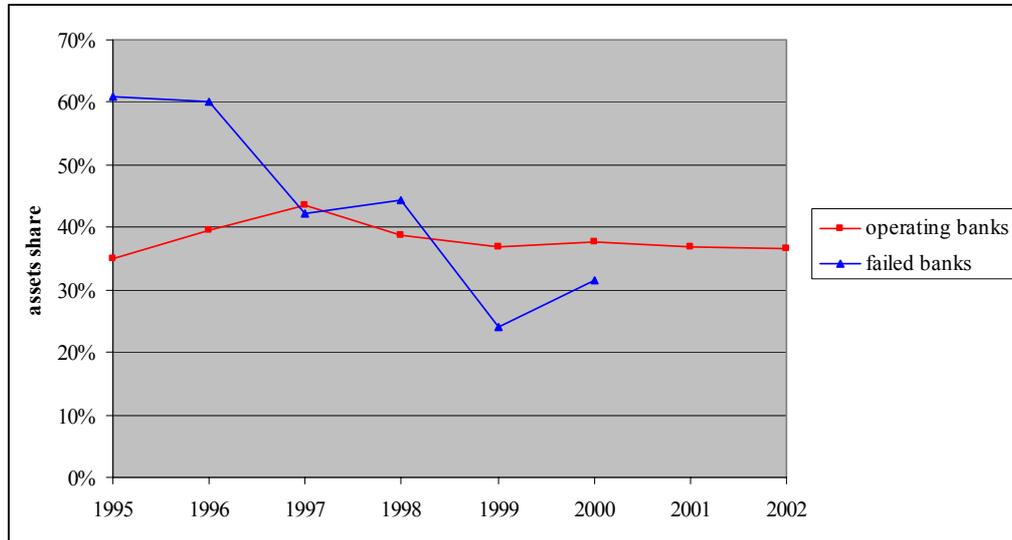
By the receivables from clients is the situation not so simple. During the first two years (1995 -1996) the clients' liabilities by failed banks formed the more significant proportion on the assets than by the properly operating banks. It was again given by a broader being of smaller banks which have to earn to pay the promised higher deposit interest rate by higher and more danger grand of liabilities which was finally fateful for these banks. In the years 1997 – 1998 are the values for both groups in facts similar and in another two years there are lower than by operating banks. This value is very much influenced by existing only four banks near bankruptcy in 1997-98 and only two banks near bankruptcy in the next period, very low amount of given or we can better say not given amount of the liabilities, the liabilities from the Banka Haná (0 % proportion on the liabilities) and the Plzeňská banka (2 %, like 1,6 % proportion on the liabilities). The rest of the failed banks had this indicator higher (IPB around 46 % and the Union banka around 60 % in both years).

As it was mentioned above, it is clear, that the failed banks got involved into the business with non financial clients. Partly they comprised for them the relative higher source of finance than for the operating banks, which searched for the finance at the beginning years of the analysis on the non banking market. In the last years they get more and more involved into the retail banking service, from which flows small individual yield but it is multiplied by the high amount of clients. From the perspective of the

receivables from the clients can be seen, except that the explained exceptions, the relatively higher amount of given liabilities to the liabilities by the failed banks than by the operating banks. The cause was especially the necessity to gain the sufficient finance to pay the promised interest deposit rate.

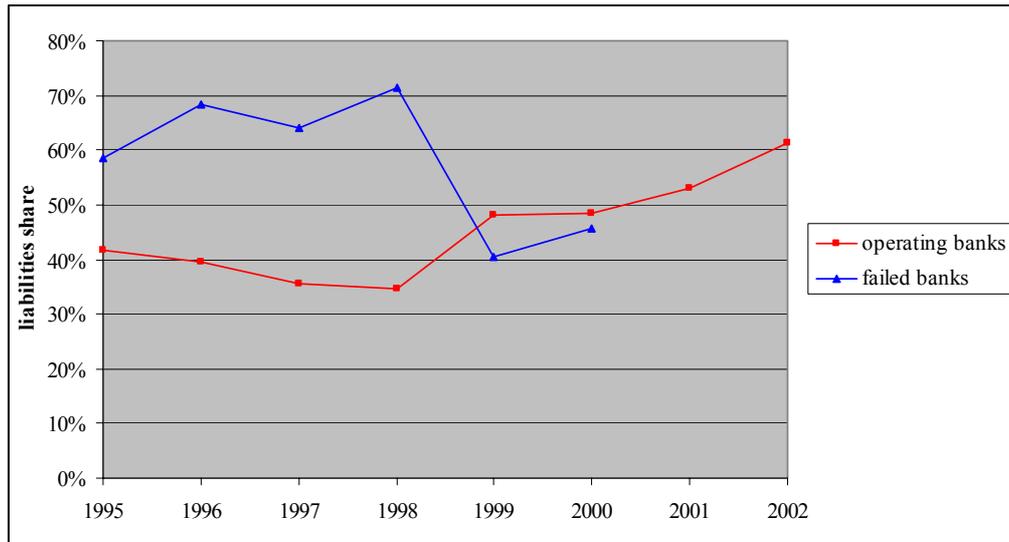
As a summary there are shown the characterized values in following graphs.

**Figure 3 Receivables from clients**



*Source: Author's calculation*

**Figure 4 Liabilities to clients**



*Source: Author's calculation*

### **3.3 Other differences**

Now we will show briefly other differences between the operating and failed banks. The first difference is the proportion size of the registered capital, which is one of the significant component of the own capital in the liabilities.

By operating banks is the course simple. The average value of this proportion is still around 4 % boundary, while by the failed banks it is more above 10 % boundary and in the last two years even around 45 %. These values are influenced by a small amount of failed banks again and the extreme high values by the Plzeňská banka (82 %) and the Haná banka (106 %), which sign their very low productivity.

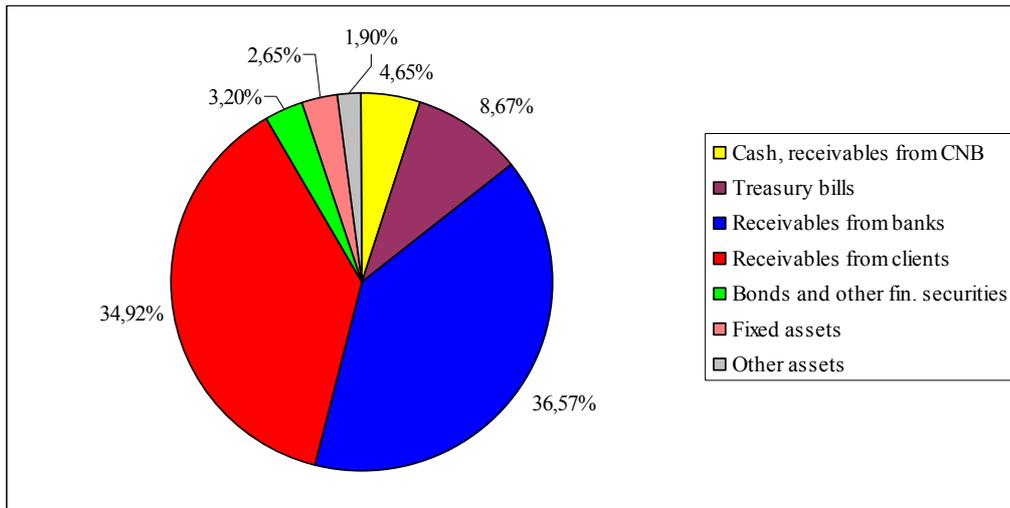
About the differences in this indicator we can say that the failed banks show in average this proportion higher, which present a higher security at the first view but on the other hand the own capital is more expensive than the foreign capital. For sure we have to mention that all banks had to fulfill the safety policy of the Czech National Bank (CNB) and this is the capital adequacy (this means the minimum proportion of own and another specified capital to the risk assets).

The final statement of above mentioned differences is the profit proportion to the liabilities, which is by the failed banks in the years 1995 – 1998 significantly lower than by operating banks and in the first three years it even assumed the minus values. In the last two analyzed years the values for

operating and failed banks evened due to moderate consolidation of the failed banks and due to the fact that the big amount of problematic banks went to bankrupt already.

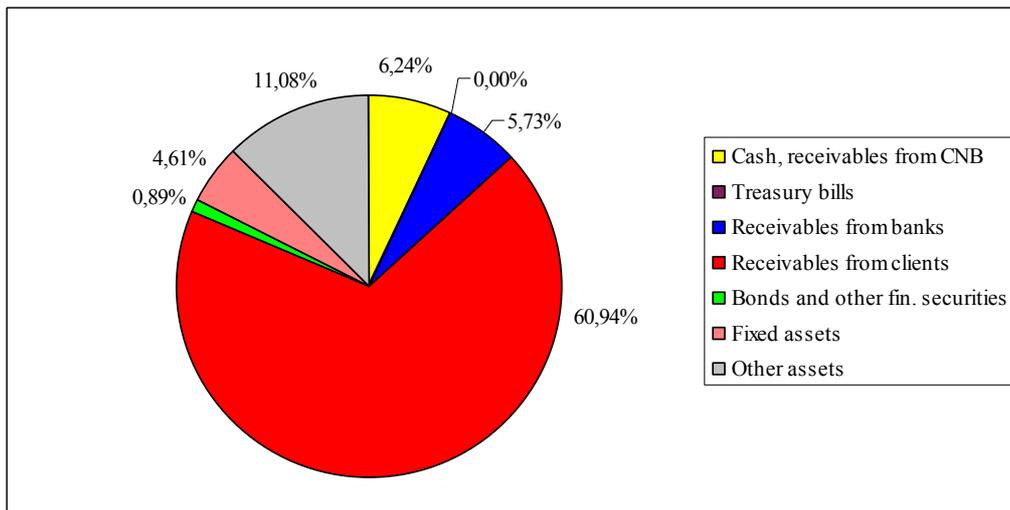
For clearness there are shown the graphs which are showing the structure of balance sheets of the failed and the ordinary operating banks in the year 1995. This year was chosen as an example from this reason, that in this year we have available the highest amount of facts about failed banks. The following graphs confirm clearly the conclusions made above. More to these facts, there is a higher danger by the failed banks which did not buy the short and long term state securities. On the site of the liabilities we mention that by the failed bank the proportion on the earnings to the liabilities goes to the minus value, this is minus 2,47 %.

**Figure 5 Assets structure of operating banks**



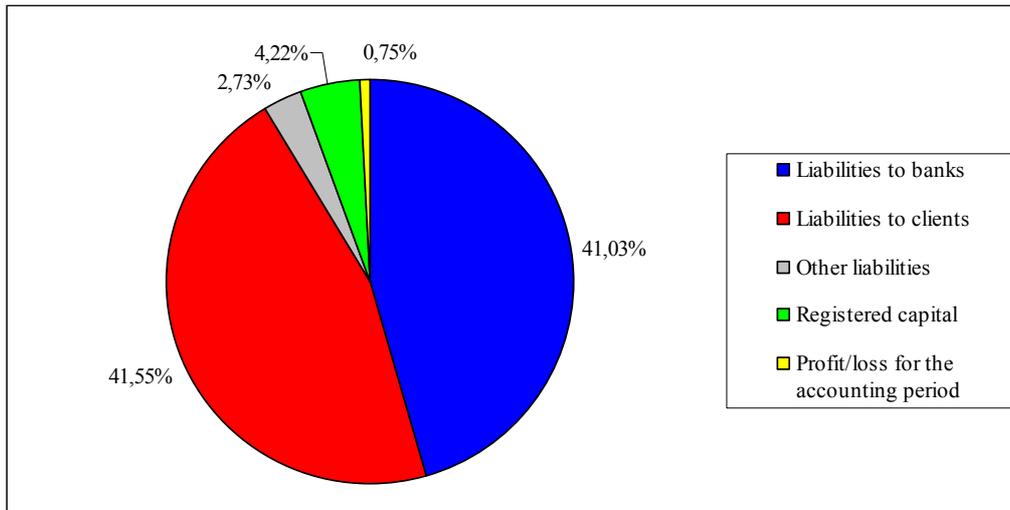
*Source: Author's calculation*

**Figure 6 Assets structure of failed banks**



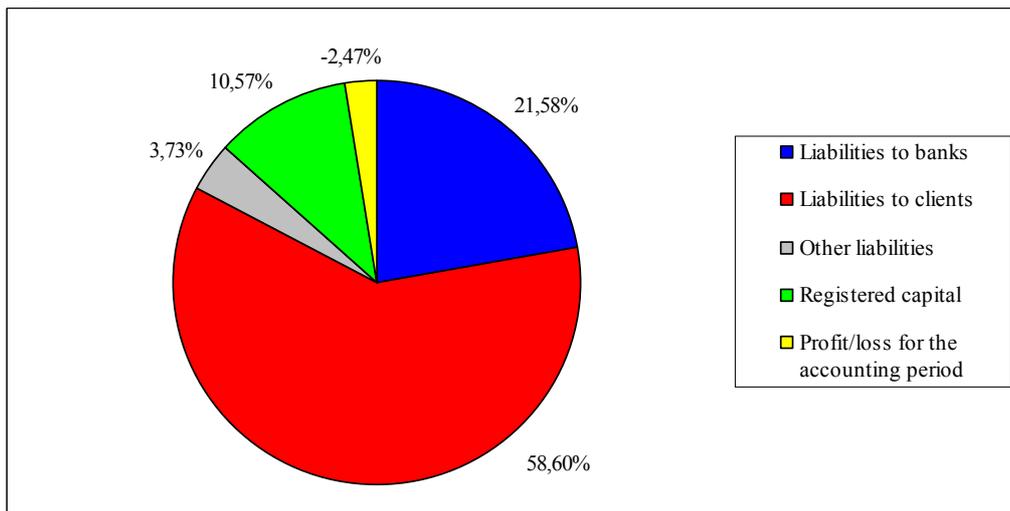
*Source: Author's calculation*

**Figure 7 Liabilities structure of operating banks**



*Source: Author's calculation*

**Figure 8 Liabilities structure of failed banks**



*Source: Author's calculation*

## **4. Conclusion**

We proved that during last years there were significant differences in the balance sheet structure between the failed and the operating banks. These differences are shown based on the average values that is why it is not possible by every individual indicator especially not for individual bank to conclude, whether the bank in short period will go bankrupt or not. The values for every bank are influenced by their strategic goals; this is for example according to the retail or investment bank's specification. Anyway we can consider the future development of individual bank based on the long term comparison of the balance sheet structure and all its main items partly in the time and partly with some comparable bank or the group of banks.

## **References**

- [1] *The Annual reports Czech banks since 1995*
- [2] *The Bank supervision CNB*

# THE EVALUATION OF BANKING STABILITY BASED ON DISCRIMINANT ANALYSIS

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## **Abstract**

*The aim of this paper is to introduce the bank stability model based on discriminant analysis. The model is devised on the basis of financial indicators analysis of selected banking institutions based in the Czech Republic in the period from 1995 until 2003. The banks were divided into two groups – the group of operating banks and the group of bankrupted banks. This division was done according to the real development of the Czech banking sector based on data provided by the Czech National Bank. All banks providing services in the Czech Republic in the period of 1995- 2003 were analyzed in the model except for building societies (due to their different activities compared to commercial banks) and foreign bank's subsidiaries (strongly influenced by their foreign owners). Data for calculation of financial indicators was taken from bank's financial statements, i.e. from the balance sheet and profit and loss statement. Following financial indicators were used for the bank stability model: rentability to average level of assets, equity / liabilities, interest margin, profit/ margin, equity total /assets.*

**Keywords:** *bank, stability, financial indicators, discriminant analysis*

## 1. Introduction

The banking sector significantly influences economic subjects and its stability is therefore crucial for each economy. The Czech banking sector has seen a sharp development from velvet revolution since 1989. For example, big banks funded manager's leveraged buy-outs and accepted company shares, usually over-priced, as collateral for their loans. In related note, small banks were sometimes founded for financing allied companies or even for financing bank's managers. For these reasons, connection among Czech banks and enterprises was becoming stronger and stronger. Consequently, if a company went bust as a result of acting bank managers, banks posted lower recovery rates from the loans because of value-less collaterals in their portfolios.

Clearly, such conditions did not support company's restructuralization and resulted in losses in bank's books. Therefore plenty of banks went under in the Czech Republic in 1990's and hence the stability of the banking sector was destabilized and the trust of customers in banks dropped (for example collapses of Agrobanka, Union Banka, IPB etc.). It is indisputable that the stabilized banking sector has been built in the Czech Republic in a relatively short period. Despite some pitfalls, the progress towards a higher stability has been made mainly due to new IT technologies, higher-qualified stuff and know-how brought by foreign investors.

The article deals with creating a bank stability model based on the discriminatory analysis made on data obtained by the development of Czech banking sector in the period 1995-2003.<sup>1</sup>

## 2. The Selection of the Financial Indicators

The bank sector has seen fast development in the Czech Republic since 1989. During this development some banks, for various reasons, finished their activity and some of them are working nowadays. Therefore we can suppose that the unstable banks will show different values of financial indicators than the stable (healthy) ones.

The bank is stable if:

- it respects the rule of cautious banks entrepreneurships determined by the CNB;

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<sup>1</sup>The Altman criteria for Czech banks cannot be used under original conditions, because these criteria were used for the U.S. environment that differs from the Czech one.

- it has not received any financial or other help nor from the state nor the Czech National Bank;
- the value of relevant financial indicators will be moving around the values of the group of stable banks.

The bank is unstable if:

- it was forced to finish its activity for reasons such as taking of the license or forced control or a bank which received any help from the state;
- the value of relevant financial indicators will be moving around the values of the group of the mean value unstable banks.

### ***2.1 Determination of Financial Indicators for Definition the Bank Stability Model***

When creating the bank stability model, it was necessary to choose the suitable financial indicators that are different for values of the stable and unstable banks and are uncorrelated at the same time. Using financial indicators varies both in the Czech (see Babouček [1] or Ziegler [23]) and the foreign literature (Golin [9]). Since data comes from the Czech banking sector, financial indicators have been chosen regarding the Czech market features, the Czech accounting standards and information disclosure of the Czech banks.

According to data availability in the Czech banking sector, the financial indicators were chosen.

First of all, we have chosen 9 financial indicators representing all groups of financial indicators.

For rentability analysis following indicators were used:

- return on average level of assets (ROAA);
- return on average level of equity (ROAE);
- interest margin;
- profit margin.

For assets and capital following indicators were taken:

- equity/liabilities;
- equity/total asset.

For loans and claims following indicators were used:

- provisions/total loans.

For liquidity following indicators were considered:

- liquid assets/total total assets;
- liquid assets/ short-term liabilities.

Regarding data availability the financial indicators for the stable banks in the period 1995 – 2003 and the financial indicators for the unstable banks in 1995 – 2000 (in 2001 and 2002 there were no banks without license or under forced administration). The Table 1 shows the number of both stable and unstable banks between 1995 and 2003. All banks providing services in the Czech Republic in the period of 1995 and 2003 were analyzed in the bank stability model except for building societies (due to their different activities compared to commercial banks) and foreign bank's subsidiaries (strongly influenced by their foreign owners).

**Table 1 The Development of Stable and Unstable Banks in the Period 1995 – 2003**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
<i>Number of stable banks</i>	12	13	15	17	16	16	17	17	23
<i>Number of unstable banks</i>	23	11	10	8	7	5	0	0	0
<i>Banks together</i>	<b>35</b>	<b>24</b>	<b>25</b>	<b>25</b>	<b>23</b>	<b>21</b>	<b>17</b>	<b>17</b>	<b>23</b>

*Source: www.cnb.cz*

The financial indicators were calculated for every bank in given years. Based on these calculations the median for each financial indicator was computed in each year, separately for stable and unstable banks (see Table 2 and Table 3) This statistic indicator was chosen because of its using by rating agencies such as Moody's and Standard & Poor when evaluating bank performance (for instance ROAA, the indicator of bad loans volume etc.). The values of these indicators were calculated for last three years and then compared with the median of the classification group.

The main criteria for creating the model of bank stability were the uncorrelated indicators and simultaneously values of the indicators are different for the group of "stable banks" and the group of "unstable banks" (verified by a graph showing time series of the financial indicators).

Based on the abovementioned criteria the following indicators were selected:

- return on to average level of assets (ROAA);

- equity/liabilities;
- interest margin;
- profit margin;
- equity/total assets ratio.

**Table 2 The Financial Indicators for the Stable Banks in the Period 1995 – 2003 (median, in %)**

	1995	1996	1997	1998	1999	2000	2001	2002	2003
ROAA	0,69	0,79	0,52	0,33	0,02	0,13	0,58	0,66	1,60
Equity/Liabilities	18,35	18,41	37,10	34,93	19,92	8,35	18,31	11,26	20,68
Profit margin	5,07	8,18	4,80	2,84	0,23	8,24	6,71	12,31	21,56
Interest margin	3,54	2,89	2,00	2,52	3,47	5,31	2,34	1,97	4,05
Equity/Total assets	8,65	8,42	9,30	10,35	8,30	5,83	7,18	6,72	2,05

*Source: own calculation*

**Table 3 The Values of Selected Financial Indicators for the Unstable Banks in the Period 1995 – 2000 (median, in %)**

	1995	1996	1997	1998	1999	2000
ROAA	-2,02	-1,30	-0,91	-0,35	0,00	0,13
Equity/Liabilities	9,76	11,28	8,73	7,30	8,62	8,35
Profit margin	-16,69	-7,26	-4,23	-4,38	0,00	8,24
Interest margin	4,69	4,06	4,84	5,48	3,79	5,31
Equity/Total assets	5,66	7,39	5,50	4,91	6,41	5,83

*Source: own calculation*

### 3. The Creation of the Bank Stability Model

When applying the discriminant analysis, we calculate values  $D_1, \dots, D_k$  for the random quantity  $X$ . The investigated element belongs to the group that has the biggest value from values of  $D_j$ . Values  $\mu_j$  and are usually unknown but we have used their estimates. The probability  $p_j$  is usually chosen as proportionally to the range of the  $j$ -group, if these ranges are unknown, one can choose  $p_j = 1/k$ . [8].

### 3.1 The Creation of the Model

Firstly, for creating of the bank stability model it was necessary to calculate values as follows:

- values of medians ( $\tilde{x}_i$ ) and variances ( $\mu_j$ ) for all indicators for the stable banks in the period 1995 – 2003 (Table 2 and Table 4);
- values of medians and variances for all indicators for the unstable banks in the period 1995 – 2000 (Table 3 and Table 5).

**Table 4 Median and Variance for the Stable Banks in the Period of 1995 - 2003**

	$\tilde{x}_1$	$\mu_1$
<i>ROAA</i>	0,0048563	0,0000056
<i>Equity/Liabilities</i>	0,2189823	0,0072530
<i>Profit margin</i>	0,0548787	0,0011690
<i>Interest margin</i>	0,0271371	0,0000327
<i>Equity/total assets</i>	0,0819767	0,0001461

*Source: own calculation*

**Table 5 Median and Variance for Unstable Banks in the Period of 1995 – 2000**

	$\tilde{x}_2$	$\mu_2$
<i>ROAA</i>	-0,0078	0,0001
<i>Equity/Liabilities</i>	0,0883	0,0001
<i>Profit margin</i>	-0,0405	0,0025
<i>Interest margin</i>	0,0469	0,0000
<i>Equity/total assets</i>	0,0589	0,0001

*Source: own calculation*

The following Tables (Table 7 and Table 8) show the covariance matrix for all financial indicators for both stable and unstable banks. The covariance was counted always for two financial indicators (Table 6).

**Table 6 The Covariance of Financial Indicators**

	<i>Covariance</i>
<i>ROAA/VkZ</i>	ROAA Equity/Laibilities
<i>ROAA/profitR</i>	ROAA Profit margin
<i>ROAA/interestR</i>	ROAA Interest margin
<i>ROAA/VkA</i>	ROAA Equity/total assets
<i>VkZ/profitR</i>	Equity/Laibilities to profid margin
<i>VkZ/interestR</i>	Equity/Laibilities to interest margin
<i>VkZ/interestR</i>	Equity/Laibilities to interest margin
<i>profitR/interestR</i>	Profit margin to interest margin
<i>profitR/VkA</i>	Profit margin to equity/total assets
<i>interestR/VkZ</i>	Interest margin to equity/laibilities

*Source: own calculation*

**Table 7 The Covariance for the Stable Banks**

ROAA/VkZ	-4,69E-05	VkZ/profitR	-0,001383	profitR/interestR	-0,00011	interestR/VkZ	4,34E-06
ROAA/profitR	6,47E-05	VkZ/interestR	-0,000132	profitR/VkA	-0,00019		
ROAA/interestR	-4,14E-06	VkZ/VkA	0,0008641				
ROAA/VkA	-3,28E-06						

*Source: own calculation*

**Table 8 The Covariance for the Unstable Banks**

ROAA/VkZ	-3,93E-05	VkZ/profitR	-0,00024	profitR/interestR	9,35E-05	interestR/VkZ	-3,8E-05
ROAA/profitR	0,000159	VkZ/interestR	-4,8E-05	profitR/VkA	-9,5E-05		
ROAA/interestR	8,668E-06	VkZ/VkA	8,67E-05				
ROAA/VkA	4,774E-07						

*Source: own calculation*

From these covariance and relevant variances the covariance matrix for both stable banks and unstable banks was formed (Table 9 and Table 10).

**Table 9 The Covariance Matrix for the Stable Bank**

5,57402E-06	-4,69329E-05	6,47806E-05	-4,14534E-06	-3,28703E-06
-4,69329E-05	0,0073	-0,001383891	-0,000132073	0,000864155
6,47806E-05	-0,0014	0,001169002	-0,000110747	-0,00019043
-4,14534E-06	-0,000132073	-0,000110747	3,2653E-05	4,3434E-06
-3,28703E-06	0,000864155	-0,00019043	4,3434E-06	0,000146118

*Source: own calculation*

**Table 10 The Covariance Matrix for the Stable Bank**

6,68628E-05	-3,93E-05	0,000159	8,67E-06	4,77E-07
-3,9335E-05	0,0001	-0,000245	-4,8E-05	8,67E-05
0,000159048	-0,0002	0,0024824	9,35E-05	-9,5E-05
8,66815E-06	-4,8E-05	9,349E-05	3,72E-05	-3,8E-05
4,77369E-07	8,67E-05	-9,45E-05	-3,8E-05	6,59E-05

Source: own calculation

When providing the discriminant analysis, we have to compute also the inverse covariance matrix for both stable and unstable banks.

**Table 11 The Inverse Matrix for the Stable Banks**

2126992,441	-90435,8851	-292904,0054	-1120348,535	234265,356
-90435,8851	6592,712885	16081,02127	72682,29792	-22226,9847
-292904,005	16081,02127	46844,25794	192906,3881	-46377,4091
-1120348,53	72682,29792	192906,3881	867160,3557	-229421,127
234265,356	-22226,9847	-46377,40909	-229421,1269	89943,67727

Source: own calculation

**Table 12 The Inverse Matrix for the Unstable Banks**

194796,9	280783,4255	3765,64	-157076,6921	-455425,584
280783,4	447849,4933	7829,9	-237793,3628	-716245,36
3765,639	7829,895835	651,563	-4801,886961	-12146,7733
-157077	-237793,3628	-4801,89	197508,4257	420401,3645
-455426	-716245,3596	-12146,8	420401,3645	1184296,957

Source: own calculation

Then we calculated determinant of the inverse covariance matrix  $D_j$ . The value of  $D_j$  for a particular bank is calculated as follows:

$$D_1 = -0,5 \cdot \ln[\det(\sum_1)] - 0,5 \cdot (\tilde{x} - \mu_1)' \cdot \sum_1^{-1} \cdot (\tilde{x} - \mu_1) + \ln p_1 \quad (1)$$

The size  $D_2$  for a particular bank equal:

$$D_2 = -0,5 \cdot \ln[\det(\sum_2)] - 0,5 \cdot (\tilde{x} - \mu_2)' \cdot \sum_2^{-1} \cdot (\tilde{x} - \mu_2) + \ln p_2 \quad (2)$$

The final result is to set up a model that enables forecasting the classification of a particular bank to the concrete group of banks (either into the first group of the stable banks or into the second group of the unstable banks) based on provided calculations. A particular bank will belong to the group of either stable or unstable banks on dependence of the value of  $D_j$  (the bank will be placed to the group where it reaches the bigger value of  $D_j$ ).

The original intention of the model of bank stability was to create so called “a grey zone” or the situation when it will be not possible to rank the chosen bank neither to the group of the stable banks nor unstable banks. Considering that banks are divided only into two groups in the model when applying the discriminatory analysis, no grey zone is used here.

In case that the relevant average variance was subtracted from the median of the financial indicator (valid in the Cartesian product) for the group of stable banks and unstable banks, it would lead to a creation of two intervals (for the group of stable or unstable banks). The interval would rise in both cases, in the process that inside of these intervals would be the median of the relevant groups of banks. Under condition that the intersection of these intervals would be disjunctive, it would mean that there are different values for the groups of stable and unstable banks. In case that the intersection of these intervals would not be disjunctive, i.e. the intersection exists, it would create an area where the group of stable banks has the same values as the group of the unstable banks.

In the intersection’s interval one cannot determine whether a bank comes of the group of stable or unstable banks. This intersection would be possible to mark as a grey zone, i.e. is the situation when it was not possible to decide into which groups the chosen bank belongs to.

In the calculation of discriminant analysis it is necessary to determine the size of  $p_j$ . In this case is not the number of  $p_j$  the same as the number of stable and unstable banks in the observed period (see Table 1) for the reason that the measurement of big banks (ČS, KB a ČSOB) was divided into the groups of both stable and unstable banks. The reasoning for such division was the fact that all three banks have received the state support and an entry of a foreign owner. Therefore these banks were ranked as the unstable banks until the year of 2000 and since 2001 they belong to the stable banks.

**Table 13 The Number of the Stable and Unstable Banks Used in the Discriminant Analysis Calculation**

	<i>The number of stable banks</i>	<i>The number of unstable banks</i>
1995	12	23
1996	14	11
1997	14	11
1998	16	9
1999	15	8
2000	15	6
2001	17	0
2002	17	0
2003	23	0
<i>Banks together</i>	145	66

*Source: own calculation*

### **3.2 The Verification of the Model**

The bank stability model was verified through 38 banks based in the Czech Republic. It was necessary to exclude the chosen bank from the observe group for verification. Hence the new covariance inverse and transposed matrix was created for every of 38 relevant banks. Furthermore, the number of measurement  $p_j$  for every bank was adjusted.

#### **3.2.1 The Identification of Observed Banks**

The verification of the suggested model was carried out for 38 banks. 41 measurements were provided because big banks (ČS, KB, ČSOB) were divided into two time intervals until the year 2000 and since the year 2001.

#### **3.2.2 The Verification of Results by Monitoring Bank of the Model**

The result of the model was verified in such manner that for every bank the values of the testing criterion  $D_1$  a  $D_2$  were found.

Consequently, the bank was classified into the group of either stable or unstable banks according to the value of testing criterion  $D_j$ . Seventeen banks were classified as stable banks and 24 banks as unstable.

Data from the CNB were used for verification of the bank stability model. The CNB presents in the publication “The Bank Supervision 2003” the following overview of the Czech banking sector:

- banks with the valid bank's license;
- banks in the forced administration;
- banks in liquidation;
- banks in bankruptcy proceeding;
- banks as stock companies without the bank license;
- banks in bankruptcy without liquidation;
- banks in bankruptcy with liquidation.

Based on obtained results the comparison between the results from the researched model and the real development of the Czech bank sector was provided.

### ***3.3 The Evaluation the Bank Stability Model***

As it comes from our research, the results from the proposed model completely correspond to the real development of the Czech banking sector. The model has classified 17 banks to the group of stable banks and 21 banks to the group of unstable banks. When comparing with real data, this classification fully matches with the real development of the Czech banking sector (see Table 14).

**Table 14 The Comparison of the Bank Stability Model with the Real Development of the Czech Banking Sector**

<i>Bank group</i>	<i>Total number of banks in group</i>	
	<b>Bank stability model</b>	<b>Real bank development</b>
<i>Stable banks</i>	17	17
<i>Unstable banks</i>	21	21

*Source: own calculation, www.cnb.cz*

Based on results outlined above one can claim that the bank stability model is able to predict if the chosen bank belongs either to the group of the stable or to the group of the unstable banks. Since data used in the model is public available, the model can be used by any economical subject for its decision process when choosing a bank for its financial transactions.

## 4. Conclusion

The proposed bank stability model was verified on the selected banks doing business in the Czech Republic in the period 1995 – 2003. However, the verification could not be done on all the banks doing business in the Czech Republic in this period of time. The reason was data unavailability for an analysis of all needed financial indicators.

The bank stability model was created on the basis of the discriminant analysis. The discriminant analysis includes five financial indicators that help to classify a bank either into the group of the stable banks or unstable banks. The model was drawn up by using 211 measurements, thereof 145 measurements were connected to the stable banks and 66 measurements were connected to the unstable banks. The classification of a bank to the stable or unstable group fully corresponded to the facts published by the Czech National Bank.

The choice of the financial indicators was influenced by data availability. The original intention included 11 financial indicators for providing the discriminant analysis. However, we had to decrease the number of financial indicators because of an uncorrelation of financial indicators requirement. Therefore the number of indicators was cut from 11 to 5 indicators. The choice of these five financial indicators was also supported with the results of the financial analysis and through a graph describing time series of these financial indicators.

The verification of the model shows the practical usage for evaluation of the bank stability. The results verification was done for 41 banks in total, thereof 24 banks were clarified as the stable banks and 17 banks as the unstable banks. The used classification fully matches with the real development of the Czech banking sector.

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# SEGMENTED ANALYSIS OF BANKING INFORMATION<sup>1</sup>

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## **Abstract**

*A bank's activities produce banking information. It consists of outwards-directed (outside) information and internally used (inside) information. The information sent outside to banking regulation institutions and general public according to the law differs substantially from the information used internally by the banks. Various information users, such as shareholders, owners, competitors, government, etc. use some kind of banking information. The bank information for the public consisting of monthly balance sheets and quarterly income statements is analysed. The type and quality of the information requested by different information users and possibilities of finding the requested information from the above-mentioned data sheets are discussed. The paper presents a possible classification of banking information analysis and gives, as an example, methods for one of the variants of analysis.*

**Keywords:** *banking information, banking consumers, banking analysis*

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## 1. Introduction

In the Republic of Estonia all companies have given up salary payments in cash. Monthly salaries are transferred to a bank by the employer and from there the money may be withdrawn either by visiting the bank office (and paying a fee for the operation) or via ATM (currently in some banks still free of charge). Increasingly more students and retired persons are using ATMs.

The primary interest of all bank clients is that their money be safe. Only after this has been achieved, people think of making a bit more money by changing their ordinary accounts into time deposits. The fear of losing one's money derives from the recent time when quite a number of banks closed their doors all of a sudden. These closings were unexpected because on previous days the bank had performed all operations without obstacles and therefore nobody could predict that the next day the doors would be closed and the customers would lose their money. Although we may blame the depositors of not dividing their risk (as a proverb warns, one should not keep all eggs in one basket), it would mean being wise only afterwards and it will not bring back the lost savings. Having lost your money once, you'll be more careful while choosing your bank next time. It is a rule with exceptions. Nevertheless, there are cases when a person has experienced three bankruptcies of his/her chosen home bank in sequence. Quite often one failure has been enough to teach a lesson. All these bankruptcies have heavily damaged the image of the banking system among Estonians.

The banks try to create an image of credibility. They erect fancy office buildings and their employees are trained to communicate in a trustworthy way with customers etc. All this belongs to external credibility. It is quite easy to mislead customers with external credibility, but all risks will be wide open once internal credibility is involved. Internal credibility is based on information spread by the bank to the external environment and the results of the analysis of this information. As any other company a bank creates information in the course of its activities. This information can be divided into outside information and information that has to remain between the walls of the bank, i.e. the so-called inside information.

While the external image could help cover the crisis up for some time, the internal image would eventually drag all problems out anyway. By an internal image we mean the result-linked information presented by the bank that allows it to analyse the real situation. Both more experienced and less experienced clients have developed a rather critical attitude towards the Estonian banking system. In addition to an image that banks try to create of themselves through mass media, people have become interested in the real

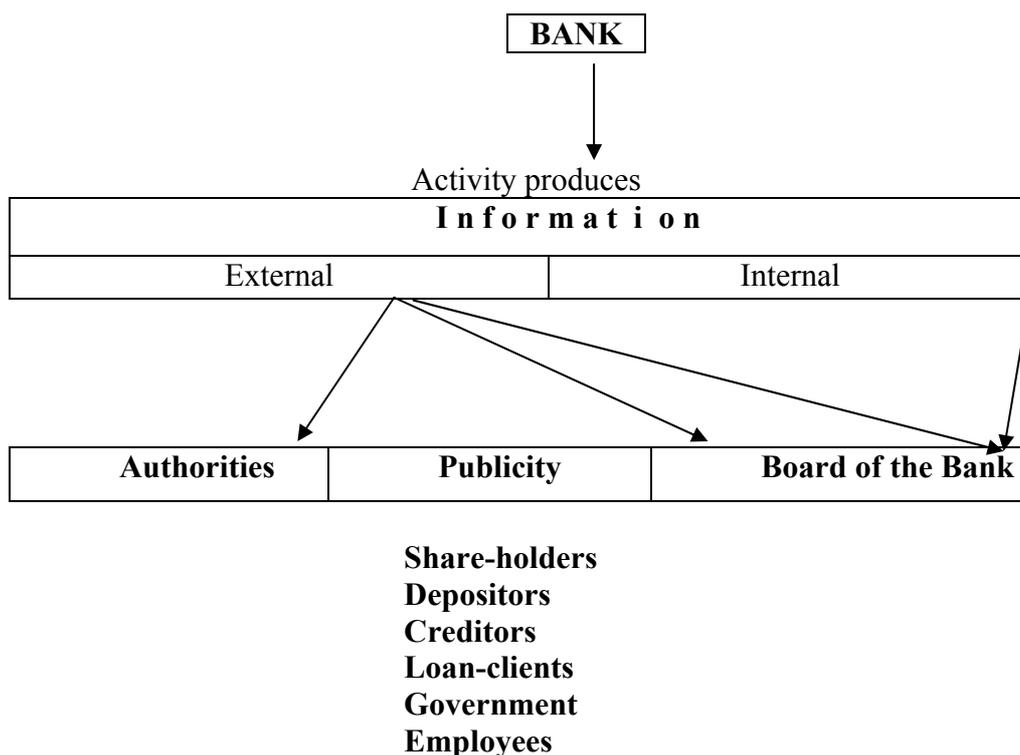
results of the banks. Figures have a unique quality of reflecting mercilessly every bank's health. Having the confirmation of an internationally recognized auditing company the reports gain more trust. The only thing a client has to do then is to read the reports. Unfortunately there are still quite a number of clients unable to understand the reports and to draw conclusions on their basis. Yet there is an obvious need for such a skill.

Discussions with the respondents showed that though everybody would choose a trustworthy bank, they would still describe it only "as a bank that would not end up with bankruptcy". All the banks that have gone bankrupt have never made a public announcement about it before. As a result of bankruptcy hundreds and thousands of people have lost their money and this has made them extremely critical about the banking sector.

## 2. Different interest-groups of bank clients

Information targeted outside (external information) is used by many institutions and interest groups. Figure 1 gives an overview of them.

**Figure 1. Consumers of the Information produced by the Banks**



*Authorities* need information on banks in order to design the government's financial policy. This information is necessary for *investors*, both individuals and institutions, for two purposes. Firstly, in order to decide whether to sell their shares or, on the contrary, to buy more of them. Secondly, to predict a bank's ability to pay dividends.

*Depositors* are interested in the bank's ability to pay interests and make payments in time.

*Creditors* are interested in the information about the bank's ability to return loans in time, whilst potential *borrowers* are interested in the information about the conditions of borrowing.

*Government agencies* need information in order to run national economy and gather statistics.

*Bank employees* need information in order to evaluate the state of their employer and to be sure that salaries will be paid.

The *public* also needs information. The word "public" includes other members of the community who may be considered as potential customers and competitors.

There are one more institution and a group of people that should be mentioned here. The institution is the Stock Exchange, to which external information has to be passed first, if a bank has been listed at the stock exchange. Information is not passed to the stock exchange on a regular basis; it is passed once it has been born. The group of people are researchers, who have not been mentioned yet. They use only regular information sources and their analysis goes far beyond simple reading of data.

### **3. Different interest-groups need different information**

Next, let us have a look at the information that is essential for evaluating a bank's reliability by different clients.

*Regulative institutions* (primarily the Banking Supervision Department) control a bank's reliability through its ability to observe necessary regulations (minimum share capital and equity requirements; capital adequacy, liquidity, reserve, and maximum risk requirements). If the annual report shows that all these regulations have been observed, the bank is reliable. Profitability is not important here.

*Government agencies* (mostly the Department of Statistics) need information purely for statistical purposes. Neither profit nor the

observance of the regulations are of their interest. Small depositors are interested in the interest rate.

In addition to reliability *investors* are also concerned about profitability. The term “investors” includes core investors, long-term shareholders as well as speculators. In the annual report they are interested in the bank’s performance, and based on that they either sell their shares or buy some more.

*Competitors* and *researchers* need more specific information. The published information is insufficient for them, as they have to analyse the balance sheet and income statement very thoroughly.

The most precious good of every bank is its reliability. Knowing the recent history of Estonian banking (Fleming, Chu and Bakker 1997; Vensel 1997; Aarma and Vensel 1998; Sõrg 1999) it is not difficult to explain why the bank customers regard reliability as the most important criterion in their selection of the bank (Aarma 2001). The cornerstone of reliability is openness. This means that everyone who needs or wishes information on the bank’s activities has to have access to it.

Besides reliability, earning a profit and its sufficient size are preconditions for a normal operation and growth of each bank. Information on profit is provided by the profit statement published quarterly. All groups who consume information provided by the bank are interested in the bank’s reliability but its profit-making capacity does not concern some of them. This is illustrated by Table 1.

**Table 1 Groups that care (do not care) about the reliability and profitability of the bank**

<i>Group of bank information consumers</i>	<i>Reliability</i>	<i>Profitability of the bank</i>
<i>Regulatory organs</i>	Yes	No
<i>Government institutions</i>	Yes	Yes
<i>Depositors</i>	Yes	Yes/No
<i>Borrowers</i>	Yes	Yes/No
<i>Investors</i>	Yes	Yes
<i>Bank employees</i>	Yes	Yes
<i>Bank management</i>	Yes	Yes

Source: Aarma 2001

The reliability of a bank is also understood differently by each group of information consumers. Regulatory organs and government institutions understand bank reliability as the correspondence of its performance indicators to the set standards. For depositors reliability is in the first place its cash position. If the bank is liquid its deposit holders will have no obstacles to withdrawing their money at any time they wish. For borrowers the bank is reliable if it is capable of lending money. No specific relationships can be found between the rate of interest on loans and bank reliability. Investors consider the bank reliable if they can be sure that the money they have invested will produce for them as high profits as possible (either in the form of dividends or rising price of shares). Bank employees and management are primarily interested in the fact that the bank is reliable and that the reliability increases continuously. The welfare of both these groups depends directly on the reliability of their bank.

As to profit-making capacity, the situation is somewhat different. There are interest groups who do not care at all whether the bank makes or profit or not. First of all it is the regulatory organs that are not interested in the bank's capacity to make a profit. Depositors and borrowers do not care much about it either. The investors and the bank's own employees, on the contrary, are vitally interested in whether the bank makes or profit or not. The government is likewise interested in the bank's profit as it collects taxes on the profit.

It was mentioned above that the most important reports of a bank are its balance sheet and profit statement. Still, to be quite exact, it should be said that it is the audited annual report that is the most important. The balance sheet and profit statement are its major components. As the balance sheet and profit statement presented in the annual report are the only audited ones of the balance sheets and profit statements published during a year, the most authentic overview of the bank could be obtained if we analysed only the balance sheets and profit statements in the annual reports. However, this would be insufficient as the time series with a time interval of one year would be too short. Therefore, the time series has to be lengthened and to do so the time interval will be shortened to embrace three months. The use of an even shorter time interval (for example one month) is hindered by the fact that the profit statement is presented once in a quarter.

Thus, by losing some trustworthiness of data (the quarterly balance sheets and profit statements are not audited and may be changed later) we can get a sufficiently long time series to make conclusions.

There does not exist any classification of banking information accepted unanimously by all authors involved in banking analysis. Each

author approaches the analysis from their own aspect. The classification of analysis presented in Table 2 is also a subjective vision of the author and is a combination of approaches of several other authors (Koch 1995; Panova 1996; Batrakova 1998, Aarma 2001, Vensel 2001, ).

**Table 2 Classification of banking information analysis**

<i>1. Based on the interval of studies</i>	<ol style="list-style-type: none"> <li>1. Monthly</li> <li>2. Quarterly</li> <li>3. Semi-annual</li> <li>4. Annual</li> </ol>
<i>2. Based on methods applied</i>	<ol style="list-style-type: none"> <li>1. Statistical: ratios, indexes</li> <li>2. Mathematical-economic: correlation and regression analysis, analysis of variance, cluster analysis, factor analysis, interpolation, extrapolation and prognostication of time series</li> <li>3. Econometric models</li> </ol>
<i>3. Based on thoroughness and scale of analysis</i>	<ol style="list-style-type: none"> <li>1. Primary (express analysis)</li> <li>2. Comparative-analytical</li> <li>3. Factor analysis</li> <li>4. Comprehensive analysis</li> <li>5. Econometric modelling</li> </ol>

*Source: The author's vision*

#### **4. Selection of the methods of analysis depends on the bank client's interest and needs**

As already mentioned above, the bank clients' primary interest is that their money be safe. This means that the bank at which they keep their money should be credible. Estonian legislation is in this respect of great help to bank clients. Namely, the Deposit Backing Act from 1st October 1998 guarantees 90% of small depositors' accounts. When the Act was passed the upper limit of the guaranteed deposit was EEK 20 000 and the level of self-

responsibility was 10%. By the beginning of 2005 the guaranteed amount had been raised to EEK 200 00 and by the end of 2007 it has to be EUR 20 000.

Bank clients who either do not wish or are not able to analyse the information published by the bank may use the ratings prepared by others. There are a large number of methods for rating banks and they differ from each other significantly.

The most trustworthy ratings are naturally the ones published by large international rating companies such as Moody's Investors Service, there is no sense in discussing their methods, as they require from the banks such information that is normally not available to the general public. Such rating methods are CAMEL, CAEL, UBSS, FIMS etc.

Those bank clients who prefer to make their own decisions about the credibility of the bank on the basis of the information published by the bank have at their disposal a number of analyses (see Table 2).

The methods listed in the table differ from one another in complexity. Several research papers have been published concerning the most complex analysis methods. For example, the matrix approach (Aarma and Vensel 1999), comparative analysis (Aarma and Vensel, 2000), DuPont Financial Ratio Analysis (Aarma 2001), econometric modelling (Aarma and Vainu 2003) have been discussed.

In the present paper a simple analysis method is treated. This method is one possibility of rating banks. A Moscow economist G. Panova (Панова, 1996) may be considered the author of this method. The method evaluates the potential chances of the bank on the market. The rating is calculated on the basis of six ratios:

1. coefficient of the credibility ( $K_1$ )  
book value equity (BE) / earning assets (EA) (1)
2. coefficient of current liquidity ( $K_2$ )  
liquid assets (LA) / demand deposits (DD) (2)
3. coefficient of risk ( $K_3$ )  
liabilities (L) / (EA) (3)
4. coefficient of liquidity ( $K_4$ )

$$(LA + \text{protected capital}) / (L) \quad (4)$$

Under protected capital we refer to the bank's capital assets minus intangible assets plus capital investments and precious metals

$$5. \quad \begin{array}{l} \text{coefficient of protected capital (K}_5\text{)} \\ \text{protected capital} / (\text{BE}) \end{array} \quad (5)$$

$$6. \quad \begin{array}{l} \text{coefficient of profit capitalization (K}_6\text{)} \\ \text{BE} / \text{share capital (SC)} \end{array} \quad (6)$$

If the coefficients of a bank calculated upon the relevant data of the bank are as follows:

$$K_1 = 1; K_2 = 1; K_3 = 3; K_4 = 1; K_5 = 1; K_6 = 3.$$

then the bank's balance can be described as optimal. All these ratios can be divided into two categories, one showing credibility and the other liquidity. The first group includes  $K_1$ ,  $K_3$ ,  $K_5$  and  $K_6$  and the other  $K_2$  and  $K_4$ . In order to get an overall formula for calculating a bank's credibility, all coefficients are to be put on an equal scale by dividing  $K_3$  and  $K_6$  by 3. However, as every coefficients has a different impact on the bank's performance, they also have to be weighed with a proportional influence factor. The proportional factor on performance of the first group is 70% and the other 30%. Coefficient  $K_1$ , which is of greatest interest to the depositors, has also the greatest weight – 45%,  $K_2$ , showing to bank's ability to satisfy the needs of demand account owners at any time, has a proportional weight of 20%.  $K_5$ , characterizing the protection level of a bank against inflation, and  $K_6$ , showing the level of profit capitalization, have both a proportional weight of 5%. The low importance of  $K_5$ , is due to the fact that buildings and land, which make up the bulk of this coefficient, are periodically revalued. Other coefficients have the following weights:  $K_3$  – 10% and  $K_4$  – 15%.

Thus, the credibility of a bank can be calculates using the following formula:

$$N = \frac{K_1}{1} 45 + \frac{K_2}{1} 20 + \frac{K_3}{3} 10 + \frac{K_4}{1} 15 + \frac{K_5}{1} 5 + \frac{K_6}{3} 5 \quad (7)$$

The banks are ranked according to the credibility rating calculated with this formula. It has to be reminded that every rating is nothing more than

a subjective opinion of experts. Besides, all methods of calculating ratings offer only some assistance in making the decision. The decision has to be made by the owner of the money.

## 5. Conclusions

1. Different client groups have different expectations of the bank. A deposit account holder is interested in the bank's ability to pay interests and make the payments in time. He is not interested in the profitability of the bank. All bank clients can be grouped based on their expectations of the bank: either its reliability or profitability, or both.

2. Different client groups have different needs for information. A deposit account holder needs information about interest rates and bank charges; a shareholder is interested in the bank's profit, as it directly influences the share price. Competitors need the most specified information.

3. Different methods of analysis produce different types of information. The balance sheet and the income statement include various data. Depending on the depth of analysis the used method becomes more complicated and the result more specified.

4. Panova's rating method enables to rank the banks analysed in the order of credibility using a rather limited amount of information and it is not time-consuming.

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# INFLUENCE OF INTERNATIONAL INVESTORS TO THE EFFICIENCY OF ESTONIAN COMMERCIAL BANKS

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## **Abstract**

*Banking in Estonia has teenager phase. Estonia has experienced two serious banking crises during the about 15-year period of its banking sector development and restructuring, the first crisis in 1992-1994 and the second in 1998-1999. Countries that have undergone financial crises are often looking to stabilize their banks with the help of international investors, often by allowing multinational banks operations to quickly expand their operations. Foreign investment came primarily from Finland and Sweden. In the research, authors are analyzing reasons, how can influence of strong participation of strategic investor from matured economy be related to the efficiency of commercial banks in Estonia in first period (before 1999) and later, when all key players were connected to some Scandinavian commercial bank. Change of efficiency is analyzed through comparison of key measures before and after involvement of strategic investor, in relation with changed regulative environment of Estonia. In more stabilized economic situation, the comparative advantage of involvement of strategic investor has less influence on efficiency and it is analyzed on the basis of Estonian commercial banks reports from 1999-2004.*

**Keywords:** *banking; efficiency; international investor*

## 1. Introduction

Banks are a unique set of business firms which assets and liabilities, regulatory restrictions, economic functions and operations establish them as an important subject for the study, particularly in the conditions of emerging financial sectors in CEECs. There is a growing interest in the impact of foreign banking on the financial system and the economic development of emerging and transition countries (Naaborg 2004)

A sound banking system is built on profitable and adequately capitalized banks. Modern bankers pay a great deal of attention to the message that is revealed by ratio analysis. Banks usually manage profitability by trying to beat market averages and keep profits steady and predictable; which in turn attracts investors. Ratios are therefore extremely useful tools, but as with other analytical methods, they must be used with judgment and caution, since they alone do not provide complete answers about the bottom line performance of banks. In the short run, many tricks can be used to make bank ratios look good in relation to industry standards. An assessment of the operations and management of a bank should therefore be performed to provide a check on profitability ratios.

Ratios are a basic tool for financial analysts and are essential to examine the effectiveness of a bank's risk management process. They are normally the initial points that provide clues for further analysis. Changes in ratios over time offer a dynamic view of bank performance. Graphs are powerful tools for analyzing trends and structures. They facilitate comparison of performance and structures over time, and show trend lines and changes in significant aspects of bank operations and performance.

The structure of the Estonian banking sector has changed fundamentally during the last years. Today, the banking system is highly concentrated and two Swedish-owned banks dominate in the market (see also table of this paper). The consolidation process continued throughout the second banking crisis in 1998-1999 resulting in fundamental bank reorganizations. We can notice all three worldwide trends in the financial consolidation process also in the Estonian market: domestic consolidation, foreign entry and cross-border consolidation, and the formation of financial conglomerates and bank assurances.

In this research, authors outline how can influence of strong participation of strategic investor from matured economy be related to the efficiency of commercial banks in Estonia in first period (before 1999) and later, when all key players were connected to some Scandinavian commercial bank. Change of efficiency is analyzed through comparison of key measures

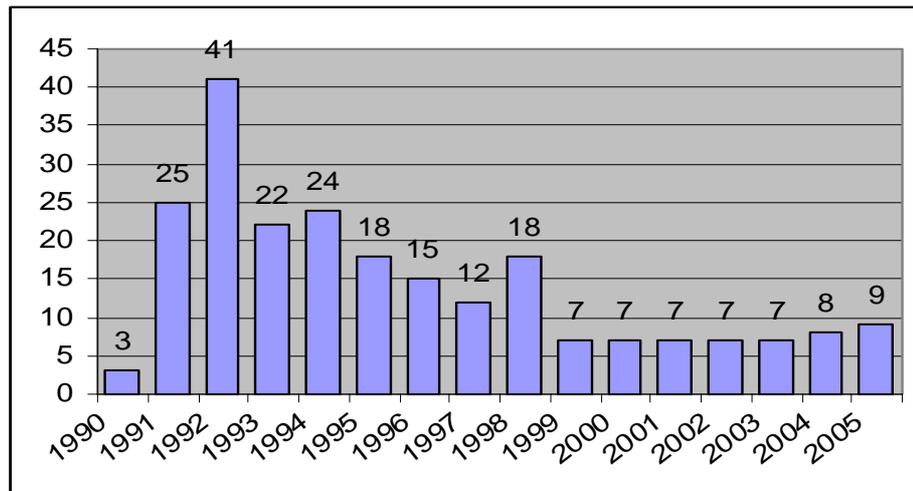
before and after involvement of strategic investor, in relation with changed regulative environment of Estonia.

## **2. Banking in Estonia**

Banking in Estonia has teenager phase (the period is 15 years). Initially Estonia has selected and introduced in life a model of a universal banking that allows banks to participate in other financial activities including operating leasing, insurance, and brokerage firms. The history of the Estonian banking was rooted in 1990s (after acquiring the independence). In most central and eastern European countries (CEECs) and the Baltics, the monobank structure was abolished in the late 1980s. CIS countries introduced a more competitive system in the early 1990s. With the elimination of monobank systems, most countries experienced a rapid expansion of the banking sector with the entry of a large number of new banks and corresponding declines in state ownership in the sector. Foreign banks entered the field in many CEECs and the Baltics in the second half of the 1990s.

At that time, the commercial banks were either new entities established by domestic industry or privatized branches of the former Soviet banks. The stages of development of banking system a little differ from other transition economies. The liberalization and decentralization of the economy accompanied by lax monetary and fiscal policies contributed to overly fast growth in both the volume of credit and the number of banks. Given extremely low barriers to entry the number of banks increased dramatically in the beginning of 1990's. New banks appeared one by one (there were 42 banks), who's careless activity led to the events that shocked all banking system (the moratoriums were declared to many banks) (see figure 1).

**Figure 1. Number of banks in Estonia**



Source: Bank of Estonia

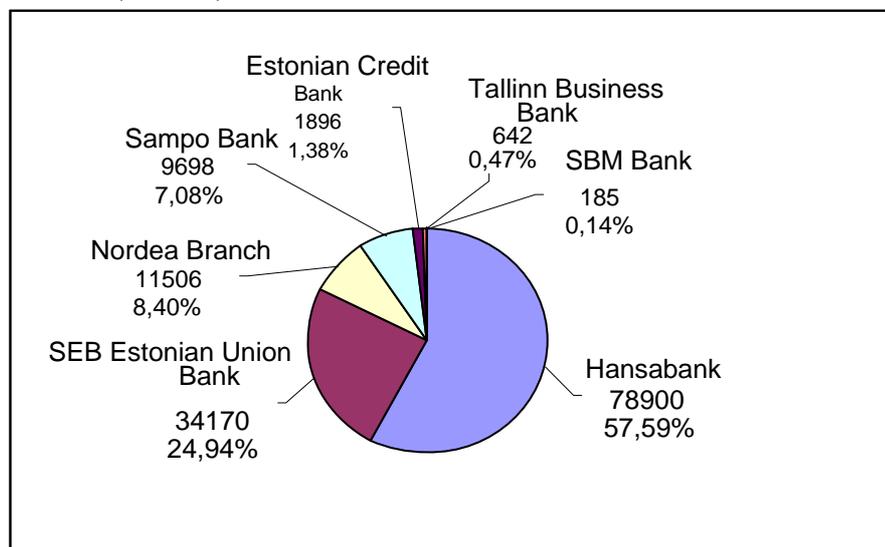
Rapid increases in stocks of non-performing loans led to banking crises in many transition countries during the 1990s. In fact, transition made banking sectors vulnerable in several respects. Many crises arose out of insolvencies in state-owned or formerly state-owned banks caused by bad loans inherited from the Soviet era. Moreover, transition cut enterprise profitability in certain sectors, reduced the ability of companies to service their loans. Estonia has experienced two serious banking crises during the about 15-year period of its banking sector development and restructuring, the first crisis in 1992-1994 and the second in 1998-1999 (Sõrg, M. and Vensel, V.). As a result, problems of banks and the insolvency of eight smaller banks seriously undermined the overall credibility of the Estonian banking sector. The operating environment for banks deteriorated in conjunction with severe output contractions in the early part of transition. Finally, regulatory frameworks and supervisory structures for the banking system in most transition countries were inadequate (EBRD 1998, Tang et al. 2000).

These events in Estonia lead to foreign investment. Countries that have undergone financial crises are often looking to stabilize their banks with the help of international investors, often by allowing multinational banks operations to quickly expand their operations. Foreign investment came primarily from Finland and Sweden, countries with long historical and cultural ties to Estonia. In time the banking system gradually improved, the process of licensing and banks mergers led to a few banks for the moment.

Generally speaking, the events of the late 1990 had a positive effect on banking in Estonia. Banks started to pay more attention to risk analysis and diversification spread; a shift from speculative to cautious action took place. This resulted in the extremely cautious domestic credit policy practiced by the banks and the growth of their foreign assets. Banks' customers who had also learned a lesson from the banking crisis, when choosing a bank did it with greater care now. The keen competition between the banks forced them to be more attentive to their client's needs, which, in turn, fostered the restoration of the trust in the banking system. The 1998 became the year of so-called *second-wave* restructuring in the banking sector. Increased competition resulted in several major mergers as well as the exit of weaker and inefficient institutions from the market.

Today, the banking sector has consolidated and there are mainly Scandinavian banks as strategic investors in Estonian commercial banks. The Estonian banking system is dominated by two foreign controlled banking groups: Hansabank and Union Bank (see figure 2). Together the two banks control around 85 per cent of the Estonian banking sector. In all, six licensed credit institutions and three branches of credit institutions licensed in a EU Member state were operating on the Estonian banking market on 1 October 2005; 63 foreign credit institutions had submitted applications for providing cross-border banking services and five credit institutions had a representative office in Estonia.

**Figure 2. The Balance sheet and market share by commercial banks in Estonia (mln.kr), 31.12.2004**



Source: Estonian Banking Association

Estonia is a small country. Through foreign investments it was able to create a sound banking sector. The ownership structure of Estonian banks is presented in Table 1. Together banks with foreign capital control around 97 per cent of the Estonian banking sector. In addition to capital, the foreign banks brought their credibility. The share of large Swedish banks in the Estonian banking market guarantees confidence in the financial sector here. It is interesting that the owner of Hansabank – Swedbank is a leader in Estonia and the fourth big bank in Sweden. SEB is the second in Estonia and at home. However, Nordea is the largest financial enterprise in the Nordic region, but has the third place in Estonia.

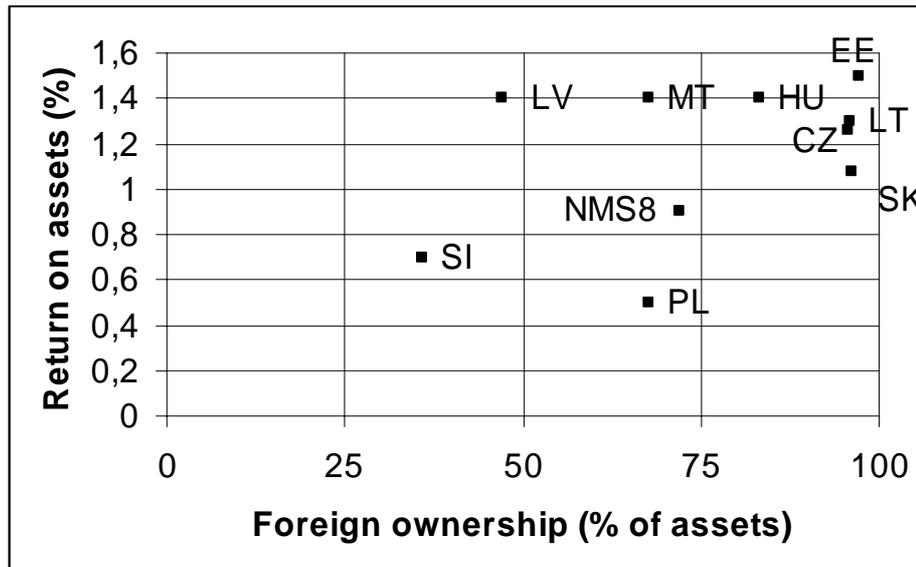
**Table 1. Estonian commercial banks and their owners, 2005**

<i>Group</i>	<i>Large banks</i>	<i>Medium-sized banks</i>	<i>Small banks</i>
<i>Banks</i>	Hansabank (Swedish Swedbank)	Sampo Bank (Finland's leading bank)	Tallinn Business Bank (Estonian residents)
	SEB Estonian Union Bank (Swedish Skandinaviska Enskilda Banken)	Nordea Bank Finland PLC Estonian branch	Estonian Credit Bank (Russian owner)
			SBM Bank (from the end of 2004 Greek and Swedish owners)
			Parex Bank (from the end of 2004) (Latvia owners)
		HVB~Bank (German HypoVereinsbank AG).	

*Source: Bank of Estonia*

Foreign presence is very large in most New Member States. On average, more than 70% of bank assets are foreign-owned. Foreign presence is notably high in Estonia. Correlation between foreign ownership and ROA in New Member States is 0,78 (ECB 2005).

**Figure 3. Foreign ownership and banking sector performance in 2003**



*Source: European Central Bank, 2005*

However, most empirical evidence seems to point toward a positive association between foreign ownership and banking sector performance in transition countries. This is also borne out by the evidence in Figure 3 for the banking sectors of the NMSs. The chart suggests a positive relation between foreign ownership and ROA for the year 2003. It should be acknowledged, however, that banks' performance may vary substantially within the different NMSs, depending not only on ownership, but also on the specialisation and strategy of the individual banks. Foreign presence is very large in most NMSs, mainly in the form of subsidiaries of foreign banks. On average, 72% of bank assets are foreign-owned. In general, NMS banks have a limited presence abroad which more often occurs via branches in neighbouring regions, but some banks also have equity participations in foreign banks. The market structure of NMS banking sectors is generally characterised by relatively high concentration. On average, the largest five banks hold 72% of total banking sector assets in the NMSs. Given the high concentration in most of the NMSs, potential concerns may arise as regards the degree of competition (16).

Foreign ownership is beneficial for the banking systems of (former) transition countries since it involves a transfer of technology and human capital which increases the operational capacity of local banks. In particular, foreign ownership is widely believed to have contributed to an improvement of the risk profile, reputation and risk management of local banks and hence to financial stability in NMSs and a convergence with western standards.

As most new Member States followed similar development paths during the transition period, most NMS banking sectors share common structural characteristics. Despite an upward trend in many countries, the level of financial intermediation is still low in the former transition NMSs, compared with the EU-15 countries. In terms of financial structure, the NMSs rely more heavily on bank finance than on direct market finance, as is the case in most EU-15 countries. The structure of the banking systems is dominated by commercial banks, with an around 90% share of total banking sector assets. In some countries there are also a significant number of small cooperative banks.

### **3. Evaluating Banks' Performance in Estonia**

Banks performance monitoring, analysis and control need special analysis of their operating and activities results from the viewpoint of different audiences, like investors (owners), regulators, customers (clients), and management themselves.

Foreign banks entry into transition economies is very topical and widely discussed subject in the recent literature, because the banking sector has a strong effect on whole economy. As stated above, the Baltic banking has changed dramatically since the new economic and legal framework was introduced in the early 1990s. Estonian has very liberal economic policy and the share of the foreign capital in Estonian banking is 97%. At the same time, the Estonian banking market is highly concentrated and all largest are controlled by foreign capital. They say that „Swedish use of Estonian banking system“. Consolidation was followed by an inflow of foreign capital from Scandinavia.

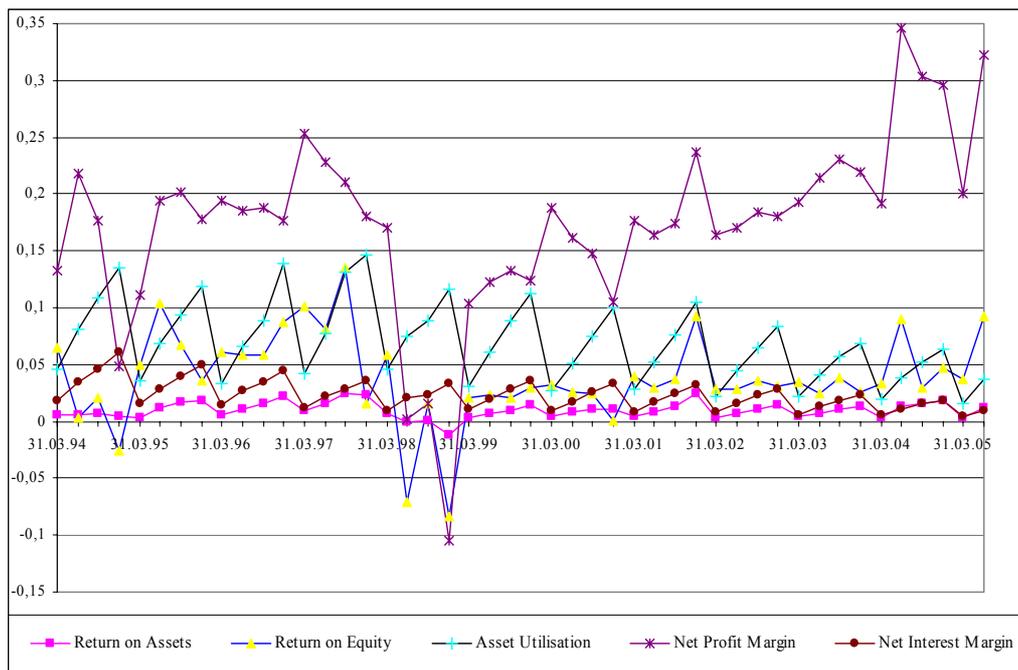
Compared to previous years, the growth rate of nominal indicators in the banking sector slowed down during 1998-2000, partly due to the changes in the external environment. With the deterioration of the economic environment in 1998, wrong economic and management decisions that had been made already surfaced in 1998 and resulted in the dropout of three banks from the banking market in July-October.

In this paper we present one of the possible approaches to such financial analysis. The following chart presents visually financial ratios of Estonian banks consolidated balance sheet and income statement. We investigate a number of indicators: the return on assets, the return on equity, the leverage, and the net results of the banks. The ratios are discussed below.

The following figure 4 presents visually financial ratios of Estonian banks consolidated balance sheet and income statement. The ratios are discussed below.

Profitability is an indicator of a bank's capacity to carry risk and/ or to increase its capital. Supervisors should welcome profitable banks as contributors to stability of the banking system. Profitability ratios should be seen in context, and the cost of free capital should be deducted prior to drawing assumptions of profitability.

**Figure 4. Financial ratios of Estonian commercial banks, 31.03.1994 - 31.03.2005**



Source: Bank of Estonia (authors calculations)

The consolidation of the banking sector and changes of the ownership structure resulted in a significant strengthening of banks' capital base and liquidity. The capitalization increased over 16% of weighted assets and it has continued to be at the same level. In addition, risk management and corporate governance practices were reviewed. All these developments led to the renewed increase of profitability in the banking sector in 1999. Additionally, the substantial deepening of financial intermediation has taken place, the balance sheet of commercial banks almost doubled during last three years. End of third quarter 1999, total assets of the banking sector were nearly 3 billion euros, which is 61% of GDP. The developments in the banking sector

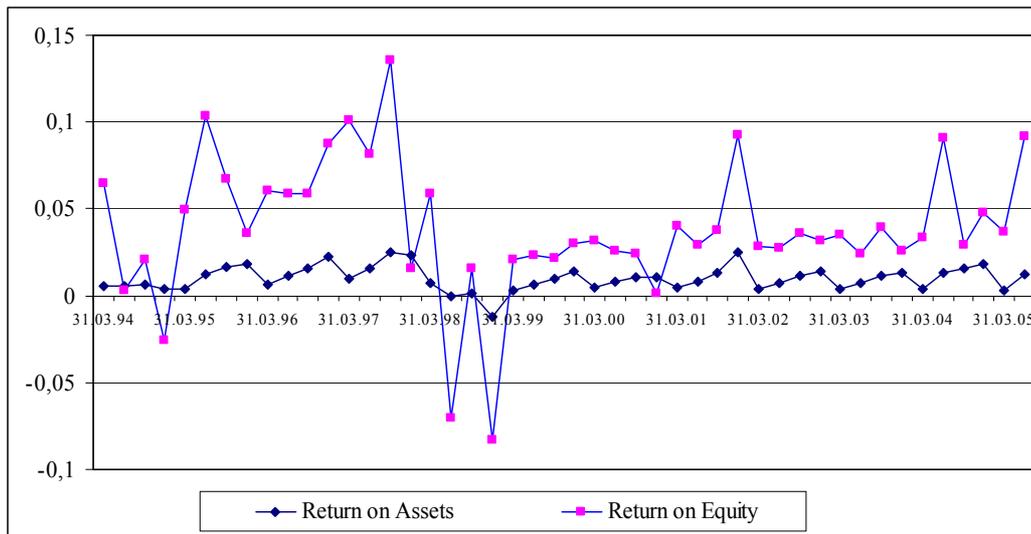
have been rapid, indeed, and the increased stability, integration and efficiency are important factors for sector's further progress.

Return of total assets (ROA) is one of the most frequently used by financial analysts. ROA measures the ability of bank management to generate income after all financial and non-financial costs and expenses for owners. Changes in ROA are usually the cause of most important changes in banks' performance and need a more detailed analysis.

Estonian domestic banks had a particular bad year in 1998 and 1999 when their combined ROA was -2, 4%. Naaborg and other authors examined to what extent foreign banks are more efficient and profitable in transition countries. Their general conclusion can be that both for domestic and the foreign banks there is an upward trend in ROA, while domestic banks were more sensitive to the economic and financial crisis in 1998 than foreign banks (Naaborg 2004).

As total assets present the volume of total resources available to the bank, ROA can be interpreted as an overall measure of banks' performance.

**Figure 5. Return on Assets (ROA) and on Equity (ROE) Estonian commercial banks, 31.03.1994 - 31.03.2005**



Source: Bank of Estonia

The book rate of return on equity is the most widely used and popular descriptor of the banks' performance, results from the viewpoint of owners (investors).

Both ROE and ROA are having significantly changing levels during the period under consideration. Highest consolidated returns were in 3rd quarter of 1997 (28, 8%) when lowest were in the end of 1998 (-7,5%). This

period was really difficult for all banks in Estonia, what can be seen also from the figure, as the total banking sector had losses.

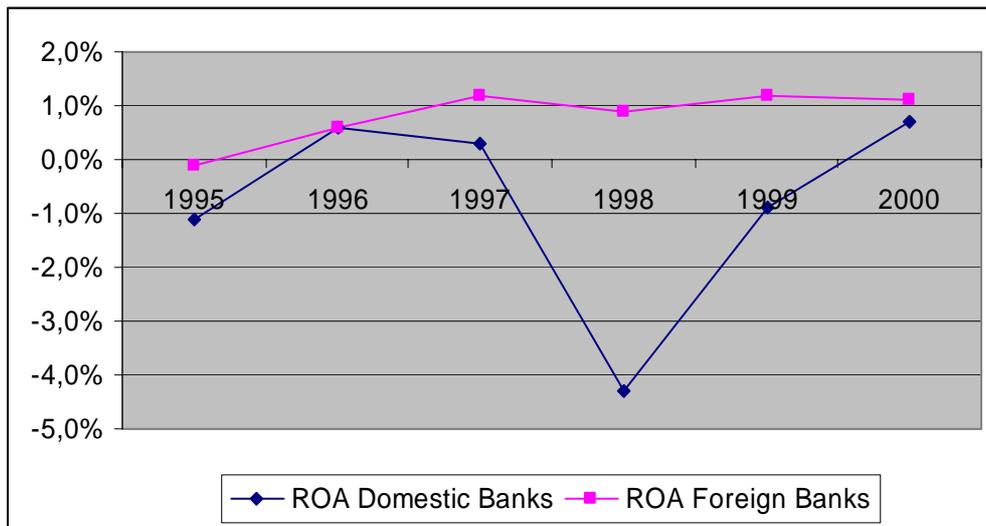
Returns are fluctuating in periods of approximately a year, although it is not exact. Large fluctuations are caused partially by the low equity requirement; also some insufficient control by Estonian Financial Authorities may be one of the reasons.

According to Claessens et al. (2001), foreign banks are more profitable and efficient than domestic banks in developing countries, while in developed countries domestic banks are more profitable and efficient than foreign banks. These differences can reflect a differential impact of informational (dis)advantages, customer bases, bank procedures as well as different relevant regulatory and tax regimes.

There are only few studies on the profitability and efficiency of the banking sector in the transition economies. Green et al. (2002) estimate the efficiency of domestic and foreign banks in Central and Eastern Europe, in terms of economies of scale and scope. They find that foreign banks are not really different from domestic banks and that bank ownership (foreign versus domestic) is not an important factor in reducing bank costs.

Naaborg (2004) examines to what extent foreign banks are more efficient and profitable in transition countries, they investigate a number of indicators at the aggregate level for both foreign and domestic banks. The first indicator reflects banks' profitability is the return on assets (ROA). Figure 6 gives the average ROA for foreign and domestic banks. It appears that the average ROA of foreign banks is higher than the average ROA of the domestic banks.

**Figure 6. Return on assets of banks in CEE countries: foreign vs. domestic banks, 1995-2000**

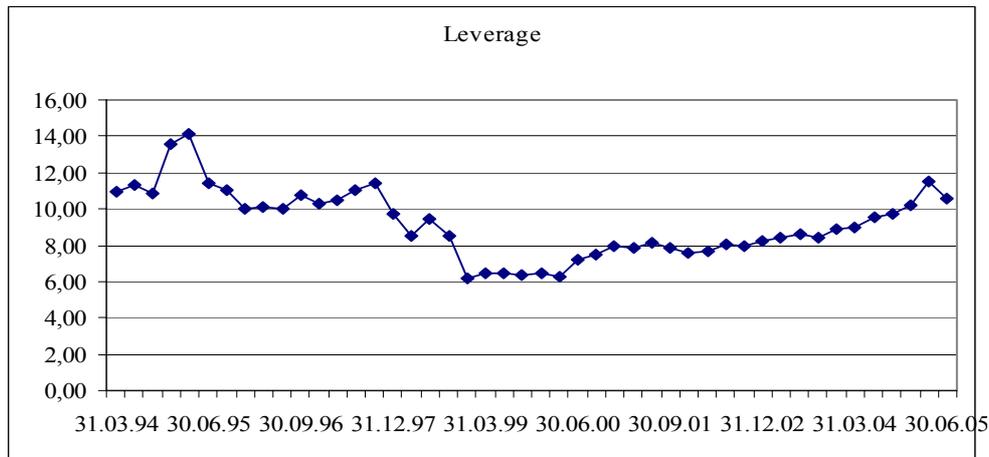


*Source: Naaborg 2004*

The picture is severely affected by bad results for domestic banks in 1998 and 1999. In all other years, the ROA of domestic banks did not diverge much from that of foreign banks. Figure 6 shows that the ROA of domestic banks tends to converge to the average ROA level of foreign banks. The general conclusion can be that both for domestic and for foreign banks there is an upward trend in ROA, while domestic banks were more sensitive to the economic and financial crisis in 1998 (moratorium from the Russian debt crisis) than foreign banks.

Financial leverage ratio measures how many kroons of assets the bank has per one kroon of equity and may be interpreted as a descriptor of the banks' gearing. On the Figure 7 leverage is presented.

**Figure 7. Financial leverage ratio of Estonian commercial banks, 31.03.1994 - 31.06.2005**

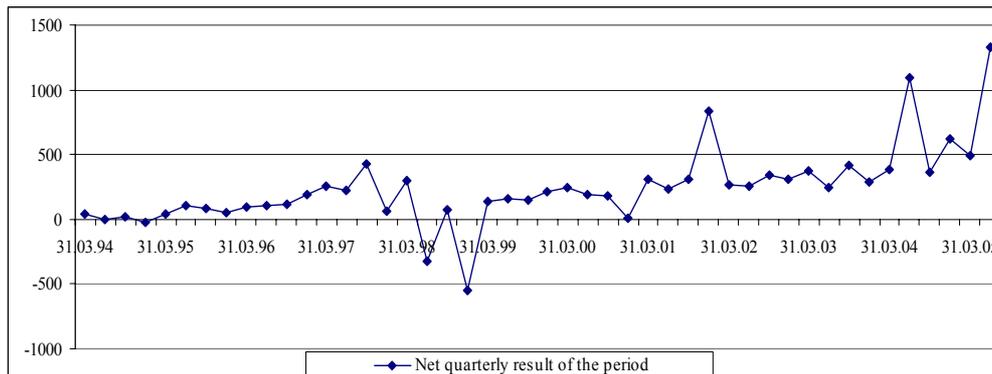


Source: Bank of Estonia (author's calculations)

Two different periods can be seen on the figure: the first one in periods 1994 to 1998 and the second from 1999 until today. The first period can be characterised as a period of significant fluctuations of leverage on higher level. The second presents more stable and balanced development stage. This first period was partially caused by small equity requirement, which enabled banks to achieve high leverage and, at the same time to take higher risks, what caused large fluctuations. Banks leverage ratio decreased substantially due to a Central Banks new equity requirements which forced banks to raise equity or to merge. Growth started again in 2000 and has stabilised after 2001.

Until 1997 the Estonian banking sector was characterised by a rapid nominal growth of total assets and loan portfolios. 1997 was the beginning of a new stage in the development of the Estonian financial sector, especially in the international context, which is confirmed by investment grade credit ratings assigned to Estonia. The rapidly growing economy boosted credit demand and also non-banking financial intermediation accelerated.

**Figure 8. The net quarterly result of the banks Estonian commercial banks, 31.03.1994 - 31.03.2005**



Source: Bank of Estonia

The net result of the banks is fluctuating on a yearly basis, caused by accumulation of the profit during the year.

The main factor of change in returns is the change of profit margin. If the difference between lowest and highest level of ROE is more than 3 times, the same difference in profit margin is more than 4 times. At the same time assets utilisation decreased approximately 10%. This is indicating to the improved cost control in Estonian banks as well as to the overall increase of banks efficiency. Decrease of the leverage influenced negatively ROE of banks in the period 1997 to 1998, but it decreased risks in banking sector causing the total number of banks to decrease.

Largest jumps in quarterly profits are in 1997 – 1998, when the backwash of instability of financial markets and collapse of sales to Russian market of main customers of Estonian banks caused profits to be either high or very low. In two quarters total result of Estonian banks was negative, the achievement what has been repeated any more.

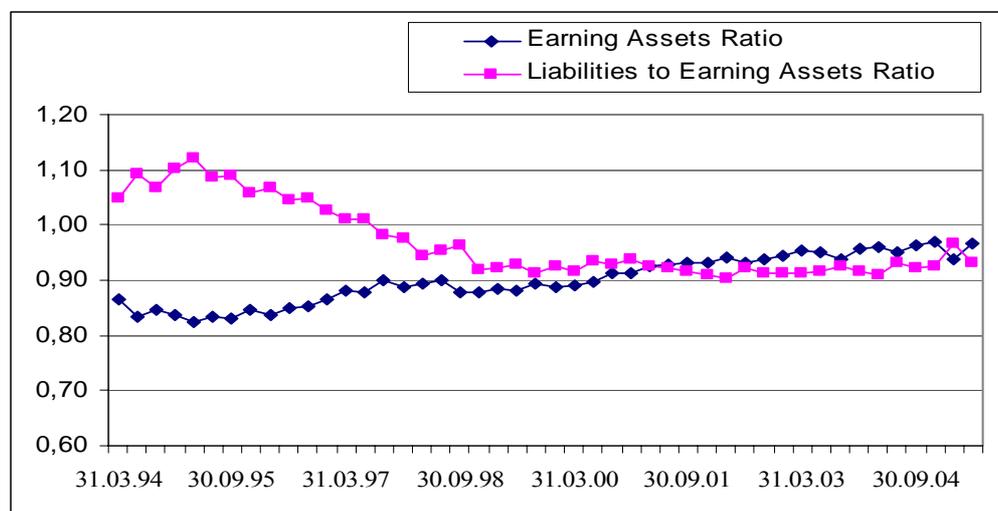
After that the banking sector has been stabilised, partly due to interference of Estonian Banking Authorities, partly due to obtaining of control by Scandinavian banks over Estonian major banks (Estonian Savings Bank, Hansapank, Estonian Union Bank, Optiva Bank).

The ratios, used for the graphs above are presented at the appendix 1.

Strong and stable net interest margins have traditionally been the primary objective of bank managers, and are still the primary determinant of intermediation efficiency and earning performance. An analysis of the interest margin of a bank can highlight the effect of current interest rate patterns, while a trend analysis over a longer period of time can show the effect of monetary policy on the profitability of the banking system. It can

also illustrate the extent to which banks are exposed to changes in interest rates, and thus the ability of management to effectively manage interest rate risk.

**Figure 9. Earning Assets Ratio and Liabilities to Earning Assets Ratio in Estonia**



Source: Bank of Estonia (authors calculations)

As you can see on the figure 9, there is the stable period after consolidation with foreign banks. Before the second crises in 1998-1999 there was a great difference between two ratios, after foreign banks entrance this difference almost disappeared.

The banking market concentration, being the share of three largest banks assets in total banks' assets, achieved more than 90% already in 1998. Foreign banks share in total assets of Estonian commercial banks increased dramatically and was 97, 4% at the end of 2000. The Estonian financial sector is clearly bank-oriented – the bank assets to GDP ratio was 68,2% and the banks assets share in total financial assets was more than 60% in the last years. Private credits by banks and other financial institutions increased considerably during the analysed period – a private credit by banks to GDP ratio was 38,7% and overall private credits to GDP ratio 49,7% in 2000.

At different times internationalisation has had various goals and forms. Besides the macroeconomic factors that rule the internationalisation of banks the ambitions of bank managers also play an important role. In the bankers viewpoint the motives of internationalisation can be divided into four groups (Rugmah and Kamath, 1987):

- Use the potential ability of a bank more entirely, for example, the domestic management and sales skills may enable banks to offer services abroad at lower costs. It also enables local companies, subsidiaries abroad to use competent information about the possibilities and conditions in the mother country.
- Use the reputation of the parent bank. The subsidiaries set up abroad may get competitive advantages as, by a rule, an international bank is considered more reliable than the local banks.
- Reduce banking regulations. In many cases the main purpose of setting up subsidiaries and branches abroad is to overcome the restrictions on moving capital abroad.
- Reduce risks. As economic situation, legislation political situation and other circumstances may change, being present will enable to recognise the risks in time and take necessary countermeasures.

There are several positive effects of foreign banks' entry into Estonia. Foreign banks entry has improved service innovation in Estonian banking. The largest Estonian banks are Hansabank and Union Bank, which both have a large share of foreign capital, have well-developed Internet banking services. A very positive spill-over from foreign banks is modern bank risk management. Foreign banks have made Estonian banks more trustable and lending from international markets has become less expensive for banks and also for banks' customers.

The Estonian banking market was quite competitive in the end of 1997, but today, after several mergers and bankruptcies, the Estonian banking market is excessively concentrated by international standards.

#### **4. Conclusions**

As there is tight connection between banking sector success and overall growth in GDP, it is difficult to say whether improved efficiency of Estonian banks was caused by stabilised macroeconomic environment or entry of foreign financial institutions has improved Estonian banks systems in the way that they were able to stabilise the whole economy.

It is clear that better risk management has stabilised returns of Estonian banks. As the banking sector was highly aggressive in periods 1994 to 1998, the returns fluctuated in large scale. After 1998 returns have stabilised.

After banking crises of 1998, Estonian banks have matured and they hardly can be named as transition economy's banks; style, performance and abilities are more close to Scandinavian tradition than to transition economy's habitants.

Estonian commercial banks have passed the same internationalisation stages as the banks of developed countries: first, establishing correspondent relations with the banks of other countries, then entering the international and capital markets, and finally, building up controlled units within the boundaries of other national banking systems.

Estonian banking sector is also opened to the invasion of foreign banks. The internationalization experience of the Estonian banks shows that the process is inevitable and useful at the same time for such a small country as Estonia.

The challenges for the banks after foreign investors' entry will be summarized in the form of following statements:

1. All three worldwide trends in the financial consolidation process also in the Estonian market: domestic consolidation, foreign entry and cross-border consolidation, and the formation of financial conglomerates and bank assurances;
2. An improvement of the risk profile, reputation and risk management of local banks and hence to financial stability in NMSs and a convergence with western standards;
3. Foreign banks entry has improved service innovation in Estonian banking;
4. The stable period in ratios after the second banking crisis 1998-1999 and consolidation with foreign banks;
5. An upward trend in ROA, while domestic banks were more sensitive to the economic and financial crisis in 1998 than foreign banks;
6. Foreign presence in banking is notably high in Estonia. On average, more than 70% of bank assets are foreign-owned in New Member States. Banks with foreign capital control around 97 per cent of the Estonian banking sector;
7. Correlation between foreign ownership and ROA in New Member States is 0,78 (ECB 2005). There is quite strong relationship between foreign ownership and return on assets. ROA is greater in Estonia than in other states.

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# THE PERSISTENCE OF PROFITS IN THE TURKISH BANKING INDUSTRY

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## **Abstract**

*This study uses IPS test methodology to test for unit roots for the panel data and analyze the profit persistency in the Turkish Banking Industry. For this purpose, banks profit rates (ROA) employed in this study. As it is expected, results of the study indicate that, banks operating in Turkey have different speed of adjustment and long run profit persistency. Peer group analysis, has also shown that, they share different profit persistency. Hence, findings reveal that, banks have diverse market behaviour in the Turkish Banking Industry, which increases competition in the banking industry.*

**Keywords:** *profit persistence, banking sector, IPS test, Turkey*

## 1. Introduction

The role of banking industry in efficient fund transfer is more important for developing countries than developed countries. The need for efficient allocation of resources is the result of growth motives of the countries. Hence, to reach this task, it needs efficiently operating financial system and institutions. Since, financial markets especially capital markets and related financial institutions are not developed such a level that can eliminate asymmetric information and related problems, the role of banks in these countries gain more importance.

Efficiently functioning banking system provides better and low cost services to creditors and borrowers. Hence, facilitates transfer of funds in the economy. Among others, one of the most important prerequisites of efficiency is the competition. As competition increases in the market, firms try to allocate their productive resources as efficiently as possible. The aim of this effort is to strengthen their competitiveness in the industry. By this way, they can protect their ex post profit level and set up new entry barriers in the industry. Their successes in creating barriers will be proportional to profit level and hence, persistency of profits in the industry.

Since the banking industry is among the most regulated industries, we can assume that entry barriers have already existed. Therefore, we can expect higher profit persistency. Nevertheless, profit persistency is not only determined by regulatory environment. Sensitivity to micro and macroeconomic policies plays crucial role in competition and persistency of profits in the banking industry<sup>1</sup>. Therefore, to consider determinants of profits in a simple equation, like in other persistency studies, a reduced model of the profit function is used in our study.

This paper analyses profit persistency of a banking system in an emerging market economy, namely the Turkey. It uses time series analysis of twenty eight surviving banks for the years 1989 to 2003. The persistency of profits in the Turkish Banking Industry (TBI) is evaluated by using the net income after tax to total assets (ROA) as a profit measure. Study applies well established profit persistency methodology that has been using very widely to measure profit persistency in non-financial sectors (Mueller, 1977; Geroski and Jacquemin, 1988; Glen et al., 2001; Maruyama and Odagiri, 2002; Glen et al., 2003; Yurtoglu, 2004). Although we employ same methodology to measure profit persistency and hence, the competitiveness, different from

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<sup>1</sup> Berger et al. (2002) find that, in addition to market power in input markets, regional macroeconomic shocks are also important for banks profit persistency in U.S.

previous studies, it is done for an emerging country's banking sector. The panel structure of data leads us to employ IPS test methodology for the unit root test which was developed by Im et al. (2003).

## 2. Methodology and Data

Similar to previous studies Yurtoglu (2004), Glen et al. (2003), Maruyama and Odagiri (2002), Glen et al. (2001), we also employ the following first order autoregressive equation to estimate the persistency of banks' profits. The critical reason of concentrating on the first order autoregressive equation is the insignificant lagged variables at a higher order which is common in many other studies.

The model of the study is:

$$\pi_{i,t} = \alpha_i + \lambda_i \pi_{i,t-1} + \mu_{i,t} \quad (1)$$

where  $\pi_{i,t}$  is derived as follows,

$$\pi_{i,t} = P_{i,t} - \bar{P}_t \quad \text{where} \quad \bar{P}_t = \sum_{i=1}^n P_{i,t} / n \quad (2)$$

In equation 2  $\bar{P}_t$  is the average profit rate of banks operating in the industry for the current year. Due to business cycles or macroeconomic changes, there would be an extensive variation in the profit rates of banks. Hence, these would have negative implications to the econometric analysis. Therefore, banks' profit level is normalized and controlled, by subtracting industry average  $\bar{P}_t$  at time t, from the profit rate  $P_{i,t}$  of bank  $i$  at time t.<sup>2</sup> Peculiarity of the banking system makes it more sensitive to business cycles, regulatory changes and other economic changes. Hence demeaning of data is becoming more important.

As indicated in persistency studies, for example, Geroski (1990), equation 1 is a reduced form equation, which contains implications of the other important determinants of competition (especially unobservable ones), like potential threat of entry. Therefore, the use of equation 1 in time series estimation eliminates the role of unobservable variables in the determination of competitive forces. Using profit rates as observable data therefore, not

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<sup>2</sup> This normalization process is becoming more important for countries like Turkey, where economy is highly unstable due to political instabilities, balance of payment, budget deficit and inflation.

requiring unobservable data provides advantage to this equation. Nevertheless, its inability in the specification of different determinants of competitive forces can be evaluated as the weakness of the equation.

By regressing  $\pi_{i,t-1}$  on  $\pi_{i,t}$ , the impact of previous years profit rates to the current year profit rates can be estimated. In other words, the value of  $\lambda_i$  predicts the intensity of competition or speed of adjustment towards the mean profit of the industry. Hence, it can be used to measure the persistency of the profits in a particular industry or market. Given the condition of  $-1 < \lambda_i < 1$  the long-run profit rate or equilibrium profit rate of a firm, is provided by:

$$\pi_{i,p} = \frac{\alpha}{(1 - \lambda_i)} \quad (3)$$

The lower value of  $(1 - \lambda_i)$  implies, transfer of the previous year's profit rate to current year is highly usual. In other words, previous years profits can be carried over to the next year. Therefore, convergence or speed of adjustment process towards the norm of the industry is quite slow. In the industries where competitive forces exist and are functional, the value of  $\lambda_i$  is expected to be at lower values. According to Maruyama and Odagiri (2002)  $\lambda_i$  can be used to evaluate speed of adjustment and stickiness of the short run abnormal profits.

We propose that entry decision is determined by after tax figures. Therefore, in our return on assets (ROA) calculations, we use net income after tax. To consider the time and cross-section dimension of data, we employed panel data of 29 banks ROA from the TBS and have common run of 14 observations for the period 1990-2003. In persistency studies, time dimension of data is one of the prerequisite for the evaluation of the previous year's impact to current years.

### 3. Results

In time series analysis autoregressive models are commonly used for forecasting future values of an economic variable that contains information on their past values. However, to avoid spurious regression and inference mistakes, the Dickey-Fuller (DF) test or augmented Dickey-Fuller (ADF) test is required to test whether the series are stationary or nonstationary. Therefore, we first start our analysis by testing unit root hypothesis for our banks data, and then we check the serial correlation of our disturbances in equation 1 and finally, we investigate the lag structure of our equation.

The application of ADF test to panel data which has time and cross section dimension is well explained in Im et al. (2003). The test simply based on the average value of the augmented DF statistics. If there is no serial correlation, panel unit root test can also be done by using the DF test. In this study, the test will be based on the average value of the DF statistics. The standard DF statistic for each group is given by the t-ratio of  $\beta_i$  in the DF version of equation 1 which is given by:

$$\Delta\pi_{i,t} = \alpha_i + \beta_i \pi_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

where  $\beta_i = \lambda_i - 1$  and  $\Delta\pi_{i,t} = \pi_{i,t} - \pi_{i,t-1}$ . An alternative hypothesis formulated as above equation, allows for  $\beta_i$  differing across groups and also allows for some of the individual series to have unit roots. Using the equation 4, we begin by estimating DF t-statistics for each bank. Then, we calculate the average value of the t-statistics from equation 4. The result is equal to -2.25 for the sample of 28 banks observed over the 1989-2003 period. Since the calculated t-statistics is lower than the critical value of the standardized t-bar test at the 1% level (-1.97), the null hypothesis of nonstationary ROA is rejected<sup>3</sup>. After the rejection of unit root, serial correlation of disturbances are analysed through Breusch-Godfrey LM test and Ljung-Box Q-statistic. In the light of these statistics, autocorrelation of disturbances in the first, second and third order is not observed in equation 1. Finally, to decide on the lag structure of equation 1, we use general-to-specific procedure and employ Akaike Information Criterion, Schwarz Bayesian Criterion and assessed the t-values of lagged coefficients and adjusted  $R^2$  of estimated equation (Erlat and Ozdemir, 2003; Enders, 1995). Most of the equations favoured to equation 1 as a more appropriate way of estimating persistency of profits in the Turkish Banking System.

**Table 1. Regression results, speed of adjustment and the estimates of long-run projected profit rate of the industry**

	$\hat{\alpha}$	$t(\hat{\alpha})$	$\hat{\lambda}$	$t(\hat{\lambda})$	$1-\hat{\lambda}$	$\hat{\pi}_{ip} = \hat{\alpha} / (1-\hat{\lambda})$	$\bar{R}^2$
Mean	0.017	0.76	0.44	1.76	0.56	0.03	0.16

Table 1 summarizes regression results of the equation 1. The estimated  $\lambda_i$  changes in between very high value of 0.74 and 0.03 with a mean of 0.44. The mean value of the speed of adjustment ( $1-\hat{\lambda}$ ) that is determined by  $\hat{\lambda}$  is 0.56 and significantly different from zero for about 53% of the sample. This shows that the convergence towards the norm is above

<sup>3</sup> Nonstationarity of the private and foreign banks are also rejected, however we could not reject it for state banks.

the average. Four of the banks in our sample have negative long run projected profit rate.<sup>4</sup> Nevertheless, 14 of them earn positive long run profit rate above the mean  $\hat{\pi}_{ip}$ , which is 0.03. Adjusted  $R^2$  explains more than 10% variation in the relative profit rates in 17 cases (61%) out of 28. Results of the study show that competition among the surviving banks is moderately high in the Turkish Banking Industry.<sup>5</sup>

Although general results are above, more specific results in terms of ownership provide could provide more insight to our analysis. Therefore, we extend our analysis by classifying banks operating in Turkey in terms of ownership. Then, we have three different classes such as, public banks, private banks and foreign banks.

In the following paragraph we evaluate the private banks profit persistency. For the evaluation purpose, we are going to use table 2 results. As can be seen estimated  $\lambda_i$  (0.43) is almost same with the industry average of 0.44. Nevertheless, smaller value of  $\hat{\alpha}$  (0.1) has shown its impact to long run persistency where  $\hat{\alpha}$  and  $\hat{\lambda}$  used together. The speed of adjustment process is also higher (0.57) than the industry average. Hence, private banks have lower long run profits persistency (0.02) than the industry average. This indicates that private banks are more competitive than the industry.

**Table 2. Regression results, speed of adjustment and the estimates of long-run projected profit rate of the private banks.**

	$\hat{\alpha}$	$t(\hat{\alpha})$	$\hat{\lambda}$	$t(\hat{\lambda})$	$1-\hat{\lambda}$	$\hat{\pi}_{ip}=\hat{\alpha}/(1-\hat{\lambda})$	$\bar{R}^2$
Mean	0.01	0.68	0.43	1.73	0.57	0.02	0.15

Foreign banks can have competitive advantages of having better access to foreign markets, technology and skilled bankers. However, factors like, customer relationship, information asymmetries and economic character of domestic country may have negative influences on their operations. Under such an environment we expect lower profit persistency for foreign banks operating in Turkey.

**Table 3. Regression results, speed of adjustment and the estimates of long-run projected profit rate of the foreign banks.**

	$\hat{\alpha}$	$t(\hat{\alpha})$	$\hat{\lambda}$	$t(\hat{\lambda})$	$1-\hat{\lambda}$	$\hat{\pi}_{ip}=\hat{\alpha}/(1-\hat{\lambda})$	$\bar{R}^2$
Mean	0.03	1.09	0.39	1.47	0.61	0.04	0.12

<sup>4</sup> For the US BHCs Roland (1997) find that, there are more BHCs persistently generating negative abnormal profits than BHCs generating positive abnormal profits

<sup>5</sup> Okumus (2002), profitability study also supports our findings.

Since  $\hat{\lambda}$  can be used to predict intensity of competition and speed of adjustment, results at above show that, competition in TBS is higher for foreign banks. In other words, they could not carry their previous year's profits to current year as their competitors. Although, they have higher speed of adjustment, interestingly their long run profit equilibrium is higher than the private banks. This is because of the constant  $\hat{\alpha}$  which represents competitive and permanent return of banks. As it is shown in table 3, this is higher than the industry and private banks average. Nevertheless,  $\hat{\alpha}$  and  $\hat{\lambda}$  t-value are statistically insignificant, therefore, this result can not be taken into consideration.

In our study, we employ three public banks which are currently operating in TBS. Although we have nonstationary problem with this panel because of data size, we would like to use it to provide some sensible findings. Having different motives than private and foreign banks, as it is expected results are fairly different than the other groups.

**Table 4. Regression results, speed of adjustment and the estimates of long-run projected profit rate of the state banks.**

	$\hat{\alpha}$	$t(\hat{\alpha})$	$\hat{\lambda}$	$t(\hat{\lambda})$	$1-\hat{\lambda}$	$\hat{\pi}_{ip}=\hat{\alpha}/(1-\hat{\lambda})$	$\bar{R}^2$
Mean	0	0.23	0.62	2.87	0.38	0	0.35

Due to operational inefficiencies and political interventions to public banks, we do not expect competitive and permanent return for them. This expectation is realized for public banks having zero for constant. Nevertheless, these are the very large banks that own large market share. Relatively high and statistically significant  $\hat{\lambda}$  value (0.62) of public banks, which reflects short-run profit actually do not reflect long run profit persistency. This statement is also approved by  $\hat{\pi}_{ip}$ , which shows long-run or equilibrium profit rate. Nevertheless, this means that they have slower adjustment mechanism than the private and foreign banks. And this could have negative implications to banking industry in general.

#### 4. Conclusion

The aim of the study is to investigate persistency of profits and hence, competition of the banking industry in Turkey. This investigation is done on different peer group basis. To carry out our study, we divide TBI into four groups. First group consist of all banks making the industry. We consider

private banks as or second group, foreign banks as third group and the fourth group represented by the public banks.

In our study, we use IPS test methodology to apply the ADF test for the unit root hypothesis to the panel data. The unit root hypothesis is rejected for our data except for the public banks. The general results for the industry indicates that long run mean profit rate for the industry is very close to zero therefore, in the long run persistency of profits does not exist in the Turkish Banking Industry. Hence, we can say competitive forces in the TBI are at work to eliminate the profits above the norm. Although this result is shared by the private bank's peer group, they are different for foreign and public banks.

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# **CROSS-BORDER MERGERS AND ACQUISITIONS IN CENTRAL AND EASTERN EUROPE**

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## **Abstract**

*Cross-border mergers and acquisitions (M&A) are an important aspect of global foreign direct investment flows. Transnational corporations use them to strengthen their market position and to create transnational production networks. The aim of this paper is to describe M&A transactions in central and Eastern Europe after the year 2000. The key findings are that M&A transactions are weak in CEE countries compared to the global M&A activities and that the M&As are dominated by public transactions (privatisation deals). Local IT corporations are a notable exception as many local software developers offer innovative and progressive products.*

**Keywords:** *cross-border mergers and acquisitions, central and eastern Europe, Czech Republic, Slovakia*

## **1. Introduction**

The world economy is a complex economic system and is getting more and more complex every day. Global corporations create production and sales networks, which cross countries and continents. Cross-border mergers and acquisitions (M&A) are an important tool helping to create international corporate networks. The vast majority of cross-border mergers and acquisitions takes place in economically developed countries as these countries are home to the largest and most progressive transnational corporations. On the other hand, available data show that the number and value of cross-border M&As in developing and transition countries fall behind every year.

The aim of this paper is to analyse the role of cross-border mergers and acquisitions in the region of central and Eastern Europe between 2002 and 2004. The main goal is to identify the main trends in the field of cross-border M&As in central and eastern Europe and to show the most active countries not only in sales but in purchases as well. The paper devotes extra space to Slovakia and to the Czech Republic as these are the home countries of the author.

The region of central and eastern Europe for the purpose of this paper consists of 19 countries – Hungary, Czech republic, Poland, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Romania, Bulgaria, Croatia, Albania, Serbia and Montenegro, Macedonia, Bosnia and Herzegovina, Russian federation, Ukraine, Moldavia and Belarus.

The data used for the analysis is taken from the statistical annexes of the most recent UNCTAD World Investment Reports (2004 and 2005). PriceWaterhouseCoopers reports on M&As in central and eastern Europe, Czech republic and Slovakia in 2003 and 2004 are used as an additional data source.

## **2. Cross-border mergers and acquisitions in the world in 2003 and 2004**

The year 2003 witnessed the continuing fall of cross-border M&As as they fell from 370 billion USD in 2002 to 297 billion in 2003 (decline of approximately 20%). to 297 billion USD in 2003 – a decline of 20%. There were only 56 mega deals (of 1 billion USD and over in transaction value) in 2003, a third of the peak number achieved in 2000 (see table 1). The largest

single deal was the acquisition of Household International Inc. (United States) by HSBC Holdings Plc. (United Kingdom) for 15.3 billion USD.

The number of cross-border M&As in 2003 was, with more than 4,500 deals, much lower than the number of greenfield projects. Three of the six countries leading in terms of the number of greenfield projects also led in cross-border M&As. The United States was the largest target country (722 M&A deals), followed by the United Kingdom (459) and Germany (296). In the developing world, China (214) ranked first (4th place in the world), followed by Hong Kong (China) (108), India (83) and Brazil (69). In terms of value, the top nine were all developed countries, followed by the Russian Federation and Hong Kong (China).

An important factor in the decline of FDI, and particularly of M&As, has been a slowdown or end in privatisation. The total sale of State-owned assets fell from about 50 billion USD in 2000 to less than 20 billion USD in 2003. Privatisation-related FDI in developing countries fell to one-tenth the level of 1998, from a record 33 billion USD that year to 3.5 billion USD in 2003. Liquidity and other problems at home lowered TNCs' interests in privatisation. At the same time, some developing countries, particularly in Latin America, became more sceptical of its benefits. Privatisation-related FDI in CEE declined as well<sup>1</sup>.

After several years of sluggish performance cross-border M&As grew in the world economy in 2004, when they rose by 28% and reached 381 billion USD. The number of cross-border M&A deals rose slightly (by 12%) and the total number of deals was around 5 100. There was a significant growth of mega M&A deals (value of the deal exceeding 1 billion USD) in 2004, which contributed to the overall growth of M&A transactions. The largest deal in 2004 was the acquisition of Abbey National (United Kingdom) by Santander Central Hispano (Spain) for 15.8 billion USD, almost the same value as that of the largest deal in 2003 but only one-thirteenth of the largest deal ever (the Vodafone-Mannesmann deal in 2000).

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<sup>1</sup> Source: UNCTAD World Investment Report 2004

**Table 1 Cross-border M&As with values of over \$1 billion, 1996-2004**

Year	Number of deals	Percentage of total	Value (billion \$)	Percentage of total
1996	43	0,9	94,0	41,4
1997	67	1,3	129,2	42,2
1998	86	1,5	329,7	62,0
1999	114	1,6	522,0	68,1
2000	175	2,2	866,2	75,7
2001	113	1,9	378,0	63,7
2002	81	1,8	213,9	57,8
2003	56	1,2	141,1	47,5
2004	75	1,5	199,8	52,5

Source: UNCTAD World Investment Report 2005, p. 9

The growth of cross-border M&A transactions was more visible on the local rather on the global level. For example, M&A deals among EU-15 countries rose by 57% in 2004 and their total value reached 99 billion USD. In addition to low interest rates in major economies and rising corporate profits, the recovery of asset prices since 2003 (as reflected in the rise in stock exchange indices) contributed to the rise in M&As. Indeed, partly as a result of increased stock prices, the number of cross-border deals using stock swaps rose from 123 to 161 in 2004 (close to the number of such deals in 1999), accounting for 16% of the total value of cross-border M&As.

The growth in the value and number of cross-border M&As in 2004 was largely due to transactions taking place among developed-country firms: their value rose by 29%. In developing countries – where such transactions are normally less common, as fewer companies attract foreign investors and restrictions continue to be imposed on M&As – cross-border M&As also rose in 2004 by 36% in value, to reach 55 billion USD, two-thirds of the peak reached in 2001. There was a significant rise in cross-border M&A purchases in China and India, with a doubling of value in both countries, to record highs of 6.8 billion USD and 1.8 billion USD respectively. For the first time, China became the largest target country for cross-border M&As in developing countries<sup>2</sup>.

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<sup>2</sup> Source: UNCTAD World Investment Report 2005

### **3. Cross-border mergers and acquisitions in central and Eastern Europe in 2002-2004**

Central and eastern Europe (CEE) emerged as a favourite spot for FDI in the recent years. Many companies (notably in the automotive industry and in electronics) decided to use the comparative advantages of the region and established there their factories in order to service the European markets. New production capacities in CEE are usually developed by greenfield projects, as suitable factories do not exist or they lack new technologies. Currently available data (collected by UNCTAD) confirm the mentioned fact, greenfield projects are getting to dominate the FDI inflows in CEE countries.

Cross-border M&A transactions can usually be divided into private transactions (a foreign private corporation buys controlling stake in a local private corporation) or public transaction (a foreign corporation buys controlling stake in a local public - state-owned or municipal – corporation). Data available in CEE states shows that M&A transactions are still dominated by public transactions – privatisation deals. UNCTAD surveys published in the World Investment report series show that between 1990 and 2003 approximately two thirds of total FDI inflows in CEE countries were covered by privatisation transactions. All CEE countries opened their privatisation processes in (in a larger or smaller extent) to foreign companies and sold lucrative state-owned companies in key sectors (ex. telecommunications or financial sector)

Review of data available about cross-border M&A transactions shows that between 2002 and 2004 the total value of cross-border M&A deals in which CEE countries acted as sellers fell constantly. In 2002 foreign corporations bought local companies in total value of 17 billion USD. In 2003 the value of sales fell by 16% and reached only 14,4 billion USD. The fall of cross-border transactions continued also in 2004 when M&A sales fell again by 14% reached 12,4 billion USD. Outward cross-border M&A transactions (companies from CEE region buying foreign corporations) were very unstable between 2002 and 2004 when the total value of outward cross-border M&A transactions rose steeply from 1,08 billion USD (2002) to 10,6 billion USD in 2003. The rapid growth was followed by a huge decline in 2004 when outward cross-border M&A transactions fell to 2,1 billion USD.

The main factor behind the falling cross-border M&A sales in CEE is the near end of privatisation transactions in central European countries. Hungary is a good example, as in this country privatisation finished around the year 2000 and the value of cross-border M&A sales falls constantly between 2002 and 2004. Similar pattern can be identified in the field of cross-border M&A sales in Slovakia, Czech Republic and Poland – these

countries conduct the last large privatisation transactions and cross-border M&As fall steadily in these states. On the other hand, privatisation activities were booming in Balkan states between 2002 and 2004 and states like Bulgaria, Romania or Albania recorded the highest cross-border M&A sales in their history. Romania is a fine example, as the year 2004 was marked by the huge privatisation sale of the Romanian oil company Petrom.

Outward cross-border M&As are negligible in CEE countries, as their share in the global M&As is very low (less than 1% in 2002 and 2004). The year 2003 is a rare exception, in this year the share of cross-border M&A purchases of CEE companies reached 3,5% of the global M&A transactions. The steep rise in outward cross-border M&A activities in CEE in 2003 was caused by the strong activity of Russian corporations. These corporations were accountable for 82% of the total outward cross-border M&A transactions in 2003.

Why are the cross-border M&A purchases so weak in CEE countries? The most important factor is the lack of strong local companies. M&As are usually dominated by transnational corporations and the number of strong local TNCs is very low in CEE. The most companies were in situation after the fall of the communist regime in 1989, as they were undercapitalised and lacked modern technologies. Large companies could not compete with successful transnational corporations from economically developed countries and were gradually purchased by them through privatisation transaction. Today, the majority of important local companies belongs to transnational networks and are losing their right to make independent strategic decisions. Business strategies of TNCs and M&A decisions are usually developed in the headquarters and local branches have only very limited authority in these issues. The situation is not likely to improve in the field of cross-border M&A purchases in the future; foreign TNCs will continue to dominate the economies of CEE countries.

**Table 2 Cross-border M&As in central and eastern Europe in 2002-2004 (billion \$)**

	Sales			Purchases		
	2002	2003	2004	2002	2003	2004
<b>Total</b>	<b>17 014</b>	<b>14 438</b>	<b>12 424</b>	<b>1 088</b>	<b>10 467</b>	<b>2 174</b>
Hungary	1 278	1 109	453	242	949	317
Czech Republic	5 204	1 756	558	30	141	360
Poland	3 131	802	1 275	58	529	216
Slovakia	3 350	160	432	4	0	232
Slovenia	1 052	1	168	63	15	59
Estonia	15	14	18	0	11	0
Latvia	4	12	0	0	0	0
Lithuania	225	135	102	0	0	5
Romania	124	493	2 200	19	1	0
Bulgaria	138	383	2 685	8	0	30
Croatia	875	613	51	42	32	6
Albania	0	2	126	0	0	0
Macedonia	5	0	4	16	0	0
Serbia and Montenegro	268	863	118	0	23	0
Bosnia and Herzegovina	19	0	110	0	0	0
Russian federation	1 252	7 880	4 062	606	8 763	949
Ukraine	74	194	41	0	3	0
Belarus	0	2	5	0	0	0
Moldavia	0	19	16	0	0	0

*Source: UNCTAD World Investment Report 2005, p. 325-327*

The above-mentioned hypothesis can be easily proved. Currently, the most active M&A activities are found in Russia, where strong local oil and natural gas companies retained their independence and are gradually building a strong competitive position. The same is true for Hungarian companies

MOL (oil) and OTP (banking). These companies were not sold to in privatisation to a TNC and are owned by a wide array of domestic and foreign investors. That means that the business strategies of these companies are developed in Hungary and both companies aim to establish a strong regional position. MOL invested in Slovakia, Croatia, Romania and Poland, while OTP invested in Bulgaria, Slovakia and Romania<sup>3</sup>.

Another interesting questions is the relatively low share of private transactions on the incoming cross-border M&As in CEE countries. This phenomenon can be also traced back to the fall of the communist regime in 1989. There were no private corporations prior this date in CEE countries, so all corporations are relatively young (max. 15 years old). So foreign corporations outside the CEE region did not find (and still do not find) enough attractive domestic private companies. Most of the local private companies are small and offer no progressive technologies or know-how. This is the main reason why foreign TNCs turn their attention to other regions and do not seek M&A possibilities in CEE countries.

In spite of the low attractiveness of local corporations, there were several interesting acquisitions in CEE last years. The most attractive local private corporation can be found in the IT industry, especially in software development and internet services. Private companies in these areas focus on high quality human resources and often offer breakthrough technologies or products. Czech company Grisoft, provide of the well-known anti-virus software AVG is a good example, as the controlling stake of this local company has been purchased by a venture investment fund led by IT giant Intel for 52 million USD. Leading Slovak IT solution provider Delta E.S. could be another example. This local IT company has been sold to Israeli company Ness Technologies for 7,75 million USD.

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<sup>3</sup> PriceWaterhouseCoopers states in his 2003 report on M&A activities in CEE – “There were a total of 43 transactions originating from the nine countries forming part of the research. This represents a decrease when compared to 54 transactions in 2002. Nevertheless, total capital invested from these countries has more than doubled, from approximately USD 500 million in 2002 to about USD 1.1 billion in 2003. The growth was even more significant when considering the three countries of the Czech Republic, Hungary and Poland from USD 0.6 million in 2001 to USD 630 million in 2003. Out of the 43 transactions, 21 were targeted in the region of the surveyed countries as well, which represents a slight increase compared to 17 deals within the region in 2002. The most active country in terms of transaction origination remained Russia with 21 deals. Further important outward bidders were Hungary with seven, and the Czech Republic and Poland with five deals each.”

#### 4. Cross-border mergers and acquisitions in Slovakia and Czech Republic in 2004

Overall, M&A in *Czech Republic* were quite strong in 2004; PriceWaterhouseCoopers<sup>4</sup> registered 185 transactions (163 in 2003 and 144 in 2002). These numbers include all M&A transactions, the share of cross-border M&As was only 53%. This meant 98 transactions in 2004 compared to 86 transactions in 2003. The total value of cross-border M&As reached 2,543 billion USD which is also comparable to 2003.

In 2004, there were only 12 privatisation deals, most of them executed by the National Property Fund. The biggest public sector transaction and the only one of an amount over USD 100 million was the sale of Unipetrol to the Polish concern PKN Orlen for USD 411 million. Although this transaction was completed in 2004, it is still subject to EU approval and has thus not been included among the 12 transactions of 2004. The second biggest privatisation was the sale of the National property fund's stake in Sokolovská uhelná to Sokolovská těžební for USD 97 million.

In 2004, the top investor country for private sector deals was Germany with 12 transactions, followed by Austria (nine), Netherlands (nine) and – the new high ranking country – Slovakia with nine deals. In 2003, the top foreign investors were Germany, Austria, and the USA, whose transactions fell from nine in 2003 to six in 2004.

There were eight outward transactions made by Czech companies in 2004, two in each of Poland, Russia and Slovakia and one in each of Spain and Lithuania. The values of these transactions were not disclosed. Czech investors also took part in privatisation in the region and made three acquisitions in Bulgaria and one in Slovakia. In addition to this, CEZ was active in Romania in 2004, but this transaction is to be completed in 2005.

According to the PriceWaterhouseCoopers survey about M&A activity in *Slovakia* in 2004, M&As on the Slovak market increased to 85 publicly disclosed private sector deals, ahead of 61 in 2003 and 51 in 2002. Of the nine CEE countries surveyed by PricewaterhouseCoopers, Slovakia ranked fifth as in 2003, after the Czech Republic, Hungary, Poland and Russia, in the number of private sector deals. Given the size of the Slovak GDP, this ranking is unsurprising. However, in terms of the growth of the number of transactions, Slovakia ranked first as it grew unparalleled 39%. The proportion of cross-border M&A transactions including foreign investors

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<sup>4</sup> Source: Central & Eastern European Mergers & Acquisitions Survey 2004 – The Czech Republic

was 55% in 2004 which is below the 61% in 2003<sup>5</sup>. As privatisation is almost finished in Slovakia, it is not surprising that private transactions dominated M&A activities in 2004. There were only four notable privatisation transactions in 2004; all of them included privatisation of bus transport companies.

As in 2003 in 2004, the top investor country for private sector deals was Austria, followed by Czech Republic and Netherlands. There were eleven outward transactions made by Slovak companies in 2004, all of them to the Czech Republic, in particular two financial groups J&T (acquisition of 34% in PRE and 100% in football club Sparta Praha) and Penta (acquisition of betting company Fortuna and Severomoravské vodárny a kanalizace) were very active.

The largest cross-border M&A deals in Slovakia included the sale of a leading drug distributor company Fides to an investor from Germany (Phoenix International). M&A in the Slovak pharmaceutical industry was high, the other major transactions included the sale of drug maker Biotika Stará Lupča to Dutch company MEI Beheer and the purchase of minority shares in of Slovakofarma by multinational drug maker Zentiva. Again and as one might expect the manufacturing sector is attractive industry segment which consistently leads the interesting M&A transactions – for example, Tatramat sold 80% stake to German Stiebel Eltron, plus there were some divestitures of non-core assets, as sale of Thermosolar Ziar Ltd. Žiar nad Hronom to German Thermosolar Landshut,.

## **5. Conclusion**

Analysis of available data collected by UNCTAD and other international organisations show that M&A activities in CEE countries are weak compared to the level of these activities in economically developed countries. The main reason of this fact is that the region lacks financially strong transnational corporations. TNCs are very important for M&A transactions as the majority of M&As involves TNCs as buyers or sellers. Most important corporations in CEE countries underwent privatisation and today they belong into transnational networks. As a result they have lost their independence in business strategies and the most important corporate decisions are made in the headquarters outside the region. Available data also show that the local companies that are active in the field of M&As do not have a foreign majority owner and are able to conduct independent strategic decisions (MOL or OTP). Russian corporations in the field of oil and natural

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<sup>5</sup> Source: Central & Eastern European Mergers & Acquisitions Survey 2004 – Slovakia

gas production are the main source of outward M&As in the region and it is likely that they will retain this position also in the future.

The time period between 2002 and 2004 also witnessed a slowdown of M&A sales in CEE countries. The main factor behind this trend is the approaching end of privatisation in central Europe (notably in Hungary, Slovakia and Czech Republic). Most state-owned companies have already been sold and public M&As are falling in this region every year. Private M&A transactions are not able to compensate the loss of public M&As as the number of interesting local companies is limited. The number of M&A sales will continue to fall or stagnate in the future as the privatisation will end in few years in most countries and the number of interesting companies is not likely to rise in the next years. IT companies could be a notable exception as many local software or internet developers offer progressive and innovative products.

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# CURRENT TRENDS IN BANK MERGERS AND ACQUISITIONS<sup>1</sup>

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## **Abstract**

*The last decade has witnessed an intense process of consolidation in the financial sectors of many industrial countries. This “merger movement” was particularly concentrated among banking firms and occurred in a global scope. As a consequence, many countries reached a situation of high banking sector concentration or faced a further deterioration of an already concentrated sector. Often a small number of large banks constitute more than two thirds of the national banking sector (e.g. measured by deposits). Banks compete in a differentiated loan market, hold reserves against liquidity shocks, and refinance in the interbank market. A merger creates an internal money market that induces financial cost advantages and may increase reserve holdings. We assess changes in liquidity risk and expected liquidity needs for each bank and for the banking system. Large mergers tend to increase expected aggregate liquidity needs, and thus the liquidity provision by the central bank. Comparative statics suggest that a more competitive environment moderates this effect.*

**Keywords:** consolidation of banking sector; credit market competition; bank mergers and acquisitions; bank profitability

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## 1. Introduction

Till the end of last year, when British bank Abbey National Bank was acquired by Spanish Banco Santander Central Hispano for EUR 13,9 billions, were bank mergers and acquisitions in Europe infrequent. Long-term discussions about sale of German HVB Group, hagridden by loss credits, finished in May 2005, when Italian Bank UniCredito announced the submission of Offer. The presented price of EUR 19 billions belongs to the highest within European bank mergers and according to Mr. Profumo, director general of UniCredito; new merged bank will save 9000 from total 130.000 employees. It will be the Number 10 in Europe and Number 1 in middle and east Europe, with total market capitalization above EUR 43 billions. In 1999, Italian UniCredito already bought its competitors Banca Commerciale Italiana, but further consolidation on Italian market seems to be difficult, therefore they were looking for other investment possibilities in Germany, French and middle and east Europe. It is interesting to see, that the last merger should be realized between banks from countries, those prefer more domestic, as international acquisitions.

**Table 1 The biggest international bank acquisitions in Europe**

<b>Bank</b>	<b>Investor</b>	<b>Price (bil EUR)</b>
<i>HVB Bank (GER)</i>	<i>UniCredito (ITA)</i>	19,0
<i>Abbey National (UK)</i>	<i>Banco Santander (ESP)</i>	13,9
<i>Generale de Banque (BEL)</i>	<i>Fortis (BEL)</i>	11,6
<i>CCF (FRA)</i>	<i>HSBC (UK)</i>	11,2
<i>Robert Fleming (UK)</i>	<i>Chase Manhattan (USA)</i>	7,5
<i>Bank Austria Creditanstalt (AUT)</i>	<i>HypoVereinsbank (GER)</i>	7,2

*Source: Wall Street Journal Europe*

During recent years a lot of European banks were active in the territory of middle and east Europe with the aim, to build the retail network and use the opportunity to take part in a privatization process of state banks. Some of the players were not successful; others had problems at home or are still waited for last chance. Looking at the map of current status of banking market, there are only a few privatization options, as most of banks were already sold to foreign investors, but some of them could be sold. There are some remaining state banks in Serbia, Monte Negro, Kosovo and Rumania.

## **2. European bank market**

Since 1990, banking sector in middle and east Europe went through large transformation process, started with creation of two step banking system consist of central banks and commercial banks. The originally state owned banks were privatized, foreign banks obtained the licenses and opened offices, a new legislation framework was implemented included the effective bank supervision. The first foreign bank, which opened its office within the territory of east European countries, was Raiffeisenbank (1996 Budapest), and now the same bank (the first one with the domicile in EU) entry on the Belorussian bank market. The downfall of iron curtain in 1990 meant for Austrian banks the occasion of century. EU enlargement brings advantages for all countries, economic development for east and profit for west. Generally, not each country or industry field will win, but advantages will be more extended, unless disadvantages will be concentrated only to a few sectors. Finally, economy of middle and east European countries will grow, mainly due to domestic increase and EU enlargement effects and market expectations.

### ***2.1 Consolidation of banking industry***

At present international banks play the major role on middle and east European markets, whereby dispose of more then 90% market share in Croatia, Czech republic, Estonia and Slovakia, and more then 60% on other markets. Austrian and Italian banks are the most successful investors on those markets, whereas in Baltic countries dominate Scandinavian banks, but surprisingly not Germane, Netherlands or British banks. The Europe in bulk together with Turkey form the market with 750 millions of citizens. The “old EU” represent the market with 380 millions of habitants and average share of consumer credits on gross domestic product (GDP) reached 50%. The new 15 EU countries with population of 80 millions gained a share of consumer loans on GDP only 20%. That’s way there is a big potential for increase of consumer loans, credit cards and mortgages.

Even higher potential lies on the east, in Russia, Ukraine and Turkey, as on those markets lives approximately 300 millions inhabitants and share of consumer loans on GDP is lower then 5%. Turkey represents a very attractive market potential characterized by growing economy and boom of credit cards and loans. That reason influenced banks like UniCredito, HVB, Erste or GE Consumer Finance to star-up with banking business in this country.

**Table 2 Share of net profit of the Group created in middle and east Europe (2004)**

<b>Bank Group</b>	<b>%</b>
<i>Erste Bank Group (AUT)</i>	56
<i>Raiffeisenbank (AUT)</i>	51
<i>Bank Austria Creditanstalt (AUT)</i>	43
<i>UniCredito (ITA)</i>	19
<i>KBC (BEL)</i>	16
<i>Banca Intesa (ITA)</i>	12
<i>Société Générale (FRA)</i>	8

Source: UniCredito, BA/CA

Consolidation within banking sector on middle and east European markets continue. In June 2005, Bank Austria Creditanstalt announced that HVB Rumania would acquire Banca Commerciale Ion Tiriatic. HVB Romania holds assets of EUR 1,4 billions with 13 branch offices, while Banca Tiriatic brings 60 branch offices and total balance amount of EUR 706 millions. The last acquisition target in this region represented Delta Bank, the second largest bank in Serbia, which was acquired by Banca Intesa. Delta Bank will enlarge current network of 500 branch offices about additional 144. Another Serbian bank Jubanka was bought by Greek Alpha Bank and Novosadska Bank by Erste bank.

Currently there are only a few state owned banks in this region. In Rumania it is Banca Comerciala Romana, the largest bank with market share of 26%, which is subject of privatization since July 2005, and 11 potential investors registered interest. Another target could be Rumanian state saving banks CEC with more then 1600 branch offices and saving bank PKO in Poland. There are several other small private banks; those could be for sale, like Banca Transylvania (91 branch offices) in Rumania or Parex bank in Lithuania.

In Hungary OTP Bank, privatized through Budapest Stock Exchange (78% of shares are in hand of foreign institutional investors) means long-term acquisition target for investor. OTP announced its strategy being one of key regional player, that's way bought banks in Rumania, Slovakia and Bulgaria, and is going to open offices in other countries, for example in Czech republic. On the Hungarian market, OTP achieved dominant position, and dispose 25% of market share according to total assets, 30% share pursuant to deposit, 21% pursuant to loans and 35% on bank sector net profit. There are also other banks on middle and east markets, those would like to raise their market share, as those markets offer relative higher margins compare to old EU and still have non-saturated loan segment. Austrian Oberbank or

BAWAG, which bought Slovak Istrobanka, Czech Interbanka, Prague Office of Dresdner Bank, and will open new Office in Slovenia, indicated such interest. Leading Belgian Bank Fortis revised its firm strategy in Spring 2005, and its major priority is focused on new EU member states, where will open its Offices in Czech republic, Slovakia and Hungary, with the aim to increase the profit of the bank.

**Table 3 Bank mergers and acquisitions in middle and east Europe in years 2002-2005**

<b>Year</b>	<b>Bank</b>	<b>Country</b>	<b>Buying Banks</b>	<b>Price (in EUR bln.)</b>	<b>Share (%)</b>
<b>2005</b>	<i>Banca Ion Tiriac</i>	<i>Rumania</i>	<i>BA/CA</i>	<i>n.a.</i>	89
	<i>Delta Bank</i>	<i>Serbia</i>	<i>Banca Intesa</i>	278	75
	<i>Jubanka</i>	<i>Serbia</i>	<i>Alfa Bank of Greece</i>	154	89
	<i>Novosadska Banka</i>	<i>Serbia</i>	<i>Erste Bank</i>	73,2	83
<b>2004</b>	<i>Savings Bank of Albania</i>	<i>Albania</i>	<i>Raiffeisenbank</i>	105	100
	<i>RoBank</i>	<i>Rumania</i>	<i>OTP</i>	35	100
	<i>Delta Bank</i>	<i>Russia</i>	<i>GE Consumer Finance</i>	<i>n.a.</i>	<i>n.a.</i>
	<i>Kredit Bank</i>	<i>Ukraine</i>	<i>PKO Bank Polski</i>	<i>n.a.</i>	67
<b>2003</b>	<i>DSK</i>	<i>Bulgaria</i>	<i>OTP</i>	311	100
	<i>Priorbank</i>	<i>Byelorussia</i>	<i>Raiffeisenbank</i>	36	53
	<i>Postabank</i>	<i>Hungary</i>	<i>Erste Bank</i>	399	100
	<i>Banc Post</i>	<i>Rumania</i>	<i>Evrobank</i>	<i>n.a.</i>	53
<b>2002</b>	<i>Biochim Bank</i>	<i>Bulgaria</i>	<i>BA/CA</i>	83	100
	<i>Rijecka Banka</i>	<i>Croatia</i>	<i>Erste Bank</i>	55	85
	<i>Dubrovacka Banka</i>	<i>Croatia</i>	<i>Charlem. Capital</i>	24	100
	<i>Splits Banka</i>	<i>Croatia</i>	<i>BA/CA</i>	132	88
	<i>Zagrebacka Banka</i>	<i>Croatia</i>	<i>UniCredito</i>	626	82
	<i>Živnostenská Banka</i>	<i>Czech republic</i>	<i>UniCredito</i>	200	85
	<i>LG Bank</i>	<i>Poland</i>	<i>Nordea Bank</i>	115	99
	<i>Nova Ljublanska Banka</i>	<i>Slovenia</i>	<i>KBC</i>	435	34

Source: *Kapital* 9/2005

The other way, how to entry into engaged market, offers leasing services. The Spanish bank Banco Santander proved this strategy, when bought Czech company CCB Credit, proposing leasing and consumer loans.

Similar strategy seated French company Sofinco, member of Credit Agricole Group, by buying Czech leasing company ČP Leasing. The company is planning to extent its activities also in the field of consumer loans, as Czech republic accounted the biggest leasing market within middle and east European countries, similar to Austrian one.

## ***2.2 Banking markets on the east***

The latest trend in bank mergers and acquisitions is aiming on east markets. The further target of expansion represents un-saturated markets of Russia and Ukraine. The Russian Federation is as one of most interesting goal, mainly due to high level of GDP, the lowest individual income tax rate in Europe (13%), due to relevant average real wages growth and share of consumer loans on GDP only at 2% level. Actually Russia remarks the fastest economy growth during the last 10 years (5-7% in years 2001-2004). Russian banking industry is to atomize, there are more then 1100 registered banks, and on the other hand it is only 1/3 compared to 1995 stage. The half of deposits and 1/3 of loans are controlled by two state banks - Sběrbank a Vněštorbank. Gazprom Bank and private Alfa Bank maintain the other positions. Foreign banks currently holds limited market share on Russian financial market, only Raiffeisenbank a Citibank maintain visible position. The market consolidation could be foreseen in following years, because the trust of clients towards domestic banks is very low. Temporary collapse of banking market in 2004, caused by psychological factors, was a consistence of that. Presently we can observe the enormous increase of interest in Russia, the consumer credit market and credit card business enhance, is enough profitable and surprisingly low-risky (2%).

In 2004 were 154 registered banks in Ukraine and further 19 were in bankruptcy. The biggest Ukraine bank Privatbank, with total assets as of EUR 1,21 billions holds only 10% market share, followed by Aval Bank a Prominvestbank. After “Orange Revolution” took Ukraine EU direction, that’s way is interesting for foreign investors, as never before. The bank industry in Ukraine must undertake a lot of standards and regulations, accustomed in developed countries, and after that, the consolidation process could start. Currently only Austrian Raiffeisenbank, among all of foreign banks, holds 2,2% markets share.

Lately international banks pursued their sharpness on the biggest potential market – China. Citibank and HSBS already bought some shares in big local banks. American Express and MBNA, second largest credit card issuer in USA, are already in China. In June 2005, bank of America announced its purchase of 9% shares of China Construction Bank (CCB) for USD 3 billions. CCB realized important changes in latest years and new

shareholder will bring its know-how combined with bank operation, risk management, credit cards and retail banking. Other foreign banks try to obtain stake in more than hundred lower commercial banks, among them reputedly only 1/3 dispose of sound credit portfolio. China belongs to one of the fastest growing economies around the world with more than 1,3 billions inhabitants. Since 2007, in compliance with GATT agreement, China's banking industry should be liberalized and open to competition.

### ***2.3 Global banking trends***

Global banking world has been changed compared to status from 90-tees, due to technical evolution. New hardware and software has been implemented in banks and insurance companies, Internet became an essential part of everyday life. There were a lot of changes, but banks are still here and will be here also in the future. The key role in successful banking plays know-how and trust of public, but not only technology. The importance of technology for banks and insurance companies will increase, and managers are fully aware of value added given by technology progress. At the same time, the competition is growing; cost cutting programs are implemented, simultaneously run consolidation process. Banks will change current fixed cost models to more flexible assurance of sources through regional competence centers and using specialized company by outsourcing of some services.

Within the European banking industry could be seen following trends:

- Growth of local and global competition
- Entry into new markets and local increase would be important factor
- Fulfillments of new legal regulations (Basel 2, Money laundering Act..)
- Stock Exchange requirements on information obligations
- International support to IT and operations
- Necessity of multi-language technologies
- Managing of more countries from one place („Multi-entity operations“)
- Sales support through more business channels
- Simple integration of banking systems
- Fulfillment of shareholders requirement (cost cutting, profit increase..)
- Growth of sales and „cross-selling“
- Flexible reaction on markets needs

Building of profitable retail network and trust of clients will be more and more important part of relationship between banks and clients. After Internet euphoria time clients clearly show, that branch offices must remain an influential part of sales channels. In Europe, the further cutting of numbers of branch offices could be expected, but simultaneously will be changed their role and design. Banks are opening small branch offices and micro-offices; their role will consist in consulting and advise to clients in selection of bank products and services.

Corporate finance business is very competitive and margins are long term on lowest levels. Retail banking is growing fast, but equally increase the competition. The most visible trend in late years has been seen in SME segment combined with new offered services. Small and medium sized enterprises require only limited number of services, like overdrafts and investment loans, and system of payments. SME segment still offers interesting margins, even though with decline tendency. Private banking is also developing, whereby grows the number of wealthy clients on total population. The more difficult is to manage such portfolio of private clients, what requires round experiences and know-how. Identification of client needs, communication schemes and clear description of banking products, seems to be very crucial facts, except of attractive marketing and effective day work with information.

### **3. Slovak bank market**

The Slovak banking industry has remarked a dynamic development during last years, on the ground of implementation of know-how giving by foreign investors. At the same time corporate finance also moved forward, especially in point of required financial services. After restructuring of industry and strong FDI inflow, gradually grows the profitability of both industry and banking sector.

Per June 2005, there were 18 banks and 4 foreign bank offices active on the Slovak banking market. In respect to the entry of Slovak republic to European Union, Slovak National Bank presently register 81 notifications of foreign bank regulation authority about interest of foreign banks to run the business in Slovakia. Total assets of bank sector accounted SKK 1.333,3 billions (+14,65% compared to 2004 end year status) and generated the profit of SKK 7,57 billions, whereby the growth was incurred by accumulation of primary and secondary sources (current accounts and deposits). Banks holds loan portfolio of SKK 481 billions, each of that 6,6% are classified (total amount of adjusted items amounted SKK 26 billions).

**Table 4 Ranking of Commercial Banks in Slovakia (In SKK thd, per June 30, 2005)**

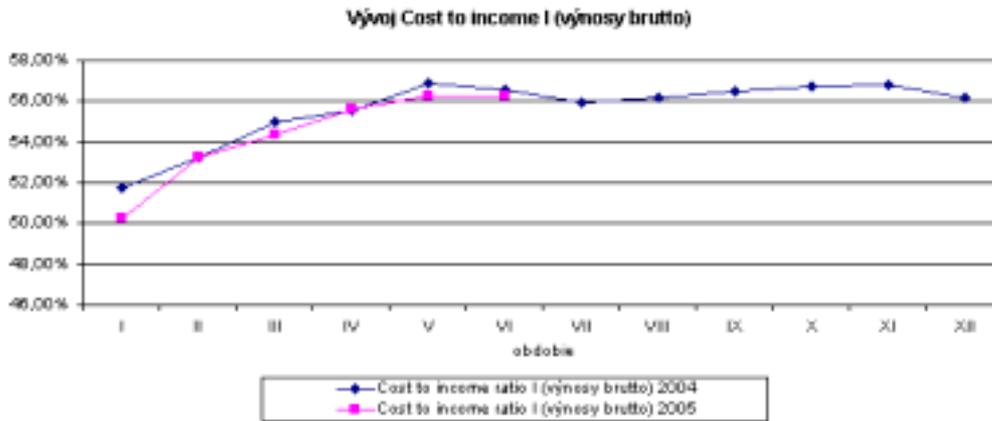
<b>Bank</b>	<b>Majority owner</b>	<b>Total assets</b>	<b>Deposits by clients</b>
Slovenská sporiteľňa	<i>Erste Bank</i>	274 023 546	168 864 771
<i>VÚB banka</i>	<i>Banca Intesa</i>	211 553 081	129 194 393
<i>Tatra banka</i>	<i>Raiffeisenbank</i>	178 457 829	137 132 973
Československá obchodná banka	<i>KBC Bank</i>	155 611 665	47 677 767
<i>ING Bank</i>	<i>ING</i>	78 730 928	27 534 351
<i>HVB Bank Slovakia</i>	<i>BA/CA</i>	67 727 190	25 266 022
<i>UniBanka</i>	<i>Unicredito</i>	59 487 165	47 732 687
<i>Dexia banka Slovensko</i>	<i>Dexia</i>	52 729 956	30 781 391
<i>Prvá stavebná sporiteľňa</i>	States SR, AU, GER	42 666 291	33 117 144
<i>OTP Banka Slovensko</i>	<i>OTP</i>	37 331 308	22 270 474
<i>Istrobanka</i>	<i>BAWAG</i>	33 309 982	19 115 183
<i>Eudová banka</i>	<i>Volksbank</i>	31 698 487	23 608 686
<i>Citibank (Slovakia)</i>	<i>Citibank</i>	28 777 431	20 120 255
<i>Poštová banka</i>	<i>Istrokapitál</i>	22 664 168	19 397 875

Source: Trend Analyses, October 2005

### **3.1 Bank profitability/market segmentation**

Total yield assets of banking sector accounted SKK 1.246 billions per June 2005 (+14,2% compared to 2004 end year status), as the main increase was remarked in items bank-to-bank receivables (+ 32,78%), loan receivables (+ 8,72%), volume of securities (+8,6%) and foreign assets (+ 9,96%). Since 2004, the share of yield assets on total assets varies in band 93,3% - 94,0%. One of the key cost indicators, carefully measured by each bank represents cost to income ratio, inducted the amount of brutto yield in % absorb by general operating costs. The average value of cost to income ratio per whole banking sector reached 56,2% per mid 2005.

**Figure 1 Cost to Income Development**



The important part of total bank profits represent yields from fees and provisions. As margins by corporate loans dramatically decreased for the last three years, banks are forced to compensate this lower profit by higher fees and provisions. This trend could be watched also in first half 2005, as share of yields from fees and provisions on total bank yields jumped from 21,72% (December 2004) to 24,67% (June 2005). The income from fees and provisions cover 45,2% of general operating costs.

Looking at the market segmentation, the most rising market is featured in retail segment. Foreign investors have had good predictions by entry into Slovakian banking market, when they count with fast growing of credit for public. The total public indebtedness increases geometrically and till June 2005 achieved sum of SKK 136 billions. The splitting of loans is asymmetric, as first three banks holds 4/5 of total public debt. At present public debt in Slovakia attained only 10% on GDP, compared to average 50% in Euro zone. Interest rates by mortgage loans varies between 4,5% and 6,5% depending on creditworthiness. By consumer loans interest rates start by 5,2% and highest rates are by 20%.

In corporate business the high attention is dedicated to SME segment. In spite of the fact, that large corporate improved its financial position, some of them are financed from abroad, but generally they create higher profits and dependency on bank loans is therefore lower, the total amount of loans for the whole corporate sector is only slightly above the level from previous year. This is due to strong development of SME segment, where still bank could achieve interesting margins. Taking into account the banking sector as a whole, total increase of loans has been mainly caused by growth of public debts. In the latest years banks portfolios dominated big loans offered to large corporate, current trend force bank managers to compensate this decline by a large number of small loans, what is more laborious and costly, but solely

solution. Current level of interest rates will not allow to banks, maintain the same levels of margins as were in the past. Raising the share of loans on total assets could preclude the future decrease of profits, as presently banks hold a big amount of non-risk assets – state bonds and deposits by National Bank.

**Table 5 Volumes of public loans in 2004 and 1H 2005 in Slovakia (in SKK mln)**

Bank	Mortgages loans		Residential loans (not mortgages)		American mortgages loans		Consumer loans	
	2005	2004	2005	2004	2005	2004	2005	2004
<i>ČSOB</i>	496	280	–	–	186	–	354	730
<i>Dexia banka</i>	579	235	–	–	54	8	165	94
<i>HVB Bank</i>	145	126	38	–	–	–	29	39
<i>Istrobanka</i>	586	302	–	–	155	–	124	126
<i>Ludová banka</i>	278	194	–	–	83	–	337	107
<i>OTP Banka</i>	1 055	943	18	8	293	55	157	188
<i>Poštová banka</i>	–	–	–	–	–	–	271	0
<i>Slovenská sporiteľňa</i>	159	1 154	4 610	–	114	–	4 375	2 711
<i>Tatra banka</i>	2 593	1 398	–	–	1 206	–	1 226	1 214
<i>UniBanka</i>	404	328	–	–	–	–	110	57
<i>VÚB</i>	4 656	1 224	–	–	396	0	2 808	1 822

Since 2004, bank raised new product on the market – American mortgage loan, which is secured by mortgage, but the purpose is not specified. The most growing market was remarked by residential and mortgage loans. In 1H 2005, the growth achieved 4/5 from the total amount of mortgages loans in previous year. Banks put to credit SKK 11 billions of mortgage loans in 1H 2005 and hold totally SKK 50 billions of such loans in their balance sheets. Banks try to enable the access to loans for inhabitants, when partially canceled requirement of expert statements, especially in large cities. Some banks started to do their own statements, others declined fees. Generally banks try to shorten approval process and change internal rating levels inevitable for binding-of the rates. Except of the mortgage loans, client raised demand for consumer loans, in 1H2005 there was growth about SKK 7 billions, whereby the higher request will be expected before Christmas.

## 4. Conclusion

The other wave of mergers and acquisitions has started within the European banking industry, especially in middle and east European countries, but Russia and China are even more attractive countries. At the same time global banking sector has remarked a dynamic development during last years, on the ground of implementation of new technologies and the usage of Internet. Corporate business is very competitive with very small margins; more interesting segment is represented by SME. Faster movement could be seen in retail banking, mainly credit card business, mortgage and consumer loans. The future success of banks will be depended on the identification of clients' needs and building of the relationship between banks and clients.

Looking back over the past year, the Slovak banking sector was characterized by increasing sales, maximizing efficiency and cutting costs, majority of banks concurrently created a strong basis for continued successful business in the fields of retail and corporate banking. Besides expansion of the SME and municipal market segments, banks were also successful in reducing their non-performing loan portfolio and stimulating the domestic payment business. I am convinced, that in addition globalization, geographical proximity to other EU member states and consistent elimination of the differences in the economic and social background compared with other EU countries, it was already created a sound business environment for future growth and prosperity of banks, running business in Slovakia.

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# SLOVAK BANKING SECTOR AFTER CHANGE OF OWNERSHIPS

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## **Abstract**

*This paper is aimed at the evaluation of selected indicators of Slovak banking sector in the segment of banks, which went through the process of restructuring and have a decisive share in the Slovak banking market. The analysis is aimed at evaluation of quantitative development of the balance value, development and state of the capital adequacy and classified claims of the transformed banks. Next to the evaluation of nowadays situation, there are also some basic development trends of the Slovak banking sector outlined in the paper.*

**Keywords:** *banks, investors, balance value, owners, capital adequacy, development*

## **1. Introduction**

The restructuring process of Slovak banking sector in the years 1999-2001 was aimed at recovery and privatization of selected banks with state ownership majority. Restructuring of these banks before privatization meant their recovery- recapitalization in the form of ordinary stock increase with state help, displacement of classified claims from credit portfolios of the banks to specialized consolidating institutions. The losing claims were replaced through state owned securities. This process led to an increase of the capital adequacy and a change of the asset structure in favor of more liquid assets. During the year 2001 these restructured banks were privatized. The successive privatization resulted in an increase of the foreign investors share in the banks total ordinary stock subscribed and in permanently provided financial means to subsidiaries of foreign banks. The foreign investors share in the banks total ordinary stock subscribed and in financial means provided by foreign banks to their subsidiaries rapidly increased in the researched time period and by the end of September 2002 represented 85.0%. This increase was caused by the entry of foreign investors into the banking sector.

## **2. Devepment of selected indicators in the Slovak banking sector**

After 2001 and after privatization of the biggest banks foreign investors gained<sup>1</sup> the ownership-majority in the Slovak banking sector. According to the volume of assets it means that the part of assets controlled by foreign owners amounts to more than 90 %, whereupon the part of the ordinary stock amounts to nearly 90 %.

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<sup>1</sup> In the current, in Slovakia are active 22 banks: Slovak saving bank, General credit bank, Tatra bank, CSOB, ING Bank, HVB Bank Slovakia, First building saving bank, Uni Bank, Volksbank, Citibank (Slovakia), Dexia bank Slovakia, Istrobank, OTP bank Slovakia, Post Bank, VUB Wustenrot, Credit Lyonnais Bank Slovakia, Komerčni Banka Bratislava, CSOB biulding saving bank, Banka Slovakia, Commerzbank, Slovak guarantee and development bank and Eximbank. Beside this banks there are also 7 representations of foreign banks. In the structure of the mentioned banks are dominant banks with universal licence, represented are also specialized building saving banks. The ownership in the mentioned banks is private, except the Slovak guarantee and development bank, which has state capital at disposal. Foreign capital is represented in the majority of banks. Up to now the Post Bank is not privatized through foreign investors.

**Table 1 Selected commercial banks, their owners and part on the ordinary stock**

<b>Bank name</b>	<i>Shareholders</i>	<i>Part on the ordinary stock in % towards 30.06.2005</i>
<i>VUB a. s.</i>	Luxembourg SR	94,47 % 5,53 %
<i>SLSP a. s.</i>	Austria-Erste bank	98,00 %
<i>OTP s. s.</i>	OTP Bank, Rt. Private person	97,23 % 1,00 %
<i>Dexia Bank Slovakia a. s.</i>	Dexia credit bank slovak towns priv. and legal pers.	79,00 % 19,00 % 1,90 %
<i>HVB Bank a. s.</i>	BA – CA Austria	100,00 %
<i>Ing Bank a. s.</i>	ING Group Holland	100,00 %
<i>Istrobanka a. s.</i>	BAWAG Austria	100,00 %
<i>Volksbank a. s.</i>	Volksbank Int. AG Banque fed. others	76,30 % 10,00 % 14,70 %
<i>Post. bank a. s.</i>	Istrokap. Slovak cons. Slovak post others	55,00 % 37,00 % 5,00 % 2,90 %
<i>Slov. GD Bank</i>	SR	100,00 %
<i>Tatra banka a. s.</i>	Raiffeisen Austria Tatra Holding others	72,20 % 14,11 % 13,63 %
<i>Unibanka a. s.</i>	Unibank EBRD others	76,29 % 19,90 % 0,01 %
<i>Banka Slovakia a. s.</i>	BASL Allianz others	49,60 % 19,80 % 30,60 %
<i>CSOB a. s.</i>	KBC Bank NV EBRD others	89,97 % 7,47 % 2,56 %

*Source: Annual Reports for 2005*

Owners of the banks are strong foreign banking groups - ING, HVB, Volksbank, Wustenrot, UniCredito. The Czech banking is represented through the fourth biggest bank Czech-Slovak commercial bank. Through a subsidiary is also represented the Komerčni banka. The Hungarian banking system is represented by a subsidiary of the biggest Hungarian bank OTP. The foreign investors come from the European economy space and from

USA. They are established in the majority of the 21 commercial banks and in 7 representations of foreign banks.

## 2.1 Balance Value

Development of the Slovak banking sector after the change of the ownership will be valued on the basis of the quantity, development of the balance sum concerning banks, which pass the process of transformation-banks, which with an important measure participate on the increasing of balance value for the entire banking sector. We will not value the whole structure of the balance, but only the parts on the side of assets and liabilities, which considerable influence the balance state of a concrete bank. It's about the biggest Slovak banks: VUB a.s., SLSP a.s. and the Slovak investment and development bank (after changing of the ownership OTP a.s.)

The balance value of the mentioned banks decreased in the period before recovery. In 1997 the balance was 385.755 Mio. Sk., in 1998 362.802 Mio. Sk. and in 1999 352.839 Mio. Sk. The reason was the entrepreneurial activity of banks. The banks recorded losses, the funds from clients stagnated. In 2000 the balance value reached the sum about 377.128 Mio. Sk. This increase of the balance value was connected with the recovery and with the renovation of the trustworthy of the biggest banks.

**Table 2: Balance sum of selected commercial banks to the 31.12.** (in million Sk)

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
VÚB	165 287	174 162	194 716	191 338	218 837
SLSP	184 452	202 058	205 037	208 338	237 354
IRB/OTP	27 389	21 344	18 959	25 106	33 873

Source: Annual Reports of SLSP, A. s., VÚB, A. s., IaRB, A. s., for 2000, 2001, 2002, 2003, 2004

**General Credit Bank VUB a.s.** strengthened it's standing on the Slovak banking sector. In 2001 there have occurred significant changes in the balance structure. The part of securities has increased by contemporaneous decrease of credit part. Part of credits has been moved to consolidating institutions in the frame of reclassification of credit portfolios. The entrepreneurial activities of the bank have been oriented to high yielded and less risky assets. The balance sum has increased in 2002 about more as 11 % against the year 2001. On the Slovak banking market the bank kept the 20 % stake. In 2003 the balance sum has decreased, which was caused by dropping of entire consolidated assets. In 2004 the VUB was very successful. The bank

strengthened business position and improved the finance results and became the most profitable bank in Slovakia. For the first time the bank received an award the best bank in Slovakia from the journals Euromoney and The Banker.

**Slovak saving bank (SLSP a.s.)** reached in 2001 a balance sum about 202,1 bln Sk, which was an increase about 9 % against the previous year. In 2002 reached the SLSP a balance value about more than 205 bln Sk. It can be said, that in 2002 the bank has been transformed to a modern banking institution, which his activity orientated to the client. The result was the reclassification of the branch-office net and the separation of the retail- and business banking. In 2003 the Slovak saving bank is beginning to manage the credit risk and to monitor the portfolio and there will be prepared in cooperation with other banks the first credit register for private persons in Slovakia. In harmony with the new Basle agreements about capital the saving bank is involved in this program through the Erste Bank for the implementation of this agreements. In 2003 the saving bank has determined the starting assumption for collecting of statements about not repaid credits and losses and proposed a new rating system for the retail business. The quality of the asset portfolio has in 2003 improved the part of the assets with a high risk level has decreased from 14,0 % in 2002 till 8,6 % in 2003. The assets are covered through correcting items and reserves about 101 %. The 2004 can be characterized as the most successful year for the bank concerning the increase of the balance sum. There was an increase against 2003 about 14 %. To the increase of the balance sum has contributed a good economic management just as the management of the credit portfolio. Changes in the legislature proposed so, that they will strengthen the position of the creditors and so there will be the guarantee, that claiming of credits will be more successful.

**OTP a.s.**, the activity of OTP (before privatization: Investment and development bank) was for a long period in a specific situation, to which the bank got in 1997. The bank was in a forced administration, managed by administrator authorized to perform the forced administration. Whereas the forced administration the bank activities have been subdued. After ending of the forced administration the activities of the bank have been renewed. In 2001 the privatization has taken place through a foreign investor and with the trying to reach a good position on the Slovak banking market. In 2001 the balance sum decreased by more than 6 bln Sk. The reason was the change of the asset structure and displacement of classified claims. High balance sum in 2000 was connected with the balance recovery of the bank and with the meaner of settlement of repo deals. Artificially has been inflated the volume of assets, when the National Bank of Slovakia came in a sterile position

against the banking sector. The balance sum of the bank reached in 2002 a value about 18,9 bln Sk, which was a decrease about 8 % in comparison with 2001. The reason was the transformation of the bank. In April 2002 the bank has been privatized. In 2002 the bank stated a loss, which occurred as consequence of building of correcting items and reserves on the property, bank claims and transformation costs. The 2003 was a successful year for the bank activities. The sources have been increased and also introduction of new credit products for the population and for the entrepreneurs. The stated reality has contributed to the increase of the balance sum, which reached in 2003 a value about 25 Bi. Sk. This tendency continued also in 2004. For this period is characteristic the consolidation, when on the Slovak banking sector the deposits have been moved from the banks to the administration companies. The strategy of the bank is to reach long-term partnerships with the clients, how the bank doesn't mean only entrepreneur clients or retail, but the bank is developing business contacts also with self-administration units. This strategy has been confirmed as correct, because the balance sum has increased and reached in 2004 nearly 40 Bill. Sk. To the increase of the balance sum have contributed about all the deposits of clients (plus 27 % yearly increase), issued securities (volume about 2,5 Bill.Sk) and granted credits.

## ***2.2 Adequacy of the own sources (capital adequacy)***

The capital of the bank is the most suitable source of protection against insolvency. In all sophisticated economies enjoy the bank capital a big attention. From the capital the bank can cover eventual asset-looses without threatening of the client deposits. But the condition is an adequate level of capital. The most important coefficient is the Capital Authorization Ratio (CAR) often named as Cooke - Ratio (capital-assets ratio), defined as ratio of capital to the sum of risky assets and credit coefficients of non-balance items.

Recommended balances are 0, 20, 50, 100 % resp. converting coefficients 0 - 0,2 - 0,5 - 1,0 how the concrete assignment of the balance to the given asset is in competence of each country. The rules of adequacy of the own sources have determined the „Basle Committee of Banking Supervision“.

Because his task is to cover of the credit risk, capital for its calculation has to be divided to three parts: own capital - supplementary capital - short term subordinated debt. For the calculation of the adequacy of the own sources is the supplementary capital limited to 100 % of the own capital or at least 50 % of capital must be own capital. Subordinated debt is

determined for covering of the market risk.

The level of capital adequacy depends directly proportional from volume of capital and indirectly proportional from the level of risky weighted assets and apart from balance items. The bank can influence the level of the capital adequacy (increase it) in double manner. Either through the increasing of capital or through decreasing the volume of weighted assets. Increasing of capital through issuing of securities by the same profit has the effect of decreasing of the value of the shares and with it to reduce the value of shareholder parts with the following negative response by them.

The bank can decrease the volume of risky weighted assets with sinking of granted credits with higher risk weights resp. the bank will prefer low risky activities for example acquisition of government securities, or the bank will undertake alternative activities, for example new credit deals, relative secure syndicated loans and others).

Low coefficient of capital adequacy is an advertiser that there is a high risk level of the bank activities. Internationalization of conditions for bank undertaking protects the banks against high risks. If there is interest to maintain the same competition conditions in the banking sector, similar measures as the indicator of capital adequacy have to be settled for all institutions, which offer their services, similar to the bank activities.

**Table 3: Capital adequacy in chosen banks (in %) in Slovakia**

	<i>1988</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
VÚB	0, 30	16, 10	35, 20	33, 50	23, 40	-
SLSP	6, 60	12, 10	21, 10	22, 50	24, 25	16, 84
IRB/ OTP	- 27, 80	12, 50	53, 60	76, 20	33, 43	17, 20

*Source: Annual Reports of SLSP, A. s., VÚB, A. s., IaRB, A. s., for 1988, 2000, 2001, 2002, 2003, 2004*

In 1988 no one of the transforming banks reached the necessary level of capital adequacy (adequacy of the own sources). The IRB (Investment and Development Bank) came even into red figures as capital adequacy reached the level minus 27,8 %. Bad results reached also the Slovak Saving Bank (SLSP) and the General Credit Bank (VUB). To the unfavorable capital adequacy in the mentioned banks have contributed above all losing debts and a low level of the own capital in connection to the high risk assets.

In 2000 the banks reached the required level of capital adequacy. This development positive influenced the running reclassification of the credit portfolios in these banks. After changing of the owners the banks reached each year the required level of the capital adequacy.

OTP reached in 2002 the capital adequacy on the level 76,2 %. The bank fulfilled the coefficient of the capital adequacy above the standard, which was caused with it, that the bank was in 2002 privatized and very circumspect granted credits which risk level has a direct impact on the level of the mentioned coefficient.

### 2.3 Classified claims

The highest part of losing claims on the entire claims was in Slovakia in 1990-2000 in transforming banks mainly in VUB,SLSP and IRB. The lowest part of losing claims was in Building Saving Banks (BSB). The reason is the reality that the BSBs began with selling of their products in 1992. The BSB grant the standard building credit after six years of the client's saving on the account of building saving. That means, that in the observing period the clients didn't repay the building credits, resp. the volume of the repaid credits was in this period still relatively low and therefore the banks didn't register any classified claims.

**Table 4: Classified claims from 1993 till 2003 (in million Sk)<sup>2</sup>**

	<i>VÚB, a. s.</i>	<i>IaRB, a. s.</i>	<i>SLSP, a. s.</i>
1993	16 156,4	4 447,3	3 050,5
1994	33 594,9	6 328,9	13 635,1
1995	39 394,0	-	-
1996	34 152,9	-	-
1997	35 316,5	-	-
1998 <sup>3</sup>	42 606,1	7 449,4	22 863,7
1999	21 671,2	2 452,5	8 354,1
2000	9 707,3	174,7	1 858,4
2001	4 872,0	144,7	1 712,7
2002	2 680,0	OTP 68,9	1 155,4
2003	1 878,0	OTP 159,0	1 031,7

Source: Annual Reports of SLSP, A. s., VÚB, A. s., IaRB, A. s., for 1993 to 2003

<sup>2</sup> Statements are taken from materials of the NBS. Sign - means, that the statements have been inadequate. Statements for the years 1998-2000 have been chosen from Trend top 2002 p.17

<sup>3</sup> In the years 1998-2000 the announced classified claims are reduced by created correcting items.

The part of transforming banks on losing claims was in 1997 represented by 68,13 % and in the first quarter of 1998 already by 68,58 %. The break happened in 2000 after reconstruction of credit portfolios in the announced banks. From the balances have been displaced the losing claims into the consolidating institutions and have been replaced through state owned securities.

**Table 5: Displacement of credits to consolidating institutions (in million Sk)**

Bank	Displacement of credits		
	to KOBL	to Slovak consolidated	together
General credit bank	7 602,8	58 641,3	66 244,1
Slovak saving bank	2 398,1	29 998,1	32 396,2
Investment and Development bank	9 507,5	4 969,2	14 476,7
Displacement of credits in the first stage	19 508,4	62 710,2	82 218,6
Displacement of credits together in the second stage	0	30 898,4	30 898,4
Together credits and guarantees without cooperative building of flats	11 395,3	93 608,6	105 003,9
Together credits and guarantees with cooperative building of flats	19 508,4	93 608,6	113 117,0

Source: NBS

In 2004 was the state of claims according to unit categories in the named banks as follows:

**Table 6: Categories of claims in chosen banks to the 31.12.2004 (in million Sk)**

	<i>VÚB, a. s. year 2004</i>	<i>SLSP, a. s. year 2004</i>	<i>OTP, a. s. year 2004</i>
<i>Standard claims</i>	70 165	36 553	20 354
<i>Standard claims with reservation</i>	15 898	13 212	728
<i>Non standard claims</i>	1 916	922	49
<i>Doubtful claims</i>	594	491	122
<i>Losing claims</i>	1 802	3 513	1 249

Source: Annual reports of VÚB, A. s., SLSP, A. s., OTP, A. s.

As conclusion we can state, that through the reclassification of the credit portfolios the mentioned banks recovered with the consequence, that the granted credits in the period after the privatization changed the structure and by it also the classification in unit classification grades. Favorable is also the development of the balance value and the quality indicator- the adequacy of the own sources.

### **3. Tendencies of banking development**

Foreign capital established in the Slovak banking sector is the promise, that the banks will enterprise in a comparable level with sophisticated countries. New trends of banking enterprise are determined above all with advancing globalization. Globalization<sup>4</sup> is supported by development of new technologies, which cause the retreat of traditional branches and expansion of mainly services, including financial services.

The current financial world has the tendency above all to

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<sup>4</sup> Globalization stated the mutual association, mutual connections and dependencies between the parts of the world system. Initially the term globalization means only an economic appearance, which characterized the unceasing spread integration and interaction of national economics and will be realized in frame of the international market and financial flows. In last time, the phenomenon globalization always more means as a spiritual and cultural connection, as a virtual reality without boundaries, which make it possible to contact countries, societies, people and others from the opposite ends of the globe. In literature we can find very often three aspects of globalization: technological, economical and political. Technological aspect of globalization follows from the connection in development of communications- and computer technology, the economical aspect follows from the movement on the capital markets which eases the existence of multinational companies and the political aspect is the combination of market and democracy.

universalization, supported though globalization processes<sup>5</sup> and at the same time in frame of universalization to a consistent specialization by granting of services.

The Slovak banking sector is a universal one, where prevail small banks in view of capital volume. These banks will have the problem to keep standing in existing competition on the field of universalization. The foreign shareholders should ease the banks to adapt them in this area, above all from a long term view. If the banks here not succeed there can start mergers and acquisitions between our banks, resp. very small specialization above all by little banks. The question is, if the banks will be able in the current competition to gain new clients resp. to maintain the old clients and if their can resist against the pressure to reduce the costs and to increase the productivity and effectiveness.

The question is also, if the banks as granting institutions of financial services will be able to keep in the future their sovereign position, or in consequence of the a. m. influences the banks will gradually loss this position.

The bank as finance mediator on the base of it's own information about market, clients, their needs and habits, their economic situation - was able in the best way to valuate the free capital of clients resp. to advise clients in professional way, who need free capital, which is temporary available on the market. This advantage the banks are losing with development of information technologies. Today, the economic subjects can receive information without effort (for example by means of internet), which was in the past possible only for banks resp. other institution of the financial market.

In the world is the trend of decreasing the part of bank credits and loans on the whole volume of bank credits and loans to the private persons and enterprise subjects<sup>6</sup>. The reason is a big boom of alternative sources for

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<sup>5</sup> Global tendencies of world development in the banking area and the 21. Century restrict the following connections (Sometimes it's very difficult to distinguish, if there is a reason, or the consequence of globalization or if there is an appearance, which directly not connected with globalization, but in the final consequence it's determined through the effect of globalization): consolidation of banks and financial institutions, securitization and desintermediation - as appearance of the securitization trend, financial innovations- financial derivatives and automatization of banking operations, internationalization - forming of overnational economic units, institutionalization - dominant standing will get institutional investors, for example pension funds, insurance companies, investment funds, intellectualization and reform of bourse systems.

<sup>6</sup> In USA, which predetermines the trends of development of the world economy, decreased the part of banking credits on the whole granted credits to private persons and entrepreneurial subjects from 36 % in 1974 to 22 % in 1994. This trend continues till the present time.

financing of enterprise activities.

The ordinary reaction of banks to this reality:

- Merging to bigger units and at the same time the banks connect their activities with other branches of the financial market: with pension funds, administration companies, insurances and others and through it they strengthen their capital stock.
- Increasing the quantity of granted services.
- Spreading of activities to big geographical distances. Managing of banks about big distances required a thorough information and managing system.
- Acquiring of new information systems, which make it possible to take very quick moves of funds and that leads to a big increase of their quantity and with it to an increase of transfers and to increase the quantity of new financial products.
- Decreasing the number of their branches and subsidiaries for economic reasons. They will be replaced through full-automated centers.
- In spite of mentioned measures, the part of traditional banking activities is going down. The failures of profits the banks therefore try to replace through new business activities, resp. through increasing of fees for granted services.

The banks lost almost their monopoly position on the market for granting of financial services. The big banks are not able to compete to small flexible and creative subjects, which are able more flexible to adapt to new technologies and make profit from it. The banks have competitors in other sectors of economy, which are active in research and innovation area and are able to adapt new technologies in very short time and to make a profit from it. The banks very often in consequence of their complicated structure of connections and processes are not able to react to the changing surroundings and to the constantly changing needs of clients.

The radical changes in the banking sector are availed in connection with transition from paper money to money in form of dates - electronic, digital, cybernetic, which takes with it the development of technologies (cash money obvious very early don't vanish, but the size of their using is gradually decreasing).

Also direct settlement between different economic subjects will be obviously in near future already limited, resp. will exclude the link between - the bank as mediator of said operations. That can be a risk not only for the

commercial banks, but also for currency authorities, the central banks, which task is to coordinate the quantity of money in the country.

#### 4. Conclusion

In the current world a lot of non-banking subjects is active in traditional banking spheres. A big advantage they have against the banks is, that they are less regulated (the banking system is in market economy the most regulated branch) and are often more flexible and innovative. If the banks want in this competition to maintain their position, it is inevitable, exactly to identify the needs of their clients and as quick as possible to adapt them. Obviously the banks should grant their clients a whole set of financial services. The banks should more grant classic bank products, which follow from traditional active and passive operations. Other services they have to leave to companies, which can grant such services more flexible and effective. Further space for banks in their activities opens in their subsidiaries, resp. in cooperation with external companies. The banks have the possibility, to cover them with a set of products and to grant them complex services from consulting services through granting of financial products, controlling till risk management. In that way the client should gain a whole set of services of good quality to attractive prices and the banks will gain clients of good quality for a long term.

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# STRONG AND WEAK POINTS OF ACTUAL ROMANIAN BANKING SYSTEM

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## **Abstract**

*The paper presents the characteristics of Romanian banking system reform between expectations and achievements. The role of the first bank institution of the country is being disclosed but there are also a series of considerations towards the second level of the banking activity, that is the commercial banks. The main trends which characterize their evolution during the transition years are brought into discussion, trends of which, the most indicative in our opinion are the concentration and the segmentation. These positive trends, concerning the improvement of the general economic environment, as well as the concentration of the stock holdings of The Romanian National Bank towards the qualitative sides of the surveillance process, have left their mark on the evolution of the indicators which define the state of our banking system. The economic- financial indicators as well as those of bank discretion certify that the Romanian banks have made significant steps towards the criteria imposed by the European integration.*

**Keywords:** *reform, banking system, European integration, concentration, segmentation*

## 1. Introduction

One of the professors who had in his hands the management of the economic education before and after 1989 stated in one of his books that: “the most far-reaching and permanent slogan, as well as the less defined one, is the reform. In the name of the reform there have been taken correct decisions, but the worst errors of politics and management have also been done”[3]. In this context, we find it necessary to express our opinions concerning the strong points and especially the weak ones of the contradictory process which had as main goal the creation of a new banking system, which, in the opinion of some important economists, represents one of the restrictions of including the Romanian banks in the select club of the western banks.

The first steps which foreshadowed the placing of our banking system on the competency pedestal have grown up together with the elaboration of the laws concerning the bank activity and the status of The National Bank of Romania, that is laws number 33/1991 and 34/1991, which have been completed afterwards by laws no 101/1998 and 108/1998. Naturally, once the two laws were adopted, the premises of a new banking system on two levels have been formed, premises of western origin, competitive premises in our opinion, the system “type mono-bank” being abolished [2]. As a consequence, the levels of the banking system have as pylon, on one hand, the issuing bank – The Romanian National Bank – and, on the other hand, the commercial banks which function as universal banks. The National Bank of Romania, as central bank, has taken over from its former balance all the extern assets, and from the intern assets the governmental credits. As means of covering, it has taken over the external passives from the balance, the monetary mass and a significant part of the structure “personal funds and other funds”.

The commercial banks, newly created, have taken over from the assets of the central bank the non-governmental credits, and, as a means of covering, the deposits of the non-banking clients from the passive, where the weight was hold by the deposits of the population with 48% of the monetary mass [2]. Hoping that we are closer to truth, in our opinion, we consider that the above mentioned author takes into consideration only the assets taken over by The Romanian Commercial Bank. The other banks having the status of universal banks have taken over the entire inheritance of the past specialized banks. The new commercial banks have taken over the entire portfolio of credits offered before to the enterprises with public capital, credits which were out of the spirit in which the crediting activity would have to act in the future. Moreover, taking into account the fact that the commercial banks had to face since “swaddle” a reduced capitalization base,

the funds of the banks from the past on which they started functioning represented only 5.5% of the passive, and taking into consideration the harmful effects or the “devastating” effects of the inflation, the natural erosion suffered by this “survival core” starts appearing.

## **2. A view on strong and weak points of banking system reform**

Nevertheless, we shouldn't omit the fact that, in order to stimulate the competency, using the new legislation, new banks with public, mixed, private, local or foreign banks which opened in Romania their own branches. The new banks could only start their activity only after they had obtained an authorization to function, a document issued by The National Romanian Bank, more exactly by the Commission of Settlement and Surveillance, an organism which issued norms and settlements concerning the volume of the social capital, the minimum amount of payment at the moment of subscription, as well as the forming of reserve funds and prevention of risks. The opening of branches of some banks by foreign judicial persons has been settled by the law concerning the functioning of foreign branches and organizations.

Without any doubt, an economy in "resuscitation" in order to go through a road from imprisoning to freedom, could not offer a proper environment in order to reshape and develop the banks. The road from the order economy to that of market hasn't been easy for anyone. The difference was in the traps of this road as well as in the chosen means to go through it. For Romania we believe that many internal and external factors have put their print on this road, the consequence being the strong and the weak points as well as the climbing and descending of the banking system. Thus, among the weak points of the reform, we mention the most significant ones:

- the slow rhythm of the process of legislative and institutional reconstruction compared to other countries from Central and Eastern Europe;
- the low financial power of the new banks, appeared especially because of a reduced capitalization as well as because of some credits taken over from the old banks;
- the insignificant competency in the newly created banking system, some banks holding the majority of credit market;
- the lack of experience and the inherited mentality, which is often not sensible to the new;
- the weak development of territorial network;

- the lack in the consistency of the concept of bank autonomy, lots of decisions being adopted under the pressure of politics;
- the contradictory behavior of bank managers related to the orientation of investments towards the public area and not towards the private one;
- eluding the most basic principles of bank discretion, that is giving credits only on political interests or mainly personal ones.

Among the strong points of the reconstruction of the banking activity, full of content, and full of effects in the real economy, we mention the following:

- the abandoning of centralized planning. The road towards the market economy has created multiple possibilities of assertion but new responsibilities as well, especially towards the capitalization of resources congruent with the criteria of economic performance and profitability;
- the orientation of activity, taking into account the principles of the bank marketing, towards the customers' desires. The commercial banks have the possibility to offer various products and services, in accordance with the market requirements, trying to satisfy the consumers' preferences. The fact that the bank institutions connect to the vectors of market coagulates the general tendency of evolution of the Romanian economy towards a performance one, connected to the circuits of international banks;
- the stimulation of competency between banks. The new economic environment has obliged the commercial banks to compete when dealing with the interests, the commissions, specific to the products and services that they offer to the consumers. The competency environment promotes the quality of services and encourages the assimilation of new ones. The quality and the price of products and services offered by banks feel the impact of competency, a phenomenon which favors the evolution of bank products market in order to assimilate the features specific to a market of consumer;
- the assimilation of a performance bank politics. The competency between banks and the discretion norms promoted by The National Bank of Romania have favored the banks which, while functioning, have assimilated and selected healthy managerial procedures, combining the criterion of a maximum profit with that of a bank discretion;
- attracting a higher number of specialists by a strict selection. Once new banks appeared, once the activity of the existing ones multiplied, the number of hired persons has raised, the banking field becoming one of the most dynamic areas, a phenomenon considered positive, taking into account

the decline of the other areas of economy.

Noticing the multitude of weak points, which we consider consistent, but especially the strong ones, offers us the logical support in order to present the steps on the road towards the reform of the banking system.

### **3. The structure and characteristics of actual Romanian Banking System**

What we should mention is that the responsibilities presented in the bank laws adopted after December 1989, have been put again, after almost a century, on the shoulders of the first bank institution of our country. They can be synthesized as it follows: The National Bank of Romania is the central bank of the Romanian state "having a key position in the banking field, around which all the agents of monetary and financial life gravitate, every citizen who uses a banknote or a coin bearing the marks of the country and of its unique emission bank"[4]. In its quality of central bank, The National Bank is the unique issuing institute of the country, which settles and leads the monetary, currency politics, the credit and payment politics, assuring the surveillance of the banks which it authorizes to function. Its responsibilities find their support in the functions which it exerts, that is: the emission, the circulation and the withdrawing of monetary signs; the stabilization and promoting the monetary politics foreseen by the state authority; the administration of the currency politics; the administration of management having the quality of bank of the banks – bank of Romanian state; the settlement and surveillance of payment system. Concerning the second level of the banking activity, that is the commercial banks, we consider that the main trends which characterize their evolution during the transition years would be: their numeric growth, creating the branches, agencies networks, developing the information structures and new departments specific to the modern banking system, that is those with management and marketing, all in order to raise the profitability and to consolidate the market position.

But, we have to remember that, although the territorial extension hasn't been one of the most rapid ones, the number of operative units compared to the number of inhabitants places Romania behind the other European countries. For example, in countries part of the European Union, an operative unit reverts to 1,700 inhabitants, in countries from Central Europe to 11,000 inhabitants, while in Romania the amount is of 23,500 inhabitants.

The developing of information infrastructures as well as of new departments, like those of management and marketing, have induced changes in the evolution of bank system, the most indicative ones being the

concentration and segmentation. At the end of 1998, at almost 8 years after the beginning of the reform which had as main objective the reconstruction of the system, the 4 banks with majority of capital and the House of Economies and Consignments were still dominating the market, holding almost 70% of the assets and 56% of the social capital from the system. In the following years, as a result of the information of table 1, the market share of the above mentioned banks was lower taking into account the number and the banking operations.

**Table 1 The volume and the share of operations coming from banks with majority state capital at 31.12.2000**

<i>Banks with majority state capital</i>	<i>Assets</i>		<i>Social capital</i>		<i>Deposits and attracted availability</i>		<i>State title in portfolio</i>	
	<i>mld. lei</i>	<i>%</i>	<i>mld. lei</i>	<i>%</i>	<i>mld. lei</i>	<i>%</i>	<i>mld. lei</i>	<i>%</i>
<i>The Romanian Commercial Bank</i>	66240,5	29,6	4308,6	31,3	48586,3	29,7	11632,6	26,3
<i>House of Economies and Consignments</i>	21931,0	9,8	647,0	4,7	19303,6	11,8	13313,4	30,1
<i>Eximbank</i>	5818,4	2,6	316,6	2,3	916,1	0,56	190,2	0,43
<i>Agricultural Bank</i>	5147,1	2,3	110,1	0,8	4089,8	2,5	39,8	0,09
<i>Total banks with majority state capital</i>	99137,0	44,3	5382,3	39,1	72895,8	44,56	25176,0	56,92
<i>Total bank system</i>	223785	100	13765	100	163590	100	44230	100

*Source: the state banks hold almost a half of the total deposits. The Financial Paper, 30.01.2001, page 5.*

The leader position of the four banks is relevant, first of all because they held together at the end of year 2000 a share of 44.3% of the balance assets in the banking system, with a value of 99,136.9 milliards lei of a total of 223,785.4 milliards lei.

Although the banking sector did not meet any major structural modifications in 2003, the extension of the market share (at 62.5%) was influenced by the raise of the bank assets, as a result of deposits coming from the non-banking persons, but also as a result of an increase in the personal funds. Once the biggest bank with state capital is privatized, The Romanian Commercial Bank, the share held by the private sector will be more than 28%.

The main feature of the Romanian bank system remains its concentration, a number of five banks (The Romanian Commercial Bank, BRD - Groupe Societe Generale, Raiffeisen Bank, CEC, ABN Amro Bank), dominating the market at the end of 2003, with a share of 61.7% of the total assets, 56.8% of the total of credits and 62.6% of the total of deposits, as it can be observed in table no. 2.

**Table 2 The share of banks and of foreign branches in the volume of Capital**

	<i>Social capital/ subsidy</i>					
	<i>2002</i>		<i>2003</i>		<i>2004</i>	
	<i>mld. lei</i>	<i>%</i>	<i>mld. lei</i>	<i>%</i>	<i>mld. lei</i>	<i>%</i>
<i>Banks with Romanian capital, of which:</i>	<i>12069,3</i>	<i>35,1</i>	<i>13477,0</i>	<i>33,7</i>	<i>15076,9</i>	<i>30,7</i>
<i>- with majority state capital</i>	<i>10273,0</i>	<i>29,9</i>	<i>10273,0</i>	<i>25,7</i>	<i>2348,3</i>	<i>4,8</i>
<i>- with private majority capital</i>	<i>1796,3</i>	<i>5,2</i>	<i>3204,0</i>	<i>8,0</i>	<i>12728,6</i>	<i>25,9</i>
<i>Banks with foreign capital</i>	<i>19879,1</i>	<i>57,8</i>	<i>23270,7</i>	<i>58,2</i>	<i>31080,9</i>	<i>63,2</i>
<i>I. Total commercial banks</i>	<i>31948,4</i>	<i>92,9</i>	<i>36747,7</i>	<i>91,9</i>	<i>46157,8</i>	<i>93,9</i>
<i>II. Branches of foreign banks</i>	<i>2422,2</i>	<i>7,1</i>	<i>3222,4</i>	<i>8,1</i>	<i>2980,7</i>	<i>6,1</i>
<i>Total banks with private majority capital, including foreign branches</i>	<i>24097,6</i>	<i>70,1</i>	<i>29697,1</i>	<i>74,3</i>	<i>46790,2</i>	<i>95,2</i>
<i>Total banks with foreign majority capital, including foreign branches</i>	<i>22301,3</i>	<i>64,9</i>	<i>26493,1</i>	<i>66,3</i>	<i>34061,6</i>	<i>69,3</i>
<i>Total bank system</i>	<i>34370,6</i>	<i>100,0</i>	<i>39970,1</i>	<i>100,0</i>	<i>49138,5</i>	<i>100</i>

*Source: The Romanian National Bank, Annual Report, 2004*

An important modification has been produced to the weight level hold by the assets of the banks with foreign capital or with foreign majority capital in the total of assets of the banking system, with an increase of 3,9 points per cent comparative to the year 2003, reaching a share of 62,1% at December 31, 2004.

Favorable evolutions have also been observed as regards the capitalization degree of the banking system (an increase of 12,5% at the end of 2004 comparative to 2003), as a main result of a consolidated position of some banks with foreign capital on the local banking market but also as a result of banks obligation to reach until May 31, 2004 a minimum level of the own funds of 370 milliards lei.

The realities from the countries with a functional market economy showed that the process of bank concentration, attained by fusion and acquisitions, is not only natural but necessary as well, having a sinuous evolution, being marked by twitches.

In Romania, this process is only in the beginning phase, having numerous barriers that have to be overpass. New ways of action are necessary, ways which should favor the consolidation of small banks with assets which aren't higher than 1% of the assets of our banking system. Therefore, we agree with the concept that, at a level of bank assets of almost 10 milliards USD, the present number of banks is too high, the best number being between 20 and 30. Nevertheless, we believe that we should enhance the assets and not to reduce the number of banks. On the other hand, the majority of those involved in the management of Romanian banks seem to be aware of the fact that, in the context of our integration in the European structures, the solution is represented by the concentration of resources by fusion or acquisitions or by the attraction of some investors with a highly financial potential.

The effects of the concentration on the bank activity are clear, especially during economic recession, the small banks being affected in the first place. They do not have the necessary resources to develop modern infrastructures which would allow them to offer integrated financial services in order to stimulate the personnel and the shareholder. Another important aspect is represented by the structure of the clients' portfolio, which cannot be optimized. The small banks, because they can not offer important credits, are obliged to address the small and middle enterprises, which are also exposed to the shocks in economy. The necessity of concentration is therefore vital especially in the moments of crises, no matter how it is built, by an increase of the social capital or by fusion.

Similar to the concentration tendency, the segmentation one, that is the restructuring of banking activity on larger levels, is a natural attendant of the modernization process. The existence, besides the commercial banks, of specialized banks will offer the premises of a greater bank management, and, in the end, of profitability.

In Romania, taking into consideration the dimension of bank market, all types of specialized banks which exist in the developed countries can not be established in a short period of time. Nevertheless, we consider that at least some of them should function, thus having a great impact on other key branches of our economy, like: agriculture, constructions and, especially, the external exchanges. We believe that in the following years the economic raise will have as support the export of goods and services and not the internal

consumption, and, from here, the necessity of a specialized bank in the finance of exterior commerce. The housing demand will also be higher and it will impose the creation of an institution which would stimulate the savings. The agriculture has to be based, in the context of our integration in The European Union, not on "budgetary subventions" but on a "reimbursed" banking finance. That is why it is imperative to form one or more specific banking institutions.

The positive trends concerning the development of the general economic environment, as well as the concentration of the actions of The National Bank of Romania on the qualitative process of surveillance, have put their mark on the evolution of the indicators which define the status of our banking system, indicators presented in table no 3.

**Table 3 The evolution of the main economic - financial indicators and those of bank discretion**

<i>Name of indicators</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
<i>Solvency report (&gt; 12%)</i>	<i>17,9</i>	<i>23,8</i>	<i>28,8</i>	<i>24,8</i>	<i>21,2</i>	<i>18,79</i>
<i>Solvency report (&gt;8%)</i>	<i>15,8</i>	<i>18,9</i>	<i>26,2</i>	<i>22,9</i>	<i>18,2</i>	
<i>The rate of personal capital (total asset)</i>	<i>7,5</i>	<i>8,6</i>	<i>12,1</i>	<i>11,6</i>	<i>10,9</i>	<i>17,9</i>
<i>Residual credits / Total portfolio credits</i>	<i>...</i>	<i>0,6</i>	<i>0,7</i>	<i>0,4</i>	<i>0,3</i>	<i>8,5</i>
<i>Total residual debts / Total asset</i>	<i>2,4</i>	<i>0,3</i>	<i>0,3</i>	<i>0,2</i>	<i>0,2</i>	<i>0,3</i>
<i>Total residual debts / Own capital</i>	<i>31,2</i>	<i>3,3</i>	<i>2,7</i>	<i>2,0</i>	<i>2,0</i>	<i>0,2</i>
<i>Rate of credit risk</i>	<i>35,4</i>	<i>3,8</i>	<i>2,5</i>	<i>1,1</i>	<i>3,4</i>	<i>2,9</i>
<i>General risk rate</i>	<i>40,7</i>	<i>38,7</i>	<i>39,7</i>	<i>42,9</i>	<i>50,5</i>	<i>47,5</i>
<i>ROA (profit / Total asset)</i>	<i>-1,5</i>	<i>1,5</i>	<i>3,1</i>	<i>2,6</i>	<i>2,2</i>	<i>2,1</i>
<i>ROE (profit / own capitals)</i>	<i>15,3</i>	<i>12,5</i>	<i>21,8</i>	<i>18,3</i>	<i>15,6</i>	<i>17,0</i>

*Source: The National Bank of Romania, Annual Report, 2004*

The increase of financial intermediation led to an increase of credit risk in the banking system, which was reflected in the growth of the general risk rate and of the credit risk rate as well as in the diminution of solvency rate (but this is maintained to a comfortable level, significantly outrunning the reference share accepted on the international plane). The dynamic evolution of the crediting activity did not imply a deterioration of the portfolio of credits quality; on the contrary, the share of the residual debts in the total of credits (net value) has been reduced with 0,11 points per cent comparative to the end of 2002, up to 0,32%. The banking system profitability was situated above the inflation rate in 2003, provided that the profit increased in nominal terms by 15,6%, its reduced dynamics comparative to that of 2002 (18,3%) being determined by: the reduction of

the distance between the rates of active interests and those of the passive interests to the operations with the non-banking and nongovernmental clients from 17,6 points per cent in December 2002 to 14,7 in December 2003; the implementation of the new regulation concerning the classification of credits that emphasized the banking effort for provisions; substructure investments made by the majority of banks.

The increase of the crediting activity was revealed in the aggregate volume of the financial result of 2003 (13290,5 milliards lei), superior to the one registered in the previous year (12498,1 milliards lei), the main source being the net interest incomes. Nevertheless, the profitability indicators (ROA and ROE) were situated on a scale of increasing values in the further period after having implemented the new regulation of credits classification and provisions (from 1,2% in January to 2,1% in December in ROA case and, from 8,4% to 17,0% in ROE case).

#### **4. Conclusion**

The favorable trends registered by the main indicators of banking system evaluation were pointed out by the representatives of The International Bank, The International Monetary Fund and The European Commission. According to these evaluations, the banking system presents a good capitalization, it has a raised liquidity and it is well supervised, the supervision authority possessing an appropriate administrative capacity, qualified personnel and a fine management. The banking system was considered resisting to the potential market and credit risks, the exposure to the currency and interest risk having a reduced level provided that banks balance their net currency position and the interest rate is variable. The dynamic of the crediting activity did not affect the solidity of the banking system, the prudential indicators – an increased rate of solvency (20%), a higher liquidity (more than 3), the level of residual credits (less than 1% of the credits portfolio of the banks) – indicating a considerable resistance to impacts. We believe that the positive trends of the economic-financial indicators and those of bank discretion have as support the favorable evolution of the following factors:

- the raise of the capitalization level as a result of the finalization, at the end of 2002, of the second level of increasing the minimum social capital of banks, as well as the consolidation of the financial position of the foreign shareholders for different banks. The significant presence of the private sector was felt at the level of capitalization of banking system, the share of this segment in the total of the capital reaching 74.3% [5] at the end of 2003;

- the expansion, especially in the last part of the analyzed interval, of the balance assets, accomplished especially in the area which deals with the customers. After many years, the structural dynamic of the asset enhances the change in attitude of the banks in the orientation of their resources and their placing on the credit market for a short period;

- the raise in the quality of managerial act. The raise during the last three years of the general risk rate shows the expansion of the crediting activity. But, this raise has been accompanied by a positive evolution of the bank capitalization, the personal funds of the banks assuring a level of solvability situated above the limits settled by the central bank for the well – capitalized banks. So, the expansion of the credit portfolio was not to the prejudice of its quality. Moreover, the credit risk has a positive trend, a level recorded at the end of the analyzed interval being in the segment of banks with a rating of 1;

- the diminution, especially in the last year of the analyzed period, of the distance between the active interest and the passive ones specific to the operations with non-banking clients and to the efficiency of alternative placing using the state titles and the deposits placed at the central bank. Correlated with an alert rhythm of raising the bank assets and the personal funds, this adjusting of distance led to an easy contraction of the capitalization indicators;

- the polarization, taking into account the rating, of the big banks, on its superior level. Although they were still in majority at the end of the analyzed period, the banks with rating 2 have decreased their share in the total bank asset in the favor of those with rating 1.

As a conclusion, by their level, the economic-financial indicators and those of bank discretion testify that the Romanian banks have made significant steps towards the criteria imposed by the European integration.

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# THE ROMANIAN BANKING SYSTEM

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## **Abstract**

*Romania has been selected among the 10 Central and Eastern European candidates for EU membership and is expected to join the Community in 2007. Romanian financial institutions have to face today adaptations and opportunities and banking business in the country seems fairly attractive to foreign banks. The paper highlights the rise and the development of banking in Romania and covers the period from 1865, when the first modern commercial bank was established to present days when the Romanian banking system will become a part of a larger EU banking structure.*

**Keywords:** *Banking system, privatization, Romania*

## **1. Introduction**

The banking system is of particular importance to the Romanian economy being a key factor in our future development. Romania's admittance into the EU structures, depends on a large extent on its capacity to produce a sustainable economic growth which must be backed up by a reliable banking system which is capable of answering back both to the internal and external influences. This work paper wants to underline that all the current strategies regarding the banking system aims at increasing its competitiveness and, at the same time, plans to eliminate all the obstacles which stand in front of Romania's integration.

## **2. The history of the Romanian banking system and its beginnings**

The first modern commercial bank was established in the Romanian Principalities in 1865 under the name of The Bank of Romania. The bank was organized as a limited joint-stock company, with subscribed capital worth FF 25,000,000. The Bank of Romania was initially set up as an issuing and commercial bank by the English and French investors who governed the Banque Imperial Ottomane. Four years later, the Romanian Government revoked the Bank of Romania's monopoly of issue. Accordingly, this institution operated further as a private commercial bank until its liquidation in 1948 by the communist regime.

The establishment of a modern-type banking system, designed to replace money lenders and trade houses that had developed healthily before the mid of the 19th century, was a slow process until the setting up of the National Bank of Romania.

On April 17, 1880, Parliament voted and passed the foundation law of the first banking institution, which was to play a major part in the economic development of the country.

The new institution called also "The Bank of Banks" fully matches as functions and organization the similar institutions in the Western countries. Since its establishment and up to World War I, the National Bank played a major part in financing the banking system by means of discount credits.

The National Bank of Romania was established at the initiative of the Liberal Party in order to grant credits in high demand after the Independence

War (1877), and providing financial stability for the country. The National Bank of Romania was designed not only to play the role of state financing and note issuing, but also to perform purely commercial banking functions. In compliance with the provisions of the law governing its establishment, the new banking institution was a joint-stock company, with the Romanian government holding 1/3 of the capital stock (shareholders holding the remainder). These provisions precluded foreign shareholders from sharing the National Bank of Romania's capital, closely following the principle of domestic control over the national economy required by the liberals. In 1901, The National Bank of Romania became a private institution. Under the Liberal Party's control, the National Bank of Romania played a significant part in the foundation of the Romanian modern type banking system and contributed to the strengthening of the Romanian bourgeoisie economic position.

The economic progress that accompanied the consolidation of the Romanian state and the support provided by the National Bank of Romania accelerated the establishment of private commercial banks, especially during the period that preceded the outbreak of World War I. The number of commercial banks increased to 215 in 1914, from 3 banks existing in 1880. If the setting up of the National Bank of Romania and long-term credit institutions were done only with domestic capital, in turn, foreign capital would be involved substantially in the creation of the new private commercial banks. Accordingly, in 1914, German, Austrian, French, Belgian and English banking institutions held 40 percent of the Romanian commercial banks' capital.

On the eve of World War I, the Romanian banking industry was highly concentrated, being dominated by 9 leading commercial banks, called "the big Romanian banks". In 1913, these banks held 70 percent of the total commercial banks' resources, while 188 small and middle-sized banks held the remainder of the total resources. Taking into account the origin of the capital, the composition of the group of "the big Romanian banks" was the following: 4 banks with national capital (Banca Agricola, Banca Comertului from Craiova, Banca Romana de Scont, Banca Romaneasca), 4 banks with foreign capital (Banca Generala Romana, Banca de Credit Romanesc, Banca Comerciala Romana, Banca Romaniei), and one bank with foreign and domestic capital (Marmorosch Blank & Co. Bank).

After World War I, under national oriented policies promoted by the Liberal governments, the weight of the foreign capital in the banking system declined in relative terms. Despite this capital trend, the banks with foreign interests maintained significant positions in the banking system and were able

to better identify profitable investments than their Romanian-controlled competitors.

Significant for the spectacular boom of the Romanian banking system by then was the rise in the number of the joint stock banking companies from 215 in 1918 to 1122 in 1928.

The financial and banking system was well organized in those years, offering the favorable pre-requisites for obtaining on the eve of 1938 competitive economic indexes in general as well as in many specific fields, as compared with to the standards reached in the other European countries.

During 1931-1932, the banking sector felt the repercussions of the economic crisis due to its close links with the industry. Banks' supervision was almost nonexistent. This state of affairs contributed to the collapse of some large banks, but generally the banks with foreign interests withstood the shocks.

In order to strengthen the banking system, the Romanian Parliament passed "the Law on the organization and regulation of the banking commerce", on May 8, 1934. Under this law, The National Bank of Romania was deeply involved in drafting measures for recovering the banking system by liquidating non-viable credit institutions and merging institutions weakened by the crisis. Consequently, the number of banks was diminished from 893 in 1933, to 523 in 1937 and 246 in 1944.

After 1934, the state intervention in regulating the banking sector forced the foreign-controlled banks to comply with imposed requirements and to apply a policy in line with Romania's general interests.

Characteristic of the interbella activity of the National bank was its financial support for the country's economic rehabilitation, for the swift accumulation of capital, for the strengthening of domestic industry, for the unprecedented expansion of the financial market, the growth of Romanian exports and participate on in wide-scope international transactions.

Soon, after the communists took the power in Romania according to the Decree Law no. 197/1948, all the Romanian and foreign-controlled banks were liquidated, except for the National Bank of Romania, the National Company of Industrial Credit and the Savings Bank.

The 1934 banking law being abrogated, the remaining banks continued their activity under the provisions of the Commercial Code and their specific laws. In the years that followed, the Romanian banking system was organized as a mono-bank system, typical to a centralized economy. It is noteworthy that in the 70s, during a period of economic liberalization two foreign banks were allowed to establish branches in Romania: Manufacturers

Hanover Trust (the branch being now part of the Chase Manhattan Bank network), and Societe Generale.

### **3. The Romanian banking system nowadays**

The actual Romanian banking system enjoys a two-tier structure, involving the National Bank of Romania (NBR) and the banks. This new banking system was introduced in December 1990, marking the first step of the banking reform process, when the NBR assumed the traditional central bank's functions and its previous commercial operations were transferred to the newly established the Romanian Commercial Bank.

The issuing of the Law on banking activities (33/1991) and the Law concerning the Statute of the National Bank of Romania (34/1991) represented the beginning of the organization of the banking system in accordance with the market economy principles.

The legal framework of the banking system was reshaped and improved in the first half of 1998, when three banking laws were enacted: the Banking Law (No. 58/1998), the Statute of the National Bank of Romania (No.101/1998) and the Law on Bankruptcy Proceedings for Banks (No. 83/1998). By the enactment of the new legislation, together with the Law on privatization of state-owned banks (no. 83/1997), the weaknesses of the former legislative framework were corrected in order to ensure a sound and stable banking system, to strengthen the independence of the NBR and its enforcement powers and to improve the exit mechanism for ailing banks.

The National Bank of Romania is aiming at full harmonization of the legal framework for banking activity with European Union regulations, in order to facilitate the European integration of Romania.

During the last decade, the main characteristics of the banking system have been concentration and segmentation. Despite the increasing number of banks over the recent years, there are four banks dominating the market, which account for approximately 60 percent of the banking sector's assets, more then 60 percent of the deposits and more then 60 percent of the paid- in capital at the end of June, 2000.

The former commercial banks have changed themselves and have become real commercial banks for the market economy. In 1990, the former commercial banks have been established as follows: Banca Comerciala Romana SA, Banca Romana de Comer Exterior SA, Banca Agricola SA, Banca Romana pentru Dezvoltare SA and many other new commercial banks have also been established, such as Banc Post SA (state capital), Mind Bank SA (private capital).

Until August 9<sup>th</sup>, 2005, the National Bank of Romania has authorized 39 banks, Romanian legal entities, to render banking services. (see Annex no. 1).

The NBR tries to stimulate, within the legal framework, the establishment of branches and subsidiaries of foreign banks, as they play an important role in developing the range of banking services and improving their quality.

There are different kinds of banks when considering capital that can apply for banking licenses issued by the NBR:

I. Romanian banks, of which:

a). fully or majority state-owned capital, out of which:

- fully state-owned capital (e.g. Savings Bank);
- majority state-owned capital (e.g. Romanian Commercial Bank);

b). fully or majority private capital, out of which:

- fully or majority domestic capital
- fully or majority foreign capital

II. Foreign banks branches, such as ING Bank, United Garanti Bank International, Banque Branco-Roumaine.

At the end of August 2005, there were 39 banks, Romanian legal entities, including 8 branches of major foreign banks. This number rose significantly from 7 banks in 1990.

### ***3.1 The National Bank of Romania***

In accordance with the Law No. 101/1998, the National Bank of Romania is a public institution, with legal personality, entitled to establish branches, subsidiaries and agencies. The main responsibilities of the NBR are the followings:

- to ensure the stability of the domestic currency with a view to maintaining price stability;
- to issue currency as legal tender in Romania;
- to design and implement the monetary, foreign exchange and credit policy;
- to participate on behalf of the State in external negotiations on financial, monetary and payment matters.

The National Bank of Romania is mainly engaged in the following activities:

- licensing commercial banks, both foreign and domestic, and monitoring their activities on a monthly basis;
- keeping the Romania's international reserves;
- elaborating the balance of payments;

- setting the level of reserve requirements of commercial banks, which in turn influences the liquidity of the financial system;
- establishing the foreign exchange policy of the State, setting exchange rates, licensing and supervising legal entities authorized to conduct foreign exchange transactions.

The National Bank of Romania is headed by a Board of Directors and its current management is entrusted by the Governor. The Board of Directors consists in the governor, the First Deputy Governor as Vice-Chairman, two Deputy Governors and five members. The members of the Board of Directors are appointed and replaced by Parliament on the recommendation of the Prime Minister.

On a permanent basis, the National Bank of Romania co-operates with the international Monetary Fund and specialized consultants provided by the World Bank, as well as with other organizations in developing policies and procedures governing the Bank's operations.

### ***3.2 Banks - A Main Part of the Romanian Banking System***

Under the provisions of the Romanian Banking Law, with subsequent amendments, a bank represents a credit institution authorized to perform mainly the activity of collecting funds from both legal and natural persons through deposits or negotiable instruments payable on demand or on maturity as well as that of granting credits.

The European Union countries utilize the concept "credit institution" in order to define the above activity. The credit institution represents an undertaking whose business is "to receive deposits or other repayable funds from public and to grant credits for its own account".

No entity is allowed to perform any banking business within the Romanian territory, without the National Bank of Romania's previous authorization. Banks, Romanian legal entities, as well as branches of foreign banks may perform, within the limit of the authorization granted, the following operations:

- Open accounts in RON and in foreign currencies;
- Receive demand, time and notice deposits;
- Loan agreements (grant short, medium and long term loans and credit lines in RON and in foreign currency), factoring operations and discounting of trade bills;
- Carry out banking operations in Romania and abroad;
- Issuance and management of the instruments of payment and credit;
- Payments and settlements;
- Financial leasing and funds transfers;

- Issuing guarantees and assuming commitments;
- Issue and operate credit cards;
- Buy and sell government securities;
- Transactions on their behalf or in their clients' account with: negotiable money instruments (cheques, bills of exchange, certificates of deposit), foreign currencies, financial derivatives, precious metals, securities;
  - Management of clients' portfolios;
  - Securities custody and management;
  - Renting of security safe boxes;
  - Financial, banking consulting and Electronic banking.

### ***3.3 Privatization of the banking sector***

Romanian commercial banks began their operations with relatively specialized portfolios, reflecting their pre-1989 concentration in particular economic sectors. However, this initial specialization has diminished as the banks competed with each other and new banks entered the market. A number of new banks with private Romanian or mixed capital have been licensed to begin operations. The privatization process of the major state-owned commercial banks started in 1998. Law on bank privatization (Law No. 83/1997) established the legal framework for the transfer of state-owned banks to the private sector and the improvement of their financial situation.

The privatization of the banking companies may be achieved in one of the following ways:

1. Increasing the share capital, through contribution of private capital in cash, on the basis of public offer or private investment;
2. Selling the stock administered by the Authority for State-Owned Equity Management and Privatization, only in cash, with full payment, towards: Romanian individuals; foreign individuals; Romanian legal persons with private majority capital; financial investment companies; foreign legal persons with private majority capital; a combination of the two methods described above.

The National Privatization Authority is the administrator of state equity in the banks' capital. A privatization commission is set up in the case of commercial companies in which the state is shareholder. The privatization commission shall supervise the privatization operations and ensure the observance of transparency, consistency and objectivity of the principles. The privatization of such companies shall be based on the valuation reports and feasibility studies drawn up by a specialized company in accordance with international standards.

In compliance with Law No. 83/1997, the process of bank's privatization in which the state is a shareholder carries on. In 1999, the

privatization of state-owned banks represented one of the key objectives of the structural adjustment program supported by the World Bank and the International Monetary Fund. In this respect, the privatization process of Romanian Development Bank and Banc Post was completed in the first semester of 1999. The majority interest (i.e. 51 percent) in case of Romanian Development Bank was sold to the French bank Societe Generale, while General Electric Capital Corporation and Banco Portugues de Investimento acquired the controlling interest (i.e. 45% ) in Banc Post. In this way, private capital in the two banks accounts for 90 percent and 83 percent respectively.

Privatization of the Agricultural Bank ended with the sale, on April 12, 2001, of the state equity holding to the consortium made up of Raiffeisen Zentralbank Osterreich A.G. (93.13 percent) and the Romanian-American Enterprise Fund (5.7 percent). Referring to the stage of privatization process of Romanian Commercial Bank, the privatization strategy was approved in 2001 by the empowered institutions (National Authority for State-Owned Assets Management and Privatization, Ministry of Development and Prognosis, Ministry of Public Finance and the National Bank of Romania) and will be completed in the following years.

The privatization is beneficial for all parties involved, ensuring banking know-how and expertise transfer, introduction of new or improved banking products, improved efficiency for bank's assets, harmonization of bank's quality services with internationally recognized standards, banking network development included, a more efficient integration of the Romanian banking system into the international one, thereby facilitating access to world financial markets.

#### **4. Recent developments and perspectives**

During the previous years, The National Bank of Romania had the following objectives:

- Achievement of lasting macroeconomic stabilization together with the revitalization of the financial market for an efficient allocation of the resources, transparency of information, and achievement of economic equilibrium. The National Bank of Romania considers that the well functioning of a complete market system in Romania is a condition for a lasting economic growth.
- The foreign exchange market liberalization by allowing all the authorized banks to be dealers in transactions and via exchange rate liberalization.

Large foreign exchange purchases by the National Bank of Romania made in order to avoid nominal appreciation of national currency led to the increase of the foreign exchange reserves:

- The capital market experienced a large increase in trading on both levels of The Stock Exchange, and of RASDAQ. The main reason for the development of the capital market was the increase of the shares demanded from the non-resident corporate investors, bolstered also by the increasing number of listed companies.

- The monetary policy conducted by the National Bank of Romania aimed to ensure macroeconomic stabilization, specially the decrease of the inflationary effect of price liberalization, the restoring the central bank's credibility to regain the confidence in the national currency and, to achieve the remonetization of the economy.

The efficiency of the monetary policy was sustained by the following achievements:

a) Release of the monetary policy from the quasi-fiscal constraints consisting of directed and preferential credits;

b) Integration of the monetary policy in the macroeconomic policies;

c) Achieving of a healthy currency issue based on improving of the National Bank of Romania portfolio by increasing the net foreign assets and the foreign reserves;

d) Improvement in the transmission of the monetary policy measures by the liberalization and development of the financial markets, especially of the money market;

e) Achieving real-positive interest rates and maintaining those levels;

f) Improvement and completion of the legal framework for the regulation of the banking and central bank's activity by drafting of the Banking Act, the Bank Insolvency Act, Bank Privatization Act, and the National Bank of Romania Act.

In the next years, the National Bank of Romania will focus its efforts on carrying out a stable policy and a macroeconomic stability, as well as on correlating the macroeconomic policies with measures taken in the privatization and structural adjustment areas.

The orientation of the National Bank of Romania reflects also important performance concerning: a) Guiding the monetary policy towards price stability; b) Creation and development of financial markets; c) Carrying out the open account convertibility of the national currency; d) Increase the international reserves; e) Consolidating its formal and operational independence.

Concerning the monetary policies, the program of the National Bank of Romania is a part of the economic program of the Government. This program has as major objective to reduce the inflation rate and to achieve lasting macroeconomic stability. Other objectives of the program are: to improve the quality of the banking sector by supervision and regulation; to improve the banking information and payments system, by modernization of

the settlement and clearing system; harmonization of the payment system operational procedures with the new banking legislation; modernization and expansion of the services rendered by the banking information system.

The National Bank of Romania will pay a special attention to the developments in the Euro-area and will monitor the consequences of starting stage III of the Economic Monetary Union. As a central bank of a country candidate for the European Union (EU), the National Bank of Romania will strive both to carry on implementation of domestic reform and to ensure the legal, institutional and procedural harmonization with its correspondent entities in the EU.

The National Bank of Romania will become a member of European System of Central Banks (ESCB) at the moment of accession to the EU. Romania will be in the position to adopt Euro only after it has complied with the convergence criteria stated in the Treaty. The task of NBR will differ from one stage to another. There are to be no essential changes in the NBR activity since the central bank will be an ESCB member with derogation during the period between accession to EU and acceptance to the Euro area.

Consequently, the NBR governor will not attend the meeting of Governing Council, but only the General Council, which has a consultative role. The NBR will keep on maintaining the price stability and will have to look the currency exchange policy as an issue of general concern. Therefore, Romania will have to participate to the exchange rate mechanism of EU - MCE II. According to the circumstances, this participation may take place immediately after accession or later.

National Bank of Romania will become a full member of ESCB only after Euro will replace RON. So NBR will no longer define the monetary policy, as our central bank will implement the unique monetary policy established by the Governing Council. But the NBR governor will be a member of this Council, thus being part of the decision-making process related to the monetary policy. NBR will have the same task of prudential supervision, issuing coins, having and establishing international relations with different institutions and effecting any financial operations for various entities. NBR will also manage the official reserves after the transfer of share-quota to the European Central Bank.

## **5. Conclusion**

The banking system in Romania after 1989:

- the new banking system started on December 1, 1990

- two levels: NBR as a central bank and the commercial banks
- the Law on banking activities (33/1991) and the Law concerning the Statute of the NBR (34/1991) according to the market economy principles
- the former commercial banks changed and new commercial banks were established
- the new laws were introduced in 1998: 58/1998 and 101/1998
- new regulations of the banking system: Law 375/2002 and Law 101/1998 was modified

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## BANKS OPERATING IN ROMANIA IN AUGUST, 2005

No	Bank	Head Office	Licencing date
1.	Anglo-Romanian Bank Limited Anglia Londra SUCURSALA BUCURESTI	Bucuresti, Bd. Carol I nr.34-36, sector 2	27.12.1979
2.	MISR Romanian Bank SA Cairo, sucursala Bucuresti	Bucuresti, Bd. Unirii nr.66 bl. K 3 sector 3	06.06.1987
3.	Banca pentru Mica Industrie si Libera Initiativa - MINDBANK S.A.	Bucuresti, Calea Grivitei nr.24, Sector 1	10.07.1990
4.	BRD - Groupe Societe Generale S.A.	Bucuresti, bd. Ion Mihalache nr.1-7, sector 1	01.12.1990
5.	Banca Comerciala Romana S.A.	Bucuresti, Bd.Regina Elisabeta nr.5, sector 3	01.12.1990
6.	RAIFFEISEN BANK SA	Bucuresti, Piata Charles de Gaulle nr.15, et.4,5,6,7 si 8, sector 1	01.12.1990
7.	Banca Comerciala "Ion Tiriac" SA	Bucuresti, str.Nerva Traian nr.3, bl.M101, sector 3	20.03.1991
8.	EUROM BANK S.A.	Bucuresti, B-dul Aviatorilor nr.45, sector 1	10.04.1991
9.	Bancpost S.A.	Bucuresti, Calea Vitan nr.6, 6A, Tronson B si C, et.3-7, sector 3, bd.Libertatii nr.18, bl. 104, bd Libertatii nr.20, bl.103, sector 5	26.11.1991
10.	Banca de Export Import a Romaniei EXIMBANK S.A.	Bucuresti, Spl. Independentei nr.15, sector 5	14.04.1992
11.	Banca Romaneasca Membra a Grupului National Bank of Greece S.A.	Bucuresti, bd.Unirii nr.35, bl.A3, sector 3	15.09.1993
12.	FINANSBANK (ROMANIA) S.A.	Bucuresti, Splaiul Unirii nr.12, bl.B6 sector 4	10.12.1993
13.	Banca Transilvania S.A.	Cluj-Napoca, str. George Baritiu nr.8	28.01.1994
14.	ROMEXTERRA Bank S.A.	Targu Mures, Bdul 1 Decembrie 1918 nr.93	02.03.1994
15.	ALPHA BANK ROMANIA S.A.	Bucuresti, Calea Dorobantilor 237 B, sector1	02.03.1994
16.	ING Bank N.V., Amsterdam - sucursala	Bucuresti, sos.Kiseleff nr.11-13, sector 1	22.06.1994

Bucuresti		
17. PIRAEUS BANK ROMANIA S.A.	Bucuresti, bd.Carol I nr.34-36, et. VI, sector 2	03.05.1995
18. ABN AMRO Bank (Romania) S.A.	Bucuresti, Piata Montreal nr.10, WTCB unit.2.23, sector 1	26.06.1995
19. OTP BANK ROMANIA S.A.	Bucuresti, str.Buzesti nr.66-68, sector 1	20.12.1995
20. Citibank Romania S.A.	Bucuresti, bd. Iancu de Hunedoara nr. 8, sector 1	26.06.1996
21. BANCA COMERCIALA SANPAOLO IMI BANK ROMANIA S.A.	Arad, str.Revolutiei nr.88	26.06.1996
22. Emporiki Bank - Romania SA	Bucuresti, str.Berzei nr.19, sector 1	25.07.1996
23. Banca Italo-Romena SpA Italia Treviso - sucursala Bucuresti	Bucuresti, Bd. Dimitrie Cantemir nr.1, bl.B2, sc.2, parter si mezanin, sector 4	13.11.1996
24. NOVA BANK S.A.	Bucuresti, b-dul Dimitrie Cantemir nr.2, bl.P3, tronson II, sector 4	25.11.1996
25. LIBRA BANK S.A.	Bucuresti, str. dr. Grigore Mora nr.11, sector 1	25.11.1996
26. Banca Daewoo (Romania) S.A.	Bucuresti, Bd. Unirii nr.55, bl.E4a, Tronson 1, sector 3	22.01.1997
27. UniCredit Romania S.A.	Bucuresti, Splaiul Unirii nr.16, sector 4	25.06.1997
28. HVB Bank Romania SA	Bucuresti, Piata Charles de Gaulle nr.15, parter, etaj 1, 2 si 3 , sector 1	13.04.1998
29. GarantiBank International NV - sucursala Romania	Bucuresti, str.Paris nr.30, sector 1	13.04.1998
30. ROMANIAN INTERNATIONAL BANK S.A.	Bucuresti, bd.Unirii nr.68, bl. K2, sector 3	13.04.1998
31. EGNATIA BANK (ROMANIA) S.A.	Bucuresti, str. General Constantin Budisteanu nr.28C, P+1, sector 1	17.07.1998
32. Banca Comerciala CARPATICA S.A.	Sibiu, str. Autogarii nr.1	15.07.1999
33. Casa de Economii si Consemnatiuni C.E.C. S.A.	Bucuresti, Calea Victoriei nr.13, sector 3	17.09.1999
34. VOLKSBANK ROMANIA S.A.	Bucuresti, sos. Mihai Bravu nr.171, sector 2	10.04.2000
35. Banca di Roma SpA. Italia Sucursala Bucuresti	Bucuresti, str. Dr. Staicovici nr. 75, sector 5	07.11.2000
36. ProCredit Bank S.A.	Bucuresti, str.Buzesti nr.62-64, et.1 si et.2, sector 1	20.05.2002

37. Raiffeisen Banca pentru Locuinte SA	Bucuresti, str. Nicolae Caramfil nr.79, sector 1	31.05.2004
38. PORSCHE BANK ROMANIA S.A.	Voluntari, sos.Pipera-Tunari nr.2, cladirea PORSCHE, parter, etaj 1 si 2, judetul Ilfov	27.09.2004
39. HVB BANCA PENTRU LOCUINTE S.A.	Bucuresti, str.Dr.Grigore Mora nr.37, sector 1	13.07.2005

Source: [www.bnro.ro](http://www.bnro.ro)

# EMPLOYMENT SITUATION IN TURKISH BANKING SECTOR AFTER THE CRISIS

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## Abstract

*When banking sector crash occurs during the financial crisis, losers are not only the customers, owners of the companies or governments...etc., the employees of the banks are also losing. In the period between the February 2001 crisis and August of the same year, and for a month following the attacks on September 11, till today, more than 50 thousand bank staff lost their job in Turkey. Bank number decreased from 81 to 48 and employment in Turkish banking sector decreased from 174,442 in 1999 to 124,030 until 2004. Bank number is decreased 48 in 2004 due to closures of banks or mergers and takeover. Employment is increased to 129,887 by May 2005. The number of banks operating in the banking system was 48 in January-June 2005. Of which, 35 were commercial banks, 13 were non-depository banks. This process was very painful for the jobless bank staff and for their family members. The aim of this study is to discover the Turkish bank staffs' current situation and to focus on unemployment problem in Turkish banking sector.*

**Keywords:** Banking Sector, Crises, Employment, Turkey

## **1. Introduction**

This paper aims to analyze the Turkish bank staffs' current situation and focuses on unemployment problem during the 2001 financial crisis in Turkish banking sector. In order to achieve this aim, firstly, the 2001 financial crisis general outlook and Turkish labour market situation during the crisis should be analyzed. This is the subject matter of second section and third section. Then, employment situation in Turkish banking sector should be analyzed in fourth section. Later, governance of privatization process and policies related with the employees of the closed banks should be taken into consideration in fifth section. Lastly, we added some conclusion to the paper in sixth section.

In this study we tried to assess the initial socio-economic impact of the 2001 crisis, with particular emphasis on the unemployment problem of bank staff. This covers a wide range of issues comprising labor market indicators such as unemployment in Turkish banking and decline in real wages of employed bank staff.

The study is based on a qualitative assessment and adopts a before and after methodology of comparing the situation before the crisis with the situation afterwards. Evidence of the effects of economic crises mixed. There are claims that the effects of the earlier 1994 crisis were still felt as late as 1998, with large foreign trade and public sector deficits and high rate of inflation.

Furthermore, at the top of list of structural factors are heavy demographic pressures and the labor market dominated by agriculture and large urban informal sector which is characterized by very large inter-sectoral and interregional productivity differentials and a slow pace of employment creation.

## **2. The 2001 Financial Crisis General Outlook**

The 2001 crisis was the worst economic crisis in the Turkish nation's republican area since 1923 which resulted in a 7,5 percent decline in the economy.<sup>1</sup>

In January 2000, with the aim of eliminating high and chronic inflation, the Turkish government launched a stabilization program with the support of the International Monetary Fund (IMF). The key to the disinflation

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<sup>1</sup> H. Kaan NAZLI, Banking on Turkey, The National Interest, Vinter 2004/05, p. 114.

program was the introduction of a new exchange rate-based stabilization (ERBS), characterized by a pre-announced exchange rate and a built-in exit strategy, which envisaged a gradual and smooth transition to a flexible exchange rate. The program entailed tight monetary and fiscal policy as well as the implementation of structural reforms. Of all the structural reforms, the most important was related to the restructuring of the banking system. The timing of which as will be discussed had some important consequences for the November crisis.<sup>2</sup>

The imported question is that, what caused to the November 2000 and February 2001 financial crises. We can describe four different causes related with:

- Turkey initiated an extensive disinflation program, the aim of this program was to decrease the inflation rate to a single digit by the end of 2002. It relied exclusively on a nominally pegged (anchored) exchange rate system. But, introduction of a reliable atmosphere of exchange rate program was not achieved,
- Uneconomic behavior of Turkish banks without a smooth auditing system,
- Structural weakness of the 2000 disinflation program,
- Short-term deposit accounts of banks and huge amount of debts, taken as syndication credits which means foreign capital and this capital movements depends on the reliable financial markets.

Generally, banking crises comes together with the other type of economic crises in the emerging market countries. Shortly, the weak banking system caused economic crisis of Turkey in 2001.<sup>3</sup>

Colombia, Peru and Uruguay in 1982, Turkey in 1994, 2000 and 2001 faced with exchange rate crisis caused banking and stock exchange crisis. Argentina and Chile in 1980, Mexico and Venezuela faced with banking crisis caused exchange rate crisis and public finance crisis. Scandinavian countries in 1990s, Mexico in 1994 and 1995 and lastly Asean countries like Taiwan, Malaysia, Indonesia and South Korea in 1997 both the banking crisis, exchange rate crisis and capital market crisis came together at the same time.

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<sup>2</sup> Hakan TUNC, The Lost Gamble: The 2000 And 2001 Turkish Financial Crises in Comparative Perspective, *Turkish Studies*, Summer 2003, Vol. 4 Issue 2, p. 31.

<sup>3</sup> Aslan EREN, Bora SÜSLÜ, Finansal Kriz Teorileri Işığında Türkiyede Yaşanan Krizlerin Genel bir Değerlendirmesi, *Yeni Türkiye*, Sayı:41, Yıl:7, Eylül-Ekim 2001, ss. 662-674. <http://www.econturk.org/Turkiyeekonomisi/krz.rtf>, 07.10.2005.

As below Table 1 shows us that financial crises occurs both in developed countries and emerging markets countries. But, there are more economic crises in emerging market countries than developed countries such as exchange rate crises of currency collapses and banking crises. Also, crises may occur as exchange rate crises and banking crises together. Average recovery periods are also higher in emerging market countries and Gross Domestic Products (GDP) losses are big.

**Table1: Financial Crises and Impact of The World Economy**

	<i>Number of the Crisis</i>	<i>Average Recovery Period (years)</i>	<i>GDP Losses per Crisis (%)</i>	<i>Caused GDP Lost Crisis (%)</i>
Exchange rate crises	<b>158</b>	<b>1,6</b>	<b>4,3</b>	61
• <b>Developed Countries</b>	42	1,9	3,1	<b>55</b>
• <b>Emerging Markets</b>	116	1,5	4,8	<b>64</b>
Currency Collapses	<b>55</b>	<b>2,0</b>	<b>7,1</b>	71
• <b>Developed Countries</b>	13	2,1	5,0	<b>62</b>
• <b>Emerging Markets</b>	42	1,9	7,9	<b>74</b>
Banking Crises	<b>54</b>	<b>3,1</b>	<b>11,6</b>	82
• <b>Developed Countries</b>	12	4,1	10,2	<b>67</b>
• <b>Emerging Markets</b>	42	2,8	12,1	<b>86</b>
Situation of Exchange rate crises and Banking Crises happened together	<b>32</b>	<b>3,2</b>	<b>14,4</b>	78
• <b>Developed Countries</b>	6	5,8	17,6	<b>100</b>
• <b>Emerging Markets</b>	26	2,6	13,6	<b>73</b>
<i>Source: Mehmet TÜRK, Bankacılık Krizleri ve Bankacılık Sistemindeki Değişimler, <a href="http://www.gazetekeyfi.com/gazetekeyfi/koseyazilari/bankacilikkrizleri.html">http://www.gazetekeyfi.com/gazetekeyfi/koseyazilari/bankacilikkrizleri.html</a> , 10.10.2005.</i>				

The crisis in November 2000 and February 2001 aggravated the problems that some of the banks in Turkey were already facing. At the end tenth number of commercial banks taken over by Savings Deposit Insurance Fund (SDIF). Foreign and domestic investors pulled out enormous sums of money from the Turkish financial market within a matter of days. This rush to withdraw funds came about nearly a year after Turkey introduced a

disinflation program predicated on an ERBS which was designed and supported by the IMF.

The Turkish government weathered the crisis in November with the financial support of the IMF and was able to hold on to the exchange rate peg. Three months later, however, turmoil in the market forced the government to abandon the peg. In the months that followed, the currency collapsed, unemployment soared, and Turkey faced the worst economic contraction it had seen in decades. In the case of the November crisis, panic was caused by the policies of the newly created banking supervision agency and the subsequent liquidity problems of a mid-sized bank. In February, it was the prime minister's statement that Turkey was in the midst of a "political crisis" following his disagreement with the president that triggered financial panic.

Following the demise of the exchange rate-based disinflation program, the newly appointed Finance Minister in Turkish Government Cabinet, Kemal Derviş (former vice president of the World Bank) submitted a new letter of intent to the IMF. On May 15, Derviş announced the invigoration of a new stabilization effort under the guidance of a program entitled "Turkey's Transition Program: Strengthening the Turkish Economy".

The new program would be the continuation of the previous disinflation program and would be backed by a series of "structural reforms" aimed at strengthening the banking system and at transforming the "old ways of economic policy making". However, the September 11 terrorist attack undermined the implementation of this new program, affecting investors' perceptions adversely. The Turkish government requested, in turn, a new three-year, stand-by arrangement for offsetting the detrimental effects of the external shock.

The IMF accepted the new letter of intent dated January 18, 2002, by providing a considerable amount of financial support. The last two stand-by arrangements should clearly be regarded as the continuation of the disinflation program launched at the end of 1999, even though they were implemented after its failure. IMF offered \$7.5 billion of new loans (and \$10.4 billion overall) for Turkey; Discussion of talks between Turkey and the European Union regarding Turkey's membership in the Union; role of poor regulation of Turkish banks on the country's unstable economy.

The main framework of the program itself, as well as the crisis episode, has been a source of debate since its very beginning. In particular, it was alleged by the former deputy managing director of the Fund, Stanley Fischer, that the difficulties in Turkey relate more to the banking sector and to the deterioration of macroeconomic fundamentals rather than any errors in

program design. In particular, according to Fischer, The recent difficulties in Turkey relate more to banking sector problems, and the failure to undertake corrective fiscal measures when the current account widened.<sup>4</sup>

The main reason for the financial crisis in February 2001 was the number of instances of malpractice in the banking sector, which collectively brought about a major liquidity crunch. The state intervened to take over a clutch of collapsed banks and poured millions of dollars into saving a corrupted banking system. One of the outcomes of all that, and one stressed by the IMF, was the establishment of a 'show and tell' system under which banks were obliged to be audited and have the size of their particular credit holes measured by outside experts. What this produced was a surprisingly healthy picture of the surviving banks.<sup>5</sup>

The combined effects of September 11th and sluggish growth have underlined or accelerated job trends that were already under way. Employment in finance soars and plummets with the markets.<sup>6</sup>

### **3. The Turkish Labor Market During The 2001 Crisis**

The adverse production trends had the most significant impact on the labor market. A distinctive feature of the 2001 crisis was the mass redundancy of labor. Reductions in the working week and laying of workers temporarily with or without pay was the common practice. The severity of the 2001 crisis was such that a large number of workers lost their jobs, especially during the first few months of the crisis. This was the combined result of firms under financial strain either reducing their workforce or going out of business altogether. The evidence on the number of redundancies is rather patchy, with estimates from different sources varying by a wide margin. Detailed information on the profile of employees made redundant during the crisis in particular their distribution by age, gender, and labor market status is not available from official sources.

According to Ministry of Labor data published in February 2002, just one year after the emergence of the crisis, 1,567,000 persons who were unemployed, 390,000 were made redundant during the year. At the other extreme, another estimate covering the two years until August 2002 put the

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<sup>4</sup> Ahmet ERTUĞRUL, Erineç YELDAN, On the Structural Weaknesses of the post-1999 Turkish Disinflation Program. *Turkish Studies*, Summer2003, Vol. 4 Issue 2, pp.53-54.

<sup>5</sup> Jon GORVETT, There may be trouble ahead, *Middle East*, Jan2003, Issue 330, p. 30.

<sup>6</sup> *Economist*, What September 11th did, and what it didn't, 2/19/2005, Vol. 374 Issue 8414, Special section pp. 7-10.

total number of enterprises going out of business at 600,000 and the number of workers who lost their jobs as high as 2.3 million. According to figures given by a trade union, Seluloz-iş, for the largest three provinces (Istanbul, Ankara, and Izmir), in the first few months of the crisis until May, a total of 1,414 enterprises went out of business, resulting in 42,000 workers losing their jobs, with the automotive and machinery sectors hit particularly hard.

Estimates for the banking sector alone put the number of workers fired at around 50,000. In mass media, a sector in which labor-shedding reached unprecedented levels by Turkish standards, around 5,000 workers lost their jobs during 2001. Engineers and architects, with nearly 50,000 in their ranks made redundant, represent another major category of workers hardest hit by the crisis.<sup>7</sup>

A survey conducted by the research team of one of the major opposition parties, the Republican People's Party (RPP) indicates that 50 percent of these were single, 75 percent male, 25 percent university graduates, 40 percent high school graduates, and a massive 96 percent working in the private sector at the time, mostly in textiles, banking, and construction.

As expected, in the face of the increasing financial difficulties of firms and severely falling domestic demand, the severe contraction in production led apart from labor shedding to a virtual halt in recruiting in the private sector. A sharp drop in job openings in the public sector aggravated this. The affect of the crisis on employment, though, was by no means uniform across different production activities. Construction was most severely affected, with employment declining by a massive 18.3 percent during 2001. In the manufacturing sector, for which we have more detailed information, the index of employment (1997 = 100) declined sharply from 89.1 in 2000 to 81.6 in 2001. The RPP survey results, indicating that 23 percent of the workers made redundant during the crisis were replaced by new recruits, prove the same point.<sup>8</sup>

Similar to the 1994 crisis, public sector employment served as an instrument of crisis management. The public sector, whose role in employment creation had been in decline due to the process of privatization and trends towards small government, also cut back its recruitment. This probably hit recent university graduates most severely. On the other hand,

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<sup>7</sup> Fikret ŞENSES. Economic Crisis as an Instigator of Distributional Conflict: The Turkish Case in 2001, *Turkish Studies*, Summer2003, Vol. 4 Issue 2, p. 99.

<sup>8</sup> The Republican Peoples Party (RPP)' announced in May 2002 on people who became unemployed as a result of the crisis. Prepared by Science' Management and Culture Platform of the RPP.

with almost perfect job security in the public sector, it was perhaps not surprising to see that this sector did not contribute to the level of unemployment during the crisis. The large number of applicants for public sector jobs, though, indicated greatly reduced job opportunities during the crisis.

The data given by the Turkish Employment Service, the number of applicants and the number of those registered as actually unemployed dropped during 2001. However, the Household Labor Force Survey results indicate that the number of unemployed persons increased considerably, from 1,455,000 to 1,892,000 during the same period.

Based on the Household Labor Force Survey results, the rate of unemployment increased from 6.3 percent in the last quarter of 2000 to 10.6 percent in the corresponding period in 2001, with the rate increasing further to 11.8 percent in the first quarter of 2002. The rise in unemployment was accompanied by a change in the profile of the unemployed, with the share of young and educated persons increasing sharply.

The effect of the crisis may not, however, be fully reflected in the unemployment rate for at least two reasons. First, some of those who lost their jobs, especially white collar female workers, might have deemed their prospects of re-employment to be rather slim and dropped out of the labor force altogether, joining the ranks of the other discouraged workers. Second, since persons who worked even one hour during the week before the survey was conducted were considered as employed, the unemployment rate does not capture the full extent of labor market slack. One would assume that these trends in the labor market might also have swollen the size of the informal sector. However, the share of selfemployed persons and unpaid family workers in total employment which may be taken as an indicator of the size of the informal sector increased only slightly, from 45.1 percent in 2000 to 45.8 percent in 2001.

As in previous crises, a major effect of the 2001 crisis on the labor market was a sharp drop in real wages. During the 1994 crisis, the real wages and salaries fell in both the public and private sectors to such an extent that it took several years to revert back to the pre-crisis levels in the private sector and even longer in the public sector. The rate of decline in real wages in 2001 was also very large, reaching an average of 14.4 percent in the manufacturing sector

The effect of the crisis on the working population was by no means confined to those groups discussed above. Although not systematically documented, there were reports of deteriorating working conditions for workers facing threats of redundancy, including longer working hours

without pay, reductions in money wages, delays in the payment of wages, and offers to give holidays earlier than usual. In addition, employers encouraged early retirement and resignation. Workers were probably tempted to succumb to these propositions for fear of losing their severance pay should the firm go bankrupt. The RPP survey showed that only 42

percent of workers made redundant during the crisis could receive their severance pay, and there were reports that many of those who could receive it had payments dispersed over time thereby eroding their real value severely due to high inflation.<sup>9</sup>

In the most recent crisis, in 2001, GDP plummeted by 7,5 %. In February that year the lira was devalued by about 40% in a week and short-term interest rates briefly touched an annual rate of 7,500%. The official rate of unemployment 10% is widely acknowledged to be unrealistically low. Due to there are considerable underemployment in agricultural sector.

Unemployment seems destined to get worse before it gets better. 700,000 new jobs need to be found every year to keep the unemployment level constant. That number is set to rise as the working population continues to grow. If the government meets its target of 5% growth for each of the next three years, it will create 1.65m jobs over that period, just enough to mop up the increase in the working population. But the labour force could be swelled further by large numbers of workers coming off the land as Turkey invests in its agricultural sector and increases productivity. Agriculture currently accounts for 33.2% of all jobs but only 13.4% of GDP. If the workforce was cut to match the sector's contribution to the economy, 4.4m jobs would have to be found elsewhere.

Some Europeans have nightmares about hordes of unemployed Turks roaming freely across the European Union (The EU) and undercutting native workers' pay. But in reality there is little evidence that immigration harms the natives' job opportunities. Rather, EU countries should be welcoming young Turkish workers, especially where populations are declining. Those workers will help to make sclerotic economies more flexible and keep up contributions to state pay-as-you-go pension schemes.<sup>10</sup>

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<sup>9</sup> ŞENSES, F. Economic Crisis as an Instigator of Distributional Conflict: The Turkish Case in 2001, *Turkish Studies*, Summer2003, Vol. 4 Issue 2, p. 102.

<sup>10</sup> *Economist*, A promising start, 3/19/2005, Vol. 374, Issue 8418.

#### **4. Employment Situation in The Turkish Banking System During The Crisis**

The stabilization program was miss-managed and the economy moved to the brink of collapse in November 2000. Interest rates on bonds, which quadrupled in that period, caused severe damage, especially to banks that invested heavily in T-Bills and Government Bonds. Three banks, including the fifth largest private commercial bank, Demir, were taken over by the BRSA and placed under the administration of the SDIF in the final quarter of 2000. Thus, the number of private commercial banks declined to 28 from 31 throughout the year. Then there came official announcements to the effect that unhealthy banks were to be removed from the system. Tension was gradually eased and hopes appeared set to rise again.

Eight more banks were taken over in 2001. Finally all banks confronting direct injury were eliminated from the system. Due to certain mergers and sell-offs, the decrease in the number of private commercial banks was limited to 6 banks.

Some banks such as Pamukbank found themselves in deep mud. The BRSA ultimately took Pamuk over in mid-June. Those takeovers and mergers consequently pulled down the number of banks (including development & investment, state and foreign) in the system to 53 in 2003, from an all-time high of 81 in 1999. The number of mergers and acquisitions increased in 2001 and 2002.

The major protagonist of this era was the SDIF. Six of the taken over banks were merged under Sumerbank and sold to Oyak, Bankekspres was acquired by Tekfenbank, Demir was sold to HSBC and Sitebank was transferred to Novabank. Interbank, Esbank and Etibank, which were merged under Eti and placed on sale, failed to attract any bids, leading to its banking license being revoked. Toprak and EGS banks are merged into Bayindirbank, which is the BRSA's asset management body.

It was not just the SDIF banks that underwent mergers. Those conglomerates having more than one bank started private commercial bank mergers. Dogus Group triggered the process via merging Korfezbank into Ottoman Bank, and thereafter the two into Garanti Bank. Cukurova Group made an unsuccessful attempt to locate Pamukbank inside Yapi Kredi, as the operation was rejected by the BRSA to protect Yapi Kredi's shareholders. Another merger came from two development and investment banks with identical shareholder structures. Sinai Yatirim Bank was merged under TSKB

at the end of 2002. And Finansbank's acquisition of its little sister Fibank in 2003.<sup>11</sup>

The country's "big four" Garanti Bank, Is Bank, Yapi Kredi Bank and Ak Bank were also rumoured to be in negotiations with foreign interests. Firstly, HSBC moved in to buy Demirbank. One of Turkey's largest holding companies Dogus owned one of the "Big Four", Garanti, plus two other smaller banks, the Ottoman Bank and Korfez Bank merged, then joined with Garanti bank. Also, Yapi Kredi and Pamukbank, both owned by the Cukorova Group, tried also merge. But the result was not successful. However, mergers between banks that are not part of the same group seem less likely.<sup>12</sup>

Turkey's banking regulator assumed control of two of the family's banks, named, Imar Bank and Ada Bank, alleging Uzan and his sons had misappropriated \$5.9 billion in 2004.<sup>13</sup>

Since 2001 February's financial crunch, Turkey's beleaguered banking system had been gone through some dramatic and rapid changes. With the pressure full on for the country's financial institutions to do some serious redeploying, particularly as they had been widely singled out as the major factor in the country's recent economic crisis, Turkey's banks were in the market for serious foreign buy outs, partnerships and mergers.

Since 1980s the Turkish banking sector experienced a significant expansion and development in the number of banks, employment in the sector, diversification of services and the technological infrastructure. The number of banks increased from 43 in 1980 to 66 in 1990 and to 79 by the end of 2000. 5 banks under the management of the Saving Deposit Insurance Fund (SDIF) were merged under Sumerbank bringing the number of banks to 74 by mid-May 2001. Of these 74 banks, 56 banks are deposit money banks and 18 are investment and development banks. Of the 56 deposit money banks, 4 are state banks, 26 are private domestic banks, 18 are private foreign banks and 8 are under the SDIF. Total employment in the banking sector has increased from 125 thousand in 1980 to 154,000 in 1990 and to 170,000 in

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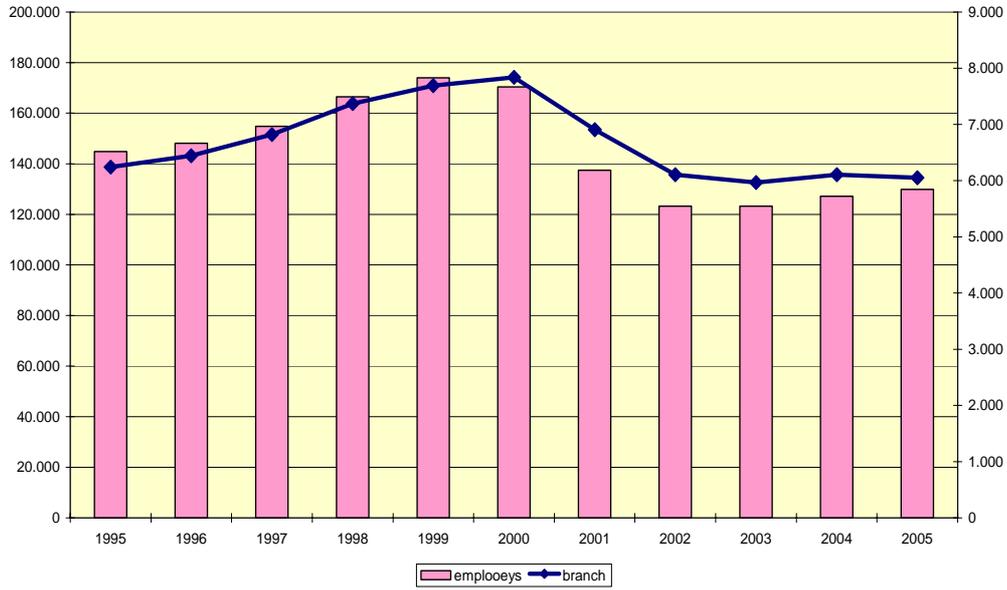
<sup>11</sup> M., YUKSEL, Turkish Banking Sector A Glimpse Through the Parting Clouds, Ak Yatirim, June 16, 2003, Istanbul. <http://www.geocities.com/meterello/GLIMPSE.pdf#search=Turkish%20Banking>.

<sup>12</sup> Jon, GORVETT, Turkish Banks Sell Off, *Middle East*, Sep2001, Issue 315.

<sup>13</sup> P., KLEBNIKOV, M., SWIBEL, Gilded Cage, *Forbes*, 3/15/2004, Vol. 173, Issue 5.

2000. Banking sector employment has been contracting in the aftermath of the November 2000 and February 2001 crises.<sup>14</sup>

Graph 1: The Number of Emplooyes and Branches in Turkish Banking Sector (1995-2005)

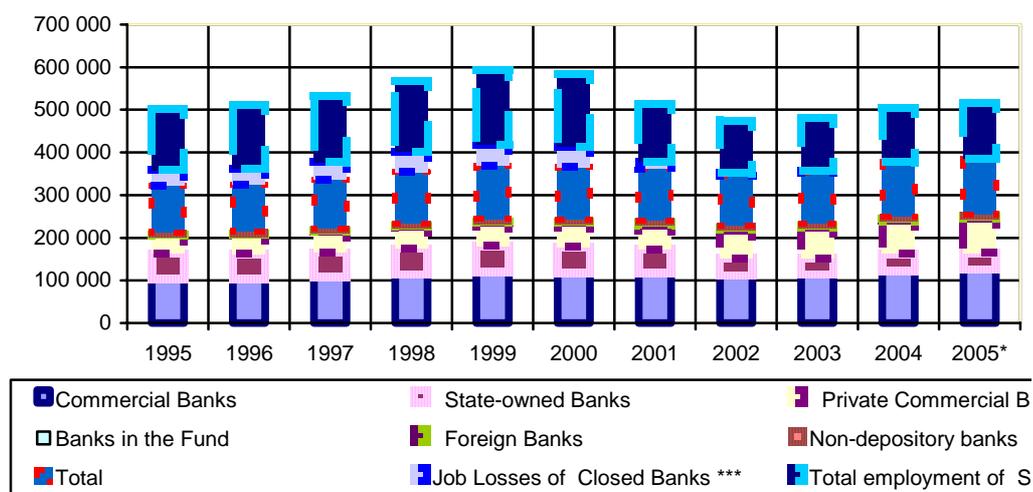


Source: Banks Association of Turkey (BAT) [www.tbb.org.tr](http://www.tbb.org.tr)

Considering the education of bank employees, 2 percent of total employees were elementary-school graduates, 35 percent high-school graduates, 60 percent university graduates, while 3 percent have post-graduate degrees.

<sup>14</sup> Banking Regulation And Supervision Agency (BRSA), Towards A Sound Turkish BankingSector, [http://www.bddk.org.tr/english/publicationsandreports/brsareports/annex\\_report\\_towards\\_a\\_sound\\_turkish\\_banking\\_sector%20.doc](http://www.bddk.org.tr/english/publicationsandreports/brsareports/annex_report_towards_a_sound_turkish_banking_sector%20.doc). 07.10.2005.

**Graph 2: Employment Trends in Turkish Banking Sector (1995-2004)**



Note: \* Banks are ranked as their belongings to groups on 30 June 2005

\*\*\* Figures included number of the employees of the closed banks

Source: Banks Association of Turkey (BAT) [www.tbb.org.tr](http://www.tbb.org.tr)

Considering commercial banks group, the percentage of the university graduates and post-graduates was 52 percent in state-owned banks, 67 percent in privately-owned banks, 76 percent in foreign banks. The same ratio was 72 percent in non-depository banks.

**Table 2: Bank Employees By Education (December 2002-June 2005)**

	Primary school		Secondary school		University graduates		Post-graduates	
	2002	2005	2002	2005	2002	2005	2002	2005
Commercial banks	1520	1928	51.048	43,953	62.844	76,007	<b>2.917</b>	3,528
State-owned banks	420	311	21.534	18,402	17.595	19,567	609	800
Privately owned banks	958	1507	25.956	24,050	38269	51,954	<b>1.686</b>	2,359
Banks in the Fund*	65	8	2.042	200	3.583	186	<b>196</b>	7
Foreign banks	77	102	1.516	1,301	3.397	4,300	<b>426</b>	362
Non-depository banks	140	92	1.355	1,163	3.054	2,824	<b>393</b>	392
Total	1660	2020	52.403	45,116	65.898	78,831	<b>3.310</b>	3,920

The sector employed 154,000 staff in 6,500 branches in 1990; it now employs 123,000 staff in 6,000 branches. The numbers peaked in 2000 with 170,000 staff and 7,800 branches, then declined rapidly. The productivity gains were

achieved in the post-crisis 2001-03 period during which personnel numbers declined by 28% and branch numbers by 24%.<sup>15</sup>

**Table 3: Efficiency Indicators in Turkish Banks, 1990-2003**

	1990	1995	1999	2000	2001	2002	2003
<i>Depozits (billion \$)</i>	32.5	43.5	89.1	101.6	81.2	86.9	111.2
<i>Assets (billion \$)</i>	58.1	67.0	133.2	154.6	115.3	129.8	178.8
<i>Depozits/assets (%)</i>	56	65	67	66	70	67	62
<i>Depozits/branch (million \$)</i>	5.0	7.0	11.6	13.0	11.7	14.2	18.6
<i>Depozits/employee (million \$)</i>	0.2	0.3	0.5	0.6	0.6	0.7	0.9
<i>Employee/branch</i>	23.5	23.2	22.6	21.7	19.9	20.2	20.7
<i>Assets/employee (thousand \$)</i>	377	463	766	907	839	1,053	1,451
<i>Assets/branch (thd \$)</i>	8,859	10,739	17,320	19,724	16,692	21,259	29,967

*Source: Alfred Steinherr, Ali Tukul and Murat Ucer, "The Turkish Banking Sector Challenges and Outlook in Transition to EU Membership", Centre for European Policy Studies, EU-Turkey Working Papers, No. 4/August 2004, pp. 22., [http://shop.ceps.be/BookDetail.php?item\\_id=1146](http://shop.ceps.be/BookDetail.php?item_id=1146),*

## 5. Governance of Privatization of State Owned Banks in Turkey

Turkish Employment Organization – ISKUR provided a labor redeployment services to jobless bank-workers who have been displaced by the privatization of SOEs, including secondary layoffs, to assist them in rapidly re-entering the labor market. More than 3 thousand jobless bank employees attended to project and educated to find a new work in banking, insurance and other financial sectors. Project will be continued during the next three years<sup>16</sup>.

As Table 4 shows us that total cost of the banking sector crisis in 2001 reached to the sum of 53.2 billion US Dollars. Huge amount of the cost borned by restructuring of the state banks and private commercial banks transferred to the SDIF.

<sup>15</sup> Alfred Steinherr, Ali Tukul and Murat Ucer, *The Turkish Banking Sector Challenges and Outlook in Transition to EU Membership*, Centre for European Policy Studies, *EU-Turkey Working Papers*, No. 4/August 2004, pp. 22., [http://shop.ceps.be/BookDetail.php?item\\_id=1146](http://shop.ceps.be/BookDetail.php?item_id=1146). 08.07.2005.

<sup>16</sup> Milliyet Daily Newspaper, 12 Dec. 2003

**Table 4: The Cost of The Banking Sector Crisis**

	<b>Billion \$</b>	<b>% of GDP</b>
<b><i>Cost to the Treasury</i></b>	<b>43.7</b>	<b>29.5</b>
• <i>Restructuring of the state banks</i>	21.9	14.8
1. “duty losses”	19.0	12.8
2. Recapitalisation	2.9	2.0
• <i>For private banks transferred to the SDIF</i>	21.8	14.7
<b><i>Cost to the private sector</i></b>	<b>9.5</b>	<b>6.4</b>
• <i>Cost borne by the SDIF</i>	6.7	4.5
• <i>Capital injection by shareholders</i>	2.8	1.9
<b><i>Total</i></b>	<b>53.2</b>	<b>35.9</b>

Source: Alfred Steinherr, Ali Tukel and Murat Ucer, “The Turkish Banking Sector Challenges and Outlook in Transition to EU Membership”, Centre for European Policy Studies, EU-Turkey Working Papers, No. 4/August 2004, pp. 5., [http://shop.ceps.be/BookDetail.php?item\\_id=1146](http://shop.ceps.be/BookDetail.php?item_id=1146),

The first Privatization Social Support Project started in 2001. PSSP I, helped to support the Government's effort to disengage itself from production activities and thus foster the continuing development of the private sector in Turkey. The World Bank approved a US\$465.4 million (Euros 360 million) Second Privatization of Social Support Project Loan (PSSP II) for Turkey in June 14, 2005. The project's main objective was to support the Government's privatization program through mitigating the social and economic impact of the privatization of state-owned enterprises (SOEs). The Government's privatization program aimed to enhance the efficiency and competitiveness of the Turkish economy and thereby help in meeting the market demands of EU accession. The Privatization Administration had been in charge of the overall implementation of the project, which was composed of the following components:

- **Job Loss Compensation:** This component ameliorated the temporary social and

economic impact on workers displaced during the privatization of SOEs. It financed severance and related payments, as regulated by law, to workers displaced by job loss due to the privatization of SOEs.

- **Labor Redeployment Services:** This component provided labor redeployment services

to workers who have been displaced by the privatization of SOEs, including secondary layoffs, to assist them in rapidly re-entering the labor market. The

component financed a variety of labor redeployment services, including job counseling and placement services, retraining, temporary community employment (managed by the Turkish Employment Organization - ISKUR), small business assistance services, and small business incubators (managed by the Small and Medium Industry Development Agency, KOSGEB).

- Management, Monitoring and Evaluation: The objective of this component was to

monitor the impact of labor redeployment services and manage the PSSP II effectively as a whole. The component financed surveys to evaluate the effectiveness of the labor redeployment services in mitigating the social costs of labor redundancies resulting from employment and privatization on selected communities; and undertake in-depth socio-economic analyses of specific communities where privatization has taken place.

## **6. Conclusion**

The Turkish banking experience has clearly shown that during the 2001 crisis, real wages declined and non-wage adjustments which were confined largely to the adoption of flexible arrangements like part-time work, subcontracting to firms some of bank jobs, reduction of working hours through paid and unpaid forced holidays. But, job losses all together were a new phenomenon. Since the crisis of 2000-2001, many other reforms have been implemented in financial sector of Turkey.

Now, employment is increasing in Turkish banking sector, again. But, not enough to hire all the jobless old bank staff. Only a small part of them reemployed since the recovery started after the crisis. Since, the emergence of the crisis, 1,567,000 persons who were unemployed, 390,000 were made redundant during the crisis year, the total number of enterprises going out of business at 600,000 and the number of workers who lost their jobs as high as 2.3 million. Also, during the crisis, GDP plummeted by 7,5 %, the lira was devalued by about 40% and short-term interest rates briefly touched an annual rate of 7,500%. The official rate of unemployment reached to 10%§ but realistelz low.

Recently started unemployment insurance payments is not enough to compensate their economic and social losses. Most of them went to find another job in other firms or sectors. They can work only in marketing, accounting, finance and foreign and domestic trade departments...etc., but, a few of them were lucky enough to find a work. Still, unemployment rate remains very high among them.

Losers were not only the employees of the banks, the owners of the banks also, lost their capital and some of them judged and went to in prison. After the 2001 crisis the coalition government lost at the following election. Three of the coalition parties even not gained a sit in the Turkish parlement. The main reason for the financial crisis in February 2001 was the number of instances of malpractice in the banking sector, which collectively brought about a major liquidity crunch. The state intervned to take over a clutch of collapsed banks and poured millions of dollars into saving a corrupted banking system.

The effect of the crisis on the working population was by no means confined to those groups discussed above. Although not systematically documented, there were reports of deteriorating working conditions for workers facing threats of redundancy, including longer working hours without pay, reductions in money wages, delays in the payment of wages, and offers to give holidays earlier than usual. In addition, employers encouraged early retirement and resignation. Workers were probably tempted to succumb to these propositions for fear of losing their severance pay should the firm go bankrupt.

Today, unemployment seems destined to get worse before it gets better. 700,000 new jobs need to be found every year to keep the unemployment level constant. That number is set to rise as the working population continues to grow. If the government meets its target of 5% growth for each of the next three years, it will create 1.65 million jobs over that period, just enough to mop up the increase in the working population. But the labour force could be swelled further by large numbers of workers coming off the land as Turkey invests in its agricultural sector and increases productivity. Agriculture currently accounts for 33.2% of all jobs but only 13.4% of GDP. If the workforce was cut to match the sector's contribution to the economy, 4.4 million jobs would have to be found elsewhere.

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# PRIVATIZATION OF THE EXPORT CREDIT AGENCY EGAP

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## Abstract

*Credit insurance provides companies with concepts and solutions for their outstanding trade receivables, protecting risks of insolvency and protracted default. In addition to this, credit insurance protects cash flow and this helps the companies in their financing needs. Historically, credit insurance was a part of state export policy to protect receivables of domestic investors in abroad. State offered credit protection throughout Export Credit Agencies (further: ECA). The role of ECA has changed because private credit insurers offered marketable risks. Therefore, commercial business offered by major ECA was privatized due to EU requirements. ECA still play an important role in the non-marketable insurance business. The 100% subsidiary of Exportní a garanční úvěrová pojišťovna, a.s. (EGAP), Komerční úvěrová pojišťovna EGAP, a.s. (KUPEG), which is with 51% the Czech market leader in the commercial credit insurance, will be privatized in an official tender in 2006. The potential investors shall contribute to more competitive position, enable to access Czech exporters both commercial databases and worldwide network. Although the tender is considered as minor in comparison to larger privatizations like Czech Telecom or CEZ, it represents an important milestone for all global credit insurance players.*

**Keywords:** *Credit insurance; Export Credit Agency*

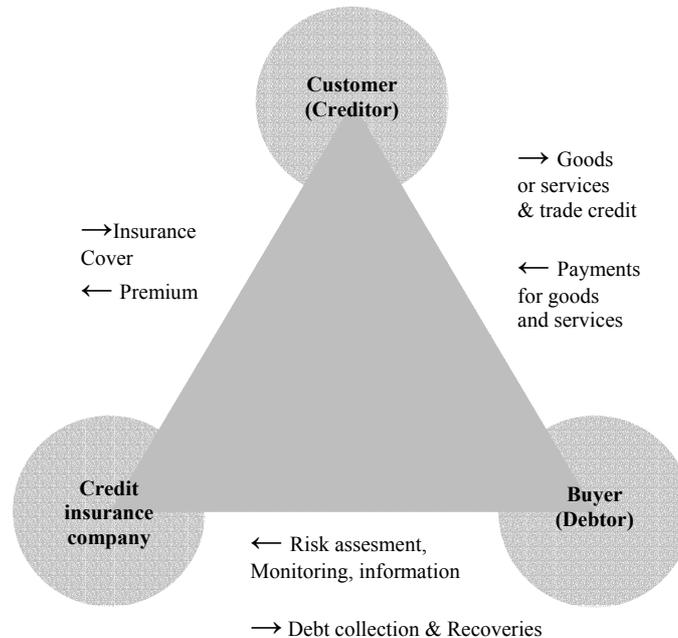
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<sup>1</sup> The author of this paper is Managing Director of Atradius Czech Republic and her opinion is merely academic and its must not express the opinion of Atradius Group.

## 1. Introduction

“Credit insurance provides companies with coverage for outstanding commercial receivables, protecting against risk of buyer default or insolvency of the buyer. In addition to managing credit risk, credit insurance supports financing needs: by reducing the risk of non-payment of trade receivables, a firm can borrow at lower interest rates.” (SwissRe, 2000:3).

**Figure 1 Credit Insurance Triangle**



Historically, credit insurance was a part of the state export policy to protect receivables of exporters and to increase competitiveness of domestic producers. In the meantime, private investors entered the market and cover so-called marketable risks. In the following chapters, I would like to discuss the role of the state in this business and explain why private sector has changed the industry on the example of ongoing privatization process of the State Export Agency EGAP.

## 2. Credit insurance market

### 2.1 State Export Credit Agencies

In the beginning of the 20<sup>th</sup> century, the private sector was not willing to financially support and to transfer the risk of domestic exporters, which led to establishing of state Export Credit Agencies (further ECA). The first one was Export Credit Guarantee Department (ECDG) established in the UK in 1919. Similar activities in several countries followed. Core markets like France, Italy, Spain, and the UK formed the International Union of Credit and Investment Insurers, called the “Berne Union”, which offered exchange of experience within the finance and investment industry, improved risk assesment and underwriting techniques.

The Berne Union comprises of around 45 member states from around 40 countries and its members cover nearly 95% of total global premium income. The Berne Union members provide mainly the coverage as follows:

- (b) Export Credit Insurance for both political<sup>2</sup> and commercial risks (insolvency and protracted default coverage).
- (c) Investment Insurance (or long-term coverage, exceeding in general 2 years), which protects investments in abroad (e.g. power plants, water pipeline in Iraq, railways etc.). Long-term risk includes higher share on political risk and is closely related to governmental relationships and state policy.
- (d) Project Finance: states through its export credit agencies enable to finance and to stabilize larger projects and their cash-flows in abroad. In the Czech Republic, For example, this is governed through the cooperation between local Export Credit Agency EGAP and Czech Export Bank CEB.

The three above-mentioned types could be also distinguished from the reinsurance type of view in two groups:

- Marketable risks: Reinsurance through commercial reinsurers as MunichRe, SwissRe, AtradiusRe etc.
- Non-marketable risks: Insurance is ceded to the state budget.
- Combined risks. This is combination between the two above-mentioned types; this could be offered only by ECA’s,

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<sup>2</sup> Political risks are mainly war, strike, terrorism, restrictions on transfer of foreign exchange (e.g. Argentina in 2003) and default by governments. However, the definition varies from one insurer to another.

because commercial insurers do not buy state reinsurance. However, after privatization process, many newly established entities are co-owned by the state and therefore are able to cover the risk from both, state and commercial resources. In the Netherlands, for example, after privatization of local ECA The Nederlandsche Credietverzekering Maatschappij N.V. (further: NCM) by Atradius, Atradius continued and developed underwriting of non-marketable risks for the Dutch state. Atradius DSB is the official Export Credit Agency of the Netherlands since 1932 and cover more than € 1.5 billion of Dutch mid- and long-term exposure (more than 12 months) export transactions insured annually (outside OECD).

The distinction between marketable and non-marketable risks is based on the type of reinsurance. In contrast to other insurance lines, credit insurance is strongly dependent on reinsurance appetite. In general, commercial reinsurers are more focused on short-term risks with maximum length of 2 years. Difficulties to find a reinsurer, who is willing to take over e.g. bonding risks lasting over 5 – 7 years, has led recently to significant decrease in bonding products offer in the building and construction industry in Germany and the Nordic States. Credit insurers cede in general 70 – 90% of the risk underwritten, mainly due to higher volatility of the industry, which has direct relation to the business cycle, which is discussed in the following chapter.

## ***2.2 Globalization of credit insurance***

The credit insurance business as a financial sector is facing the negative influence of the cyclical business development worldwide and in particular, in the Western Europe. The prices of the credit insurance are growing; on the other hand, the insurance coverage is shrinking because of the decreasing buyers' solvency.

The rating of the insurer goes hand in hand with his creditworthiness. In general, we can say that during depression and recession of the business cycle falls the rating of insurance companies, because they are facing increasing claims ratios<sup>3</sup> and their financial position is weakening. Since the Enron scandal are the rating agencies under heightened scrutiny (Swiss Re, 2003:3).

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<sup>3</sup> Claims ratio (%) is the proportion between claims provisions and claims paid to the premium written.

Dr. David Laster in his sigma study highlights that ratings in the non-life insurance industry have deteriorated markedly in recent years. “The share of industry capacity rated AAA has fallen, on capital-weighted basis, from 38% in 2000 to 17% at present.” (SwissRe, 2003:13).

Looking ahead to 2004, the global macroeconomic picture remains challenging. Although the global economy might be expected to improve towards the end of 2003, boosted by fiscal and monetary stimuli mainly in the US, there remain significant risks. The current account deficit in the US is growing to new record levels, private indebtedness is high and increasing, there is an evident danger of deflationary tendencies spreading in some industrialized countries, and geopolitical risks are still on the agenda. Volatility seems to be the only phenomenon that will last for sure.

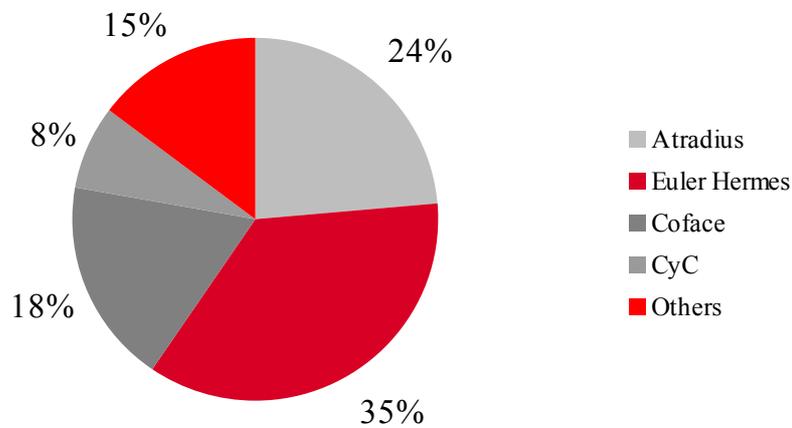
From the view of the credit insurance industry globalization has started in the 90’s. The sector dominated by leading German and French commercial insurers at the end of the 80 has though mergers and acquisitions.

One of the reasons for this market behavior was a high appetite for increase of market share. Mergers are often intended not to use synergies but to buy profits. “The aim was to purchase a profit. They do not want synergies. They want to purchase profit and add them to their own profits. And this is done ten times a year.” (Wisniewski, 2003: 298).

### ***2.3 Commercial credit insurance market***

In the early 50’s, first commercial credit insurers have started their business. Among the most known names are German insurers Hermés or Gerling, Dutch NCM or French Namur. At the end of 90’s, the global market consisted of ten larger insurers. From this high number of insurers only three leaders remained and the market became oligopoly. Gerling purchased Namur and NCM and then became Atradius; Hermes is now a part of the EULER Group.

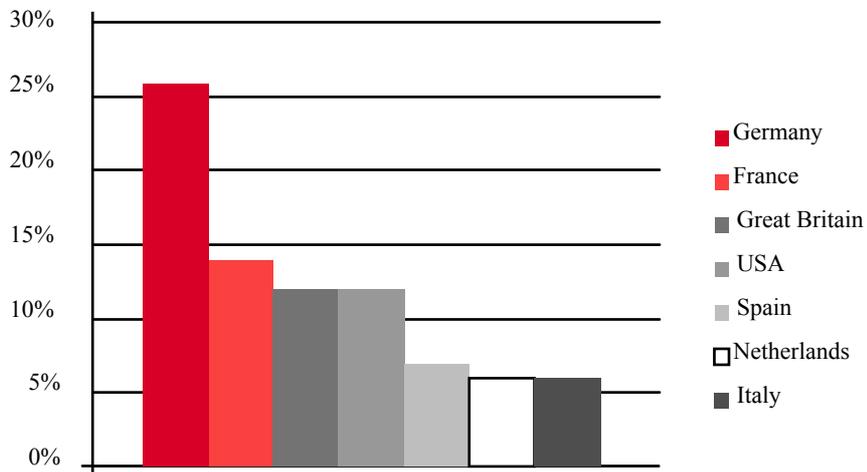
**Figure 2 Commercial Credit Insurance market (2004)**



Source: Atradius.

Atradius is negotiating its cooperation with Spanish ECA Crédito y Caución and Seguros, which represents 8% of the worldwide market share. This will lead to further concentration in the market. Although, speaking in terms of “global” market, we should have a look at the risk spread and main countries of buyers, which are insured through insurers.

**Figure 3 World Credit Insurance Market by Largest Countries**



Source: Atradius.

Surprisingly, worlds largest economies, like China, the US or Japan are not present. This depends on (1) different techniques and instruments used for credit protection (the US market is mainly bond-driven, credit insurance plays there still minor role, also due to strong regulated market) or (2) very strong remaining regulation (China – still very strong market protection continues, Japan, the Japanese market was directly entered by Euler Hermés or Atradius in the early 2005). However, as you can imagine, global players are seeking for all opportunities to increase their market coverage.

The question is whether the industry is indeed as global as it may be likes to think it is. The success of international companies invariably relies on focused local presence and knowledge that effectively makes them nationals. The Czech Republic, for example, has been famously home of two fierce competing insurers for 5 years (1998 – 2002), both representing the worldwide biggest credit insurance group EULER Hermes (34% market share).

The additional effect of mergers is that industry leans on the risk spread. Today, global customers have no other options than to choose one of the market leaders. This leads with an increasingly tendency to a growing risk exposure, which might influence the risk management, ratings and reinsurers' behavior.

Some observers could note a lack of competition in the credit insurance market. This lack of competition could stifle innovation, prompt insurers to underestimate in their businesses, or lead to inefficient pricing services. Two salient features of an imperfectly competitive market – high economic profit and barriers to entry – are characteristics of the credit insurance market.

#### ***2.4 EU enlargement***

The EU enlargement remains on the top of all global economic influences. The main contributions for business will be the emergence of a European market place. A wide range of administrative hurdles like customs or different laws will fade away. For the Eastern European countries new business partners will arise, in the contrary, the firms will be forced to provide competitive business conditions. The credit insurers will be able to provide the cover without having a local license; however, the law will become more comprehensive. The EU enlargement consists of an additional psychological aspect: The Western economies will be forced to consider the Eastern Europe as a part of a whole, the distinction between West and East will unquestionable disappear. In addition to this, states will be forced to

follow European directives and to privatize marketable credit insurance. This is going to happen in all the new EU member states. I cannot state an example, because we follow all the processes at a very early stage.

Both mentioned major influences, EU regulations and globalization, are main triggers for decision of the Czech government to privatize the marketable credit insurance to face the increasing competition.

### **3. Export Guarantee and Insurance Corporation (EGAP)**

#### ***3.1 History and role***

“EGAP offers credit insurance against the non-payment caused by political and commercial risks. Their activity is carried out with State support on the one hand and based on authorization following from the Act No. 58/1995 Coll., on Insuring and Financing Export with State Support as amended, and the commercial principle on the other, i.e. without State support and with the reinsurance concluded with leading foreign reinsurers. The activity of EGAP enables Czech exporters (...) to offer to their clients the payment terms comparable with the competition.” (EGAP. 2005:6).

#### ***3.2 ECA as an interesting aim for investors***

EGAP holds its successful market leadership in the marketable credit insurance over more than 10 years, its share in the commercial business has decreased slightly to 51% in 2004, and its claims ratio varies between 55 and 60%, which is slightly above average.

The other two players, Atradius and Euler Hermés share the remaining market share in relation 1:3. Coface has not entered the Czech market at all; although this was announced many times in the past and acts just as a credit information agency. However, there is no clear methodology, which offers a transparent insight into market shares and result presentation. Czech Insurance Association (CAP) offers a half-yearly insight into figures, which do not represent difference between marketable and non-marketable risks, therefore the presentation of the final result may sometimes differ, which strongly depends on the origin of source.

### ***3.3 Privatization of EGAP***

#### **3.3.1 Establishment of KUPEG**

In compliance to European Union's Communication on the short-term export credit insurance Czech Export Credit Agency EGAP established a 100% subsidiary named Komerční úvěrová pojišťovna EGAP, a.s., "Commercial Credit Insurance Corporation EGAP" (further: KUPEG), where marketable risks were transferred in October 2005.

KUPEG was established as a joint stock company under Czech Commercial Code and Insurance Legislation, whereby in the initial period EGAP shall act as its sole shareholder. KUPEG should take over the entire commercial operations of EGAP, which have been reinsured in the market with major international Reinsurers.

Spinning off the EGAP marketable risks operations into KUPEG should enable, in a subsequent step at a later stage (first half of 2006), to seek a suitable strategic partner, who should ultimately become the majority shareholder in KUPEG, whereby EGAP intends to keep a blocking minority share (in the Parliament, minimum of 30% of stake was approved) in its equity. In selecting a strategic investor, EGAP will seek a trade buyer, i.e. a company already operating in the credit insurance sector, which is financially strong, avails of an extensive database of information on buyers worldwide, and has an intention to develop the credit insurance business in the Czech Republic and in the region. EGAP aims to carry out the divestment transparently and with a "level playing field" for bidders to comply with any applicable EU guidelines or regulations.

#### **3.3.2 Estimated privatization procedure of KUPEG**

The initial point of the process to select a strategic partner was the date when KUPEG obtains its Court Registration and became a stock company. There is an important condition precedent to be met – an apparently minor change in the specific legislation, which would clarify the possibility to sell a majority stake in the Subsidiary. The relevant bill is already in the Czech Parliament and is supposed to be approved and signed by the President in December 2005 at the latest.

Although EGAP representatives describe this change as a minor and less relevant, the amendments to the Act 58/1995 Coll. will enable EGAP to start with reinsurance of commercial (marketable) risks and to continue with insurance SME. Those changes will definitely have impact on the future position of the winner of the tender, because he may increase its competitive offer with insurance of non-marketable risks, and use less expensive

reinsurance sources (which are in this case the state budget). As I mentioned before, reinsurance plays a significant role in the credit insurance business and therefore influences the technical result of each insurer. Having opportunity to transfer non-marketable risks or more riskier commercial business to the state will contribute to less competitive market and probably will lead to problems with the EU authorities.

After the Amendment of the Law has been passed, the Czech Government as the sole shareholder of EGAP will first select an advisor and then approve the selection criteria for the strategic partner and privatization of the stake in EGAP KUPEG as such. In an optimal schedule, this Government approval will coincide with the start of operations of KUPEG.

The process of selecting a strategic partner will be broken into three stages and EGAP will be carrying it out with the assistance of an advisor where appropriate. There will be a committee overseeing the whole process. EGAP wishes to keep the process transparent, therefore during each stage all bidders involved in that stage should receive the same information: no bidder should have more than another and nothing should be proffered to one that is not proffered to all. This rule should apply from the time it has been publicly declared that EGAP will be seeking an investor in KUPEG, until a preferred bidder is selected. However, it is publicly known that both EGAP and KUPEG are cooperating with a French credit insurer Coface and use their database. Although Coface purchases its information to each global insurer, KUPEG shares with them data and offers its products with the explanation that this is a product of independent cooperation within Credit Alliance (association of ECA's). Again, this may improve position of Coface in the bidding process. To avoid any speculations, EGAP and the Czech government must state the selection criteria as transparent as possible.

The bidding or tender process consists of three stages:

First stage consists in requests for expressions of interest and selection of potential bidders, then selection of potential bidders fitting basic criteria and meeting the basic preconditions. All the major market players expressed their interest in the process, which means that at maximum three investors will be interested: Atradius, Euler Hermés and Coface. No other investors will be selected into the second stage, although there were some speculations on PPF (owner of Ceska pojistovna), because traditional insurers do not offer this special insurance line at all.

Second stage consists in a selection of short-listed bidders. The purpose of Stage 2 is to cut the field of potential bidders down to a manageable size, whilst also ensuring that suitable candidates get through to Stage 3. Third stage consists in a selection of a preferred bidder. The purpose

of Stage 3 is to prevent from speculation on releasing information to competitors within due diligence process.

The whole selection process of the strategic partner can be estimated to run during the first half of 2006.

#### **4. Conclusion**

The worldwide credit insurers are observing the latest developments in the Czech credit insurance market. After spin-off of the division of marketable risks of EGAP into KUPEG, the Czech government announced that a privatization process will follow. An investor from narrow credit insurance market will be selected (Euler Hermés, Atradius or Coface), which will enable Czech exporters and producers to get access to competitive information databases, competitive products and prices. However, the Czech government should prepare the whole selection criteria very transparently because both EGAP and KUPEG are collaborating with Coface, which has not entered the Czech credit market at all and might be in possession of insider information. The privatization process is the first in the Eastern European countries.

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# THE IMPACT OF EMPOWERMENT AND SELF EFFICACY ON THE JOB OUTCOMES OF BANK EMPLOYEES: SOME EVIDENCE FROM NORTH CYPRUS

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## **Abstract**

*In today's competitive world, most of the banks accept that increasing employee satisfaction, enhancing service quality and customer satisfaction are of pivotal importance to their survival and growth. This study aims to develop and tests a model which examines the effect of empowerment and self-efficacy on job satisfaction by using Turkish frontline employees in the banking industry of Northern Cyprus. Also, the study tries to assess the impacts of job satisfaction on the affective commitment and service quality provided by the organizations in the research content. Results reveal that employee self efficacy has significant and positive impact on the job satisfaction. On the other hand, employee empowerment by management staff has significant but negative effect on management commitment to service quality. Empirical results also suggest that management commitment to service quality has significant but again negative effect on perceived service quality by bank customers. Implications of these results for bank chiefs and avenues for further research are also discussed in the study.*

**Keywords:** *Empowerment, Self Efficacy, Job Satisfaction, Service Quality, Cyprus.*

## 1. Introduction

Employees are essential in the service industry out of serving to the reputation of the companies. Thus, their position is very important in providing service quality and satisfaction of customers. Since frontline employees are at the core of the service delivery; the success is highly depend on their performance (Zeithaml et al., 1988; Schneider, 1980). Moreover, as it has been stated by Tax and Brown (1998), a considerable amount of customer complaints is initiated with frontline employees; and therefore, these organizations need to develop customer focused strategies. Otherwise several mistakes and failures might occur and could result in double deviation from expectations (Boshoff and Allen, 2000; Kotler et al., 1999; Bitner et al., 1990).

Banking and financial services are an important part of the services industry and became sophisticated as new information technologies are adopted in the banking and finance industry. The creation of new information technologies also leads to an improvement in service quality efforts in the banking and finance industry, that is, financial institutions start to give more qualified services to their customers as they benefit from new technologies. Therefore, improvement in service quality naturally is expected to have a positive impact on customer satisfaction. Developments in information technologies, on the other hand, force the institutions in the banking and finance sector to revise and restructure their services by adopting new developments. For example, today, internet banking is the most important facility provided by banks around the world. However, as electronic banking becomes more prevalent, customers still tend to measure a bank's service quality in terms of the personal support they receive, rather than the technical support (Araslı et al., 2005). Thus, services provided by the bank personnel are a major component of service quality and customer satisfaction also in this sector. Since new technologies are important component of the banking industry today, customers are likely measure the level of service quality by the service that they get from bank personnel.

This study aims to develop and tests a model, which examines the effect of empowerment and self-efficacy on job satisfaction by using Turkish frontline employees in the banking industry of Northern Cyprus. Additionally, the present study tries to assess the impacts of job satisfaction on the affective commitment and service quality provided by the organizations in the research content.

Empowerment refers to a situation in which the manager gives employees the discretion to make day-to-day decision about job-related activities (Hartline and Ferrell, 1996). By allowing contact employees to make these decisions, the manager relinquishes control over many aspects of the service delivery process.

Hartline and Ferrell (1996) define job satisfaction as “pleasurable emotional state resulting from the appraisal of one’s job as achieving or facilitating the achievement of one’s job values”. The conceptual domain of job satisfaction is broad, because it includes “all characteristics of the job itself and the work environment which salesmen find rewarding, fulfilling, and satisfying, or frustrating and unsatisfying”. Operationally, job satisfaction consists of several facets, including satisfaction with the supervisor, work, pay, advancement opportunities, co-workers, and customers. Although some studies examine the effects of these facets separately, others average across facets to create a global measure of job satisfaction.

As a key part of social learning theory, self-efficacy refers to an employee’s belief in his or her ability to perform job-related tasks. The importance of self-efficacy lies in its ability to raise employee performance. Self-efficacy grows stronger over time as the employee successfully performs tasks and builds the confidence necessary to fulfil his or her role in the organization. As self-efficacy raises, employees use more effort, become more persistent, and learn to cope with task-related obstacles. Empirical studies confirm that self-efficacy has a strong, positive relationship with employee performance (Hartline and Ferrell, 1996: 54). It is therefore reasonable to expect that contact employees who possess strong self-efficacy beliefs are more likely to create favourable service encounters than those who do not.

Management commitment to service quality (MCSQ) can be defined as encompassing the conscious choice of quality initiatives as operational and strategic options for the firm, and engaging in activities such as providing visible quality leadership and resource for the adoption and implication of quality initiatives. It involves two components: 1) a strong personal commitment to quality improvement and 2) a visible and active involvement in the quality-improvement process. Several authors identify commitment as an important component of successful market relationships because it gives rise to co-operative behaviours (Dwyer et al., 1987; Morgan and Hunt 1994; Garbarino and Johnson 1999). Although some theorists have argued that MCSQ is the single most important determinant of whether good service is

delivered to customers, it has generated little empirical research. Perhaps, the only test of the MCSQ construct fail to find a direct relationship between MCSQ and service quality (Parasuraman et al., 1990). A probable reason for this finding is that the relationship between MCSQ and service quality is indirect. Theory suggests that managers must first possess a personal, affective commitment to improve the firm's service quality. Managers who exhibit this commitment are more likely to take initiatives that help the firm and its employees deliver superior quality. Example of these initiatives include creating more flexible processes, dedicating resources to the improvement effort, promulgating a quality-oriented vision throughout the firm, and rewarding employees for their efforts and commitment to the process.

Management of service quality is about determining the stages of service quality that we can deliver and then promising and delivering that quality of service to customers. Service quality is suggested as the difference between customer expectations and perceptions of service (See Hartline and Ferrell, 1996; Parasuraman et al., 1985; 1988).

The island of Cyprus was divided in 1974 following Turkey's peace operation and Turkish Cypriots formed their own state in the North of Cyprus. The TRNC (Turkish Republic of Northern Cyprus) was founded in November 15, 1983 which is a non-recognized state having a considerably small economy with limited natural resources, a small internal market, and is widely vulnerable to external economic changes. The political and economic isolation of the TRNC created a substantial burden in terms of its foreign trade and international relations with countries other than mainland Turkey. The economy is plagued by over employment in the public sector and economic focus is on agriculture, tourism and higher education sector (Lockhart, 1994). The contribution of the services sector in North Cyprus was approximately 52.3% of GDP in 2002 (SPO, 2004). The Turkish Lira (TL) of Turkey is the official currency of North Cyprus. Therefore, monetary policy is managed by the mainland Turkey and the economy is highly vulnerable to any changes in the Turkish economy.

There are currently thirty two banks operating in North Cyprus of which two are public banks, seventeen are private commercial banks, five are branch banks from Turkey, one is a development bank, and seven are private commercial banks that have already been transferred to the savings deposit insurance fund. On the other hand, seven banks have been liquidated as a result of the banking crises in North Cyprus in the late 1990s. Additionally, there are 34 offshore banks and 5 offshore firms operating in North Cyprus

(Katircioglu, 2002). Total deposits generated by the banking sector in North Cyprus were around 81.5% of Gross National Product (GNP) in 2002. And the contribution of financial institutions was 4.8% of GNP in 2002 (SPO, 2004).

After the emergence of higher education sector apart from 1980s, banks in North Cyprus started to employ more qualified people compared to the past times. In parallel to the qualified workforce in the banking industry, the banks in North Cyprus have experienced a transition to adapting new technologies after banking crises that occurred in the late 1990s. For example, besides Turkish originated banks, some Turkish Cypriot banks also started to provide internet banking facilities to their customers, and majority of them started to provide credit cards and many shopping facilities with those credit cards. That is, currently, banks in North Cyprus are focusing their efforts on attracting new customers and stimulating economic spending by the introduction of credit cards which allow customers to make a wide range of purchases on an instalment basis (Arasli et al., 2005).

This paper is organized as follows: Section 2 defines data and methodology, section 3 gives and discusses the results, and section 4 concludes the study.

## **2. Data and Methodology**

This study employs and revises the original instrument of Hartline and Ferrell (1996) in order to analyze inter-relationship between the triangle of Supervisors, customer-contact employees (frontline employees) and customers in the banking sector of North Cyprus. As can be seen from appendix Table 1, a total of 43 questions were asked to respondents of which 17 questions were asked to supervisors, 16 to customer contact employees and 10 to customers of the banks.

Using those questions management commitment to service quality and empowerment for bank chiefs and/or supervisors; employee self efficacy and employee job satisfaction for customer contact employees; and customers' perceived service quality for customers were also measured as in the original instrument of Hartline and Ferrell (1996).

In this study, general to specific modeling approach is used to access three interfaces of the service process: management-employee, employee-role, and employee-customer relationship in the banking sector of North Cyprus. This approach examines the attitudinal and behavioral responses of

customer and frontline employees (customer-contact service employees) that can influence customers' perceptions of service quality, and equally access the relationship between these responses and two formal managerial control mechanisms which are: empowerment and management commitment to service quality as mentioned before.

The banks are selected for this study as sampling frame because the delivery of banking services requires considerable customer contact. Twelve banks in North Cyprus were targeted for this study. Four Supervisors and bank chiefs (or supervisors) were conducted to carry out the survey. The distribution of these supervisors and customer-contact employees according to their banks are as below:

**Table 1. Distribution of Supervisors and Employees in the Banks as Selected for This Study**

Data sample	Supervisor		Employee	
	Frequency	Percent	Frequency	Percent
1) T.İşbank.	4	8,3	10	8,9
2) HSBC	4	8,3	9	8,0
3) K.T.K.M.B	4	8,3	9	8,0
4) İktisat Bank	4	8,3	9	8,0
5) Universal	4	8,3	9	8,0
6) Mez.Koop	4	8,3	9	8,0
7) Limasol	4	8,3	9	8,0
8) Vakıflar	4	8,3	9	8,0
9) Halk Bank	4	8,3	9	8,0
10) Ziraat Bank	4	8,3	9	8,0
11) Öğretmenler	4	8,3	10	8,9
12) Şeker Bank	4	8,3	11	9,8
Total	48	100	112	100

On the other hand, customers who benefit from banking services are randomly selected for this study. Detailed demographic distribution of respondents including supervisors and employees is provided in Table 2:

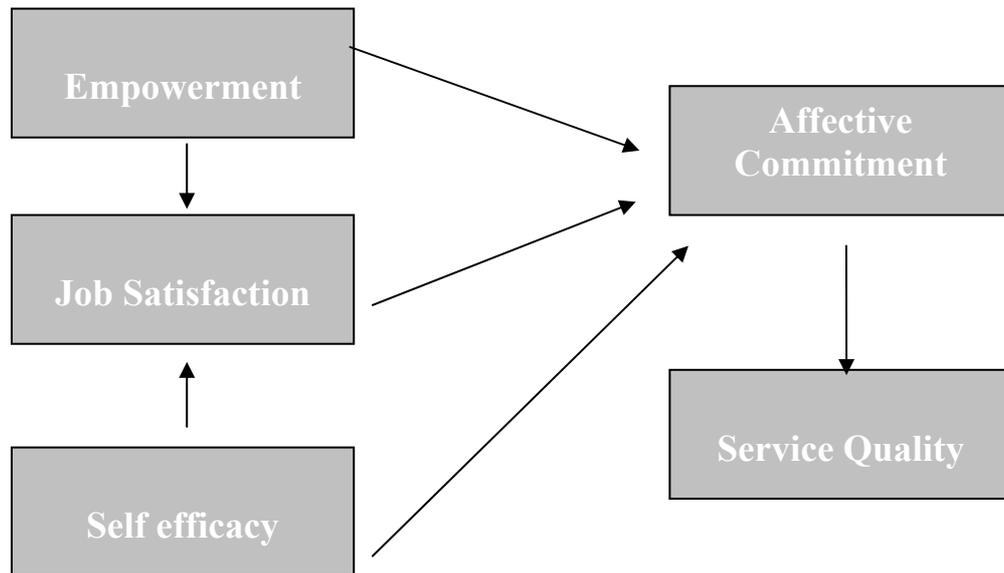
**Table 2. Demographic Profile of Sample**

	<b>Supervisors</b> n =48		<b>Employee</b> n = 112		<b>Customer</b> n = 203	
	Frequency	%	Frequency	%	Frequency	%
<b>Sex</b>						
Female	20	41.7	59	52.7	72	35.5
Male	28	58.3	53	47.3	131	64.5
<b>Age</b>						
18 to 24	-	-	10	8.9	156	76.8
25 to 30	10	20.8	42	37.5	31	15.3
31 to 36	23	47.9	41	36.6	-	-
37 to 42	13	27.1	19	17.0	8	3.9
43 and up	2	4.2	-	-	8	3.9
<b>Nationality</b>						
North Cyprus	48	100	112	100	134	66.0
Turkey	-	-	-	-	50	24.6
Other	-	-	-	-	19	9.4
<b>City</b>						
Nicosia	26	54.2	40	35.7	50	24.6
Famagusta	17	35.4	54	48.2	126	62.1
Kyrenia	5	10.4	17	15.2	14	6.9
Guzelyurt	-	-	1	0.9	5	2.5
Iskele	-	-	-	-	8	3.9
<b>Marital Status</b>						
Single	-	-	20	17.9	177	87.2
Married	48	100	92	82.1	26	12.8
<b>Education</b>						
College student	31	64.6	55	49.1	13	6.4
University	12	25.0	55	49.1	169	83.3
Academic	5	10.4	2	1.8	21	10.3

Before conducting the main quantitative survey, a pilot study has been carried out in order to test and enhance the questionnaire validity, wording, sequence, and layout. In this pilot study, 20 questionnaires were collected. These had already been used to estimate response rate and to become familiar with respondents.

The conceptual model and the related hypotheses of the present study are given below:

**Figure 1. Hypothetical Conceptual Model**



Using the above conceptual model, this study will test the effect of empowerment by management staff and self efficacy of employees on their job satisfaction and then the individual effects of these three items on affective commitment. Lastly, the effect of affective commitment on the perceived service quality of customers will also be tested. Therefore, the hypotheses of this study can be set as follows:

H<sub>1</sub>: Empowerment by management staff exerts a significant and positive effect on frontline employee job satisfaction.

H<sub>2</sub>: Self-Efficacy of employees exerts a significant and positive effect on their job satisfaction.

H<sub>3</sub>: Job Satisfaction of employees has a significant and positive effect on affective commitment of management to service quality.

H<sub>4</sub>: Empowerment by management staff has a significant and positive effect on their affective commitment to service quality.

H<sub>5</sub>: Self-Efficacy of employees has a significant and positive effect on the affective commitment of management staff to service quality.

H<sub>6</sub>: Affective Commitment by management staff to service quality has a significant and positive effect on service quality as perceived by their customers.

The respondents for this study were selected from the employees and their supervisors who work in the banks as shown in Table 1 and their customers who benefit from the services of the banks operating in North Cyprus. The number of employees who work in manager, bank chief or executive position selected for this study is 48 people and the number of employees working in customer-contact services is 112 people from various banks based on stratified sampling method. On the other hand, 203 customers were randomly selected from each bank for interview that live in different regions of North Cyprus and benefit from the services provided by banks.

The revised instrument as developed by Hartline and Ferrell (1996) is provided in Tables 3, 4 and 5. Seven-point Likert Scale was employed to measure each construct. First, “Strongly Disagree to Strongly Agree” scale was used for constructs, Management Commitment to Service Quality, Empowerment and self efficacy. Second, “Extremely Dissatisfied to Extremely Satisfied” scale was used for Job Satisfaction. And finally, fifth, “much worse than I expected to much better than I expected” scale was used for the construct of Perceived Service Quality.

As mentioned before, the questionnaire includes different constructs which are asked to managers, employees and customers separately. For example, manager data includes management commitment to service quality and empowerment; employee data includes employee self efficacy and employee job satisfaction; and customer data includes customers’ perceived service quality.

After the original questionnaire of Hartline and Ferrell (1996) was distributed to respondents, the results were typed in SPSS 10.0 software. On the other hand, LISREL 8.3 was also used in this study as it is linked with SPSS to run factor analysis. By the help of factor analysis, it is clearly seen which factors or items in the questionnaire are loaded or not.

Data were analyzed through the use of frequencies, descriptive statistics such as means and standard deviations by SPSS software, and reliability analysis, exploratory factor analysis, correlation and regression

analysis by LISREL 8.30. Simple regression analysis was preferred in this study instead of path analysis due to the limited sample size. Reliability analysis shows the reliability level of the questionnaire to be distributed. Factor analysis shows which constructs or factors are loaded and are ready for analysis. Correlation analysis shows the degree and direction of linear association among the factors. And simple regression analysis shows the effects of independent variables on dependent variable via regression models.

To assess factor, correlation and regression analyses across all three samples (supervisors, employees and customers), the employee and customer responses were aggregated (averaged) and matched with the manager responses to create a single data set in which the cases represent bank units (12 banks) rather than respondents. These procedures resulted in a final sample of 12 banks, as can be seen from Table 1, to be used for correlation and regression analysis. This is why simple regression was preferred in this study (See Hartline and Ferrell, 1996, for more details).

### **3. Results**

Prior to testing hypotheses of this study by regression models each construct will be evaluated by factor analysis if they are loaded or not. Table 3, 4 and 5 display factor loadings and t-values for supervisors, employee and customers data respectively.

In Table 3, factors loadings are generally greater than 0.50 and their t values are statistically significant since they are higher than 2.00 by Nunally (1967). However, there are items which are not loaded as shown by NL, therefore they are extracted from analysis in regression models. Cronbach alpha and reliability alpha values show that this construct in Table 3 are ready for analysis since they are higher than 0.50 by Nunally (1978).

**Table 3. Supervisor Data (n= 48)**

<b>Management Commitment to Service Quality (MCSQ)</b> (Cronbach's $\alpha$ = 0.84; Construct reliability = 0.85)	Factor Loading	t-value
MQ1 I feel strongly about improving the quality of my organization's services	NL	NL
MQ2 I enjoy discuss quality-related issues with people in my organization	1.00	23.76
MQ3 I gain a sense of personal accomplishment in providing quality services to my customers	0.90	19.98
MQ4 I explain to all my employees the importance of providing high quality service to our customers	0.79	16.20
MQ5 I often discuss quality-related issues with people outside of my organization	NL	NL
MQ6 Providing high quality services to our customers should be The number on priority of my organization	NL	NL
MQ7 I am willing to put in a great deal of effort beyond that normally expected in order to help my organization deliver high quality services to our customers	NL	NL
MQ8 The way I feel about quality service is very similar to the way My organization feels about quality	0.67	13.01
MQ9 I really care about the quality of my organization's service	NL	NL
<b>Empowerment (EMPOWER)</b> (Cronbach's $\alpha$ = 0.74; Construct reliability = 0.64)	Factor Loading	t-value
EM1 I allow employees completely freedom in their work	0.92	20.77
EM2 I permit employees to use their own judgment in solving problems	0.75	15.25
EM3 I encourage initiative in my employees	NL	NL
EM4 I let employees do their work the way they think best	NL	NL
EM5 I assign tasks, then let employees handle them	0.78	15.97
EM6 I turn employees loose on a job, and let them go to it	0.97	22.95
EM7 I allow employees a high degree of initiative	0.76	15.53
EM8 I trust employees to exercise good judgment	0.95	21.86

NL: Not Loaded

Table 4 display factor loadings and t-values for employee data:

**Table 4. Employee Data (n= 112) (Continued)**

<b>Employee Self-Efficacy (SELFEFF)</b> (Cronbach's $\alpha= 0.75$ ; Construct reliability = 0.75)	Factor Loading	t-value
SE1 My job is well within the scope of my abilities	NL	NL
SE2 I did not experience any problems in adjusting to work at this organization	0.81	15.02
SE3 I feel that overqualified for the job I am doing	NL	NL
SE4 I have all the technical knowledge I need to deal with my job, all I need now is practical experience	NL	NL
SE5 I feel confident that my skills and abilities equal or exceed those of my colleagues	NL	NL
SE6 My past experiences and accomplishment increase my confidence that I will be able to perform successfully in this organization	0.77	14.20
SE7 I could have handled a more challenging job than the one I am doing	NL	NL
SE8 Professionally speaking, my job exactly satisfies my expectations of myself	0.78	14.46
<b>Employee Job Satisfaction (SATIS)</b> (Cronbach's $\alpha= 0.86$ ; Construct reliability = 0.87)	Factor Loading	t-value
JS1 Your overall job	0.82	16.96
JS2 Your fellow workers	0.76	15.02
JS3 Your supervisor (s)	NL	NL
JS4 Your organization's policies	0.71	13.81
JS5 Your support provided by your organization	NL	NL
JS6 Your salary or wages	0.67	12.67
JS7 Your opportunities for advancement with this organization	NL	NL
JS8 Your organization's customers	0.95	21.27

NL: Not Loaded

In Table 4, all of the factor loadings are again greater than 0.50 and their t values are statistically significant. Again Cronbach and reliability levels are higher than 0.50. However, there are again some items which are not loaded as shown by NL.

Table 5 display descriptive statistics for employees: Factor loading, t-value:

**Table 5. Customer Data (n= 203)**

<b>Customer Perceived Service Quality (QUALITY)</b> (Cronbach's $\alpha$ = 0.67; Construct reliability = 0.57)		Factor Loading	t-value
SQ1	Receiving prompt service from our employees	NL	NL
SQ2	Never being too busy to respond to your request	0.79	21.28
SQ3	Employee behaviors that instill confidence in you	NL	NL
SQ4	The safety you feel in transactions with our employees	NL	NL
SQ5	The courteousness of our employees	-0.80	-21.64
SQ6	The ability of our employees to answer your questions	NL	NL
SQ7	The individual attention you received from us	-0.99	-30.81
SQ8	The personal attention you received from our employees	NL	NL
SQ9	Having your best interests at heart	-0.82	-22.33
SQ10	The ability of our employees to understand your specific needs	-0.91	-26.46

NL: Not Loaded

In table 5, factor loadings are above 0.50 and their t values are greater 2.00. However, only items SQ2, SQ5, SQ7, SQ9 and SQ10 are usable in this study.

Table 6 gives correlation matrix that shows the interaction between each construct. The table gives correlation analysis results as well as means scores and standard deviations for each construct. Mean value of MCSQ is 6.56. This means that Supervisors have positive intentions for management commitment to service quality where they generally agree with this construct items. Mean value of empowerment is 4.33 which mean that Supervisors have positive intentions for empowerment where they medium agree with this construct items. The minimum mean score is 4.33 for Empowerment.

The maximum mean score is 6.56 for MCSQ. This means that Supervisors have positive intentions for affective commitment for their employees. On the other hand, employees have also positive intentions for self-efficacy where they generally agree at 6.21 mean score. Mean value of job satisfaction for employees is 5.77. This means that employees have positive intentions for their job satisfaction.

**Table 6. Correlation analysis results**

Measure	Mean	SD	1	2	3	4
1.Mcsq	6.56	1.26				
2.Empower	4.33	0.85	-0.874			
3.Selfeff	6.21	0.66	-0.148	0.230		
4.Satis	5.77	0.94	0.389	-0.305	0.611	
5.Quality	5.86	0.80	-0.579	0.514	0.585	0.032

And the mean value of service quality as perceived by employees is 5.86. This indicates that customers have generally founded bank services better than they expected from their banks.

Correlation matrix shows that perceived service quality of customers is positively correlated with empowerment for employees by their supervisors and job satisfaction of employees. It means that as empowerment and job satisfaction increases, the perceived service quality of customers will increase as well. However, a negative correlation was obtained between perceived service quality of customers and management commitment to service quality.

Finally, Table 7 gives the results of simple regression analysis as hypothesized in this study:

**Table 7. Hypothesized and Final Models of Service Employee Management: Structural Parameter Estimates (n= 12)**

Hypothesized Model				
Path	Hypothesis	Coeff.	t-value	R <sup>2</sup>
EMPOWER → SATIS	H <sub>1</sub> (+)	-0.18	-1.01	0.31
SELFEFF → SATIS	H <sub>2</sub> (+)	0.42	2.44**	0.61
SATIS → MCSQ	H <sub>3</sub> (+)	0.39	1.34	0.39
EMPOWER → MCSQ	H <sub>4</sub> (+)	-0.52	-5.68*	0.87
SELFEFF → MCSQ	H <sub>5</sub> (+)	-0.10	-0.47	0.02
MCSQ → QUALITY	H <sub>6</sub> (+)	-0.27	-2.25**	0.34

\* and \*\* indicate respectively significant levels at alpha 0.01 and 0.05 .

According to Table 7, employee self efficacy has positive and significant effect on their job satisfaction as well, thus H<sub>2</sub> is validated in this study. Again, empowerment by management staff has significant but negative relationship on their affective commitment, thus, H<sub>4</sub> is not validated in this study. That means that empowerment by management staff given to employees does not have a positive effect on their commitment of service quality. And lastly, management commitment of service quality has again significant and negative effect on service quality as perceived by customers, thus, H<sub>6</sub> is not validated again. On the other hand, H<sub>1</sub>, H<sub>3</sub>, and H<sub>5</sub> again were not validated according to the results of this study.

Figure 2 shows the results of conceptual model set for this study according to the research implemented in this study as also introduced previously in this study:

**Figure 2. Hypothetical Results of Conceptual Model**

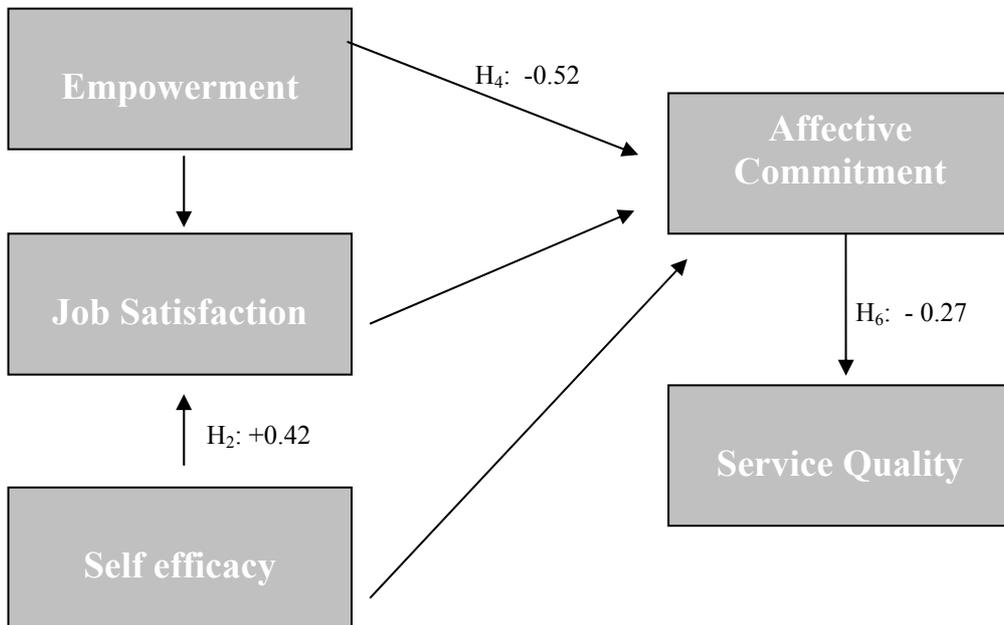


Figure 2 shows that only three hypotheses that were tested via simple regression analysis were found significant. However, two of them are in inverse directions. Thus, only the second hypothesis has been validated according to the results of this study. That is, self efficacy of employees has positive and significant effect on their job satisfaction.

#### 4. Conclusion

This study empirically investigated the relationship between bank chiefs, employees and customers interface in the banking industry of North Cyprus by using revised construct of Hartline and Ferrell (1996). The descriptive analysis that mainly includes mean scores indicates that management personnel and employees in the banks of North Cyprus which are selected for this study has positive intentions about the arguments provided by the constructs of Hartline and Ferrell (1996). And, generally speaking, customers who benefit from banking services are generally satisfied from their banks in North Cyprus.

Additionally, according to the findings of the study, the hypotheses which were run in this study were not generally validated except one mainly due to the small sample size of bank chiefs and employee data which are in parallel to the study of Hartline and Ferrell (1996). Results of this study revealed that employee self efficacy leads to a better job satisfaction of them. Furthermore, management commitment to service quality has significant but negative impact on the perceived service quality by customers. On the other hand, empowerment of employees by management staff exerts significant and negative effect on management commitment to service quality. This indicates the situation that empowerment does not exert a positive impact on employee satisfaction by management in the sample selected for this study. And lastly, management commitment by management staff has significant and again negative effect on perceived service quality by customers according to the results of this study.

The most important limitation of this study is the limited sample size. Due to the limited number of banks in North Cyprus and great difficulty in reaching and convincing bank personnel, this study was put on limited sample size. Therefore, as a suggestion for further research, it can be recommended to expand this study for the whole population size for bank personnel and for greater size of customers in order to test the validity of the instrument of Hartline and Ferrell (1996) for the banking industry of North Cyprus. However, it can easily be said that the results are in parallel with the results of Hartline and Ferrell (1996). And lastly, this type of study can be implemented in both sides of Cyprus to make a comparison between Turkish Cypriot and Greek Cypriot banking industries.

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# CROSS -BORDER BANKING MERGERS AND ACQUISITIONS IN EUROPE: AN EMPIRICAL INVESTIGATION<sup>1</sup>

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## **Abstract**

*Cross-border mergers and acquisitions have not been a major feature of the EU banking sector with the dominance of domestic consolidation. The introduction of the euro, the globalization of financial markets and the technological advances have led to acceleration in the process of European banking integration. An important concern arises about the driving forces behind the current banking consolidation wave in Europe in the context of international banking expansion. The aim of this paper is to identify some countries or characteristics of countries that will affect the trends of foreign direct banking investments via mergers and acquisitions across Europe. We use a panel data of cross-border banking mergers and acquisitions in the main European countries from 1987 to 2004. Moreover, we distinguish between receiving and investing countries of cross-border banking investments in Europe. Considering the internationalisation banking literature, we test whether the characteristics of home and host countries would affect cross-border banking investments within Europe. The findings confirm the importance of banking market concentration as a determinant of further international growth of European banks. The European deregulation seems to have exerted a greater influence on foreign banking investments across Europe.*

**Keywords:** *Cross-border banking, mergers and acquisitions, Multinational banking, Europe*

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## 1. Introduction

The European banking landscape has experienced a profound restructuring since the mid 1980s and still is substantially changing. The change has been driven by a tremendous technological progress, the ongoing national and European deregulation, the implementation of the European Monetary Union (EMU) and ongoing globalisation (Bis (2001)).

The gradual elimination in most countries of barriers to international capital flows, jointly with a general relaxation of barriers to operating across geopolitical borders has made possible the ongoing expansion of international financial institutions.

Allowing the production of financial services at large distances from the home country headquarters, the new communications, information and financial technologies have helped banking institutions to take advantage of these relaxed geopolitical barriers. As well, the globalization of no financial economic activity has increased the demand for the services of multinational financial institutions, capable to follow customers operating in foreign countries.

For a number of reasons, domestic banking mergers and acquisitions (M&As) have long outnumbered cross-border banking in European countries. First, most countries have historically used regulations to discourage foreign entry – for example, by requiring foreign banks to hold excess amounts of capital, or by requiring branches of foreign banks to adhere to both home country and host country regulations. Second, the difficulty to operate in a foreign country is also due to the differences in language, business customs, laws and the problems associated with distance that made such investments less valuable. Third, domestic banks might form combinations in order to gain the scale needed to make future cross-border acquisitions themselves or to compete more effectively against potential foreign entrants (*Berger et al, 2004*).

The experience of the European community constitutes a unique case for the investigation of international trade in banking services and cross-border banking activity. The Treaty of Rome in 1957 created the basis for the existence of a European common market. The First Banking Co-ordination Directive of 1977 created a framework for a single European banking market by eliminating differences in banking regulations and practices across the Member States of the EU.

A license from the national authority was needed in most countries to operate in the market. The Second Banking Co-ordination Directive of 1989 introduced a single banking license for operating across the European Union,

aimed at liberalizing the trade of financial services across Europe. Therefore, a bank authorized to operate in a member country could operate in any other member countries without any further local authorization. However, national European governments can not formally allow foreign banks entry that involves the acquisition of national banks<sup>2</sup>. Given the important obstacles to cross-border banking activity, some studies (Berger, 2000; Boot 2002) outline the limited relevance of the traditional economic rationale to explain the banking movements abroad. In this respect, recent research tried to provide an alternative argument, specific to the international banking growth strategies. In other side, the recent changes in the macro environment suggest that pan-European consolidation is likely to accelerate:

- i. The ECB and European Commission are actively pushing for the creation of an integrated financial system to better allocate capital across Europe and increase competition in banking services.
- ii. Regulatory harmonisation has increased significantly compared with the last ten years (Basel II, IAS/IFRS) making accounts much more transparent and reducing “regulatory” risks”.

In this context, consolidation activity among European banks significantly increased within the last decade and in particular within the last two years.

In this paper, we study the determinants of cross-border banking M&A activity in Europe, given the context of the recent phase of banking internationalisation. Using the data of banking M&A operations over the period (1987-2004), we perform the analysis of countries’ characteristics in order to explain cross-border investments by banking institutions in Europe. Our contribution consists in distinguishing between investing countries and the target countries of foreign banking acquisitions. Considering the theory of comparative advantage, we have tested whether some countries have, and/or some characteristics of countries yield, advantages at receiving foreign banking investments or investing abroad via cross-border M&As.

The remainder of the paper is organized as follows. The next section highlights the previous empirical evidence on cross-border banking activity and sets up the theoretical background for the empirical analysis of M&As trends. Section 3 describes the data set and presents the results of empirical analysis on the characteristics of countries concerned by cross-border banking M&A activity.

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<sup>2</sup> The recent attempts by BBVA and ABN Amro to acquire the Italian banks BNL and Antonveneta constitute a good example of this situation.

## **2. Theoretical and empirical research on cross-border banking**

An important research on banking consolidation in Europe examined the external factors that facilitate European banking integration and consolidation. These factors include (i) the globalisation of the international financial system due to the liberalisation of international capital movements and financial deregulation within countries; (ii) major technological advances, particularly in the field of data processing; (iii) improvements in the cross-border regulatory environment linked to the Single Market Programme and the introduction of the euro. Other studies focus on the motivations of banks to expand in foreign markets and the obstacles that they face to be so efficient and competitive as the domestic institutions.

### ***2.1 Theoretical background of cross-border banking activity***

Previous research has emphasized the importance of barriers to entry as a main determinant of cross border banking movements. Regulatory restrictions in the host country have been often mentioned as a barrier to entry in multinational banking. A pre-requisite for entering a foreign country is obviously, that the national authority allows the entry. As it has been previously noted, regulatory barriers were formally removed within European Union through the Second Banking Directive. Nevertheless, factors as the existence of hidden restrictions, as well as non-regulatory barriers could at least partially isolate national banking sectors from competition (Balandon, 2000).

Many theoretical and empirical studies focused on the motivations of international banking. According to the results of research on international banking activity, the banking motivations to expand on foreign markets (through M&As) can be classified in four main rationales:

- servicing exporters from the home country
- servicing foreign subsidiaries of home country clients
- participating in the host country's capital markets
- participating in the host country's banking system or banking consolidation process.

A main motive for *foreign banking investments* is to provide banking services to home country clients. The range of banking services typically offered would include the provision of information about the general and economic conditions for doing business in a particular foreign country and, above all, the collection of receivables for home country exporters. The rationale of this behaviour would be the need to preserve existing banking relationship in the

home country before they could be eventually substituted by a new banking relationships (Williams, 1997).

Banks following their clients' multinational expansion has been widely considered as a main motivation of cross-border banking movements. Grubel (1977) applied the theories of foreign direct and international trade to the internationalization of banks that provide the theoretical explanation. According to this explanation, multinational banks go abroad to service their domestic customers who have gone abroad. Information asymmetries regarding local banks about the client's financial needs would constitute a main ownership advantage for the foreign bank.

The Eclectic theory provides the theoretical framework of international banking based on the three concepts: ownership advantage, location advantage, and internalization advantage. The presence of these advantages allows the foreign bank to overcome the advantages possessed by the domestic banks due to incumbency. Given the basic characteristics of the financial services industry, the eclectic framework predicts that banking institutions are more likely to move across international boundaries via foreign direct investment rather than by cross-border trade.

Ownership advantages are resources or production processes to which firms in the host countries do not have access. These proprietary assets that are typically knowledge-based are crucial factor to prompt foreign direct investment because given the possibility to move knowledge-based assets across great distances at low cost, and to be applied to multiple plants at low marginal cost. These advantages in the form of intangible, customer-specific, and knowledge-based assets are important for providing credit to small- and medium sized enterprises (SMEs);

Location advantages are conditions in the host country that make it profitable for a multinational enterprise to produce in the host country rather than producing at home and export to the host country (Berger et al, 2004). Some examples of location advantage are cheap factor prices in the host country; high transportation costs; import quotas and tariffs; and better access to the host country customers. The factors relative to location advantages in multinational banking include differences in regulatory structures, the geographical dispersion of the bank's client base, leading to banks following their retail customers, information collection, and access to a skilled pool of labors.

Internalization advantages are conditions, which preclude a firm from simply licensing its 'knowledge capital' to a host country firm. For example, the existing flow of information resulting from the bank-client relationship would not be pre-empted by a potential competitor bank according to Casson

(1990). The underling hypothesis to this point of view is to consider the bank's information network and its infrastructure of skills that correspond to the personal contact, as one of the main advantages of a multinational bank. Therefore, owning information-gathering centers in a variety of locations can enhance these advantages. Williams (1997) considers the ability of the multinational bank to institutionalize and learn from this network of information as source of its comparative advantage.

Banks have traditionally played a major role in domestic and international capital markets. The growing expansion of commercial banks towards the securities business should make this trend to continue and even increase in the future. Accordingly, some authors have suggested that banks will establish facilities abroad with the aim of participating in the host country's capital market<sup>3</sup>. Hence, banks would funnel internationally the savings originated in the home country through cross-border acquisitions and have access to the domestic customers more easily. The greater possibilities of diversification available at an international level would justify this behaviour.

Participating in the host country banking consolidation should be a quite straightforward motivation for cross-border acquisitions. Accordingly, banks would enter in foreign countries to carry out the typical commercial banking activity lending and accepting deposits. The less concentrated foreign markets are more likely to be the targets of cross-border banking investments.

## ***2.2 Previous evidence on international banking activity***

Previous research on international banking provides empirical evidence on the following issues: the limited economies of scale and synergies achieved on cross-border M&As, the difficulties associated to cross-border banking activity, the performance of international banks in foreign markets and the strategic rationale of international banking growth. The empirical evidence on cross-border banking M&As confirms the consensus view that cross-border deals add limited value. The academic research on cross-border acquisitions of financial institutions in developed countries suggests mediocre post-merger financial performance at best. Examining cross-border operations in Europe, Beitel and Schiereck (2001) found that the associated combined bidder and target value changes were generally zero or negative, compared with domestic mergers, which combined values were positive on average.

A study of U.S. M&As provides some evidence consistent with fewer benefits from cross-border M&As. De Long (2001) found that mergers

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<sup>3</sup> see Heinkel and Levi, (1992); *Focarelli et al*, (2000).

combining two firms from different geographic areas create less shareholder value. Similarly, the risk-reduction benefits from cross-border bank mergers seem to be no significant as they have little impact on the volatility of stock returns as proved by *Amihud et al.(2002)*. Whereas most empirical studies on efficiency of foreign banks in developed countries found that the domestically owned banks are more efficient, Berger et al. (2000) show the possible exception for U.S banks. In a European study, Vander Venet (1996) found that the foreign institutions have about the same efficiency on average as domestic institutions while a few studies have proving the same evidence. The research on cross-border banking efficiency in developing countries finds different results from those in developed countries. One study of foreign banks in over 80 countries, made by Claessens et al. (2001) reveals that foreign-owned banks have relatively high profitability in developing countries.

The empirical evidence consistent with the hypothesis of limited gains from cross-border M&As are due to the obstacles faced by foreign-owned institutions that limit their efficiency. Accordingly, Buch and DeLong (2004) found that the banks in highly regulated markets are less likely to be the targets of cross-border acquisitions. The results of their study suggest that the cultural differences and the distance tend to discourage this type of operations. Therefore, these kinds of structural factors act as barriers to cross-border lending and borrowing by banks, considering the results of Buch (2001, 2003).

Berger and Smith (2003) detected another obstacle related to the preferences of the customers for the services provided by the local banks. The domestically owned banks have the advantage to have better knowledge of the local conditions and information about domestic customers. In this respect, foreign affiliates of multinational corporations operating in European countries usually choose domestic banks for cash management (i.e., liquidity and short-term financing) services. Other studies have argued that cross-border consolidation within Europe may be deterred by political factors, cultural differences, the use of different payment and settlement systems, and remaining differences in capital markets, taxes, and regulations across the countries (Boot, 2003; Bandon, 2000).

Many empirical studies confirm the hypothesis of ‘following-the client behaviour’ as driving factor of banking internationalization (Grosse and Goldberg, (1991); Wengel, (1995); Brealey and Kaplanis, (1996)). Concerning the latter argument, Casson (1990) has argued that U.S banks expanded offshore to follow the expansion of U.S manufacturing firms. This empirical research supports servicing home country exporters as a determinant of foreign banking expansion. However, the results of Stanley &

al. (1993) and Seth & al, (1998) suggest that this strategy is not the only motivation explaining cross-border M&As. Focarelli and Pozzolo (2001) argued that this motivation is only relevant for small banks, while the behaviour of larger banks is determined by diversification policies.

Previous research has revealed the existence of large and well-developed capital market in the home country, as a determinant of banking expansion abroad. Accordingly, De Paula (2002) suggest that the internationalization of banks could also be explained by the strategy of universal banks seeking to diversify their activities in the financial markets of the host country through the acquisition of majority, controlling stakes or the acquisition of minority. Accordingly, economic conditions in the home and the host countries seem to be key determinants of the foreign banking investments.

A study of Focarelli et al (2001) provide some evidence consistent with the explanation of banking internationalization that is due to increased banking competition caused by financial deregulation. The results of their study suggest that countries with developed financial markets are more likely to be at the origin of cross-border M&As. The empirical evidence reveals that banks expand to countries where the potential economic growth is stronger and the banking sector is less efficient. De Félice and Revoltella (2003) provide some evidence consistent with the importance of regulatory environment and the degree of concentration in the host country and the domestic country of international bank as decisive factor of its strategies to go abroad.

The results of Berger et al. (2004) found empirical evidence of the theories of international trade (*the theory of comparative advantage, the new trade theory*) as theoretical framework to explain cross-border financial M&As. They found that the characteristics of EU countries are determining factors of foreign financial investments as having implications on the comparative advantage of foreign banks.

### **3. Empirical evidence on cross border banking M&As in Europe**

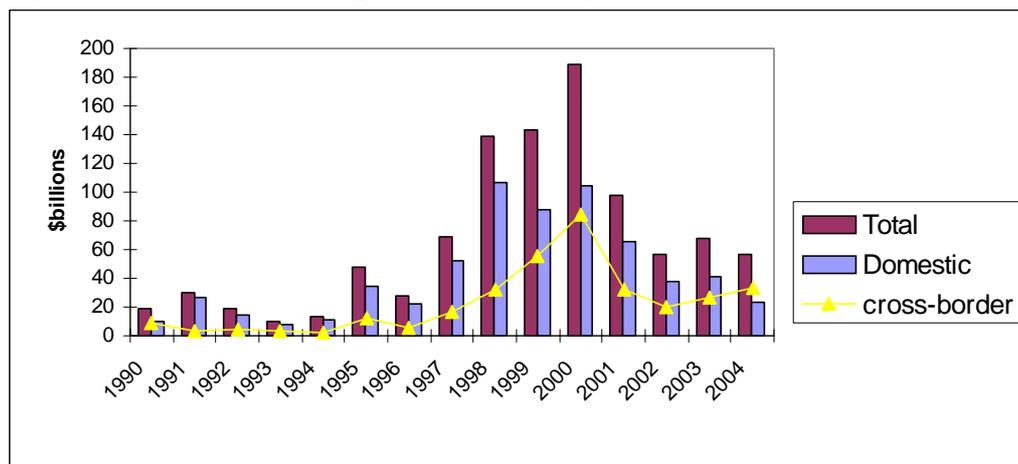
The purpose of our empirical tests is to investigate the patterns of foreign direct investment via cross-border banking M&As through Europe. Unlike most previous researchers, we focus our analysis on international banking expansion in the main European countries only the foreign banking investment through cross-border M&As.

### 3.1 European Banking M&As trends

The data of M&A trends displayed in Fig1 show a significant mergers and acquisitions activity among large credit institutions took place in the run-up to and the early years of the Monetary Union (1998-2000). During 2003, M&As activity in terms of value stabilised at levels comparable with those seen in 2001 and 2002 (ECB, 2004). Around 70% of the entire transactions volume between 1985 and 2000 is related to national focused banking M&As. European banking institutions thus seem to consolidate their national markets first to become powerful enough to stand the arising competition of a single European market of financial services<sup>4</sup>.

In 2004, the percentage of domestic M&As activity in the banking sector fall to 42% of the total value of M&A transactions. The recent acquisition of Abbey National by SCH explains to some extent this new trend in M&A activity of European banks. This transaction and the recent ongoing deals between BBVA, ABN Amro and the Italian banks (BNL, Antonveneta ) suggest more attention on cross-border M&As and arise the question of the future deals between EU financial institutions.

**Figure 1: Value of banking M&As in Europe**



Source: Thomson Financial Securities data and author's calculations

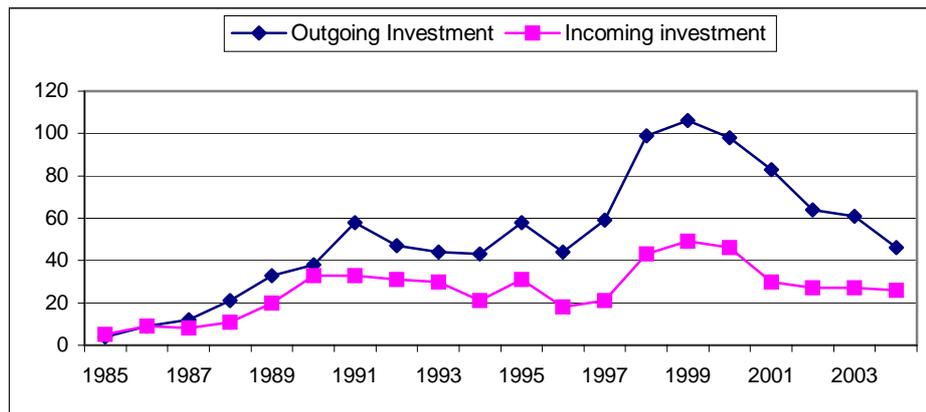
In order to identify the determinants of cross-border M&As in EU, we focus our analysis on investing and receiving countries of foreign banking investments. The data of M&As are taken from the Thomson Financial Securities Data database on M&As from 1985 to 2004. However, the

<sup>4</sup> Compared to other sectors, banks lack substantially behind with regards to the share of cross-border operations of total M&As (Focarelli and Pozzolo, 2000).

regression analysis begins from 1987 due to data limitations for other variables.

According to the assumption of Berger et al (2004), we consider the M&As in foreign countries as outgoing banking investments and the M&As of foreign banks or Credit institutions in a European country as incoming banking investments. These data for the EU Banking sector as a whole are displayed in Figure 2 that reveals a net investing banking sector with an excess of outgoing investments<sup>5</sup>.

**Figure 2 : Number of cross-border banking M&As in EU countries (1985-2004)**



Source : Author's calculations based on Thomson Financial Securities Data (2005).

We examined the foreign banking investments in the main European countries (EU) without making restrictions on the target activity of cross-border banking M&As. Thus, we estimate that our data has the advantage to provide a geographic diversification's indicator of banking activities. In this respect, we will test the effects of local countries characteristics on broadening banking scale and scope through cross-border M&As.

<sup>5</sup> This situation could be influenced by the effect of pan-European banking acquisitions. The number of cross-border M&As in EU include the cross border banking investments between European countries.

**Table 1 : Foreign banking investments (cross-border M&As) in EU (1985-2004)**

Countries		(1) Incoming investments (target )	% Total EU (%)	(2) Outgoing investment (Investor)	% total EU	(3) = (2) – (1) Net level of cross border investment
Austria	Number	10	1,93	34	3,31	24
	Value	8933,8	5,78	3787,4	1,54	-5146,4
Belgium	Number	24	4,62	108	10,52	84
	Value	3531	2,29	16723,2	6,80	13192,2
Germany	Number	30	5,78	111	10,81	81
	Value	8927,7	5,78	37968,5	15,43	29040,8
Greece	Number	11	2,12	11	1,07	0
	Value	2105,4	1,36	1054	0,43	-1051,4
Spain	Number	74	14,26	122	11,88	48
	Value	10105,5	6,54	51808,1	21,06	41702,6
France	Number	75	14,45	309	30,09	234
	Value	28382,4	18,38	22518,9	9,15	-5863,5
Ireland	Number	21	4,05	20	1,95	-1
	Value	4599,6	2,98	3256,9	1,32	-1342,7
Italy	Number	54	10,40	51	4,97	-3
	Value	9269,8	6,00	10734,9	4,36	1465,1
Luxembourg	Number	8	1,54	15	1,46	7
	Value	3812,7	2,47	1491,3	0,61	-2321,4
Netherlands	Number	19	3,66	44	4,28	25
	Value	4785,7	3,10	14030,5	5,70	9244,8
Portugal	Number	22	4,24	18	1,75	-4
	Value	6060,9	3,92	2735	1,11	-3325,9
Finland	Number	8	1,54	11	1,07	3
	Value	9105	5,90	8178,1	3,32	-926,9
Sweden	Number	13	2,50	35	3,41	22
	Value	2578,1	1,67	12529,9	5,09	9951,8
UK	Number	136	26,20	129	12,56	-7
	Value	44993,1	29,13	57205,9	23,25	12212,8
Denmark	Number	14	2,70	9	0,88	-5
	Value	7247,2	4,69	2017,6	0,82	-5229,6
European Union	Number	519	100	1027	100	508
	Value	154437,9	100	246040,2	100	91602,3

*Source : Author's calculations based on Thomson Financial Securities Data (2005).*

Table 1 displays the aggregate transaction value and the number of M&As for the period 1985- 2004 in all EU banking systems and their net level of internationalisation. The data of cross-border banking activity reveals

some EU banking systems as net investing and others as net receiving of foreign banking investments. The first group include Belgium, Germany, Spain, Netherlands and Sweden, which have higher level of outgoing investments in terms of number and global value of M&As than receiving banking investments. In other side, Greece, Ireland, Portugal, UK and Denmark are considered as receiving countries taking into account the number of cross-border M&As.

Nevertheless, the high value of outgoing investments in some countries (Italy, UK) suggests the large scale of cross-border acquisitions in the main European countries. The high level of receiving banking investments in France, Austria, Luxembourg and Finland is consistent with this assumption of large cross-border deals in these countries. Considering the number of cross-border M&As, we found the same countries as investing countries.

The differences between the number and the value of M&As illustrate the importance of target and investing countries characteristics as determinant of the net level of their internationalisation. In this respect, some target countries of incoming banking investments have some comparative advantage that explains the high number of cross-border M&As in these countries. The data are consistent with the assumption that these countries have more banking institutions with the potential to make cross-border acquisitions or which are attractive targets for cross-border M&As. As illustration, we note that the large European countries as France, UK, Spain, Germany and Italy have the highest share of cross-border investments. This result suggests that the scale of M&A operations in these countries have been important.

The degree of concentration of the banking systems and the characteristics of their countries are determinant factors in cross-border banking investments. The discussion about other determinants of cross-border banking movements within Europe is presented in next section.

### **3.2 Model, data and variables**

To investigate the determinants of international banking investments in Europe, We test the following model using the data of cross-border M&As for the period (1987-2004).

$$BKEXP_{i,t} = a + \sum_{i=1,N} \alpha_i CountryiDummies + \sum_{i=1,N} \beta_i x_{it} + \varepsilon_{i,t}, \quad i = 1, N; \\ t= 1...T \quad (1)$$

$$BKIMP_{j,t} = b + \sum_{i=1,N} \alpha_i \text{Country}j\text{Dummies} + \sum_{j=1,N} \beta_j x_{jt} + \varepsilon_{j,t}, i = 1, N; \\ t= 1...T \quad (2)$$

Where  $i = 1, N$  indexes the home country of foreign banking investments;  $j=1,N$  indexes the receiving countries of cross-border banking investments and  $t = 1, \dots, T$  indexes the year the M&A was announced. The explicative variables displayed in the Table 2 are chosen on the basis of the theoretical and empirical evidence discussed above.

The dependant variable in the first regression ( $BKEXP_{i,t}$ ) equals the number of cross-border M&As in year  $t$  of banking institutions from the country  $i$ . In the second regression, the dependant variable equals the foreign banking investments in the European country  $j$  through cross-border M&As.

**Table 3: Summary statistics for regression variables, 1987-2004**

<i>Variables</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<b><i>Dependant Variables</i></b>				
BKEXP	3.53	5.38	0	32
BKIMP	1.5	2.00	0	13
<b><i>Country characteristics</i></b>				
NBKA	0.76	1.21	0	6
CONC	0.43	0.27	0	1
PIBGROWT	2.89	2.52	-6.2	15.6
LPIBCAP	4.30	0.22	3.4128	4.84
PIMP	42.33	24.25	18.5	135.67
PEXP	44.69	28.23	16.3	153.08
INFL	3.40	3.08	-0.2	20.4
OPEN	84.79	53.18	35.9	288.74
DERGLM	0.84	0.37	0	1
FBD	0.81	0.39	0	1
SBD	0.69	0.46	0	1

*Sources : Thomson Financial Securities Data, Mergers and Acquisitions on-line Database (2005); DataStream Database (2005) and the author's calculation.*

The explicative variables ( $x_{i,t}$ ) and ( $x_{j,t}$ ) correspond respectively to the home and the host countries characteristics of cross-border banking movements through M&A operations. These variables include indicators about the economic and regulatory environment of these countries:

- NBKA: Number of cross-border banking acquisitions of other banking institutions.
- CONC: The share of domestic operations in the total of banking M&A is considered as indicator of the market concentration of the country's banking industry.
- PIBGROWT: annual GDP growth as indicator of economic conditions in the home and the host countries of foreign banking investments.
- LPIBCAP: the natural log of GDP per capita is an other indicator of economic environment.
- PEXP: the ratio of exports to GDP is an indicator of the non-financial firms exports activity.
- PIMP: the ratio of imports to GDP reveals the importance of international firms presence in the target country of foreign banking investments.
- OPEN: the ratio of total exports and imports to GDP measures economic openness.
- INFL: inflation rate in home and the host countries of foreign banking investments
- DERGLM: a 0,1 dummy take the value 1 after the year that restrictions to cross-border movements of capital are eliminated.
- FBD: 0,1 dummy variable that take value 1 from the year that the First Banking Directive was implemented in the European country
- SBD: 0,1 dummy variable indicating the year of the Second Banking Directive implementation.

We assume at a given date that two countries having similar observable characteristics will have approximately the same number of cross-border M&As. The coefficients  $\alpha_i$  and  $\alpha_j$  reveal the countries specific effects on their outgoing and incoming foreign banking investments. Considering the Hausman tests, we estimate the equation (1) using Fixed effects Model and Random effects Model for equation (2). The Table 3 and 4 display the different specifications of the two equations. The Panel data contains 252 observations for 14 European countries. The United Kingdom was excluded because of missing observations relative to regulatory characteristics. The methodology of tests can be explained by the aim of our study to identify the investing and receiving countries in EU of cross-border banking investments. We assume that the country characteristics increase the likelihood to be at the origin of foreign banking expansion or the target of cross-border M&As.

### 3.3 *Expected signs*

The signs of the equations (1) and (2) coefficients are predicted considering the empirical results and the literature discussed above. According to the new trade theory literature, banking FDI are more likely into and out of highly developed countries. This assumption implies positive coefficients on LPIBCAP and PIBGRWTH.

Considering the hypothesis “to follow customer abroad” as motivation of foreign banking investments, we predict that the degree of trade openness would be positively correlated with cross-border banking activity. This assumption implies positive coefficients on EXP, IMP and OPEN variables.

Given the law of comparative advantage, the country environments that foster strong banking institutions, more likely to have a competitive advantage over their competitors in the destination market allow them to invest abroad. This implies positive sign on LPIBCAP. Accordingly, the large banks formed from previous banking mergers reach the sufficient scale to expand their activities in other foreign markets. This implies a positive coefficient on NBKA.

The previous evidence on cross-border banking suggests that highly developed economies may also be more attractive for foreign banking investments. Therefore, the same sign of coefficients on the above variables would be expected in equations relative to incoming banking investments.

The signs of coefficients on some other variables (INFL) are ambiguous and different between the two equations *a priori*. The hypothesis that high domestic banking consolidation may increase banking incentives to expand in foreign market, suggests a positive correlation between the degree of banking concentration and the outgoing banking investments. However, the less concentrated markets are more likely to be the targets of foreign banking investments, which imply negative coefficients on CONCj.

In order to distinguish countries which are more likely to be as investing or as receiving country of cross-border investments, we include Country i and country j Dummies in our regressions. The positive coefficient on country i Dummies suggests that country is less likely to be the target of cross-border acquisitions. On other side, the coefficients on country j Dummies are interpreted as indicator of European countries which are more attractive to foreign banking investments.

The First banking directive and the Second banking directive aimed to liberalize the trade of financial services across European borders and to increase the integration of the European banking market. In this respect, the

sign of PDB and SDB will be positive as measure of European banking integration that facilitate the cross-border banking movements. Considering the positive effect of liberalizing capital movements on cross banking investments, we expect that the coefficient on DERGLM be also positive.

### ***3.4 Estimation results***

The empirical results of different specifications of the equation 1 are displayed in Table 3 showing the determinants factors of outgoing banking investments in Europe.

The positive coefficients statistically significant on NBKA confirm our predictions. This result is due to the coexistence in the same countries of specialised banking institutions with the diversified institutions, acquiring other financial institutions in foreign markets.

The empirical results confirm the motivations of banking institutions to follow their customers in foreign markets with generally positive and statistically significant coefficients on PEXP. As expected, the degree of trade openness is positively correlated with cross-border banking investments as suggest the positive coefficient on OPEN<sup>6</sup>.

The coefficient on PIBGROWT is negative, contrary to our predictions. However, this coefficient is not statistically significant and the sign of this coefficient become positive when we estimate the specification (4) of the equation (1) using a fixed effect model. This result reveals limited evidence on the positive effect of economic development in the home country of banks on their expansion abroad. However, the negative coefficient on inflation rate is generally statistically significant, which suggests the importance of this indicator of country's economic environment as driving factors of cross-border banking activity.

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<sup>6</sup> The result concern the coefficient on OPEN, relative to fixed effects model specifications' which are not reported in the Table 3.

**Table 3 Selected regression results for equation (1) : Dependant variable BKEXP<sub>i</sub>,**

	Outgoing banking investments <sup>a</sup>			
	FEM (1)	REM (2)	OLS with dummies V (3)	REM (4)
NBKA	0.587***	0.689***	0.587***	0.602***
CONC	-1.165	-1.095	-1.165	-2.144**
PIBGROWT	-0.084	-0.083	-0.084	0.059
PEXP	0.078***	0.034	0.078***	
INFL	-0.193**	-0.219**	-0.193**	0.087
OPEN				-0.002
DERGLM				2.568***
PDB				-0.642
SDB				1.389**
Germany			3.143**	
France			14.007***	
Belgium			-0.530	
Spain			3.893***	
Italy			0.418	
Ireland			-4.636**	
Portugal			-1.089	
Austria			-1.706	
Finland			-1.962	
Netherlands			-2.594*	
Denmark			-2.733**	
Sweden			-1.139	
Luxembourg			-8.961***	
Constant	1.016	2.963*	1.293	1.113
R-squared	0.11		0.68	

*Sources: Annual data from 1987 to 2004 based on Thomson Financial Securities Data, Mergers and Acquisitions on-line Database (2005); DataStream Database (2005) and the author's calculation.*

The results provide empirical evidence of the hypothesis that banking deregulation process and the implementation of the Second banking Directive has encouraged the cross-banking investments in European Union countries.

Contrary to our predictions about the necessity to consolidate the domestic banking industry before investing in foreign markets, the coefficient on CONC is negative. This result is partly due to the method of calculating

<sup>a</sup> The coefficients are \*significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

the concentration indicator, which implies a negative correlation with the number of cross-border M&As. The low degree of banking concentration comparing to the important cross-border banking investments in some European countries is another possible explanation for this surprising result.

The positive coefficients on countries Dummies and statistically significant suggest that these countries has comparative advantage as investing countries according to the analysis of Berger et al (2004). Accordingly, Germany, France, Spain are likely to be at the origin of cross-border M&As. The coefficient on Italy Dummy is also positive but not significantly different from zero. The countries having negative coefficients statistically significant and considered as receiving countries of cross-border banking investments are Luxembourg, Denmark, Netherlands and Ireland. The rest of countries Dummies are negative and not significantly different from zero.

Table 4 displays the estimation results of different equation (2) regressions. The negative coefficient on the concentration indicator is consistent with the predictions of larger potential of consolidation in less concentrated countries that are likely to be the targets of cross-border M&As. The coefficients on economic environment indicators (PIBGROWT, LPIBPOP and INFL) are generally negative for all regressions of the equation (2) and not significantly different from zero. This result suggests that low inflation for a European country could encourage the investments of foreign banks in this country. Nevertheless, the economic growth of the target's country seems not to be an attractive characteristic for cross-border banking activity across Europe. Contrary to the results of estimating the determinants of outgoing investments, only the positive coefficient on DERGLM is statistically significant although the coefficient on SDB is also positive.

The positive coefficient on PIMP and OPEN are significantly different from zero for all regressions of the equation (2). This result confirm the hypothesis of customer following behaviour as motivation of cross-border banking movements through M&As.

The negative coefficient on Luxembourg Dummy significantly different from zero is consistent with the previous result relative to the regression of outward banking investments.

France, Spain and Italy dummies are the only positive coefficients significantly different from zero in the regression (5). This result suggests that banks in these countries have comparative advantage, which allows them to expand in foreign markets. The rest of country j dummies are negative excepting Germany, Finland and Sweden.

**Table 4 Selected regression results for equation (2): Dependant variable BKIMP<sub>j</sub>**

	<i>Incoming banking investments</i>				
	(1)	(2)	(3)	(4)	(5)
	FEM	FEM	FEM	FEM	OLS With Countries Dummies
NBKA	1.279***	1.282***	1.274***	1.278***	1.283***
CONC	-0.118	-0.116	-0.243	-0.250	-0.124
PIBGROWT	-0.031	-0.028	-0.011	-0.009	-0.028
LPIBPOP	-0.501	-0.763	-1.288	-1.228	-0.499
PIMP	0.030**	0.028**	0.028**		
DERGLM			0.690**	0.673**	
PDB		-0.119	-0.353	-0.350	
SDB		0.163	0.094	0.092	
INFL	-0.037	-0.034	-0.004	-0.006	-0.038
OPEN				0.012*	0.013**
Germany					0.343
France					1.836***
Belgium					-0.590
Spain					0.938**
Italy					0.931**
Ireland					-0.113
Portugal					-0.024
Austria					-0.343
Finland					0.140
Netherlands					-0.076
Denmark					0.162
Sweden					0.456
Luxembourg					-1.874**
Constant	1.671	2.865	4.662	4.641	1.721
R-squared	0.66	0.66	0.67	0.67	0.78

*Sources: Annual data for (1987-2004) based on Thomson Source: Financial Securities Data, Mergers and Acquisitions on-line Database (2005); DataStream Database (2005) and the author's calculation.*

#### 4. Conclusion

The creation of European Monetary Union, the relaxation of barriers to operating across geopolitical borders and the development of new technologies of communications has led to an acceleration of banking integration process in Europe. In this context, a sharp increase in M&A activity is the widespread trends seen in the European banking sector.

The analysis of foreign investments by banking institutions based on cross-border banking M&A data reveals the investing and receiving countries of these investments in Europe. The first group includes Belgium, Germany, Spain, Netherlands and Sweden, which have higher level of outgoing investments in term of number and global value of cross-border M&A operations than incoming investments by banking institutions. In other side, Greece, Ireland, Portugal, UK and Denmark are considered as receiving countries of banking investments in view of the number of acquisitions.

The empirical tests of the determinants of foreign investments by banking institutions confirm the hypothesis of following clients' behavior as motivation of their expansion in other European countries. The economic growth in the target country seems to be a determinant factor for foreign acquisitions by banking institutions. The low inflation appears an important characteristic of home and host countries of cross-border banking investments within Europe.

The opportunities offered by other European markets appear to be determinant factor of pan-European banking consolidation. The low degree of concentration of banking sector increases the potential for acquisitions by foreign banks, which will contribute to the banking consolidation in the host country. However, the results are not consistent with the hypothesis about the limited margins for consolidation within national boundaries as a driving factor of banking expansion on the EU market.

The results of analysis show a positive correlation between geographic expansion of banking institutions and the diversification of their activities. The European banks seem to focus on banking activities consolidating their domestic position before expanding their activities in the EU market. The deregulation process and the implementation of the second banking directive appear as important factors which largely contributed to accelerate these cross-border movements within Europe.

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<b>Appendix 1</b>	31.03.94	30.06.94	30.09.94	31.12.94	31.03.95	30.06.95	30.09.95	31.12.95	31.03.96	30.06.96	30.09.96	31.12.96	31.03.97	30.06.97	30.09.97
Leverage	10,916	11,278	10,881	13,539	14,155	11,378	11,052	10,040	10,083	9,980	10,742	10,283	10,522	11,072	11,458
Equity multiplier	0,092	0,089	0,092	0,074	0,071	0,088	0,090	0,100	0,099	0,100	0,093	0,097	0,095	0,090	0,087
Return on Assets	0,006	0,005	0,007	0,004	0,004	0,012	0,017	0,019	0,006	0,011	0,015	0,022	0,010	0,016	0,025
Return on Equity	0,065	0,003	0,021	-0,026	0,050	0,103	0,067	0,036	0,061	0,059	0,059	0,087	0,101	0,082	0,135
Asset Utilisation	0,046	0,081	0,109	0,135	0,036	0,069	0,093	0,119	0,034	0,066	0,089	0,139	0,042	0,077	0,131
Net Profit Margin	0,133	0,219	0,176	0,049	0,112	0,194	0,202	0,178	0,194	0,186	0,188	0,177	0,254	0,228	0,210
Net Interest Margin	0,019	0,035	0,046	0,061	0,016	0,029	0,039	0,049	0,015	0,027	0,035	0,045	0,012	0,022	0,029
Earning Assets Ratio	0,865	0,833	0,848	0,836	0,824	0,835	0,830	0,847	0,837	0,850	0,853	0,865	0,880	0,879	0,900
Liabilities to Earning Assets Ratio	1,050	1,093	1,068	1,103	1,121	1,085	1,090	1,058	1,068	1,044	1,047	1,027	1,011	1,011	0,981
	31.12.97	31.03.98	30.06.98	30.09.98	31.12.98	31.03.99	30.06.99	30.09.99	31.12.99	31.03.00	30.06.00	30.09.00	31.12.00	31.03.01	30.06.01
Leverage	9,730	8,511	9,405	8,530	6,158	6,445	6,486	6,356	6,464	6,289	7,233	7,488	7,943	7,895	8,105
Equity multiplier	0,103	0,117	0,106	0,117	0,162	0,155	0,154	0,157	0,155	0,159	0,138	0,134	0,126	0,127	0,123
Return on Assets	0,024	0,007	-0,001	0,001	-0,012	0,003	0,007	0,010	0,014	0,005	0,008	0,011	0,011	0,005	0,008
Return on Equity	0,015	0,059	-0,071	0,016	-0,083	0,021	0,024	0,021	0,030	0,032	0,026	0,024	0,001	0,040	0,029
Asset Utilisation	0,146	0,046	0,075	0,088	0,117	0,031	0,061	0,089	0,113	0,027	0,051	0,075	0,100	0,029	0,052
Net Profit Margin	0,180	0,171	0,002	0,016	-0,105	0,104	0,122	0,133	0,124	0,188	0,161	0,148	0,106	0,177	0,164
Net Interest Margin	0,036	0,010	0,020	0,023	0,034	0,011	0,020	0,028	0,037	0,009	0,018	0,025	0,033	0,009	0,017
Earning Assets Ratio	0,888	0,894	0,900	0,879	0,877	0,884	0,881	0,894	0,888	0,891	0,896	0,912	0,913	0,924	0,928
Liabilities to Earning Assets Ratio	0,975	0,944	0,953	0,962	0,919	0,924	0,928	0,912	0,925	0,917	0,936	0,928	0,936	0,926	0,921
	30.09.01	31.12.01	31.03.02	30.06.02	30.09.02	31.12.02	31.03.03	30.06.03	30.09.03	31.12.03	31.03.04	30.06.04	30.09.04	31.12.04	31.03.05
Leverage	7,896	7,535	7,674	8,084	7,915	8,214	8,456	8,635	8,442	8,847	8,951	9,512	9,729	10,191	11,485
Equity multiplier	0,127	0,133	0,130	0,124	0,126	0,122	0,118	0,116	0,118	0,113	0,112	0,105	0,103	0,098	0,087
Return on Assets	0,013	0,025	0,004	0,007	0,011	0,014	0,004	0,007	0,011	0,013	0,004	0,013	0,015	0,018	0,003
Return on Equity	0,037	0,092	0,028	0,028	0,036	0,031	0,035	0,024	0,039	0,026	0,033	0,090	0,030	0,048	0,037
Asset Utilisation	0,076	0,105	0,022	0,045	0,065	0,084	0,022	0,041	0,057	0,069	0,019	0,039	0,052	0,064	0,016
Net Profit Margin	0,174	0,237	0,164	0,170	0,184	0,181	0,193	0,214	0,231	0,219	0,192	0,346	0,304	0,296	0,200
Net Interest Margin	0,025	0,032	0,008	0,015	0,023	0,029	0,006	0,013	0,019	0,023	0,006	0,010	0,015	0,019	0,004
Earning Assets Ratio	0,932	0,932	0,942	0,932	0,939	0,945	0,952	0,949	0,939	0,956	0,961	0,952	0,963	0,969	0,939
Liabilities to Earning Assets Ratio	0,915	0,909	0,902	0,921	0,913	0,912	0,911	0,916	0,924	0,914	0,911	0,932	0,923	0,925	0,967

*Banking and financial  
risks management*

# THE EVOLVING, IMPLICATION AND IMPORTANCE OF CAD I, CAD II, CAD III

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## **Abstract**

*The capital adequacy concept leads off a risk measuring in the banks and investment firms, and subsequently from determination of an appropriate capital requirement of these institutions. The Banking Advisory Committee of European Union, which was established in 1979, is one of the most important authorities within European Union. It comprises the most significant authority of regulation and supervision in Europe with empowering to issue binding directives. The aim of this article is to show how the European Union responds Capital Accords Basel I, New Basel Accord and Basel II. The substance is on the Capital Adequacy Directives CAD I, CAD II and CAD III. The CAD I included market risk, risk of counterpart, foreign currency risk and risk of large exposures. The CAD II included commodity risk and internal models for calculating of capital requirements, it responds to New Basel Accord. CAD III responds to proposals included in Basel II.*

**Keywords:** *capital adequacy, own funds, market risks, minimal level of capital to cover risks, investment companies.*

## 1. OFD and SRD Directives

Steps taken by European Union in the field of capital requirement have come from commands of Basel Committee for Banking Supervision.

European Union passed two directives in 1989 as reaction to Basel I:

- » Council Directive 89/299/EEC of 17<sup>th</sup> of April 1989 **on the own funds of credit institutions**, also called **OFD Directive**,
- » Council Directive 89/647/EEC of 18<sup>th</sup> of December 1989 **on a solvency ratio for credit institutions**, also called **SRD Directive**.

Overhead mentioned directives took a leaf from Basel I with an identical approach to credit risk.

The first directive (OFD Directive) defined own funds and the second directive (SRD Directive) specified risk weights for individual sorts of assets.

The conception of capital adequacy is named in EU Directives as solvency ratio and capital is named as own funds.

## 2. Capital Adequacy Directive I (CAD I)

In European Union has been born need to define minimal capital requirements for investment institutions (the same for both banks and investment firms).

Furthermore, Basel Committee for Banking Supervision has also recommended market risk to take under capital requirement. Thus, under the conditions the Council Directive 93/6/EEC of 15<sup>th</sup> March 1993 on Capital adequacy of investment firms and credit institutions has been passed. This directive is also named CAD I.

### *2.1 Reasons for passing CAD I Directive*

The reasons for passing directive CAD I could be summarized to seven main points:

- » creation of common standards for capital requirement of banks and investment firms,
- » to give a definition of separate risks for different sorts of financial instruments and for different business positions,
- » the same capital requirements for the same market risks of banks and investment firms,
- » common standards of monitoring and managing credit engagement of banks and investment firms, particularly in banking book,
- » creation of the standards for own fund of credit institutions and investment corporations,

- » need of common rules of consolidation of financial institutions with regard to market risk,<sup>1</sup>
- » the effort to remove barriers between investment banking and commercial banking in the interest of individual approach to them under the terms of regulation and supervision.

**CAD I prescribed mainly conditions for capital requirement for investment firms.** It also related to banks but only on those activities, which were integrated to business portfolio (trading book). Also the Directives OFD and SRD were linked with these activities.

## ***2.2 The conception of trading book***

The conception of trading book was significant for CAD I like that in the case of New Basle capital accord. The trading book includes financial operations (short-term operation on own account and providing financial services). Another items, mostly credit and deposit operations belong to banking book. Separation of classical banking operations and operations on the financial markets was related to growth of market risks, followed from the operations on the financial markets.

## ***2.3 The CAD I followed market risks, position risk, settlement/delivery risk, risk of counterpart, foreign currency risk and risk of large exposures.***

Credit and share risk were divided into general and specific ones.

**Position risk** was defined as preponderance of covered (uncovered) positions of institution over its uncovered (covered) positions within the same group of stock and debt instruments and identical time-limited contracts.

**Risk of the marketable debt instruments** is shown on the base of net currency position, in which the debt instruments are denominated. The general risk is appointed:

- » on the maturity-based of instruments,
- » on the based of modified duration if the institution uses this way, systematically.

**Share risk** is determined on the based of gross position, which is sum of all net covered and net uncovered positions. Capital requirement for general risk is 8%, for specific risk is 4% (in some precisely defined cases, it is possible to decrease capital requirement to 2%).

Settlement/delivery risk

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<sup>1</sup> Council Directive 92/30/EEC of 6th April 1992 on the supervision of credit institutions on a consolidated basis is not related to cases, when a group contains more investment firms without bank.

**Settlement/delivery risk** arises from a price differences between agreed price and possibility of change in market price during the time to maturity of business. It depends on a number of working days till the date of settlement.

**Counterpart risk** follows from a situation, where counter-party is not able to fulfill its own liabilities from concluded contracts.

**Foreign exchange risk** can be sets out in two steps:

1. the net open position of institution is calculated in each currency,
2. the net uncovered and covered position are converted through spot exchange rate to reporting currency and such a sum of covered and uncovered positions will be created.

If an institution's overall net foreign-exchange position exceeds 2% of its total own funds, it shall multiply the excess by 8% in order to calculate its own funds requirement against foreign-exchange risk.

**Other risks** represent independent part, which includes for example low business turnover risk or risk from low revenue at the level which is not sufficient to cover overheads. Therefore, investment firms shall be required to hold own funds equivalent to one quarter of their preceding year's fixed overheads (when a firm has not completed a year's business, the requirement shall be a quarter of the fixed overheads figure projected in its business plan).

**CAD I was not monitoring market risk at a level of credit and stock instruments of the banking book.**

#### ***2.4 The investment companies***

The investment company has an important position under the terms of CAD I, where is defined like corporate body with regular activities oriented to providing investment services for third-country investment firms on a professional bases.

The directive also enables to add subjects which are not corporate bodies between investment companies. Investment companies are not that subjects which only receive and transmit orders from investors without holding money or securities belonging to their clients and which for that reason may not at any time place themselves in debit with their clients.

Initial capital of investment firms had been appointed subsequently:

1. **ECU 125 000**, if institutions provided one of the following activities:
  - » the reception and transmission of investors' orders for financial instruments,
  - » the execution of investors' orders for financial instruments,

» the management of individual portfolios of investments, provided that they do not deal in any financial instruments for their own account or underwrite issues of financial instruments on a firm commitment basis.

2. **ECU 50 000**, if firm was not authorized to hold clients' money or securities, or to deal for its own account.
3. All other investment firms should had initial capital of **ECU 730 000**, mainly those of them which running activities beyond the terms of first point.

The member states of European Union could divide single items of own funds of the credit and financial institutions by that way their national supervision authorities decided within the scope of EU recommendations. Regardless of legally and accounting terminology the items of the own fund had to fulfill the following signs:

- » the credit institution had them at itself disposal for covering ordinary banking risks anytime,
- » there were keeping account of them,
- » the subordinated funds could not exceed 100% of core funds and also had to contain clause of inferiority and their maturity should not be less than 5 years.

CAD I should been implemented within the member states of European Union till the end of the year 1995. The most of them did not meet this date. Great Britain was the first country which implemented CAD I in practice. On the other hand, Germany was the last country implemented this directive.

### **3. Capital Adequacy Directive II (CAD II)**

CAD II represents a revision of CAD I following New Basel Capital Accord – amendment of Basel I. Target was to avoid different regime of members and non-members of Basel committee on banking supervision within European union.

CAD II was adopted in 1998 and was focused on two main areas:

1. internal models of banks and
2. commodity risks.

### ***3.1 Reasons for passing CAD II Directive***

Reasons why to adopt CAD II may be summarized into several areas:

- necessity to incorporate commodity risks or commodity derivative risks designed for trading into trading book,
- to allow institutions to use their own risk management and risk measurement models to measure risks more accurate,
- to evaluate gold positions (and their derivatives) of the institutions similar to the foreign currency and foreign currency derivatives positions,
- a detailed modification of the non-balance items,
- improvement of the OTC derivative regulation, possibility to include risk mitigation effect,
- necessity of consistent regulation over the lending institutions and investment firms in OTC derivatives area,

### ***3.2 Commodity risks***

Investment firms with their main activity focused on commodity trading are not subjects to neither CAD II nor investment firms Directive .

Capital requirements connected to commodity risks are related to necessity to defend lending and investment institutions depositors and lenders. These institutions are not primarily focused on commodity operations. Capital requirement per commodity is 15% of the net covered/uncovered position multiplied by current commodity price and 3% of a gross position, covered plus uncovered, multiplied by current commodity price.

### ***3.3 Internal models***

To apply internal models by an institution must be approved by regulator.

According to CAD II possibility to exercise internal models is connected to several risks:

- position risks,
- foreign currency risks,
- commodity risks.

Regulator may allow institution to use internal models for the purpose to calculate capital requirements for **specific risks in debt and stock trading positions**, if internal models fulfill **additional (along with obligatory) conditions**, which are:

- model explains price volatility in portfolio,
- model evaluates concentration in portfolio structure,
- model is verified by reverse testing.

Regulator authorize institution to use risk management internal models only if these **obligatory conditions are reached**:

- institution has risk management unit, independent of trade units, and they report directly to the head management,
- risk management internal models is integrated into everyday process of risk management and cooperate with head management,
- head management actively participate in risk management process, executive officers responsible for checking reports should be authorized to lower positions of the relevant traders to help to decrease the risks,
- institution should have enough crew able to work with complex models,
- model accuracy control and model reliability control is needed,
- strict program for crisis situation testing and their evaluation by head management,
- internal audit concerning model reliability judging.

In reverse testing, VaR (Value at risk) calculated by internal model is compared every day (not including weekends). Daily change calculated for portfolio at the end of the day is taking into account. Reverse testing on theoretical changes of portfolio value is done by comparing the portfolio value at the end of a day and portfolio value at the end of a next day, while portfolio position remains unchanged.

Minimum value of the multiplier is 3 and it grows in dependence on number of overruns during the last 250 trading days. Overrun means daily change of the portfolio value that is greater than VaR calculated for the same day by internal model. Overruns are calculated either on real or theoretical changes of portfolio value.

#### **4. Capital Adequacy Directive III (CAD III)**

Goal is to provide unified application of the new concept for capital adequacy in banks and financial institutions within EU. CAD III respond to Basel committee on banking supervision and its ratification of the Basel II in 2004 (26.6.2004). This document established **operation risk** defined as a risk of operating system failure as well as some forms of human factor failures. There are three ways to calculate capital needs to cover this risk:

- simple, based on a gross profit percentage,
- advanced, dividing trade activities into 8 groups,
- developed, based on institution's own calculations.

CAD III represents union title for recodification of the SRD<sup>2</sup> directives and CAD II. The new projection of the directive was introduced to Council of the EU by European Commission in 2004 (19.7.2004).

This document increases the role of the regulation on consolidated basis over cross-border groups. There is also emphasis on regulators' cooperation. Newly found The Banking Advisory Committee of European Union will play important role in this context.

## 5. Conclusion

Main point of capital adequacy in CAD Directives is measuring of risks of credit institutions and investment firms and valuation minimal level of capital to cover them. The aim of capital regulation is health of financial system and protection of depositors and investors. Basel Committee on Banking Supervision has defined as first the capital adequacy. Basel accords respond to condition of banks. Principle "the same capital has to cover the same risk in banks and investment companies" is implemented to Capital Adequacy Directives. CAD Directives were prepared on conditions of investment companies and for operations of trading book in banks. In conditions of national banking and financial systems of many countries are implemented the same capital accords with different result. The reason is in different access to application of capital adequacy rules (Basel Accords or CAD Directives) in diverse territorial parts. Different access to application of capital adequacy rules shows next table:

	<b>Bank</b>	<b>Financial institution</b>
<b>EU members and members of Basel committee on banking supervision:</b> (Great Britain, Belgium, France, Germany, Luxembourg, Netherlands, Sweden, Italy)	New Basel Accord + CAD	CAD
<b>EU members outside G10:</b> (Austria, Denmark, Finland, Greece, Iceland, Ireland, Norway, Portugal, Spain)	CAD	CAD
<b>Basel committee members outside EU:</b> (USA, Canada, Japan, Switzerland)	New Basel Accord	No international agreements

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<sup>2</sup> SRD directive was amended in 2000 and figures under the number 2000/12/ES

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# **RISK ATTITUDE PROFILES OF INVESTORS IN THE FINANCIAL SERVICES INDUSTRY: THE IMPACT OF BEHAVIOURAL BIASES**

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## **Abstract**

*Risk attitude profiling is an essential step in the financial advising process. It provides an understanding of the investor's attitude and tolerance for investment risk. Data collection on risk attitudes is commonly collected from an investor's choice between uncertain outcomes of a risky investment. However, responses are conditioned by a well documented behavioural bias in decision making under uncertainty known as "framing". Individuals develop internal frames of reference as a simplifying behavioural heuristic when faced with decision making under uncertainty. The framing of attitudinal survey questions will condition an investor's response to risk attitudes. Alternative frames can reverse attitudinal responses to the same choice. This paper examines the significance of framing in the risk attitude profiling process. We argue the need for alignment between the external framing of questions and the investor's internal frames appropriate to a particular class of investment decision. Misalignment may bias attitudinal responses and lead to inappropriate investment advice. We analyse this within the context of providing advice for superannuation (pension) investment. A class of investment decisions with a common purpose, long time investment horizon, individual choice and large capital sums.*

**Keywords:** *Personal Finance; Framing, Risk Attitude; Superannuation; Behavioural Finance.*

## 1. Introduction

The assessment of risk attitudes and tolerances of potential investors is now required of all financial advisors. But current practices are severely criticised for their lack of psychometric validity and omission of significant behavioural factors that characterise financial investment decision making under uncertainty [(Callan and Johnson, (2002), McCrae, (2004)]. A crucial omission that may invalidate the interpretation and application of risk attitude profiles as a basis for subsequent financial advice, is a behavioural factor known as ‘framing’.

The term framing refers to how choices are put to a decision maker. Framing first evolved from Kahneman and Tversky (1979) in prospect theory and then more formally in (Kahneman and Tversky, 1986). The main issue raised within prospect theory is the notion that the desirability of alternatives is altered by their framing, such that risk choices can be manipulated through alternative framing methods.

Two consistent findings emerge from behavioural finance studies regarding how individuals deal with outcome uncertainty or financial risk when making financial decisions. Kahneman and Tversky (1984) demonstrated that individual attitudes towards financial risk are conditioned by how the uncertain outcomes are expressed or ‘framed’ to the respondent – a characteristic known as external framing. Subsequent studies confirmed the phenomenon of risk attitude reversal associated with opposing frames. Risk tolerance (risk loving) observed when uncertain outcomes are expressed in terms of gains, wins or survival may reduce to risk aversion when equivalent outcomes are framed as losses, costs or failures.

A second group of studies demonstrates that individuals tend to adopt behavioural heuristics or ‘general behavioural rules’ to simplify the complexity of financial choices dominated by outcome uncertainty and information overload. One such heuristic is the grouping together of decision situations with common characteristics and the use of common attitudinal ‘internal frame’ of reference that may emphasise the loss or gain aspects of uncertain outcomes for all such decisions. Individuals simplify choice decisions in that class by using the same risk attitude or risk tolerance level considered appropriate to that frame of reference. The dominant risk attitude applied to particular sets of decisions may vary drastically between sets.

This paper suggests that the aforementioned behavioural principles have significant implications for the risk attitude assessment process (risk

profiling) now required of financial advisors when recommending a specific or well defined set of financial choices such as superannuation. Risk attitude profiling is essential as it provides the financial advisor with an understanding of an investor's attitude towards investment risk and establishes a 'reasonable basis' for subsequent investment advice.

A concern in the risk profiling process is a misalignment between external and internal framing. Misalignment can occur when the external 'frame' used to express a financial choice problem in a profiling instrument does not correspond to the respondent's normal internal frame for that category or class of financial decisions. Since external framing can cause risk attitude reversals for equivalent situations, misalignment may produce completely inappropriate risk attitude profiles for that decision context.

This exploratory study examines the significance of framing as a decision making heuristic in the risk attitude profiling process. Current legislation that governs the processes which financial advisors must adhere to, including risk attitude profiling omit behavioural factors. An example of this is framing. We argue the need for an alignment between the external framing of questions in the risk attitude profile and the investor's internal frames appropriate to a specific class of investment decisions. To highlight this we use superannuation or pension investing as a class of investment. We have selected this class of investment as it forms the majority of an investor's wealth, has a common purpose (to attain the highest retirement income), an approximately defined long term investment horizon and individual choice of investment strategy. Moreover, we believe that superannuation is an appropriate example, as financial advice and recommendations may be in conflict with attitudes that do not agree with economic objectives.

Our analysis is structured as follows. Section two defines the process of risk profiling and briefly reviews the financial risk attitude profiling requirements placed upon financial advisors by the legislation and the lack of guidance on process control. Section three defines heuristics, with the types of framing in decision making literature also identified. Section four analyses the unique investment aspects of superannuation, illustrating the need for alignment between internal and external frames. Section five concludes with a main summary of the paper and future research directions

## **2. The Financial Services Industry & Risk Attitude Profiling.**

In 2001, the Australian Federal Government introduced sweeping reform of the financial services industry to combat rampant self-interest,

fraudulent practices, inadequate training, excessive fee structures and a pervasive lack of transparency, disclosure or accountability. Any individual or organisation providing financial advice of any nature is required to have minimum knowledge standards, with respect to the advice they are giving. The legislative foundation for this reform is the Financial Services Reform Act (FSR Act) of 2001 (Commonwealth of Australia, 2001).

In common with legislation in the UK, USA and many European countries, the foundation of the advisor-client fiduciary relationship laid down in the Act is an absolute requirement for an advisor to act in a client's 'best interests'. The burden of proof rests on the financial services provider. An advisor must make reasonable attempts to gather sufficient information from the client about their financial and other relevant circumstances to establish a 'reasonable basis' for subsequent financial advice and to show that the advisor has always acted in the client's 'best interests'. Penalties for contravention include large fines and deregistration depending on offence severity.

Under the Act, the terms 'best interest' and 'reasonable basis' expressly include notions of psychological and behavioural, as well as economic, well-being. Both the FSR Act and Section 851 of the Corporations Law require financial advisors to make 'reasonable attempts' to define and consider an investor's risk attitudes or 'tolerances' in relation to a specific financial objective before providing financial advice.(section References). Risk attitude profiles aim to provide financial advisors with a means to assess an investor's attitude and tolerance towards investment risk. Any subsequent advice, product recommendations or other services must then accord with those attitude profiles, as these risk attitude and tolerance profiles are shown to fundamentally condition client choice between alternative financial decision alternatives (Kahneman and Tversky, 1984).

The purpose of the risk attitude profiling process is to provide the financial advisor with an understanding of an investor's attitude towards investment risk. Unfortunately, the FSR Act gives no guidance on the risk profiling process other than a requirement for collection of information directly from the client. The vacancy is problematic since the majority of current risk profiling practices have been strongly criticised as ad hoc processes that lack internal consistency, remain psychometrically untested and characteristically ignore behavioural biases that characterise human financial decision making under uncertainty. Current profiling procedures often produce inaccurate, invalid attitudinal assessments that lead to gross mismatches between financial advice and a client's actual risk preferences.

## ***2.1 Financial Risk Defined***

Financial risk refers to uncertainty about investment outcomes. The outcome may be return on investment, capital growth or loss or failure to meet an expected target. The greater the uncertainty about the outcome the greater the financial risk. The most common measure of this concept is the volatility of investment returns around their expected value as given by their standard deviation. As return volatility or (loss probability) increases so does the financial risk associated with the outcome. Choices between investments depend upon the expected level of return and the volatility or uncertainty attached to that return. The summary measure is usually expressed as risk-adjusted returns.

Finance theory holds that higher absolute returns are preferred to lower returns and lower volatility preferred to higher volatility. However, individual choice of the optimum risk-return combination among alternative investments will be uniquely determined by each investor's attitude towards, or tolerance of financial risk.

## ***2.2 Risk Attitude Profiling***

The process of identification, measurement and categorization of a client's individual risk attitudes and tolerances is known as risk profiling. Legally, risk attitude profiling is a requirement and necessity of financial advice as deemed by the FSRA Act (2001) and the financial services hand book (ASIC, 2003). To identify attitudes towards uncertainty a financial advisor must identify preferences for risk through choices under uncertainty. However, each individual may approach or edit information differently to others when faced with choices, even given the same choices. Risk attitudes contribute to an understanding of the investor's psychological "comfort". This integration of attitudes or behavioural dimensions to rational models seems to be juxtaposed. Therefore, when developing an understanding of investor's attitudes and how they are formed, investment advisors need to be aware of behavioural biases involved in responses to the risk attitude profiling process. Consideration of behavioural biases such as framing addresses the issue of psychological comfort. In other words, considering the investor's level of comfort with investment decisions.

Unfortunately, neither PS 175 nor the FSRA Act provide any guidance as to how to conduct risk attitude profile assessments. Nor do they address the issue of incorporating behavioural aspects of decision making into the risk assessment process which can affect the validity (framing effects) and relevancy of risk profiles. To understand how the process is

threatened by framing effects, it is worthwhile to briefly examine what are risk attitudes and how they are measured.

### **2.3 Risk Attitudes**

Investment risk profiling provides a measure of an individual's 'attitude' towards financial risk. But the concept is not easy to define. The Act refers to levels of 'tolerance' of investment risk rather than using the term 'risk attitude'. However, the two terms are often used inter-changeably in the sense that risk attitude profiling provides a means of measuring individual tolerances of different levels of financial risk. The terms 'risk averse', 'risk neutral' and 'risk loving' are used to refer to the spectrum of attitudes.

The concept relates to the psychological or behavioural 'comfort' or 'well being' of an individual in making investment decisions. Definitions of the concept are inherently context dependent. In neo-classical portfolio theory, an investor's risk profile is reflected in the shape and position of their utility indifference curves which then uniquely determines an optimal portfolio choice. The optimal portfolio is determined through a tangency solution with the risk-return frontier of efficient portfolios positions given by "the point on the efficient frontier at which the one of the investor's indifference curves just touches the frontier" Sharpe (1997).

In contrast to this rather mechanistic approach, behavioural researchers emphasise the 'psychic comfort' aspect of attitudinal measurement, as in the following definitions:

*"The maximum amount of uncertainty that someone is willing to accept when making a financial decision"* (Grable, 2000), and *"Risk tolerance is the degree to which an investor is willing to accept the possibility of an uncertain outcome to an economic decision"* (Harlow and Brown, 1990). More recently, Callan and Johnson (2002) define risk attitudes as, *"The degree to which a client is willing and able to accept the possibility of uncertain outcomes being associated with their financial decisions"*.

Implicit in all these definitions is the trade-off between risk, as measured by the uncertainty of a return and the level of expected return, which is commonly referred to as the risk premium. This aspect of risk attitudes is emphasised in the work of researchers such as [(Cordell, 2001), (Bodie, Kane and Marcus, 2003) and (Jahnke, 1999)]. Therefore, assessment and measurement of investor's risk preferences requires a risk attitude profiling process. Emphasised across all definitions of the concept is the notion that the risk attitude profiling process is an attitudinal measure.

Importantly, the quality of this measure can be threatened by the process of measurement or data collection. The process of data collection and the investor's heuristics used to make decisions under uncertainty also need to be addressed.

#### ***2.4 Attitude Reversion***

Risk attitude profiling process is an attitudinal measure whose psychometric validity depends upon the process of data collection and measurement. The data collection process of risk attitude profiling involves responses to questions on uncertainty, aiming to measure attitudes towards uncertainty. Data collection always and unavoidably involves "framing" of questions. Framing refers to how choices are put to the decision maker. In their development of prospect theory Kahneman and Tversky (1979) showed that the manner in which choices are framed alters their desirability, such that risk choices can be manipulated through alternative framing methods. Questions may be framed in terms of gains or losses, positive or negative returns, and long versus short term (narrow framing). Consequently, the results of any risk attitude profiles are determined by the framing of questions used to collect data about risk preferences. Framing a problem under uncertainty in terms of a loss context may provide a complete reversal in response to an identical decision in a profit context. If risk attitudes are prone to preference reversals, then financial advice and recommendations based on responses may not truly reflect or cater for the investor's psychological and financial well being.

#### ***2.5 Legal Requirement of Risk Attitude Profiling***

Under the FSR Act, the purpose of risk profiling in financial advice is two-fold. Primarily, risk attitude profiles are a means of ascertaining an investor's attitude towards uncertainty as an integral part of a client's psychological 'comfort level'. Under the FSRA Act's definition of a "client's best interests", consideration of behavioural and psychological well-being, as well as economic benefit must occur. Risk attitude profiling achieves this.

Secondly, risk attitude profiling satisfies the legislative requirement placed on investment advisors to establish a 'reasonable' basis for all subsequent advice (FSRA Act, 2001; ASIC PS 175). Risk attitude profiles form an integral part of that "reasonable basis" of advice. All subsequent financial advice on asset allocation and portfolio selection (investment products) must conform to that 'reasonable basis'. A "reasonable basis" of advice essentially draws on the investor's attitudes towards investment risk and their tolerance of it under the concept of 'relevant circumstances'. PS 175 defines an investor's relevant circumstances as:

- (a) tolerance to the risk of capital loss, especially where this is a significant possibility if the advice is followed; and
- (b) tolerance of the risk that the advice (if followed) will not produce expected future benefits (PS 175.104, ASIC, 2003).

One criticism of the above definitions, in particular (a) is the focus on capital loss. An investment perspective should also incorporate volatility of returns which some industry bodies such as the Financial Planning Association (FPA) adopt. Moreover, PS 175 and the FSRA Act do not provide any guidance as to how to conduct risk attitude profile assessments, nor do they address the issue of incorporating behavioural aspects of decision making into the risk assessment process. In order to understand how the current process is threatened by framing effects (behavioural biases), it is worthwhile to briefly examine some of the current forms of risk attitude profiling.

### **2.6 Current Risk Attitude Profiling Techniques**

Current profiling processes produce only the broadest of attitudinal categories. Industry practice is to distinguish only four profile categories that range from a low end of “risk averse”, through “risk neutral” onto ‘risk tolerant’ and “risk seeking” at the high end. Anecdotal evidence suggests that industry interests rather than the client’s focus dominate such divisions. Financial advisors typically use these four categories as a basis for recommending portfolio products already pre-packaged as ‘conservative’, ‘balanced’ and ‘growth’ portfolios based on relative percentages of asset classes in each (see table one below).

**Table 1- Investment Product Risk Profiles**

<i>Assets</i>	Risk Profile		
	<i>Conservative</i>	<b>Balanced</b>	<b>Growth</b>
Domestic Equities	15%	30%	50%
Global Equities	10%	25%	50%
Fixed Interest	40%	35%	-
Property	5%	5%	-
Cash	30%	5%	-

This table illustrates an example of the risk profiles of investment products that are broadly categorised as; “conservative”, “Balanced” and “Growth”. The assets represent the percentage of a portfolio for each risk

profile. It should be noted that this table is a guide and not indicative of all risk profiles as labelled below.

The major use of these profiles by financial advisors is for recommending selection from available investment products. Once completed, financial advice on portfolio selection with respect to a specific financial objective must be consistent with the investor's risk attitude profile.

### **2.6.1 Criticisms of Current Practice of Risk Profiling**

The forms of risk attitude profiling range from primitive qualitative interpretations of statements, to highly quantitative measures of attitudes to financial risk (Roskowsi, 2003). Even during interviews, investment advisors are capable of framing questions by presenting them in one form (e.g. in terms of gains, separate investments, etc). This leads to biased responses which may not necessarily reflect the investor's true risk attitudes. Consequently, an advisors interpretation of responses are then placed against standardised portfolios e.g. table one, and portfolios with risk profiles similar to the investor are recommended. A criticism of such an approach, is that if questions on risk attitudes were framed so as to yield risk seeking responses, a totally different risk profile would be formed to a question framed in opposing terms. This in turn determines the type of portfolio an advisor recommends.

#### *Portfolio Matching*

There are two primary methods by which risk profiling data can be obtained to identify risk attitudes and preferences. One method is to examine a number of alternative efficient portfolios, and explain to the investor the investment risks associated with them and, then choose among this sample of portfolios (investment products). Sharpe (1997) asserts that this is universally done in institutional practice.

This form of risk attitude profiling is a simplistic one-step approach at combining the investor's risk attitudes, investment objectives and preferences into asset allocation and recommendations. Whilst it meets the requirements of the Act, it does not meet any of the principles of risk attitudinal measurement as Callan and Johnson (2002) alluded to.

The second method categorises risk profiling by the data gathering technique; either structured questionnaires or semi-structured interview/discussion. Advisors use either a combination or one of these types of methods as a starting point for identifying risk attitudes. The semi-structured interview method may be used by itself or as a method of "probing" and contextualising responses to the preceding structured questionnaire (Roskowsi, 2003).

Even with interviews, investment advisors are capable of framing questions by presenting them in one form (e.g. in terms of gains, separate investments, etc). This would lead to biased responses which may not necessarily reflect the investor's true risk attitudes. Consequently, an advisors interpretation of responses would then be placed against standardised portfolios such as those in table one and, be recommended portfolios with risk profiles similar to the investor. A further criticism of an approach such as this is that if questions on risk attitudes were framed so as to yield risk seeking responses, a totally different risk profile would be formed. In turn, an advisor would recommend a "growth" type portfolio.

The above form of investment product selection or 'portfolio matching' faces strong criticism in the financial planning literature. There are several reports from industry bodies and government regulators. Most notable, however, is the *Quality of Advice Survey*, conducted by ASIC in 2003. This survey involved over 100 investors or participants that actually received financial advice from financial advisors. Each financial plan and consultation between advisors and investors were then rated by academics, legal and financial services professionals. More than 50% of reviewed plans were either classed as "borderline" to "very bad". A discerning result from the survey was that some financial plans and advisors provided reams of generic information and failed to show how the recommended strategy and action was appropriate for the client. Portfolio matching provides a recommended strategy for a set of generic set of risk attitude questions.

### *Interviews*

Callan and Johnson (2002) report that client-centred interviews and conversations are often the primary data collection tool for risk profiling by financial advisors. This data then allows the financial advisor to gain an initial insight into the investor's attitudes towards certain types of risky investments. They provide a technique to probe the comfort levels of investors associated with investment choices between alternative types of investments or asset classes that are characterised by return uncertainty.

Once the advisor has more meaningful understanding of the investor's attitudes, more possible valid questions about specific investment products that match the investor's level of expected performance and optimism can be used to further confirm risk attitudes (Callan and Johnson, 2002).

This type of assessment provides the financial advisor with subjective and intuitive estimates of the investor's investment needs and objectives that are relevant to their financial decisions. One discerning outcome of this method is the subjective interpretations as well as questions that investment advisors have in the process. The questions on choice under uncertainty may

be framed in manner that necessarily does not represent the investor's true attitudes.

#### *Advisor interpretations of Risk Profiling*

Research into investment advisors interpretations of risk tolerance is limited. Pioneering work by Snelbecker et al (1990) found that given a hypothetical investor's statements, financial advisors make substantially different interpretations. This finding is concerning for investors who receive and act upon advice from one advisor, despite theoretical variability in the validity of advice. Thus, interviews and informal discussions with investors regarding their previous and current investments are not scientific or objective and do not provide any substance for investment advisors to provide recommendations on.

These conflicts highlight several substantive criticisms levelled at unstructured data gathering approaches for risk attitude profiling. The process results in an ad hoc, unsystematic, often undocumented data collection that is completely subjective and open to wide variations in qualitative assessment attitudinal results very dependent upon the individual advisor's perceptions of risk attitude responses.

#### *Questionnaire Method*

There is a plethora of psychological literature on the collection, measurement and interpretation of attitude scales. There are a number of well developed attitude scaling techniques now available as generalised instruments. But the development of similar instruments in the financial risk attitude profiling area is limited to a few studies exemplified by Grable and Lytton (1999, 2003) and Roskowski and Snelbecker (1990). However, there is an increase in the number of standardised computer based risk attitude profiling systems. This is a direct reflection of the current inadequate state of practices, which the industry has been left to do without any guidance from government regulators (albeit through the FSRA Act). Presently, there has been no comparison between the different risk attitude software profilers that examine their psychometric and construction validity. Although, the firm FinMetrica submitted their software for psychometric and validity tests, yielding positive results (ProQuest 1999).

The questionnaire process is similar to the interview method, but it provides a quantitative result. A questionnaire will have between 10-20 questions relating to financial experience and scenarios that describe possible outcomes of investments. Questions that involve choices between risky outcomes are spanned over a spectrum extending from risk averse to risk tolerant behaviour. Behaviours are based on hypothetical or experience based situations. Grable and Lytton (2003) empirically demonstrated the validity of

a 13 item risk assessment instrument (questionnaire). This study found that the responses to this instrument were correlated with portfolio ownership. That is there was a significant relationship between equity ownership (proxy for risk) and risk attitudes. An example by from Grable and Lytton (2003) is presented.

An experienced based question refers to attitudes towards certain investments. For example: In terms of experience, how comfortable are you in investing in stocks or stock mutual funds?

- a. Not at all comfortable
- b. Somewhat comfortable
- c. Very comfortable

With regard to attitudes toward “risk” a question may ask:

When you think of the word “risk” which of the following words come to mind first?

- a. Loss
- b. Opportunity
- c. Uncertainty
- d. Thrill

The above question is framed in terms of losses and highlights external framing, which is manipulation of presented choices. If asset allocation advice and recommendations is based on such questions, then the revealed risk attitude maybe biased in the manner which choices were given to them (e.g. positive or negative). As a consequence, the revealed risk attitude may be in conflict with the particular class of investment the investor is considering, and hence, provide the financial advisor with a misleading and inappropriate basis to provide advice from.

Responses are answered through likert scale type responses. Each question has a score allocated to its response, with a high score indicating that the investor is risk tolerant, and a low score meaning they are risk averse. The scores are then totalled and compared to benchmarks or “profiles”. The range that the investor falls within denotes their risk attitude profile. Model portfolios or portfolios of asset classes that display similar levels of risk are then recommended.

We have shown that current risk profiling methods are susceptible to interpretive bias that may lead to substantively different risk attitude assessments. This is due to the nature of data collection involved risk attitude profiling. Framing in data collection cannot be avoided. Therefore, to reduce

framing effects to establish more reliable and accurate measures of risk preferences we must examine framing and its implications on risk attitudes, in particular “internal” framing. This will be discussed now.

### **3. Framing Effects and Risk Attitude Profiling**

The current risk attitude profiling methods used in both industry and research shown above, rely on a question and answer approach to measure individual investor’s uncertainty towards investment decisions. Kahneman and Tversky (1979) and much of the literature on decision making under uncertainty showed that risk preferences are influenced by how problems are presented. In terms of risk attitude profiling, framing is unavoidable. Current practices have illustrated that all forms of risk attitude profiling involve some form of question framing. By examining framing and in particular the effect of internal framing on decision making under uncertainty, emphasis needs to be placed on the need to recognise internal frames as part of the risk attitude profiling process. Doing so will provide a better means of understanding an investor’s risk preferences, as well as advice that is relevant to a class of investment.

#### ***3.1 Framing Formally Defined***

Kuhberger (1998), defined framing as a subjective, internal process determined by the situation’s contextual and individual factors. Elliot and Hayward (1998) define framing as “any manipulation of factors causing a change in an individual’s frame such that a predictable behaviour is effected” (pg, 232). These two definitions are consistent with the original constructs of prospect theory. To illustrate this Kuhberger et al (2002) found that by manipulating a problem in order to describe the same situation in an opposite context, revealed attitudes were reversed. In terms of financial advising and risk attitude profiling this is a significant problem, particularly when considering long-term savings for investments such as superannuation or retirement income. Risk attitudes reveal that an investor may be “risk-averse” to a particular decision problem. Although this may just be their natural (internal framing) decision making response to choices with risky outcomes.

From the review of current risk attitude profiling methods, it is evident that in the data collection process, investors are faced with a choice. The two options are a certain outcome and a gamble with known probabilities. Options are expressed in monetary terms or that of total wealth. The investor’s selection of a certain outcome versus a gamble reflects their risk attitudes. When making decisions with alternative choices with given probabilities, the chosen path will reveal something about one’s attitude

toward risk (Kahneman and Tversky, 1984). Preference for the certain outcome would result in a risk “averse” attitude, whereas selection of the gamble would reflect a “risk seeking” attitude. This demonstrates the unavoidability of framing when seeking responses to risk attitudes.

### **3.1.1 Relevance of Framing in Financial Decision Making**

Risk attitude profiles reveal an investor’s tolerance for investment risk. As mentioned in the previous section “framing” and its effects are unavoidable. Lebouf and Shafir (2003) define a framing effect as, “to occur whenever different descriptions of the same decision situation lead to different preferences” (p.78). Research has been plentiful and thorough, for reviews see (Kuhberger, 1998, Levin, Schneider and Gaeth, 1998) whom provide an excellent analysis of this issue. Framing effects are robust in numerous choice domains including medicine, project resource allocation, consumer choice, and gambling (Roskowsky and Snelbecker, 1990). But application to financial risk and risky decisions is an emerging discipline. Therefore, we need to look at more researched areas to assist in understanding how attitudes are formed.

Whilst the aforementioned areas may have life or death consequences in terms of the choices decision makers are faced with, economically the same is true for financial decisions. In terms of superannuation, if economically optimal investment decisions are not considered in an investment choice, the severity of that choice may be equivalent to a medical choice, between life and death. We will highlight this in our next section. There is a need for an understanding and incorporating framing in risk attitude profiling, as it is prominent in many choice domains.

This leads us to advocate and consider “internal” frames as part of the risk attitude profiling process. Kahneman and Riepe (1998) in their review of biases of judgement and decision making, acknowledge that individuals use their own heuristics in the coding and editing phase of analysing choices under uncertainty. Whilst these heuristics may not conform with rational decision making, to the individual they are correct. If these heuristics are used consistently, then individuals will continuously make errors in choice, or preference reversals. A further role of the financial advisor is to educate clients to make more optimal decisions and to be comfortable with them emphasising the importance to understanding and acknowledging internal

### **3.2 Internal Framing**

Internal framing or “self-framing” refers to how decision makers (investors) “themselves spontaneously encode and frame a choice problem” (Wang, 2004). Internal framing is a behavioural heuristic to simplify complex decisions characterised by outcome uncertainty. The above analysis illustrated that framing is unavoidable in the risk attitude profiling process. However, as eluded by researchers [(Elliot and Archibald, 1989, Levin, Schneider and Gaeth, 1998, Thaler and Johnson, 1990)] when investigating the manner in which decision makers frame choice outcomes and risk preferences, findings show individuals prefer positive to negative frames.

Kuhberger (1998) asserts that the “loose” definition of framing as, “an internal event that can be induced not only by semantic manipulations but may result also from other contextual features of a situation and from individual factors, provided that problems are equivalent from the perspective of economic theory” (pg, 24). Internal framing may be adopted in any context. If a choice is presented in terms of either gains or losses, individuals may select the certain or risk averse option because their natural tendency is to be risk averse, even though it contradicts economic rationality.

For financial advisors and the current risk attitude profiling processes, internal framing has implications. The major issue for the financial advisor regarding internal framing is that the need to ensure an alignment between the external framing of questions and the investor’s typical internal frames when making decisions under uncertainty. Misalignment can result in inappropriate responses, attitude recognition and inappropriate advice for a particular class of investment.

#### **3.2.1 Internal Framing as a Heuristic**

Heuristics is a process whereby individuals use short-cuts to make complex decisions. Heuristics are problematic due to their inclination to introduce bias into decision making (Shefrin, 2000). This bias is encouraged by past events (representativeness) which are stereotypes of judgement. An example of this is investors focusing on short term volatility for long term investment (such as superannuation). The short term volatility may be viewed unfavourably, however, over the long term volatility could prove to be insignificant. Short term volatility for long term investment strategies such as investing predominately in equities is relatively, not of much consequence as the same decision would be over a short term (Bodie, 1995). Adopting heuristics means that when faced with a choice, individuals use their common heuristics (based upon past behaviour and experiences) to assist them in making decisions, even if doing so leads to a preference reversal. To

determine if a framing effect occurs, the choice must provide the same “acts, outcomes, and contingencies” associated with decision that lead to preference reversals (LeBoeuf and Shafir, 2003).

Thaler and Johnson (1990) examined systematic phenomena to determine how prior gains and losses can affect subsequent choices. When confronted with a choice asking individuals to consider the effect of previous investment outcomes, individuals do not always conform with prospect theory. Significantly, the authors found that a prior gain often induces individuals to accept gambles, the authors naming this behaviour as the “House-Money effect”. This is at odds with prospect theory which found people to be risk-averse in the domain of gains. Another finding was that when faced with losses, the gamble was less attractive. However, if there was an opportunity to break-even or recoup prior losses, this seemed attractive. A similar study by Fox and Dayan (2004) provided similar results. In terms of superannuation investment, investors need to consider the choice of their decision in terms of their total investments.

Mental accounting is another example of using of internal heuristics in decision making. Thaler (1999) found investors to segregate information about their investments. Doing this leads investors to value investments differently and, hence change their attitudes towards risk for various investments. For example an investor that is relatively young may not take as much risk for their long term investment strategy when in fact they are quite risk tolerant for short term investments. This is their natural internal frame. No matter how questions maybe framed in the risk attitude profiling process, investors may still elicit attitudes that are not rationally consistent with a particular class of investment they seek advice on.

There is literature that postulates individuals have internal frames. Individuals will work through a choice in the same manner irrespective of different problems facing them. Arguments of this type of nature are based assumption that “problem frames are an integral way people think about decisions” (LeBoeuf and Shafir, 2003). (Kuhberger, 1998) goes further by defining internal framing as an event that can be induced by both semantic manipulations as well as contextual features of a situation, provided the problems are equivalent from an economic perspective.

If choices to situations involving uncertainty reveal risk attitudes then the contextual features also play a role in determining choice. In the process of risk attitude profiling, the internal frames must be aligned with external frames or the context of decision making. The decision facing investors must be specific to a particular investment class. Or it will not provide an indication of their actual attitudes.

### **3.2.2 External Framing**

External frames initially evolved from prospect theory, where Kahneman and Tversky (1979) manipulated the same problem to yield different responses and attitudes towards risk. Whilst probabilistically the chance of risky outcomes occurring is the same irrespective of the frame (gain or loss, certainty versus uncertainty, etc), the manner in how these choices are presented differ only in context. However, the difference in context leads individuals to interpret outcomes and utility associated with choices differently (Bazerman, 1998).

Conversely, internal frames are those that individuals adopt, irrespective of the decision they face. Individuals adopt heuristics to make decisions, as was shown by the House-Money effect and Mental Accounting. Using heuristics such as this may at times, not lead to optimal choices given the choices for a specific situation. The reason for this is that external frames used to describe a problem of choice under uncertainty do not correspond to the particular internal frame that an investor adopts. As a result there will be biased responses to decisions.

Current risk attitude profiling data collection methods involve framing, in particular that of external framing. Examples as seen in Grable and Lytton (2003) were given. These examples whilst not representative the types of questions asked in the data collection process, still highlight the issue of framing. Given some of these differences we will now examine some of the consequences of misalignment in financial advice recommendations.

### **3.3 Consequences of Misalignment**

Under current risk attitude profiling techniques, the major consequence of misalignment is the false categorisation of investor profiles and hence, recommendations based on these risk profiles. However, the current prevalence of broad attitudinal scales with only four categories means misalignment in frames makes drastic mis-classification unlikely. Typically, variation would be only in terms of one class at most, and if risk adjusted returns between adjacent classes of portfolios are similar, the chance of misalignment is further mitigated.

Misalignment between external and internal frames arises from the current data collection procedures. Investor's internal frames determine the choices under uncertainty they select. Financial advisors then subjectively interpret these choices, with this interpretation at risk of being in opposition to the investor, causing misalignment. One possible way to overcome this

misalignment given current risk attitude profiling practices, is education of the investor by the financial advisor. In particular, education should include information regarding the existence of behavioural biases and the conflicts these biases may cause in choice and economic optimisation. This may be achieved through illumination of the behavioural biases investors display during the risk attitude profiling process. Alignment of investor's psychological and behavioural "comfort" with investment strategies for optimising economic objectives is thereby assured.

To illustrate our argument further we will briefly examine superannuation investment and the need for an alignment between internal and external framing of questions in the risk attitude profiling process.

#### **4. Unique Characteristics of Superannuation Investment**

To illustrate the need for alignment between the external framing of questions in the risk attitude profiling process and the investor's internal frame to a class of investment decision an example will be used. The class of investment we have selected as an example is superannuation or pension investment. In Australia, retirement investing is mandatory and termed superannuation. Superannuation is so termed because of the propensity for Australian investors to take retirement investments as a "lump-sum" rather than a stream of income. Superannuation investment is primarily a defined contribution retirement income vehicle. There are a few defined benefit schemes remaining, but most new superannuation investments are defined contribution based. Superannuation investment was selected as the example for a number of reasons. Primarily was been selected as it is the largest investment that individuals have (aside from the equity in their place of residence). Secondly a large proportion of the population is approaching retirement (the "baby boomers"<sup>1</sup>) and finally with the onus of investment decision making placed on the individual investor<sup>2</sup>. Characteristics that make this class of investment unique to other types of investments are; it has a common purpose (goal), long-term investment horizon, individual choice and involves large capital sums. These will be very briefly discussed to highlight how a misalignment of internal and external frames may affect the financial advice.

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<sup>1</sup> "Baby Boomers" refers to people born within the years 1945-1950 (immediately after WWII).

<sup>2</sup> An example of this is Choice of Fund legislation. This legislation allows employees to select where their mandatory contributions are invested. This will come into full effect on July 1, 2005.

#### ***4.1 Purpose of Superannuation Investment***

The objective of superannuation investment is to maximise the net accumulated wealth in the accumulation period (employment years), subject to the investor risk attitude profile. This enables the investor to achieve the highest possible retirement income. Currently, investor's superannuation is based on contributions paid into a defined contribution fund by their employer, which is managed by a financial institution. Investors also have the choice of voluntary contributions that supplement that of their employers. Investments can also be made outside of the superannuation domain for the same purpose of accumulating funds for retirement. However, superannuation provides investors with tax effective incentives such as lower capital gains taxes on investments and tax concessions on income tax, if contributions to superannuation are made from gross salary. Incentives such as those just described aid investors to maximise their net contributions. To achieve this though, investors must be comfortable with their investment strategies.

#### ***4.2 Long-Term Investment Horizon***

Superannuation investing is definite long term investment. Investments can span over 40 years and begin at the individual's commencement of full-time employment<sup>3</sup>. At the conclusion of employed life, investors can receive superannuation benefits in terms of lump sums, annuities or pensions. During the accumulation period, investors are unable to access their funds or receive any associated cash flows from their investments. Thus, over time investor's could possibly make choices based on relatively large capital sums. Risk attitudes must be considered with respect to large capital sums that can not be accessed as well as time involved until they can be. If investors followed traditional economic models they would be able to plan and smooth consumption of wealth over their lifetime. This, however, does not largely occur, resulting in governments having to implement retirement income policies, such as superannuation investing. Such phenomenon has been named as *imperfect self-control*, and is been in the behavioural finance literature of (Fisher and Statman, 1997) and (Statman, 2002).

A long-term investment horizon highlights the need for an alignment between an investor's internal frames and external frames of risk attitude profile questions. For example a superannuation investor elicits a risk averse attitude in a risk attitude profile. This attitude is interpreted by a financial

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<sup>3</sup> Any individual earning over \$450 per month is entitled to a 9% superannuation contribution, on the behalf of their employer.

advisor as someone who would invest in relatively safe (low volatility) investments throughout their investment horizon, and is inappropriate considering the objective of superannuation and economic rationality. The risk attitude is inappropriate as investors need to maximise their terminal wealth. To achieve this they would need to invest passively in growth assets during their investment horizon, or accumulation period.

#### ***4.3 Investment Risk***

In many defined contribution retirement systems throughout the world, investors are faced with the onus of investment risk, requiring them to select their own desired investment strategy and, accept the returns associated with the particular choice they have made. The onus of investment risk couples with investment choice gives the investor the ability to select investments and strategies that are consistent with their financial objectives. As mentioned previously another example of framing was “naïve diversification”. If an investor uses this as an internal frame to allocate assets evenly, then when presented with a choice between investments that have low volatility and return, they should do the same. Again, this highlights the issue of misalignment between internal and external frames. In terms of superannuation investment, presenting choices between investments that do not offer much growth for a compounded long term investment may not be suitable to eliciting risk attitudes. Furthermore, doing so may bias responses that are economically irrational. Responses are biased in the sense that they relate to choices that are financially contradicting. The alignment of a risk attitude profile for a class of investment such as superannuation would need to utilise a broad range of investment strategies, to identify the investor’s internal frame. Prudent advice (taking life style considerations into account) would be against naïve diversification.

#### ***4.4 Preservation of Superannuation Funds***

Complementing compulsory contributions is *preservation* of accumulated funds. To stop investors from early withdrawals, taxes have been placed on accumulated funds to deter investors from accessing their future income sources. Conversely, investors are able to access and consume funds immediately outside the superannuation domain. If there were no accessing to superannuation funds then the objective of this specific type of investment is compromised. In their review of the behavioural finance literature, (Mullainathan and Thaler, 2000) found that given the wants and needs of most individuals over their lifetime, sacrificing current consumption for retirement is not a priority. Policies such as forced savings and preservation assist investors with self-control and planning for their

retirement needs. Superannuation investment envisages that investors remain focused on their goal of reaching the highest attainable retirement income stream. To achieve this, investors must be comfortable with an investment strategy that will enable them to achieve their objective and tolerate the risks of such a strategy over their investment horizon. Preservation of superannuation funds is a unique investment characteristic that makes this type of investment unique to other investment types that complements the forced superannuation savings thereby assisting investors to achieve the maximum attainable goals subject to their risk attitude profiles.

With respect to risk attitude profiling, internal frames found by may cause investors to be more risk seeking even in the gain domain (Thaler and Johnson, 1990). For financial advisors this is critical when reviewing investment strategies over an investor's life-cycle. If investments in superannuation have been performing considerably well, then a risk attitude profile, of the investor may change to a risk seeking attitude, when faced with choices under uncertainty. The new risk attitude profile may contradict previous assessments. Financial advisors should consider this change and consequently frame subsequent choices in terms of losses to see if this attitude is representative of all outcomes.

We have illustrated very briefly some of the unique investment characteristics of superannuation investing. By examining some of the issues surrounding risk attitude profiling we have highlighted the potential misalignment that risk attitude profiles may have when considering investment decisions for a specific class of investment. This misalignment will result in biased responses that do not characterise the investment decisions at hand. In particular, this analysis illustrates that specific investment purposes require specific risk attitude profiles reflecting the characteristics of the investment at hand.

## **5. Conclusions & Future Research**

This paper examined the significance of framing as a decision making heuristic in the risk attitude profiling process. Current risk attitude profiling processes are fundamentally flawed behaviourally. We concentrated solely on data collection and framing influences. Through our example of superannuation investment we showed that framing may lead to adverse consequences both economically and behaviourally. Current data collection procedures are also used to manipulate investors to fit into pre determined portfolios.

We argued that there needs to be an alignment between the internal frames of investors and the external frames of questions in the risk attitude profiling process. To illustrate this we used superannuation investment as an example to highlight the critical aspect of misalignment between internal and external frames of a particular investment class. If investors make choices under uncertainty adopting internal frames, irrespective of the decision and outcomes available to them, bias will result in investment advice. Other notable behavioural biases including mental accounting and the House Money effect were shown to be examples of heuristics used in decision making when problems were presented in frames. Of note, behavioural biases that may influence risk attitudes are not limited to those aforementioned.

The analysis of internal frames being part of investment decision making for individual investors is restricted to superannuation portfolio construction advice and recommendations. We illustrated the unique aspects of superannuation investment and illustrated how the external framing of questions can result in biased results due to the internal frames individual investors adopt.

At present whilst there have been limited studies into the interaction of internal or self framing and the measurement of risk attitudes/tolerances, we believe the two complement each other. From the review of current practices it is apparent that framing of questions is unavoidable. This being the case, framing effects need to be recognised and considered in the interpretation of risk attitude results. Results of this process are critical in the financial advising process, as current and subsequent advice (asset allocation) is based on risk attitudes. Furthermore, the example of superannuation investing highlighted the need for a specific risk attitude profiling processes for individual classes of investment objectives. Generic risk attitude profiles may produce grossly biased responses that are economically contradicting.

This study is only the beginning of examining what constitutes internal frames and their impact on financial decision making. We believe that there should be some attempt to describe this empirically and on a more conceptual basis. This paper is will attempt to do so for the benefit of the financial services industry and investors.

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# FINANCIAL CREDIT RISK PREDICTION WITH FUZZY SYSTEM

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## **Abstract**

*Credit risk is the possibility of loss incurred as a result of a borrower or counter party failing to meet its financial obligations. In the event of a default, a bank generally incurs a loss equal to the amount owed by the debtor, less any recovery amount resulting from foreclosure, liquidation of collateral or the restructuring of the debtor company. Credit risk prediction decisions are important for the financial institutions involved due to the high level of risk associated with wrong decisions. The process of making credit risk prediction decision is complex and unstructured. The existing models for prediction financial credit risk do not capture the learned knowledge well enough. In this study, we analyze the beneficial aspects of using fuzzy database for credit risk prediction decision.*

**Keywords:** *Fuzzy system; Credit risk prediction; Fuzzy database.*

## 1. Introduction

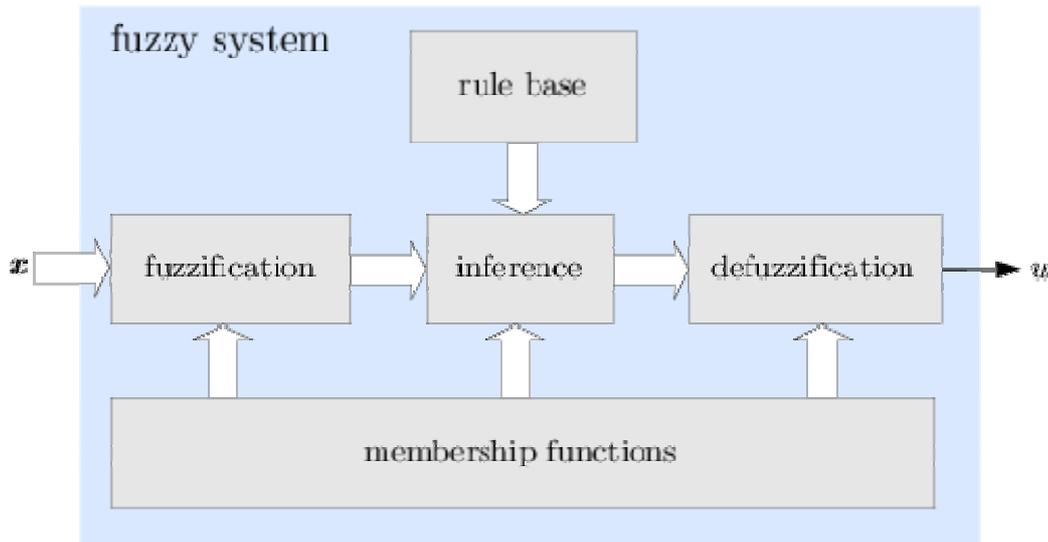
Credit risk is the risk of loss due to a counterparty defaulting on a contract, or more generally the risk of loss due to some "credit event". Credit risk is sometimes also called default risk. In business, almost all companies carry some credit risk, because most companies do not demand up-front cash payment for all products delivered and services rendered. Instead, most companies deliver the product or service, and then bill the customer, often specifying net 30 payment, in which payment is supposed to be complete on the 30th day after delivery. Credit risk is carried during that time. Managing credit risk is important for any company, and significant resources are devoted to the task by large companies with many customers (whether they be businesses or individuals). For large companies, there may even be a credit risk department whose job it is to assess the financial health of their customers, and extend credit (or not) accordingly [7].

In the process of analyzing credit-risk, the party involved in making the decision investigates factors that may lead to default in the repayment of loan. Credit-risk prediction decisions are inherently complex due to the various forms of risks involved. The existing models for prediction financial credit risk do not capture the learned knowledge well enough [1-3,5]. This paper analyzes the beneficial aspects of using fuzzy database system for credit risk prediction decision and organized as follows: Section 2 provides an overview of fuzzy system components and fuzzy database system for this problem. Section 3 includes a conclusion and future extensions of this study.

## 2. Fuzzy System

In this section, we briefly discuss the fuzzy database system as well as the components of this system and fuzzy search model. Fuzzy system is form a system that is easy to use, with good performance. Fuzzy system is drawn as a black box with some inputs and an output. Figure 1 shows the contents of a fuzzy system.

**Figure 1: Components of a fuzzy system.**



Now it is clear, what is in this black box. The input signals combined to the vector  $\mathbf{x} = [x_1, x_2, \dots, x_q]^T$  are crisp values, which are transformed into fuzzy sets in the fuzzification block. The fuzzification comprises the process of transforming crisp values into grades of membership for linguistic terms of fuzzy sets. The membership function is used to associate a grade to each linguistic term.

The output  $u$  comes out directly from the defuzzification block, which transforms an output fuzzy set back to a crisp value. Using a fuzzy system as a controller, one wants to transform this fuzzy information into a single value  $u^*$  that will actually be applied. This transformation from a fuzzy set to a crisp number is called a defuzzification. The set of membership functions responsible for the transforming part and the rule base as the relational part contain as a whole the modeling information about the system, which is processed by the inference machine. The core section of a fuzzy system is that part, which combines the facts obtained from the fuzzification with the rule base and conducts the fuzzy reasoning process. This is called a fuzzy inference machine. This rule-based fuzzy system is the basis of a fuzzy controller [4,6]. As well as fuzzy database system contains a fuzzy search model for our study, which is described bellow.

## 2.1. Fuzzy search model

A practical realization of fuzzy query required the development of a model, method, and algorithm of fuzzy querying in MS Access on the basis of FQUERY. The suggested system allow processing fuzzy queries of kind and the linguistic quantifier e.g. “above”, “approximately”, “good”, “very good”, “good enough”, “around” etc.

The implementation of the fuzzy query is done by the following formular:

$$Poss(a_1/a_2) = \max_u \min(\mu_{a_1}(u), \mu_{a_2}(u)) \in [0,1] =$$

$$= \begin{cases} 1 - \frac{ml_1 - mr_2}{\alpha_1 + \beta_2}, & \text{if } 0 < ml_1 - mr_2 < \alpha_1 + \beta_2 \\ 1, & \text{if } \max(ml_1, ml_2) \leq \min(mr_1, mr_2) \\ 1 - \frac{ml_2 - mr_1}{\alpha_2 + \beta_1}, & \text{if } 0 < ml_2 - mr_1 < \alpha_2 + \beta_1 \\ 0, & \text{otherwise} \end{cases} \quad (1)$$

So by considering  $a_1, a_2$  as flat fuzzy numbers which  $a_1=(ml_1, mr_1, \alpha_1, \beta_1)$ ,  $a_2=(ml_2, mr_2, \alpha_2, \beta_2)$ . Where  $ml_1, mr_1, ml_2, mr_2$  are the mean values.  $\alpha_1, \beta_1$  and  $\alpha_2, \beta_2$  are the left and right spreads of the fuzzy numbers  $a_1$  and  $a_2$  respectively.

$\mu_{a_1}(u)$  and  $\mu_{a_2}(u)$  are membership functions of the linguistic values  $a_1$  and  $a_2$  respectively. By using Visual Basic for Application of MS Access, the membership functions are calculated (formula (1)).

## 3. Conclusion

Fuzzy systems, including fuzzy logic and fuzzy set theory, provide a rich and meaningful addition to standard logic. Many systems may be modeled, simulated, and even replicated with the help of fuzzy systems, not the least of which is human reasoning itself. In this paper we have analyzed the beneficial aspects of using fuzzy database system for credit risk prediction decision. The kernel of the discussed system is Access DBMS and programming language Visual Basic. The purpose of the future work will be addition of neural network control system to our present study.

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# **BANKING RISKS MANAGEMENT – QUO VADIS?**

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## **Abstract**

*The ever changing environment in which banks exist and function generates new opportunities, but also more complex and various risks as a challenge for traditional banking management. The present paper focuses on the importance of banking risks management as a key factor of success for Romanian banks, especially on the background of new risk facets in the contemporary economy. Monitoring is seen as an important share of the management process in banks and the monitoring of credit risk is particularly highlighted in the paper. Low quality credits have a high disturbing potential and this is the reason for which their causes and possible solutions are brought into analysis.*

*In order to value the opportunities and face the exigencies and risks that the European integration process and the globalization phenomenon induce in the banking sector, Romanian banks must develop efficient systems for reviewing and reporting the implementation of their credit policy, the quality and characteristics of their credit portfolios being one of the key success factors of a bank.*

**Keywords:** *banking risks management; monitoring; credit risk.*

## **1. Introduction**

The ever changing environment in which banks exist and function generates new business opportunities, but also more complex and various risks as a challenge for traditional banking management. These risks are to be managed by banks as adequately as possible in order to face competition and foster economic growth in the private sector.

Banking risk is a phenomenon present in the entire banking sphere and represents the uncertainty of achieving a certain level of profit or the probability to incur a loss. Banking risk can be generated by various operations and procedures and must be analyzed as a complex of factors, often interdependent, with common causes and chain effects. It is permanently changing and evolving in its complexity, adding to the traditional components new ones such as financial, operational, strategic, country, human and fraud risks.

## **2. New facets of banking risks management in the contemporary economy**

The conditions that accompany the occurrence of banking risks are determined by a complex of factors which depend upon: the general economic trend, changes in the organizational structure of the bank, adopting financial decisions, political and economic circumstances. The occurrence of banking risks determines a decrease in profit and income for shareholders and, consequently, the bankruptcy of the bank or its acquisition by another bank.

The Basel Committee has identified eight categories of risks: credit risk, country risk, transfer risk, market risk, interest rate risk, liquidity risk, operational risk, legal risk and the reputation risk.

The contemporary era is dominated by the "risk management episode" in the banking system and risk management is a very important and difficult task for banks' management teams, covering a broad spectrum, from strategic planning of capital, asset and liabilities management to business management.

In order to generate profit, commercial banks must face risks that are specific to this process, while observing prudence requirements expressed by the national regulating authorities, justifying their exposure to risks and dimensioning risk in a way that the potential loss generated by its occurrence could be considered normal for the activity, for the internal and external

reputation of the bank. Banks must permanently monitor risks and balance sheet accounts. Their success in monitoring definitely depends on the organizational framework which should be likely to facilitate monitoring in particular and risk management in general.

We must point to the fact that banking literature does not draw a clear line between risk management instruments and monitoring instruments for the banking risks. We therefore consider it useful to distinguish between monitoring banking risks, i.e. identifying, assessing and controlling policies and practices regarding risk management in a bank, which allow for early detecting of potential problems and managing banking risks, i.e. the methods that are used for administrating banking risks with a view to eliminating, avoiding, dividing and financing them, as well as to decreasing exposure to risks. The demarcation line is even more important for banks management given the fact that high-quality monitoring of banking risks is likely to ensure the target area of risk management.

### **3. Exigencies regarding the use of monitoring tools and techniques for credit risk in Romania**

We consider that among the various risks that influence the activity of commercial banks in Romania, it is relevant to deepen the analysis of credit risk. Credit risk has been a factor with high destabilizing potential against the proper functioning of Romanian banks.

The environment in which Romanian banks function becomes more and more complex and intricate and leaves open way for tempting credit offers in terms of low exigencies regarding the quality of debtors and the required guarantees. This considerably increases the premises for credit risk to occur.

Credit risk can be defines as the probability of non-reimbursement or partial reimbursement for the interest, the principal or both of them. This type of risk is specific to banks whose main function is granting credits. No matter how high the level of assumed risks is, losses can be minimized if only credit operations are organized in a professional manner.

Credit risk must be assessed via comparison with the profit that the bank expects to gain by granting the credits; direct benefits consist of interests and fees charged against the principal, while indirect benefits consist of initiating or maintaining relationships with certain clients that are likely to open new deposit accounts or to require new and more diverse services.

The most important function of banking management is that aiming at the control and analysis of credit portfolio quality, given the fact that the low

quality of credits is one of the main causes of banks' bankruptcies and requires permanent informing of the managing boards on the results of the analysis process on credits quality. This allows for early detecting and correction of various problems.

The managing boards of Romanian banks should take care that the crediting function that they implement serves three fundamental objectives:

- credits are granted on a safe basis so that they will be reimbursed;
- the amounts are invested in a profitable manner to the benefit of shareholders and the protection of depositors with the bank;
- credit needs of the economic agents and natural persons are met.

It is also necessary to revise credit operations, given the fact that the integrity and the credibility of the crediting process depends on objective decisions that can ensure an acceptable risk level vis-à-vis the expected return. The revising must include a detailed credit analysis, the criteria on which granting credits is based, price policy, credit ceilings, guarantees for all types of credits, as well as methods for reassessing guarantees. Revising credit requests offers new clues on the quality of credit assessing systems.

We consider that the management teams of Romanian banks should pay attention to the important role that human resources play in this process, in order to better identify the personnel that is suitable for monitoring credit risk in terms of qualifications and skills.

There are also needed efficient systems for revising, reporting and informing the managing boards of banks on the way in which credit policies are implemented, on the quality and characteristics of banks' credit portfolios, which gives a picture of the market share, the demand for the products and services of a bank, its business and risk strategy, as well as its potential for granting credits.

In order to accomplish a correct analysis of the way in which the quality of credit portfolio evolves in time, and of the impact that it exerts on the profitability, capital adequacy of a bank and clients' trust, Romanian banks calculate the following categories of indicators for quantifying credit risk:

- $\text{non-reimbursed credits} / \text{total credits} \times 100$  : it is expected to get as close as possible to 0;
- $\text{low-quality credits} / \text{total credits} \times 100$  : the optimal value is the minimum one given the fact that low-quality credits negatively influence the activity and the financial results of banks and the economic system;

- reserves for credit losses/total credits x 100, this indicator shows the expectations of the managing board regarding the trend in the quality of credits portfolio;
- contingencies for credit losses/net losses x 100, this indicator reflects the level of prudence adopted by banks in performing their credit policy;
- gross profit/ contingencies for credit losses x 100, i.e. the cost incurred by a bank in order to cover the credit risk.

Romanian banks monitor the quality of their credits portfolio via periodical auditing depending on the credit rating depicted from the credit documentation. Monitoring allows for early detecting of potential problems generated by credits that do not generate income for the bank and that are considered as non-performing, when there are delays in the reimbursement of either principal and interests or both of them.

#### **4. Non-performing credits in the Romanian banking system - causes and solutions**

For a long period of time, the lack of performance in the crediting activity, as one of the main causes of the successive bankruptcies, has been present in the Romanian banking system.

There are certain reasons that can explain the worsening of the credits portfolio quality. The main explanations that have been identified for the Romanian banking system, especially for the period between 1990 and 1999 are:

- the "internal" crediting operations that consisted of granting numerous credits to banks' managers and shareholders, thus disobeying the sound crediting principles;
- disobeying sound crediting principles by consciously granting credits with high risks for hunting very high incomes in a competitive environment or because of personal conflict of interests;
- accepting and ignoring high risks in the idea that they will not come up anyway, which is a very frequent problem, especially that credits are the main source of income for banks;

- having incomplete and/or incorrect information regarding the solicitants and granting credits without a solid analysis of the client's financial situation;
- the lack of attention in supervising old, familiar clients, basing the credit granting on verbal information and not on financial evidence, by optimistic interpreting of weak points and the successful solving of problems in the past;
- ignoring alarm signals regarding the client, the economy, the region or the sector and refusing to apply the necessary laws and regulations at the appropriate time;
- inefficient supervision and incomplete knowledge of the client's activities and situation during the crediting interval, because it often happens that an apparently sound credit in the beginning turns into a problematic one and generates losses because of inadequate supervision;
- technical incompetence, consisting of the lack of capacity of credit officers to analyze financial documents, to collect and assess relevant data;
- weak credit selection process, consisting of: granting credits for which the amount offered by the bank out of the total investment cost exceeds clients' own capital; granting credits based on the assumption of successful finalization of a certain transaction and not on the quality of the client; granting credits to companies placed in problematic areas from an economic point of view; granting credits based on uncertain collaterals.

An important direction concerning the minimization of banking risks consists of maintaining a “granular” structure of the placement portfolio, which means drawing an optimal balance between assets, according to their potential degree of risk. From this perspective, one can suggest an optimal structure based on 30% of low risks credits and 30% medium risk credits. For high risk assets a level of 40% is usually calculated. On the other hand, banks must constantly aim at varying the attracted resources, especially in what deposits are concerned.

The capacity of Romanian banks' managing boards to correctly administrate banks' assets is a key factor for their success on the market. Given the fact that there are still low quality credits in the portfolios of Romanian commercial banks, it is obvious that they are preoccupied by identifying, monitoring and solving them along with minimizing their potential losses.

The portfolio of low-quality credits offers information on the quality of the total portfolio as well as on the crediting conditions of a certain bank. Its analysis points to the following aspects:

- the causes that have generated the worsening of the credit portfolio quality, which can contribute to identifying the possible corrective measures to be taken by the bank in the future;
- ranking low-quality credits according to their duration and types of clients, from the point of view of their sector of activity;
- assessing every low-quality credit in order to establish the actions necessary to improve the clients' capacity of reimbursing the credit and/or monitoring the schedule of reimbursement;
- assessing the impact of low-quality credits on the profit and loss account of the bank in order to anticipate the extent to which the bank could be affected by the worsening of its assets quality.

We must emphasize the fact that the main criterion for credit granting remains the client's capacity to generate positive cash-flows, as a primary source for reimbursement, thus placing on a second position the material guaranties.

In order to diminish risks, a periodical and strict analysis of the portfolio quality is necessary, as well as drawing up the necessary reserves. An immediate option could be the insurance of credits against the non-payment risk, made by specialized institutions (the Romanian Guarantee Fund for the private investors, the Rural Credit Guarantee Fund, Eximbank, insurance and re-insurance companies).

The credit risk dispersion can be achieved by unionizing the loans with other banks from Romania or abroad, as well as the diversification of clients and credit types. In order to avoid the danger of concentrating credits in a certain field of activity, it is necessary to establish some limits in exposure, on the basis of scoring type analysis models, according to the indices that are relevant for assessing various sectors' performance.

These indices could include, for example:

- non performing credits' share in total ongoing credits;
- the quality of the loans portfolio;
- the volume of risk-specific fare;
- the share of loans granted to the private sector in total credits.

## **5. Conclusions**

The changing environment in which Romanian banks function generates new business opportunities, but also more complex and diverse risks, which are a challenge for the traditional approaches of banking management.

A competitive market economy can only function with profitable, well-consolidated banks and well prepared to face multiple risks. We have considered necessary to distinguish between the management methods and the monitoring tools of banking risks and we have focused in the present paper on the instruments and techniques that are used for identifying, assessing and controlling policies and practices regarding the management of credit risk by the Romanian banks.

Credit risk must be assessed as compared with the profit that banks expect to gain when granting credits. The most important function of banking management is that aiming at controlling and analyzing the quality of credits portfolio, especially that the latter has been one of the main causes of banks' bankruptcies in Romania.

In order to value the opportunities and face the exigencies and risks that the European integration process and the globalization phenomenon induce in the banking sector, Romanian banks must develop efficient systems for reviewing and reporting the implementation of their credit policy, the quality and characteristics of their credit portfolios being one of the key success factors of a bank.

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# **SOME ISSUES ABOUT RISK MANAGEMENT FOR E-BANKING**

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## **Abstract**

*The e-banking or on-line banking is a service provided by many banks and credit unions that allow to conduct banking transactions over the Internet using the information and communication technology. Continuing technological innovation and competition among existing banking organisations and new entrants have allowed for a much wider array of banking products and services to become accessible and delivered to retail and wholesale customers through an electronic distribution channel collectively referred to as e-banking. However, the rapid development of e-banking capabilities carries risks as well as benefits. To minimize legal and reputation risk associated with e-banking activities conducted both domestically and cross-border, banks should make adequate disclosure of information on their web sites and take appropriate measures to ensure adherence to customer privacy requirements applicable in the jurisdictions to which the bank is providing e-banking services.*

**Keywords:** *e-banking; risk; new banking products*

## 1. Introduction

Banking organisations have been delivering electronic services to consumers and businesses remotely for years. Electronic funds transfer, including small payments and corporate cash management systems, as well as publicly accessible automated machines for currency withdrawal and retail account management, are global fixtures. However, the increased world-wide acceptance of the Internet as a delivery channel for banking products and services provides new business opportunities for banks as well as service benefits for their customers.

But, can we appreciate that everything is ok in e-banking? *This study revealed that indeed ebanking could become the major form for payment systems in organizations as technologies will improve to create a fully secure environment.* In this moment, we believe that e-banking is only a supplement of traditional methods. This paper suggests, that not only is it probable to use e-banking but that networks (especially Internet) will promote the quick development of such a services.

Electronically-based payment systems have been in operation since the 1960s and have been expanding rapidly as well as growing in complexity. However, in most of the major industrialized countries, an inverse relationship exists between the volume and the number of transactions handled electronically. Typically, of business payments around 85-90% or more of monetary value will be processed electronically, while less than 5-10% of the total number of payment transactions will be handled in this way.

This has been due to four related factors: (1) proprietary closed networks were developed by banks to handle large and increasingly internationally based payments systems; (2) large value payments are increasingly associated with foreign exchange and global securities transactions, thereby becoming divorced from underlying world trade; (3) large value payment systems were not designed nor are they cost-effective for small value payments; and (4), paper-based non-automated payment systems remain an established part of accepted business practice for varying institutional reasons, thereby remaining ingrained in the economic system.

Electronic banking (e-banking) is the newest delivery channel of banking services. The definition of e-banking varies amongst researches partially because electronic banking refers to several types of services through which a bank's customers can request information and carry out most retail banking services via computer, television or mobile phone (Daniel, 1999; Mols, 1998; Sathye, 1999). Burr, 1996, for example, describes it as an electronic connection between the bank and customer in order to

prepare, manage and control financial transactions. Many authors appreciate that Internet banking (e-banking) is defined to include the provision of retail and small value banking products and services through electronic channels as well as large value electronic payments and other wholesale banking services delivered electronically.

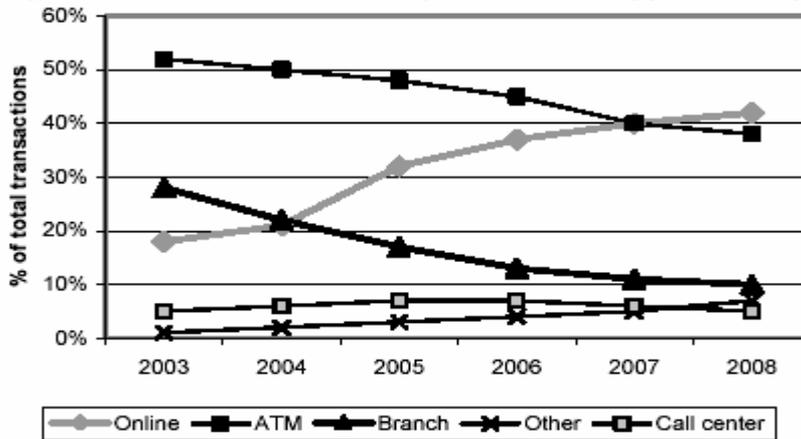
Electronic banking can also be defined as a variety of the following platforms: (a) Internet banking (or online banking), (b) telephone banking, (c) TV-based banking, (d) mobile phone banking, and (e) PC banking (or offline banking). In this paper, the ATM (Automated Teller Machine) channel is also added to the research.

## 2. Levels of e-banking business

According to researchers, in the late 2002, Internet bankers represented 37 percent of Internet users and online banking services now attract 18 percent of all European adults (Forrester, March 2003). Forrester projects that the number of Europeans using online banking will double to reach almost 130 million users in five years — a total of 21 percent. While online banking penetration in the Nordic countries and the Netherlands will climb to 60 percent of Net users in 2003, Italy and Greece, which had fewer than 5 percent of adults banking online a year before, struggled to achieve a situation with a third of Net users banking online in 2003.

According to Forrester, a typical European bank has the following perspective (Figure 1) — in six years the proportion of transactions made online will exceed 40% of all transactions, while the transactions in the traditional branches will be below 10% (Forrester, June 2003).

**Figure 1 Transaction volume by channel in a typical European bank**



Source: Forrester, June 2003

Despite their problems, some important steps are also in the developing countries where the average of e-banking penetration by the end of 1999 was close to 5% (World Bank Survey, 2001) and up to 15% in 2004. The Internet is experiencing rapid growth which is being largely driven by new commercial users of the network. Other commercial on-line services provided by companies such as CompuServe, America On-line and Prodigy are also expanding rapidly.

Continuing technological innovation and competition among existing banking organisations and new market entrants has allowed for a much wider array of electronic banking products and services for retail and wholesale banking customers. These include traditional activities such as accessing financial information, obtaining loans and opening deposit accounts, as well as relatively new products and services such as electronic bill payment services, personalised financial “portals,” account aggregation and business-to-business market places and exchanges. Notwithstanding the significant benefits of technological innovation, the rapid development of e-banking capabilities carries risks as well as benefits and it is important that these risks are recognised and managed by banking institutions in a prudent manner.

Generally we appreciate that there are three levels of e-banking business:

- ✚ **Basic information e-banking**/web sites that just disseminate information on banking products and services offered to bank customers and the general public;
- ✚ **Simple transactional e-banking**/web sites that allow bank customers to submit applications for different services, make queries on their account balances, and submit instructions to the bank, but do not permit any account transfers;
- ✚ **Advanced transactional e-banking**/web sites that allow bank customers to electronically transfer funds to/from their accounts pay bills, and conduct other banking transaction online.

In the past several years, many economists have considered the impact of the digital revolution on the money and banking system, and by extension the macroeconomy. Although many of the papers on e-money and e-banking have contained useful insights into these developments, they have also tended to paint an incomplete and even confusing picture. The application of information technology to money and banking raises many interesting questions. But to make further progress in understanding the economic effects, we need to advance in a very important area: what is the risk management for e-banking?

### **3. Categories of risk in e-banking**

In many ways, e-banking is not unlike traditional payment, inquiry, and information processing systems, differing only in that it utilises a different delivery channel. Any decision to adopt e-banking is normally influenced by a number of factors. These include customer service enhancement and competitive costs, all of which motivate banks to assess their electronic commerce strategies. The benefits of e-banking are widely known and will only be summarised briefly in this document.

E-banking can improve a bank's efficiency and competitiveness, so that existing and potential customers can benefit from a greater degree of convenience in effecting transactions. This increased level of convenience offered by the bank, when combined with new services, can expand the bank's target customers beyond those in traditional markets. Consequently, financial institutions are therefore becoming more aggressive in adopting electronic banking capabilities that include sophisticated marketing systems, remote-banking capabilities, and stored value programs. Internationally, familiar examples include telephone banking, automated teller networks, and automated clearinghouse systems. Such technological advances have brought greater sophistication to all users, commercial and "the man in the street".

A bank may be faced with different levels of risks and expectations arising from electronic banking as opposed to traditional banking. Furthermore, customers who rely on e-banking services may have greater intolerance for a system that is unreliable or one that does not provide accurate and current information. Clearly, the longevity of e-banking depends on its accuracy, reliability and accountability. The challenge for many banks is to ensure that savings from the electronic banking technology more than offset the costs and risks involved in such changes to their systems.

While financial institutions have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to lax credit standards for borrowers and counterparties, poor portfolio risk management or a lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a bank's counterparties.

Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other categories of risks. For any transaction on capital market, business or economic transaction in generally, there are seven categories of risk:

- Strategic;
- Credit;
- Market;
- Liquidity;
- Operational;
- Compliance/legal/regulatory;
- Reputation.

The most important category of risk management for e-banking services is operational risk. Operational risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. The main causes for operational risk can be:

- ✚ Inadequate Information Systems;
- ✚ Breaches in internal controls;
- ✚ Fraud;
- ✚ Unforeseen catastrophes.

The inadequate information system can result from general risks or from application oriented risks. The general risks can include physical access to the hardware, logical access to the information and communication technology systems, emergency management or from an insufficient backup recovery measures-mitigate the consequences of system failures.

Application oriented risk can be one result of one from following error situation:

- Data not correctly recorded due to system errors;
- Data not correctly stored during period of validity;
- Relevant data are not correctly included;
- Calculations which are basis for information are not correct;
- Due to systems failures the information processed by the application is not available in time.

For the risk result from fraud management, at e-banking level, we can meet one of the following categories:

- ✚ Check fraud;
- ✚ Debit card fraud;

- ✚ Electronic Payment fraud;
- ✚ ATM Deposit fraud;
- ✚ Account Take-over/Identity Theft.

For e-banking are many obstacles in detecting fraud, like financial or human resource shortage, high volumes of claims, transactions or other information to be analyzed, cookie-cutter detection methods that miss new or unusual instances or lack of in-house expertise or training. According to Office of Comptroller of the currency, the proportion of national banks in the world that provide e-banking services, was 21% in 1999, 32% in 2000, 41% in 2001, 47% in 2002 and more than 50% at the end of the year 2002.

The reliable customer authentication is imperative for e-banking. Effective authentication can help banks reduce fraud, reputation risk, and disclosure of customer information and promote the legal enforceability of their electronic agreements. There are many methods to authenticate customers, like:<sup>1</sup>

- Passwords & PINS;
- Physical devices such as tokens;
- Biometric identifiers;
- Digital certificates & Public Key Infrastructures.

#### **4. The principal risk management challenges identified by EBG2**

The Electronic Banking Group of the Basel Committee on Banking Supervision (EBG) noted that the fundamental characteristics of e-banking (and e-commerce more generally) posed a number of risk management challenges:<sup>3</sup>

- The speed of change relating to technological and customer service innovation in ebanking is unprecedented. Historically, new banking applications were implemented over relatively long periods of time and only after in-depth testing. Today, however, banks are experiencing competitive pressure to roll out new business applications in very compressed time frames – often only

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<sup>1</sup> Stoica, M., Risk management for E-banking, International Workshop IE&SI, Timisoara, 2003, p. 39

<sup>2</sup> EBG - The Electronic Banking Group of the Basel Committee on Banking Supervision

<sup>3</sup> see - [www.iwar.org.uk/pipermail/infocon/2003-July/000392.html](http://www.iwar.org.uk/pipermail/infocon/2003-July/000392.html)

a few months from concept to production. This competition intensifies the management challenge to ensure that adequate strategic assessment, risk analysis and security reviews are conducted prior to implementing new e-banking applications;

- Transactional e-banking web sites and associated retail and wholesale business applications are typically integrated as much as possible with legacy computer systems to allow more straight-through processing of electronic transactions. Such straight-through automated processing reduces opportunities for human error and fraud inherent in manual processes, but it also increases dependence on sound systems design and architecture as well as system interoperability and operational scalability;
- E-banking increases banks' dependence on information technology, thereby increasing the technical complexity of many operational and security issues and furthering a trend towards more partnerships, alliances and outsourcing arrangements with third parties, many of whom are unregulated. This development has been leading to the creation of new business models involving banks and nonbank entities, such as Internet service providers, telecommunication companies and other technology firms;
- The Internet is ubiquitous and global by nature. It is an open network accessible from anywhere in the world by unknown parties, with routing of messages through unknown locations and via fast evolving wireless devices. Therefore, it significantly magnifies the importance of security controls, customer authentication techniques, data protection, audit trail procedures, and customer privacy standards.

The e-banking risk management principles identified in the Report of EBG, fall into three broad, and often overlapping, categories of issues. However, these principles are not weighted by order of preference or importance. If only because such weighting might change over time, it is preferable to remain neutral and avoid such prioritization.

**A. Board and Management Oversight<sup>8</sup> (Principles 1 to 3):**

1. Effective management oversight of e-banking activities;
2. Establishment of a comprehensive security control process;
3. Comprehensive due diligence and management oversight process for outsourcing relationships and other third-party dependencies.

**B. Security Controls (Principles 4 to 10):**

4. Authentication of e-banking customers;
5. Non-repudiation and accountability for e-banking transactions;
6. Appropriate measures to ensure segregation of duties;
7. Proper authorisation controls within e-banking systems, databases and applications;
8. Data integrity of e-banking transactions, records, and information;
9. Establishment of clear audit trails for e-banking transactions;
10. Confidentiality of key bank information.

**C. Legal and Reputational Risk Management (Principles 11 to 14):**

11. Appropriate disclosures for e-banking services.
12. Privacy of customer information;
13. Capacity, business continuity and contingency planning to ensure availability of ebanking systems and services;
14. Incident response planning.

**5. Security is of major importance to all online consumers, not only for ebanking transactions.**

The main goal of any company is to maximize profits for its owners, and banks are no exception. Automated e-banking services offer a perfect opportunity for minimizing costs (see Table 3).<sup>4</sup>

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<sup>4</sup>Olga Luštšik, Can e-banking services be profitable?, Tartu University Press, Tartu, 2004, p 26

**Table 1 Unit costs for transactions in different distribution channels**

Channel	Europe average (Forrester 2003)		US average (Booz 1996)		Nordea (Finland, Dynamo 2001)		Union Bank (Estonia, Toomla, 2003 )
	Euro	%	US \$	%	US \$	%	%
Branch	2.00	100	1.07	100	1	100	100
Call Center	0.96	48	0.54	50			67
Mail	0.27	14					161
ATM	0.22	11	0.27	25			14
IVR	0.19	10					
Online	0.14	7	0.01	1	0.11	11	7
Direct Debit PC Bank	0.04	2	0.015	1			2

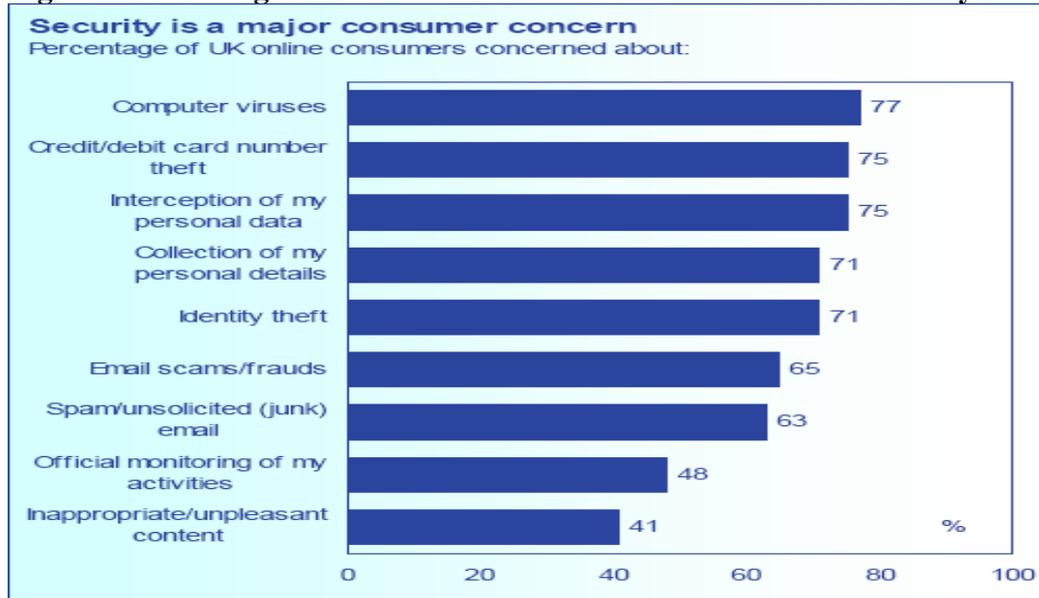
*Source: Olga Luštšik, Can e-banking services be profitable?, Tartu University Press, Tartu, 2004, p 27*

According to a survey by Booz, Allen and Hamilton (1996), an estimated cost providing the routine business of a full-service branch in the USA is \$1.07 per transaction, compared to 54 cents for telephone banking, 27 cents for ATM and 1.5 cents for Internet banking. In the Nordea Bank, Finland, one online transaction costs the bank an average of mere 11 cents, compared to \$1 per transaction in the branch (Dynamo..., 2001).

The difference in net cost between the US and Finnish banks can be explained by Finland's smaller population and the scale effect in case of the USA. Forrester research (June 2003) covered Europe's largest banks and found that on average online transactions cost 14 times less than those made by branch tellers'.

Security is of major importance to all online consumers, not only for ebanking transactions. Though they also worry about unpleasant content or spam, their foremost concerns relate to security. Viruses, credit card number theft, interception of data, collection of personal details and identity theft received most mentions in a survey in the UK. The attitude is similar in most European countries.

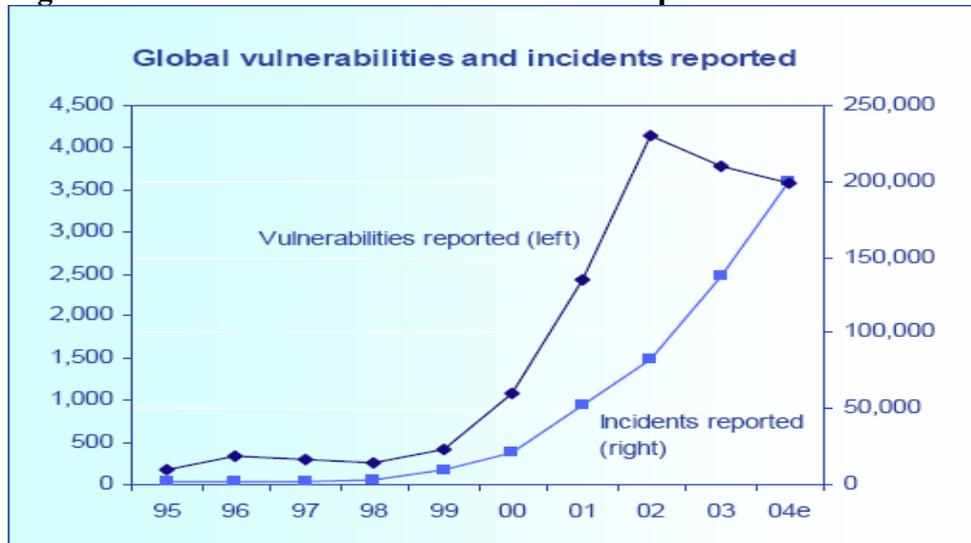
**Figure 2 Percentage of UK online consumers concerned about security**



Source: [www.forrester.com](http://www.forrester.com), 2004

Security vulnerabilities are part of web reality, however. The success of the internet has attracted a rising number of hackers and other scallywags. Given the wide-spread use of automated attack tools against internet-connected systems, the overall damage is potentially much larger than the reported vulnerabilities and incidents indicate at first glance.

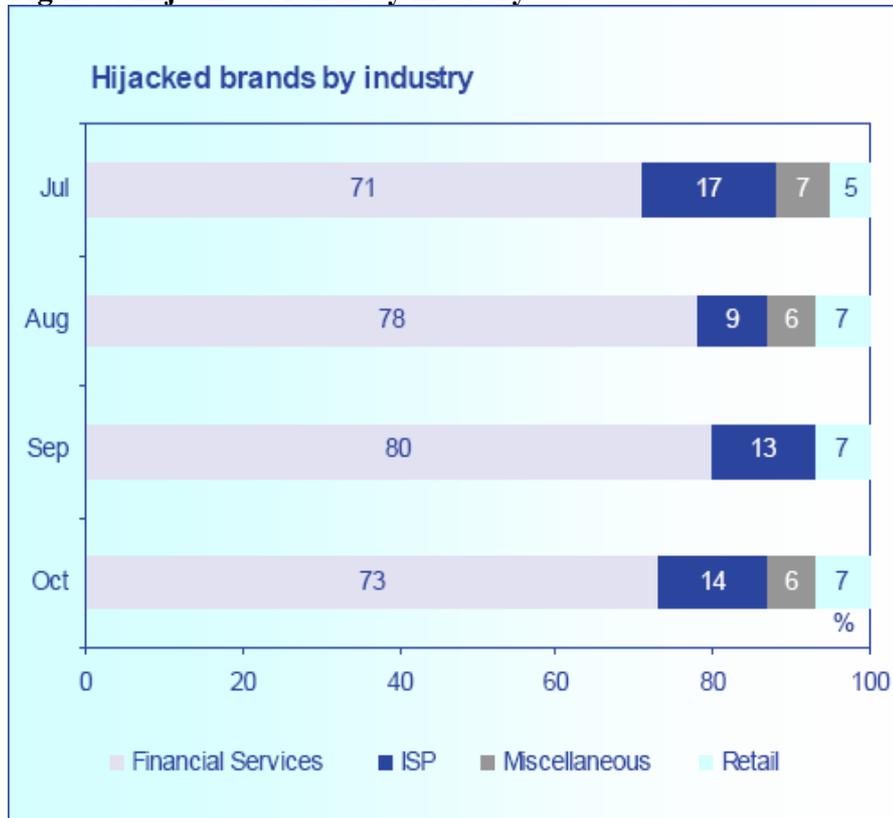
**Figure 3 Global vulnerabilities and incidents reported**



Source: [www.dbresearch.com](http://www.dbresearch.com), 2004

The most targeted industry for phishing attacks is financial services. This holds from the perspective of total number of unique baiting sites as well as from the number of companies targeted. The financial services sector represents 73% of all brands hijacked in October 2004. Sites of internet service providers (ISP) rank second with 14% in October, followed by retail brands.<sup>5</sup>

**Figure 4 Hijacked brands by industry**



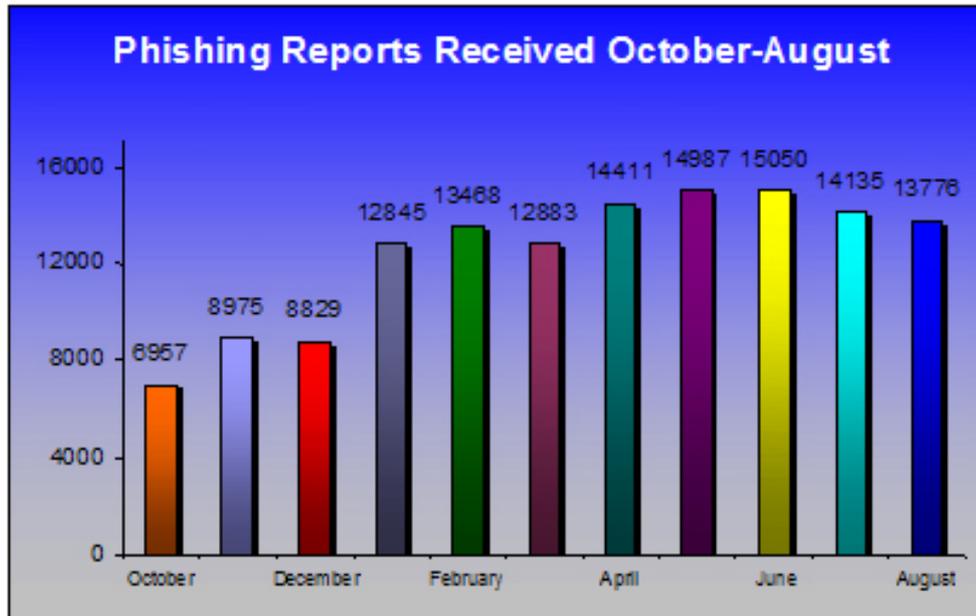
Source: *www.antiphishing.org*, 2004

Phishing attacks use both social engineering and technical subterfuge to steal consumers' personal identity data and financial account credentials. Social-engineering schemes use 'spoofed' e-mails to lead consumers to counterfeit websites designed to trick recipients into divulging financial data such as credit card numbers, account usernames, passwords and social security numbers.

<sup>5</sup> Deutsche Bank Research, E-banking snapshot, in Digital economy, no 12, dec 2004, available at <http://www.dbresearch.com/servlet/reweb2>

Hijacking brand names of banks, e-retailers and credit card companies, phishers often convince recipients to respond. Technical subterfuge schemes plant crimeware onto PCs to steal credentials directly, often using Trojan keylogger spyware. Pharming crimeware misdirects users to fraudulent sites or proxy servers, typically through DNS hijacking or poisoning.<sup>6</sup>

**Figure 5 New and Improved Phish Tracking 2005**



source: <http://www.antiphishing.org/>

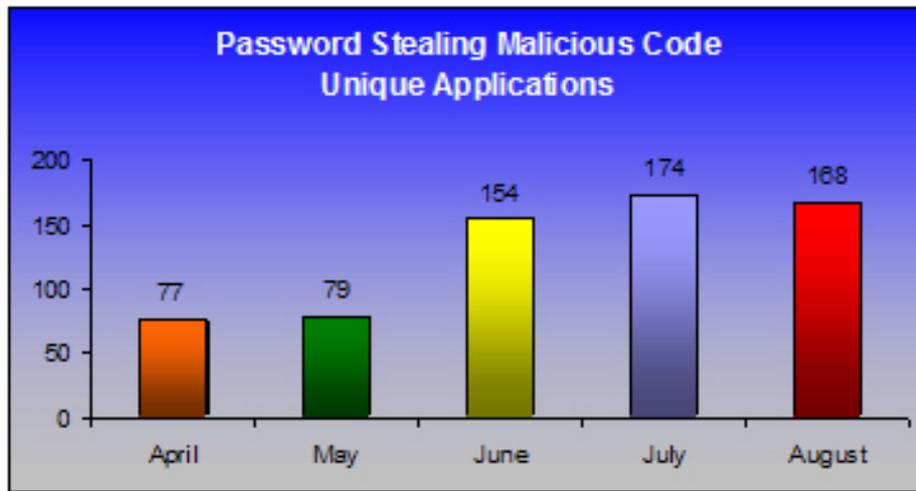
Also, the figures offer an important information: the crimeware growth remains strong.<sup>7</sup>

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<sup>6</sup> see <http://www.antiphishing.org/>

<sup>7</sup> see <http://www.antiphishing.org/>

**Figure 6 The Crimeware growth remains strong**



source: <http://www.antiphishing.org/>

A bouquet of measures is necessary to meet the threat. Banks must combine multiple instruments to keep – or regain – their online customers’ trust. Only best practices should be followed to minimise the hazards. Technology is an important weapon, business processes must be analysed and improved, and – most important – customers should be educated and reassured.

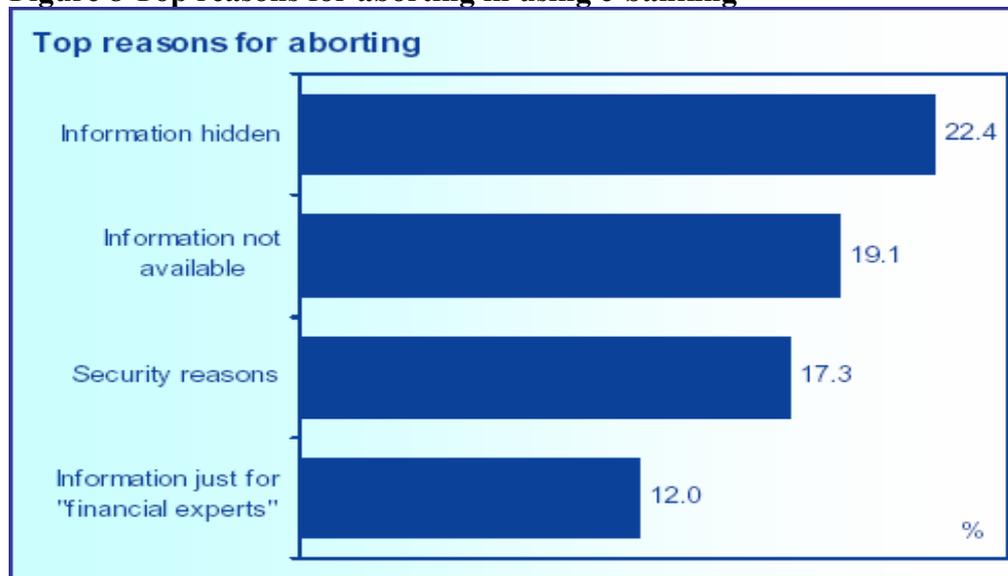
**Figure 7 Instruments to meet the threat**

Instruments to meet the threat	
<b>Technology</b>	Log analysis tools Alert services E-mail validation Web site verification
<b>Screening of customer contacts</b>	Check - Links in e-mails - 3rd party services for sending e-mails - Automated e-mail responses - E-mail campaigns
<b>Customer education</b>	Explain threats to customers Advise customers (technology and habits)

Source: DBR, Forrester, 2004

There is another important reason that could affect many potential users of e-banking. Complexity of online banking sites may turn customers away. A startling 92.6 percent of German internet users regularly abort their visits to bank websites according to an Emnid survey. The top reason for aborting is that they cannot find the information they are looking for because it is hidden or not available.

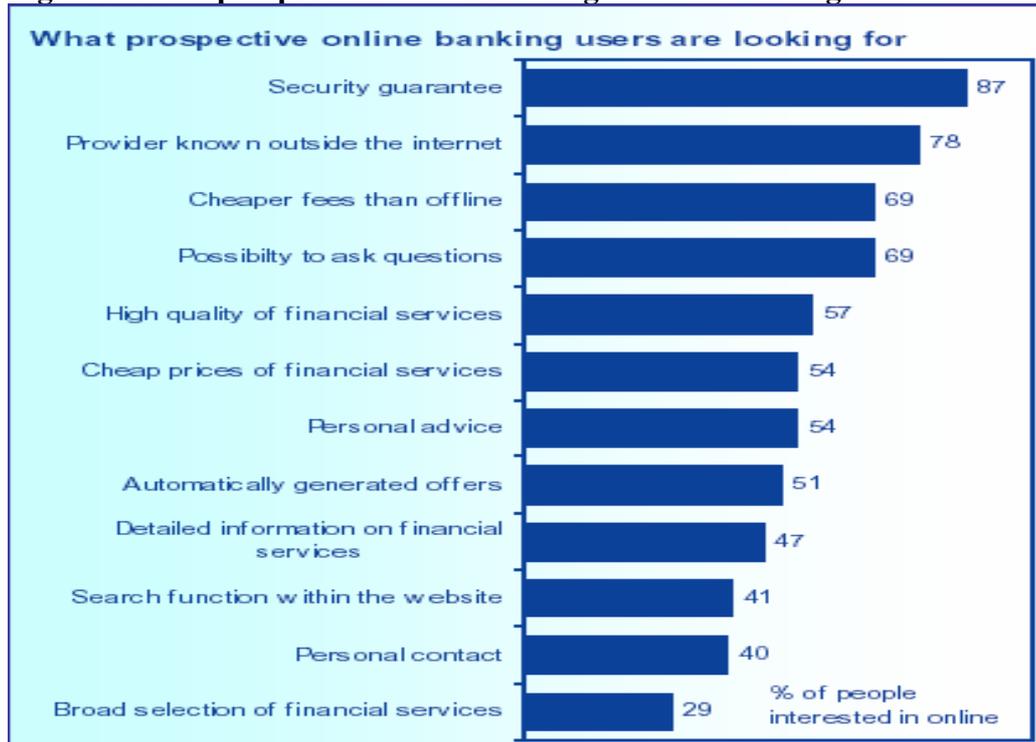
**Figure 8 Top reasons for aborting in using e-banking**



Source: <http://text.tns-global.com>

Banks should therefore convince more of their customers to go online. Of those offline customers who are interested in online banking, almost 90% find a security guarantee crucial. A well-known offline brand and relatively cheaper fees are also considered very important. Surprisingly enough, only 29% find a broad selection of financial services important in this context.

**Figure 9 What prospective online banking users are looking for**



Source: <http://text.tns-global.com>

## 6. Conclusion

The information technology (IT) revolution of the last 2 decades of the 20th century led to a proliferation of personal computers (PCs), servers, modems and other associated electronic data terminal equipment. The use of high bandwidth fiber optic cabling to provide integrated services coupled with modems and switching devices has improved speed of connection via the Internet and the growth in Internet Service Providers (ISPs) has increased accessibility.

This rapid growth and expansion of IT and telecommunication networks and interconnectivity encouraged the introduction of electronic services and non-more so than in the retail trade and in the provision of electronic banking.

Banks, like all other commercial organizations are in business, primarily, has to make a profit for their shareholders. Whilst banks have always offered the means of depositing and retrieving currency or currencies

for individuals, and usually within set opening hours, the fundamental business of banks is to make a profit from using monies on deposit within their system. They do this by buying or selling currencies at a mark-up, or mark-down depending on whether the customer is buying or selling and by loaning amounts of money at a predetermined or negotiated rate of interest. In addition, banks offer other services such as insurance cover, buying and selling securities, government bonds and stocks and shares.

All of these transactions have, until more recently, been conducted on the bank's premises and most transactions include a fee for financial services and advice. Now, through the advent of on-line services customers have greater choice and do not need to be tied to one financial institution or another. For example, customers can shop around, via the Internet, to find the best deal on home or car insurance, on interest rates on current and deposit accounts and, on buying and selling shares. Importantly, consumers can move banks if and when they do not receive the level of service they might reasonably expect from institutions that are handling their money. Indeed, it could be suggested that customer loyalty to one company or organization is dead and the idea of a 'one-stop-shop' for all financial services does not appear to make much sense unless that is the services on offer are highly competitive.

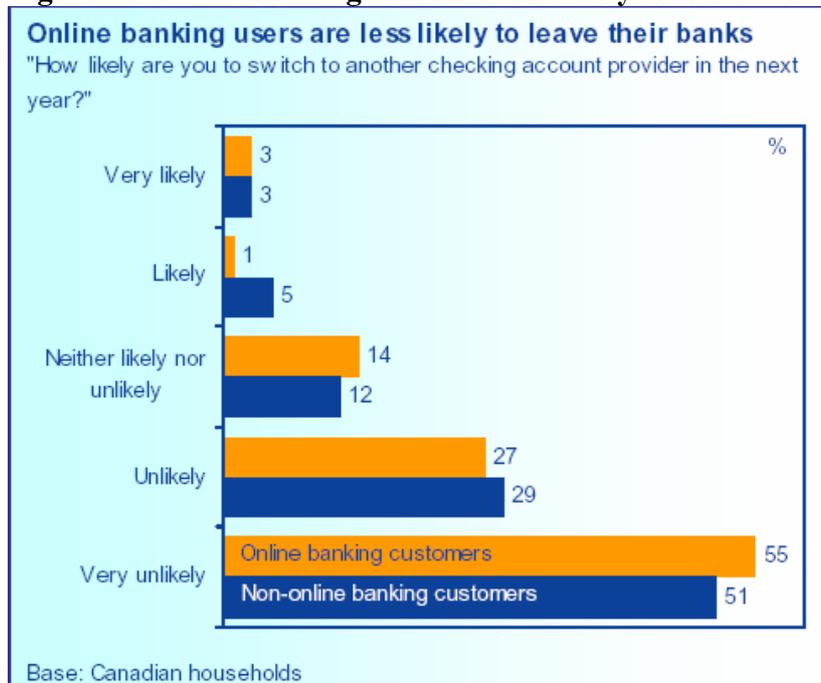
Over the last few years European banks have spent billions of euros on new electronic channels. However, after some years of excitement it was clear that the banks' long-awaited skyrocketing profits from this area would not be netted.

There are other drawbacks to the use of electronic systems. One of the biggest problem areas with Internet banking appears to be with the security and safeguarding of information exchanged between customer and bank. Indeed, the Federal Reserve Board of the US banking system expressed concern that the use of electronic banking could expose banks, their customers and their transactions to electronic interception and possibly interference leading to fraud. Therefore, banks need to conduct regular risk assessments, keep customers informed and, perhaps, be prepared to offer compensation if private information is made public.

With these entire problems one question is very important: online banking users are stimulated to develop or to leave their banks. Online banking users are less likely to leave their banks. Online banking appears to be the retail channel that is especially promising in cultivating customer loyalty: online banking users are less likely to switch their checking account provider than their offline counterparts. Only 4% of Canadian online households say they are likely or very likely to switch their provider. The corresponding figure for offline households is twice as high (8%). While

these results come from North American customers they are likely to also apply in the European context.

**Figure 10 Online banking users are less likely to leave their banks**



Source: [www.antiphishing.org](http://www.antiphishing.org), 2004

It's important to follow some important policy implications/recommendations:

1. Establish a comprehensive security control process.
  - ✚ Authentication of e-banking customers;
  - ✚ Appropriate measures to ensure segregation of duties;
  - ✚ Establishment of clear audit trails for e-banking transactions;
  - ✚ Non-repudiation and accountability for e-banking transactions.

2. Centralized-back office to free staff time in sales and services areas and to consolidate process consistently across the organization.

3. Develop automated credit authorization system by developing appropriate credit scoring system and cash-flow scoring system to reduce operating costs, improve asset quality, and increase client profitability. One of the major benefits of credit scoring system is that lenders can make credit decisions without necessarily obtaining financial statement, credit reports, or other time-consuming and hard-to-get information. In particular, the financial statements of SMEs are often not complete and difficult to get. Banks can more closely align their specific credit policies and marketing strategies with the analytics, making the decision process more cost-efficient. (I.e., Fair,

Isaac has developed a credit scoring system specialized in SME finance—SBSS 5.0 (small business scoring services), which has been increasingly used by many banks as their SME credit decision making model.)

4. Comprehensive due diligence and management oversight process for outsourcing relationships and other third-party dependencies.

5. Integrate cross-border e-banking risks into the bank's overall risk management framework.

6. Legal and reputational risk management

[1] Appropriate disclosures for e-banking services;

[2] Privacy of customer information;

[3] Capacity, business continuity and contingency planning to ensure availability of e-banking systems and services;

[4] Incident response planning;

[5] Segregation of duties;

[6] Due diligence on risk assessment

Risk identification and analysis should direct the bank to adopt appropriate oversight and review guidelines, operating policies and procedures, audit requirements, and contingency plans. These risks can be mitigated by adopting a comprehensive risk management programme that incorporates a sound strategic plan. Importantly, the extent of a financial institution's risk management programme should be commensurate with the complexity and sophistication of the activities in which it engages. Essentially, a bank which offers a simple information-only site is generally not expected to have undertaken the same level of planning and risk management as institutions that engage in more complex activities. Many of these risk categories have been identified in the Basel Committee's Core Principles for Effective Banking Supervision, published in September 1997.

E-banking presents new administrative control requirements and potentially increases the importance of existing controls. Management must evaluate its administrative controls to maximize the availability and integrity of e-banking systems. E-banking information can support identity theft for either fraud at the subject institution or for creating fraudulent accounts at other institutions. Institutions should consider the adequacy of the following controls:

- Segregation of e-banking duties to minimize the opportunity for employee fraud;
- Dual-control procedures especially for sensitive functions like encryption key retrieval or large online transfers;
- Reconciliation of e-banking transactions;
- Suspicious activity reviews and fraud detection with targeted review of unusually large transaction amounts or volumes;

- Periodic monitoring to detect websites with similar names, possibly established for fraudulent purposes;
- Error checks and customer guidance to prevent unintentional errors;
- Alternate channel confirmations to ensure account activity or maintenance changes are properly authorized;
- Business disruption avoidance strategies and recovery plans.

To protect banks against business, legal and reputation risk, e-banking services must be delivered on a consistent and timely basis in accordance with high customer expectations for constant and rapid availability and potentially high transaction demand. The bank must have the ability to deliver e-banking services to all end-users and be able to maintain such availability in all circumstances. Effective incident response mechanisms are also critical to minimise operational, legal and reputational risks arising from unexpected events, including internal and external attacks that may affect the provision of e-banking systems and services. To meet customers' expectations, banks should therefore have effective capacity, business continuity and contingency planning. Banks should also develop appropriate incident response plans, including communication strategies that ensure business continuity, control reputation risk and limit liability associated with disruptions in their e-banking services.

At the end, we must not forget that E-banking can not only improve the access to finance, but also:

- allows access to finance with better and more competitive rates;
- use online banking as new delivery tools to improve access to finance and alleviate financial constraints;
- as a regulatory authority, focus on core principles and Basle capital accord.

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# LIQUIDITY RISK MANAGEMENT

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## **Abstract**

*Liquidity risk management is a key banking function and an integral part of asset liability management process. The importance of liquidity transcends the individual institution, because a liquidity shortfall at a single institution can have system wide repercussions. Banks are particularly vulnerable to liquidity problems, on an institution –specific level and from a systemic-market viewpoint. Diversification of funding sources and maturities enables a bank to avoid the vulnerability associated with the concentration of funding from a single source. The framework for liquidity risk management has three aspects: measuring and managing net funding requirements , market access and contingency planning.*

**Keywords:** *assets , liabilities, liquidity, banking legislation, , cash flow*

## **1. Introduction: The Need for Liquidity**

Liquidity represents a bank's ability to obtain needed funds to efficiently accommodate the redemption of deposits and other liabilities. The price of liquidity is a function of market conditions and the market's perception of the inherent risk of borrowing institution. It is in the nature of a bank to transform the term of its liabilities to different maturities on the asset side of the balance sheet. The actual inflow and outflow of funds do not necessarily reflect contractual maturities. A bank may therefore experience liquidity mismatches, making its liquidity policies and liquidity risk management key factors in its business strategy. Liquidity risk management therefore addresses market liquidity rather than statutory liquidity. A bank's net funding includes its maturing assets, existing liabilities and stand by facilities with other institutions. Liquidity risks are normally managed by a bank's asset-liability management committee (ALCO), which must therefore have a thorough understanding of the interrelationship between liquidity and other market and credit risk exposures on the balance sheet. Understanding the context of liquidity risk management involves examining a bank's approach to funding and liquidity planning under alternative scenarios. As a result of increasing depth of inter bank (money) markets, a fundamental shift has taken place in the attitude that the authorities have toward prudent liquidity management. Supervisory authorities now tend to concentrate on the maturity structure of a bank's assets and liabilities rather than solely on its statutory liquid asset requirements. The level of liquidity deemed adequate for one bank may be insufficient for another. Thereby, the liquidity lack problem could be solved but the real problem is obtaining the price of these liquidities. The lack of liquidities, although apparently a conjuncture factor results from a serial of structural correlation of the resources and investment of the bank.

## **2. Optimizing the bank activities by correlating the asset and liability operations**

In day-to-day operations the management of liquidity is typically achieved through the management of a bank's assets. In the medium term, liquidity is also addressed through management of the structure of a bank's liabilities.

Maturity mismatches are an intrinsic feature of banking, including the short-term liability financing of medium-term and long-term lending. The crucial question is not whether mismatching occurs-because it always does-

but to what extent, and whether this situation is reasonable or potentially unsound. Put another way, one can ask how long, given its current maturity structure, a bank could survive if it met with a funding crisis, and what amount of time would be available to take action before the bank became unable to meet its commitments. These questions should be asked by banks, regulators, and, ultimately policymakers. This aspect of liquidity risk management also implies that access to the central bank, as the lender of last resort, should be available only to solvent banks that have temporary liquidity problems. An increased mismatch could be due to problems in obtaining long-term funding for the bank or could reflect a deliberate decision based on the bank's view of future interest rate movements. For example, banks tend to increase their short-term mismatches if they expect interest rates to fall.

The focus of such an analysis is not only the size of the mismatch but also its trends over time, as these could indicate if the bank has a potential funding problem. If deposits are composed primarily of small stable accounts, a bank will need relatively low liquidity. A much higher liquidity position normally is required when a substantial portion of the loan portfolio consists of large long-term loans, when a bank has a somewhat high concentration of deposits, or when recent trends show reductions of large corporate or household deposit accounts. Also, bank should increase its liquidity position, when large commitments have been made on the asset side and the bank expects the client to start utilization. Liquidity needs usually are determined by the construction of a maturity ladder that comprises expected cash inflows and outflows over a series of specified time bands. The difference between the inflows and outflows in each period provides a starting point from which to measure a bank's future liquidity excess or shortfall at any given time. The success of the banking activities depends on the efficient binding between the assets and liabilities. The comparison and correlation can be realized considering:

- the resource mobilize and use
- the crediting price

The time of mobilization and use of the liquidities is strongly connected with the liquidity position of the bank being a way to work against the liquidity risk. To have liquidity conditions, the bank must assure the balance on every segment ( $A_1=L_1$ ;  $A_2=L_2$ ; .....;  $A_n=L_n$ ), not just the whole balance on ensemble ( $A=L$ ).

Table 1 presents a possible structure depending on the different time of use.

**Table 1**  
**The structure of the banking assets and liabilities on the different time of use.**

Period	Effective liabilities	Assets		Net liabilities		
		accumulated	Effective	accumulated	Effective	accumulated
-1 week	4800	4800	4200	4200	600	600
8days-1 month	6400	11.200	5000	9200	1400	2000
1-3 months	8600	19.800	5400	14600	3200	5200
3-6months	5800	25.600	4200	18800	1600	6800
6months-1year	2000	27.600	2400	21200	-400	6400
1-3years	1000	28.600	3400	24600	-2400	4000
Over 3 years	1400	30.000	5400	30000	-4000	0
	30.000	30.000	30000	30000	0	0

There is a seeming balance.

To truly appreciate the situation we will calculate the liquidity index.

The liquidity index =  $\Sigma$  counterbalanced liabilities :  $\Sigma$  counterbalanced assets

Between the assets and the liabilities there is a satisfying correlation if the counterbalanced liquidity index is 1 or close to it. If the index is far from 1 it means that covering long term assets out of short term resources ultimately represents an deficient management.

$$K = \frac{(4800 \times 1) + (6400 \times 2) + \dots + (400 \times 7)}{(4200 \times 1) + (5000 \times 2) + \dots + (5400 \times 7)} = \frac{92400}{117400} = 0,787 \quad (1)$$

The presented index is an instrument of global analyse. It is required the analyse out of distinct sequences that appear from the different engaging time of assets and liabilities.

The liquidity position is a low but talking index obtained through the difference between the liquidities and the assets and the liquid liabilities like "Net effective liabilities" out of table 1.

Another challenge for liquidity management is contingent liabilities, such as letters of credit or financial guarantees. These represent potentially significant cash outflows that are not dependent on a bank's financial condition.

The existence of multiple currencies also increases the complexity of liquidity management, particularly when the domestic currency is not freely convertible. In principle, a bank should have a management (i.e.,

measurement, monitoring and control) system for its liquidity positions in all major currencies in which it is active.

The liquidity index shows the commitments of the bank on the crediting market, the way that immediate reimbursing loans must be paid d from new resources.

The crediting price, the level of the current interest is an important criteria on correlating the assets with liabilities.

Obviously, the bank is interested in its working and performance the difference between the sum of the cashed and paid interest

In the condition when the bank practice is used on a relatively big scale the flowing interest we have the sensitive assets, liabilities, interest influenced by the market interest change.

To analyse the correlation between the assets and liabilities we must calculate the rate of sensibility as a report between the sensitive assets and liabilities. The below 1 rate expresses the bank dependence on the sensitive liabilities which can act in the direction of growth with the interest expense. In another way, the sensitive interest impact determines a difference between the assets and liabilities, a gap for which' s covering you must draw in resources.

To example, we take the following situation:

	<b>Interest rate</b>	<b>interest</b>
<b>Assets</b> <b>9800</b>	12,50%	1225
<i>Liabilities</i> 8600	10,90%	937,4
<i>Gap:</i>	1200	287,60

The coverage index of the lack of liabilities in sum of 1200 is calculated by operation:

The gap coverage rate:

$$\text{Interests: } \text{Gap} = 287,60 : 1200 \times 100 = 23,96\% \quad (2)$$

By some foreign authors opinion, the presented situation can be shown in the following way:

The bank is considered to have sensitive liabilities of 125.000 thousands m.u. with an 14% interest put in the situation of raising this interest at 16%.

It must be determined the minimal interest level in use the credits given this way in summarizing 110.000 thousands for which appliance in the beginning was an 17,5% interest. The bank has an 10.000 m.u. capital, unusable assets in sum of 45.000 m.u. out of 320.000 m.u.

The fixed interest is 10,5% on the liabilities and 15,5% on the assets. The bank estimated costs and bank profit of 7900 thousands m.u. By all this data the balance sheet equality is: :

$$45.000(\text{ unusable assets})+165.000(\text{fixed interest assets})+110.000(\text{sensitive interest assets})=320.000 \quad (3)$$

$$10.000(/\text{capital})+185.000(\text{fixed interest liabilities})+125.000(\text{sensitive interest liabilities})=320.000 \quad (4)$$

The income and expense equation is :

$$(A_{NS} \times D_{NS}) + (A_S \times D_S) = (P_{NS} \times D_{NS}) + (P_S \times D_S) + CPB, \text{ where:}$$

$A_S, P_S, D_S =$  assets, liabilities ,sensitive interests

$A_{NS}, P_{NS}, D_{NS} =$  assets, liabilities ,nonsensitive interests

$CPB =$  costs and bank profit

In the first place, we have:

$$(165.000 \times 15,5\%) + (110.000 \times 17,5\%) = (185.000 \times 10,5\%) + (110.000 \times 14\%) + 7900 = 44.825 \quad (5)$$

Because of the sensitive interest change, the equation becomes:

$$(165.000 \times 15,5\%) + (110.000 \times X\%) = (185.000 \times 10,5\%) + (110.000 \times 16\%) + 7900 = 44.825 \quad (6)$$

$$A_S \times D_S = 44925 - (165.000 \times 15,5\%) = 19.350 \quad (7)$$

$$D_S = (A_S \times D_S) : A_S \times 100 = 19.350 : 110.000 \times 100 = 17,59\% \quad (8)$$

It is observed that the engaging of the assets and liabilities do not change.

The interest level modifying goes to expense modifying, which determines a fit of the income based on the sensitive interest. Banking legislation normally contains specific liquidity requirements that banks must meet. These prudential requirements should not be viewed as the primary method for the management of liquidity risk; the opposite in fact is true.

Typical liquidity regulations are:

- a limit on the loan-to-deposit ratio;
- a limit on the loan-to-capital ratio;
- guidelines on sources and uses of funds;
- liquidity parameters; for example, the liquid assets should not fall below "x" percent or rise above "y" percent of total assets;

- a percentage limit on the relationship between anticipated funding needs and available resources to meet these needs; for example, that the ratio of primary sources over anticipated needs should not fall "x" percent.
- a percentage limit on reliance on a particular; for example, that negotiable certificates of deposit should not account for more than "x" percent of total liabilities.
- limits on the minimum/maximum overage of different categories of liabilities; for example, the average maturity of negotiable certificates of deposit should not be less than "x month"

### **3. Liquidity Risk Management Techniques**

Banks should regularly estimate their expected cash flows instead of focusing only on the contractual periods during which cash may flow in or out.

An evaluation of whether or not a bank is sufficiently depends on the behavior of cash flows under different conditions.

Liquidity risk management must therefore involve various scenarios.

The "going-concern" scenario is ordinarily applied to the management of a bank's use of deposits.

A second scenario relates to a bank's liquidity in a crisis situation when a significant part of its liabilities cannot be rolled over or replaced.

A third scenario refers to general market crises, wherein liquidity is affected in the entire banking system, or at least in a significant part of it.

Table 3 provides a simple forecasting tool for liquidity needs under normal business conditions, under conditions of liquidity crisis and under conditions of general market crisis.

Diversified liabilities and funding sources usually indicate that a bank has well-developed liquidity management. The level of diversification can be judged according to instruments types, by type of fund provider and geographical markets

All banks are influenced by economic changes, but sound financial management can buffer the negative changes and accentuate the positive ones.

In practice, however, it may be difficult to obtain funding when a dire for it exists. Certain unusual situations also may have an impact on liquidity risk, including internal or external political upheavals, seasonal effects, increased market activity, sector problems and economic cycles.

Management must have contingency plans in case its projections prove to be wrong. Effective planning involves the identification of minimum

and maximum liquidity needs and the weighing of alternative courses of action to meet those needs.

Large banks normally expect to derive liquidity from both sides of the balance sheet and maintain an active presence in inter bank and other wholesale markets. They look to these markets as a source for the discretionary acquisition of short-term funds on the basis of interest rate competition, a process that can help them meet their liquidity needs. Conceptually, the availability of asset and liability options should result in a lower cost for liquidity maintenance. The costs of available discretionary liabilities can be compared to the opportunity cost of selling various assets, since banks also hold a range of short-term assets that can be sold if necessary. These assets also serve as reassurance to the potential suppliers of funds, thus enhancing a bank's ability to borrow.

The major difference between liquidity in larger and smaller banks is that, in addition to deliberately determining the asset side of the balance sheet, larger banks are better able to control the level and composition of their liabilities. They therefore have a wider variety of options from which to select the least costly method of generating required funds. Discretionary access to the money market also reduces the size of the liquid asset buffer that would be needed if banks were solely dependent upon asset management to obtain funds.

When large volumes of retail deposits and lending are at stake, outflows of funds should be assessed on the basis of probability, with past experience serving as a guide. Banks with large volumes of wholesale funds can also manage liquidity through maturity matching. This means that an appropriate degree of correspondence between asset and liability maturities must be sought, but not that an exact matching of all assets and liabilities is necessary.

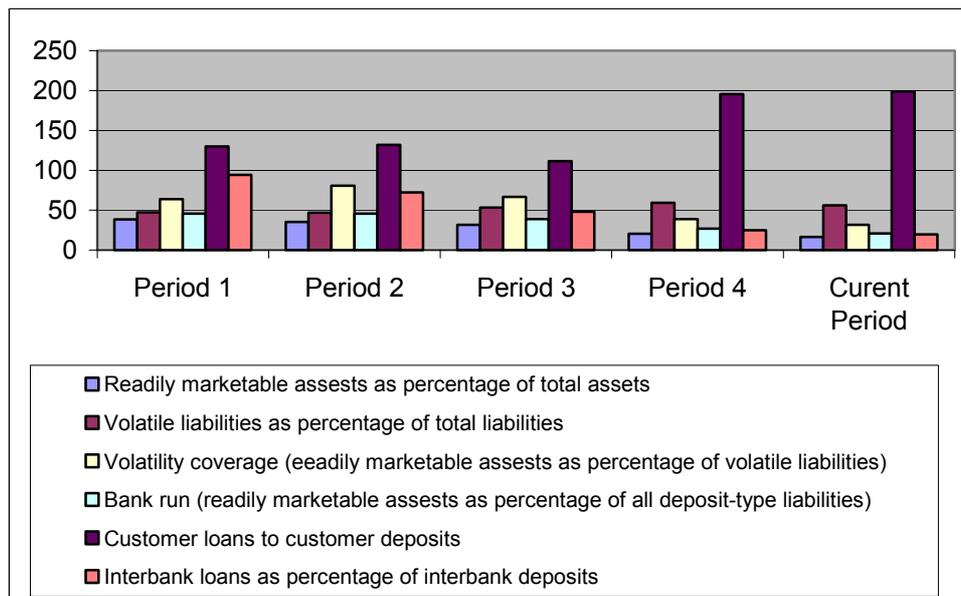
Figure 1 and Table 2 illustrate the liquidity management of a bank and the bank's liquidity position has deteriorated over time.

**Table 2 Liquidity ratios-percent**

<i>Liquidity</i>	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Current Period 4</i>
<i>Readily marketable assets as percentage of total assets</i>	38,5	35,40	231,79	20,53	16,31
<i>Volatility liabilities as percentage of total liabilities</i>	47,74	46.85	53,28	59,17	55,99
<i>Volatility coverage</i>	63,89	80,66	66,70	38,88	31,44
<i>Bank run</i>	45,77	45,68	38,67	26,62	20,94
<i>Customer loans to customer deposits</i>	130,06	132,05	111,62	195,68	198,82
<i>Inter-bank loans as percentage of inter-bank deposits</i>	94,24	72,54	78,20	24,64	19.60

The percentage of loans funded from the bank's own sources has steadily decreased. In contrast, the percentage of volatile liabilities has increased and volatility coverage has become significantly worse.

**Fig. 1 Liquidity position of a bank**



In reality, a bank's position and reputation within the financial community influence its liquidity options. This connection is based on many factors, the most crucial of which is the bank's past and prospective

profitability. Properly understood, a maturity profile can be a useful indicator of a bank's position and may yield important information, for example when a sudden increase in maturity mismatches occurs. However, maturity profiles should be analyzed in conjunction with information about the bank's off-balance-sheet business, management objectives and systems of control.

**Table 3 Maturity ladder under alternative scenarios**

	<i>Normal Business conditions</i>	<i>Bank specific crises</i>	<i>General Market- Crisis</i>
<i>Maturing asset(contractual)</i>			
<i>Interest receivable</i>			
<i>Asset sales</i>			
<i>Draw downs</i>			
<i>Other(specify)</i>			
<i>Cash inflows</i>			
<i>Total inflows</i>			
<i>Maturing liabilities(contractual)</i>			
<i>Interest payable</i>			
<i>Disbursements on lending commitments</i>			
<i>Early deposit withdrawals</i>			
<i>Operating expenses</i>			
<i>Other(specify)</i>			
<i>Total outflows</i>			
<i>Liquidity excess(shortfall)</i>			

Although the acquisition of funds in a market at a competitive as profitable banks to meet the expanding customer demand for loans, the misuse or improper implementation of liability management can have severe consequences.

Preoccupation with obtaining funds at the lowest possible cost and with insufficient regard to maturity distribution can greatly intensify a bank's exposure to the risk of interest rate fluctuations.

Another critical aspect of liquidity risk management is dependence on a single source of funding, known as concentration risk. A bank has a few large depositors and one or more withdraw their funds, enormous problems will occur if alternative sources of funding cannot quickly be found. Most banks therefore monitor their funding mix and the concentration of depositors very closely, to prevent excessive dependence on any particular source. The sensitivity of banks to large withdrawals in an uncertain environment cannot be overemphasized. Regulators increasingly are focusing on mismatches in liquidity flows and on the ability of banks to fund such mismatches on an

ongoing , rather than on statutory liquid assets and traditional access to the central bank.

An appraisal of a bank therefore must give adequate attention to the mix between wholesale and retail funding and , in connection to this, to the exposure to large depositors and whether or not an undue reliance on individual sources of funds exists. By calculating the percentage of the short-term mismatch that large deposits represent an analyst can obtain a picture of the sensitivity of the bank or of the banking sector as a whole to withdrawals by large supplies of funds. The proportion of wholesale funding to retail funding is another means of measuring sensitivity to large depositors. Overall, the increasing volatility of funding is indicative of the changes in the structure and sources of funding that the banking sector is undergoing.

To assess the general volatility of funding, a bank usually classifies its liabilities as those that are likely to stay with the bank under any circumstances; for example, enterprise transaction accounts and those that can be expected to pull out if problems arise. The key issues to be determined for the latter are their price sensitivity, the rate at which they would pull out and which liabilities could be expected to pull out at the first sign of trouble.

## **5. Conclusions**

The changes that appear necessary within the bank's culture and managerial practices, given the nature and relative complexity of liquidity risk management, , including as applicable:

- the need for full sponsorship by the board and executive management;
- the necessary enabling culture in which every manager is expected to consider risk, that is, to identify, measure and report on risk exposure;
- the changes that appear necessary after the assessment of evaluation, monitoring and reporting systems that cover critical risk functions.
- the convenience of adopting appropriate risk objectives for each function and for the bank as a whole;
- the need to institute a formal process for the general manager and the board to review and evaluate all expected and unexpected liquidity risks;
- the convenience of designating a member of senior executive management for overseeing the liquidity risk;

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# DYNAMIC OF LOCAL FINANCIAL BEHAVIOUR

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## **Abstract**

*The last research on dynamic demand for local public goods depending on the median voter does not give value to the transformation of the capital structure and the nature of the local public goods. Those reports admit the static hypothesis of a median voter's model based on the total consumption of his own income in each period. However, that is not realistic because the median voter demand depends on the level of public goods available. As a result, this demand changes and becomes intertemporal. Indeed, the median voter does not totally consume his income in each period, but he saves a share which constitutes the intertemporal constraint of the decisive agent. On the other hand, the time introduction operates on the local public good nature of which use extends throughout many periods of time (durable local public goods). However, this capital accumulation involves the municipality to plan the recurrent charges in order to assure the continuity of the use of local public goods. The dynamic of cost operation is similar to a technical debt.*

**Keywords :** *Budgetary dynamic, Financial gearing, Local public account, Durable local public, Median voter.*

## 1. Introduction

The modelization of the financial behaviour of the local communities lies on a basis model of the median voter. In that very static model, the expense in local public goods of the local community is immediately covered by the local tax that balances the budget each year. For that reason, the static modelisation of the expensive choice doesn't mark out the operation section of the budgets.

Nonetheless, time is a mechanism that doesn't make immediacy possible. Indeed, every choice made in the real world involves a postponement between the end of an action and the instant the decision was made. The consumption of the durable goods, like the local public good, takes a long time. From that point of view, taking into account the temporality needs to consider the investment line of the budgets. From that moment on the issues of investment and of its financing are raised. As an aftermath, the intertemporal local expensive choice of the median lies an optimal arbitrage of the means of financing which are, for instance, local tax ( final ressource ) and borrowing (temporary ressource).

However, the credit standard and the disappearing of the financial gearing from the mid 80's (Guengant, Josselin, 1999) led the local communities to focus to the recent times on fiscal levy to the detriment of public loan. Within the context of weak interest rates and of a financial environnement fueled by the competition of european financing sources, arbitrary in favor of public loan could help local communties to benefit a lever effect, in the sens of Modigliani-Miller (M-M, 1958). Furthermore, the use of public loan rather than tax has the advantage of postponing the burden between the current and future taxpayers ( tax effect) or to pre finance a fiscal feed back on investment thanks to the increase of the future bases (basis effect). Choosing public loan cannot be considered as a will be to spare the current taxpayer or to postpone the consequences of investing : constructing a secondary school or residences will be useful to many generations of users/taxpayers.

This paper is about the choice of the funding structure concerning the investment request for local public goods. This investment request can be seen as the result of the preference of the median voters since Borcharding and Deacon (1972).

The investment decision requires from the local government a correct estimate of the demand for local public goods. In dynamics, the risk of inadequacy between demand and supply for local public goods is showed trough the increase of the local tax deduction on taxpayers. From this point of view, we can wonder about the budgetary impact of a misjudgement of the demand for local public goods. Indeed, the risk of overvaluation of current

and future demand can lead to a possibility of insolvency of the local public budgets.

The dynamic analysis for demand of local public goods the medium voter pattern is a very new theme in France. Most of the patterns made so far have been instant section (Rosa, 1984 ; Rocaboy, 1994 ; Baudry, Leprince and Moreau, 2001 ; Métais, 2001).

During the last decade many reports have been published in the United States, Sweden, Norway and Finland<sup>1</sup>. The authors tried to verify on the empirical view the existence of the intertemporal decision at a local level. But all those searching studies have in common to keep on the theoretical level the hypothesis of the static model of the media

This paper is different from those searching studies in two main aspects: the introduction of the concept of stock required by the median in each period and the local budgetary dynamic. Indeed, in lack of public loan, the annual equality of outgoings and incomings is a condition of budget static balance. The opportunity to borrow changes the nature of the balance. The opportunity to borrow changes the nature of the balance, that must be analyse in a pluriannual perspective. The time introduction operates on the nature of the local public good whom use extends throughout many periods of time.

Thinking from a financial behavior conception in terms of flows to a conception in terms of stocks causes a change in the use of the local public good that's now extended throughout time. The durable goods will be analysed in the first part. Then, in a second part, we shall go root from the model of medium static demand to a general model of intertemporal demand general pattern.

## **2. Frame of theoretical analysis : theory of durable goods and dynamic budgetary**

In definition, in the static model, only one period was mainly taken in account. From this moment, we tried to determine on the one hand, the level of the publics goods required, on the other hand the level of public goods which was offered. In the current case, we have to notice that the local public good inherently does services in a sequence of periods. Therefore, the local public good can be considered as a durable good. we considered one period and the we searched to find in the one hand the level of public demanded, and the other hand the level offered by the municipality. Here, we must to take in

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<sup>1</sup> See Holtz-Eaking and Rosen ( 1989-1991,1993) ; Holtz-Eaking and al. (1994); Newey and Rosen (1989); Dahlberg-Johansson (1998-2000); Borgea and al.(1993, 1996); Borge-Tovmo (2001); Moisisio (2002).

account the nature of local public good which isn't short-lived but gives back some services on rest of period. So local public goods can be considered as durable goods.

Durable goods help a long, lasting use throughout time, contrary to non durable goods, subject of the median static model.

Furthermore, the imposition of the median electorate involves that they consume their whole income in each period. However, this is simplifying enough insofar as the median makes a request which depends on the level of the public goods available. The consequence is that the request of the median electorate changes and becomes intertemporal. The income of the median is not entirely consumed in each period. There is percentage saved which is going to allow to constitute the intertemporal imposition of the decisive agent.

So, it's interesting to notice how the median, who should represent the local community, makes his expense choice when the analysis period goes beyond the year. For the same reason that it's possible to adapt the consumer choice standard theory to the intertemporal choice study, it's also possible to extend the median model to a dynamic model of local expensive choices.

### ***2.1. Dynamic pattern of the local financial behaviors***

All along the local communities existence, theoretically never-ending, the median voter remain decisive. He has an intertemporal preference function,  $U$ , defined as such :

$$U_t = u(x_{m_t}, k_t) \tag{1}$$

With,  $t = 1, 2, 3$  to write it simply;  $x_{m_t}$  is the median private consumer;  $k_t$  correspond to the local public facilities stock desired by the median during the period  $t$ . In order respect, in dynamic, the reasoning involves to consider local public facilities stock,  $K_t$ , more or less divisible. So, we get the following division function on the local communities :

$$k_t = \frac{K_t}{N_t} \tag{2}$$

Moreover, in the static pattern, the median income was totally divided in every expense without considering the possibility to delay or advance the purchase day. So, he spends a part of his income to spare that could be used to increase money ingoings or to purchase financial assets.

If  $s_t$  spare at  $t$  periods,  $y_{mt}$  the median private income,  $T_t b_{mt}$  the tax paid by the median to finance public facilities of the period.

To explain the median intertemporal behaviour, it's easy to reason in the frame of a simplified pattern where the choices are taken back on 3 periods marked out by three dates  $t = 1, 2$  and 3. The current period for future date. We put :

$$s_1 = y_{m1} - x_{m1} - T_1 b_{m1} \quad (3)$$

$$s_2 = (1 + r_1)s_1 + y_{m2} - x_{m2} - T_2 b_{m2} \quad (4)$$

$$s_3 = (1 + r_2)s_2 + y_{m3} - x_{m3} - T_3 b_{m3} \quad (5)$$

We get :

$$s_3 = (1 + r_2)(1 + r_1)[(y_{m1} - x_{m1} - T_1 b_{m1}) + (y_{m2} - x_{m2} - T_2 b_{m2})] + y_{m3} - x_{m3} - T_3 b_{m3} \quad (6)$$

Where  $r_t$  indicates the real interest rate, measuring the median net gain when he delays his consumer. The median voter wins because of the nominal interest rate that pays for saving later, but he may lose if the prices increase.

If the median is selfish, there'll be no heritage. The equation will then be written  $s_3 = 0$ . The intertemporal budgetary constraint of the median expressed in the present values will be:

$$x_{m1} + T_1 b_{m1} + \frac{x_{m2} + T_2 b_{m2}}{1 + r_1} + \frac{x_{m3} + T_3 b_{m3}}{(1 + r_1)(1 + r_2)} = y_{m1} + \frac{y_{m2}}{(1 + r_1)} + \frac{y_{m3}}{(1 + r_1)(1 + r_2)} \quad (7)$$

From that point of view, the present value of the median public and privates consumer expenses match the current value of the future incomes.

But, supplying local public utilities ( LPU), to the users needs to produce them be for. Also, the median is confronted to a technical constraint by the production function.

### 2.1.1. Production function of the LPU

It's distinguished by a coefficient of capital  $v$ , and a coefficient  $u$  associated to the repeating costs of intermediary consumers (IC) and salaries (S). By hypothesis, the production is made at constant factor. Then, a combination of production is described by the input, postulating a wasteless production :

$$Z_t = K_t^\Theta \quad (8)$$

$\Theta$  indicates the production scale output that can be constant ( $\Theta=1$ ), decreasing ( $\Theta<1$ ) or increasing ( $\Theta>1$ ). Within simplified calculations, the outputs are constant.

### 2.1.2. Dynamic of development costs

The production of LPU creates an annual total cost that can be broken down into an annual variable cost (intermediary consumers and salaries) and an annual permanent cost ( hiring gross price of fixed assets).

In the frame of an efficient production of collective utilities, the variable cost in volume correspond to a determined proportion of the capital ( $v_t$ ):

$$CV_t = v_t K_t \quad (9)$$

As for the annual permanent cost, if we take into account the hiring gross price fixed assets is made of the economic profit and the depreciation provision on full year ( $K_t/m_t$ ,  $m_t$  certain duration of use). If the asset evaluation by the local community by the flow ( economic profit rate) he makes in one year, we get the recurrent permanent cost :

$$CF_t = \left( r_t^e + \frac{1}{m_t} \right) K_t \quad (10)$$

$r_t^e$  indicates the profit rate of the local community total asset. Then, it comes from the permanent total cost :

$$CT_t = \left( v_t + r_t^e + \frac{1}{m_t} \right) K_t \quad (11)$$

From that point of view, in addition to the necessary financial debt to finance the local collective investments, the concept of permanent expense points out the obligation for the local community to provide future amounts to assure the continuity and the maintenance of the local public utilities. They can be analysed as a technical debt. So we have a double dynamic of development permanent charges and an induction dynamic of financial charges.

De facto, the local community budgetary constraint can be done by the accounting links coming from internal mechanisms of the budget operation : connection of the operation and investment sections.

### 2.1.3. Accounting balance of the operation section

First and foremost, the balance of the operation section is secured when the operation section is secured when the operation receipts match the operation expenses :

$$T_t B_t + G_t = CT_t \Leftrightarrow T_t B_t + G_t = \left( v_t + r_t^e + \frac{1}{m_t} \right) K_t \quad (12)$$

If the difference is positive, the local community redeems a gross saving ( $EB_t$ ) which, on an accounting level, is made of the depreciation provision ( $DAP_t$ ) and profit or loss for the financial year ( $RES_t$ ) :

$$EB_t = DAP_t + RES_t \quad (13)$$

However, the equation doesn't help to overview the other dynamic described at the previous paragraph, i.e. the dynamic of financial debt. To put it right, an help to a decomposition of the economic profit rate is done. On the one hand, the interest rate of the debt and the other hand the financial profit rate. That difference of profit rate refers to the financial gearing by M-M (1959).

Indeed, the structure of the local community asset ( $K_t$ ) written at the liabilities is made of debt stock, the public facilities subventions and the net saving or self financing.

Supposing that the long-term capital cover & employment stable” (gross values of capital assets), it’s now :  $K_t = K_t^p + D_t$  (14)

With,  $K_t^p$  for Am stockholders’ equity.

Flow-stock induction of the permanent financial charges helps to link every part of financial sheet to a flow.

As it is, at the credit of the financial sheet, the local community asset is associated to the economic result that results from the profit or loss for the financial year and the financial costs. To the liabilities the debt stock is associated to financial charges flow ( $FF_t$ ). We successively obtain :

- The median interest rate :

$$i_t = \frac{FF_t}{D_t} \quad (15)$$

- The financial profit rate :

$$r_t^f = \frac{RES_t}{K_t^p} \quad (16)$$

- The economic profit rate :

$$r_t^e = \frac{RES_t + FF_t}{K_t} \quad (17)$$

By the hypothesis of financial markets efficiency, we deduce the equation of financial gearing:

$$r_t^f = r_t^e + (r_t^e - i_t) \frac{D_t}{K_t^p} \quad (18)$$

From the equation (12), (14) and (18), the accounting balance constraint is as such :

$$T_t B_t + G_t = \left( v_t + r_t^f + \frac{1}{m_t} \right) K_t + (i_t - r_t^f) D_t \Leftrightarrow T_t B_t + G_t = v_t K_t + i_t D_t + \frac{K_t}{m_t} + r_t^f (K_t - D_t) \quad (19)$$

$$T_t B_t + G_t = v_t K_t + i_t D_t + \frac{K_t}{m_t} + r_t^f (K_t - D_t) \quad (20)$$

$$\Rightarrow EB_t = \frac{K_t}{m_t} + r_t^f (K_t - D_t) \quad (21)$$

#### 2.1.4. Account balance of the investment section

Then, the balance of the investment section is made when :

$$EB_t + E_t + S_K K_t = RK_t + I_t \quad (22)$$

$E_t$  corresponds to the debt flow of the current period;  $S_K K_t$  corresponds to the public facilities subventions received from the Government  $RK_t$  corresponds to the financial amortization of the current period. The introduction of the investment ( $I_t$ ) helps the precise expression of the balance constraint. But that specificity needs two more hypothesis. Indeed, the investment made along the period  $t$  ( $I_t$ ) generates a modification of the local public utilities at the end of the period. So that investment decomposes of replacement investment ( $IR_t$ ) and development investment ( $ID_t$ ). The latter increases the equipment stock, so it's characterised by a variation of the local public utilities stock :

$$ID_t = \Delta K_t \quad (23)$$

The replacement investment permits to fill a local public utilities loss occurred during the previous period. By hypothesis, the investment covers exactly the capital assets fall in value:

$$IR_t = \frac{K_{t-1}}{m_{t-1}} \quad (24)$$

$$\text{i.e. } I_t = K_t - \left(1 - \frac{1}{m_{t-1}}\right) K_{t-1} \quad (25)$$

Moreover, the amortization of the financial debt is lineary made connected to the median residual duration ( $n_t$ ) of borrowing portfolio :

$$RK_t = \frac{D_t}{n_t} \quad (26)$$

Rewriting the balance constraint of the investment section from the equations (21) and (26), it comes:

$$\left(r_t^f - \frac{\Delta K_t}{K_t}\right) K_t = \left(r_t^f - \frac{\Delta D_t}{D_t}\right) D_t + S_K K_t \quad (27)$$

With,  $\Delta D_t = E_t - RK_t$ , the debt annual instalment. Supposing that the financial profit rate of own assets is nil and neglecting the endowed facilities subventions, the variation of the debt balances exactly the development investment.

## 2.2. Budgetary balance

From accounting balance of operation and investment section, global balance of community obtained in the structural model form :

$$\begin{cases} T_t B_t + G_t = CV_t + FF_t + EB_t \\ EB_t + E_t + S_K K_t = I_t + R_t \end{cases} \Rightarrow \text{Structural model form} \quad (28)$$

The verification of the existence and the solution uniqueness is easy because the model is linear. The entry of a reduced form give the possibility to specify the global imposition of the municipal financial stability via the unstable gross saving which is shared by the two equation. Writing of a reduced form permit to specify the global constraint of accounting balance of community via the gross saving who is the common variable to aboth equation :

$$T_t B_t + G_t + E_t + S_K K_t = RK_t + I_t + CV_t + FF_t \quad (29)$$

However, this imposition goes against the golden rules of the real stability of the local budget which obliges the local government to affect mainly the loan by the single funding of the investment and the gross saving at the amortisation of capital. This obligation ( $EB_t > RK_t$ ) involves a positive or null net saving ( $EN_t : EB_t - RK_t \geq 0$ ). From this equation (21) and after the simplifying, we obtain:

$$EN_t : r_t^f K_t^p + \left(\frac{K_t}{m_t} - \frac{D_t}{n_t}\right) \geq 0 \quad (30)$$

If the hypothesis of a profit or loss for the financial year result is null

$$EN_t : \left( \frac{K_t}{m_t} - \frac{D_t}{n_t} \right) \geq 0 \quad (31)$$

In that case the depreciation provision is superior or equal to the funding amortization. However, this inequality in connection with the budgetary imposition does not enable to entry correctly the synthetical financial imposition of the municipality. In the case of a strict budgetary, the net saving is null. The consequence is that the specification of the indebtedness conduct is necessary. This specification is obtained from the relation between the debt stock and the public stock facilities after entering and simplifying the expression of the net saving: amortization allocation becomes greater or equal than financial amortization allocation. On the other hand, this disparity tied to budgetary constraint doesn't allow to write correctly the global constraint for the municipality. In this case of strict budgetary balance, net saving is equal to zero. As a result, characterization of behaviour debt is necessary. The latter obtained from the relation between the debt stock and public facilities after reducing net saving expression :

$$D_t = \left( \frac{r_t^f + \frac{1}{m_{t-1}}}{r_t^f + \frac{1}{n_t}} \right) K_{t-1} \quad (32)$$

If the profit or loss for the financial year is null, the indebtedness conduct with the imposition of the budgetary stability is written:

$$D_t = \left( \frac{n_t}{m_{t-1}} \right) K_{t-1} \quad (33)$$

Finally we obtain global balance with strict stability per addition of (19) and (32) :

$$T_t B_t + G_t + S_K K_t = \left[ \left( v_t + \frac{1}{m_{t-1}} \right) + i_t \left( \frac{r_t^f + \frac{1}{m_{t-1}}}{r_t^f + \frac{1}{n_t}} \right) + r_t^f \left( \frac{\frac{1}{n_t} + \frac{1}{m_{t-1}}}{r_t^f + \frac{1}{n_t}} \right) \right] K_{t-1} \quad (34)$$

Finally the budgetary constraint obtained involving a financial profit rate null is:

$$T_t B_t + G_t = \left( v_t + \frac{1+i_t n_t}{m_{t-1}} \right) K_{t-1} \quad (35)$$

$$\text{where: } T_t = \frac{v_t + \left( 1 + \frac{i_t n_t}{m_{t-1}} \right) K_{t-1} - G_t}{B_t} \quad (36)$$

Here's what occurs to the median intertemporal global constraint:

$$\begin{aligned} & x_{m_1} + \frac{x_{m_2}}{1+r_1} + \frac{x_{m_3}}{(1+r_1)(1+r_2)} + \left[ \left( v_1 + \frac{1+i_1 n_1}{m_0} \right) k_0 N_0^y \right] \frac{b_{m_1}}{b_1} + \left[ \left( \frac{v_2 + \frac{1+i_2 n_2}{m_1}}{1+r_1} \right) k_1 N_1^y \right] \frac{b_{m_2}}{b_2} + \left[ \left( \frac{v_3 + \frac{1+i_3 n_3}{m_2}}{(1+r_1)(1+r_2)} \right) k_2 N_2^y \right] \frac{b_{m_3}}{b_3} \\ & = y_{m_1} + G_1 + \frac{y_{m_2} + G_2}{1+r_1} + \frac{y_{m_3} + G_3}{(1+r_1)(1+r_2)} \end{aligned} \quad (37)$$

The current value of the public and private consolidated consumer covers the current value of the private and public resources.

From which the following intertemporal optimisation program:

$$\text{Max}_{x_{m_1}, x_{m_2}, x_{m_3}, k_0, k_1, k_2} U = u_m(x_{m_1}, x_{m_2}, x_{m_3}, k_0, k_1, k_2)$$

$$\begin{aligned}
& x_{m_1} + \frac{x_{m_2}}{1+r_1} + \frac{x_{m_3}}{(1+r_1)(1+r_2)} + \left[ \left( v_1 + \frac{1+i_1 n_1}{m_0} \right) k_0 N_0^\gamma \right] \frac{b_{m_1}}{b_1} + \left[ \left( v_2 + \frac{1+i_2 n_2}{m_1} \right) \frac{1}{1+r_1} \right] k_1 N_1^\gamma \frac{b_{m_2}}{b_2} + \left[ \left( v_3 + \frac{1+i_3 n_3}{m_2} \right) \frac{1}{(1+r_1)(1+r_2)} \right] k_2 N_2^\gamma \frac{b_{m_3}}{b_3} \\
& = y_{m_1} + G_1 + \frac{y_{m_2} + G_2}{1+r_1} + \frac{y_{m_3} + G_3}{(1+r_1)(1+r_2)} \tag{38}
\end{aligned}$$

We make the hypothesis of a Cobb-Douglas utility function :

$$U(x_{m_t}, x_{m_{t+1}}, x_{m_{t+2}}, k_t, k_{t+1}, k_{t+2}) = \prod_{t=1}^3 \left( x_{m_t} \cdot k_{t-1} \right)^{\frac{1-a}{3}} \frac{1}{(1+\rho)^\gamma} \tag{39}$$

With  $\rho$  represents the subjectif interest rate, we obtain the demand functions for locals private and publics goods :

$$x_{m_1}^* = \frac{a(1+\rho)}{2+\rho} \cdot (y_{m_1} + G_1) \tag{40}$$

$$x_{m_2}^* = \frac{a(1+\rho)}{2+\rho} \cdot \frac{y_{m_2} + G_2}{1+r_1} \tag{41}$$

$$x_{m_3}^* = \frac{a(1+\rho)}{2+\rho} \cdot \frac{y_{m_3} + G_3}{(1+r_1)(1+r_2)} \tag{42}$$

$$k_0^* = \frac{(1-a)(1+\rho)}{2+\rho} \cdot \frac{y_{m_0} + G_0}{\left[ \left( v_1 + \frac{1+i_1 n_1}{m_0} \right) N_0^\gamma \right] \frac{b_{m_1}}{b_1}} \tag{43}$$

$$k_1^* = \frac{(1-a)(1+\rho)}{2+\rho} \cdot \frac{y_{m_1} + G_1}{\left[ \left( v_2 + \frac{1+i_2 n_2}{m_1} \right) N_1^\gamma \right] \frac{b_{m_2}}{b_2}} \tag{44}$$

$$k_2^* = \frac{(1-a)(1+\rho)}{2+\rho} \cdot \frac{y_{m_2} + G_2}{\left[ \left( v_3 + \frac{1+i_3 n_3}{m_2} \right) N_2^\gamma \right] \frac{b_{m_3}}{b_3}} \quad (45)$$

The demand functions for local public goods depends effectively of recurrent cost, financial fees, depreciation rate and the fiscal ratios. The private revenue of median voter, is one variables that determines the local public demand for the municipality.

If private price is equal to zero, fiscal price of local public goods for median voter are :

$$p_{m_0} = \left[ v_1 + \left( \frac{1+i_1 n_1}{m_0} \right) \right] \frac{b_{m_1}}{b_1} \quad (46)$$

$$p_{m_1} = \left[ v_2 + \left( \frac{1+i_2 n_2}{m_1} \right) \frac{1}{(1+r_1)} \right] \frac{b_{m_2}}{b_2} \quad (47)$$

$$p_{m_2} = \left[ v_3 + \left( \frac{1+i_3 n_3}{m_2} \right) \frac{1}{(1+r_1)(1+r_2)} \right] \frac{b_{m_3}}{b_3} \quad (48)$$

i.e :

$$p_{m_i} = \left[ \frac{\left( v_{r+1} + \frac{1+i_{r+1} n_{r+1}}{m_r} \right) N_r^\gamma}{\prod_{i=1}^r (1+r_i)} \right] \frac{b_{m_i}}{b_i} \quad (49)$$

The fiscal price expression insert fiscal return on investment by tax base growth (base effect). In practical terms, this effect will be in favour of municipality if the economic profit rate expected from public development is

greater or equal than debt cost. The debt allow to make net saving by Euro invested greater than credit cost by Euro debt.

In other words, more debt weight compared with Am stockholder's equity is high, better will be financial profit. Conversely, if the economic yield rate expected become lower than credit cost, the growth of debt compared with Am stockholder's equity will damage the financial profit. So the municipality will be forced to diminish his debt.

In addition, the marginal cost use is :

$$p_t = \frac{C'(k_{t-1} N_{t-1}^\gamma) N_{t-1}^\gamma}{R_t} = \frac{N_t^\gamma \left( v_{t+1} + \frac{1+i_{t+1} n_{t+1}}{m_t} \right)}{R_{t+1}} \quad (50)$$

The short term cost function is defined as minimum production cost when we adjust only the variables productions factor. The expression of variables cost was defined by equation (9). But, the production cost of local public goods in static was :

$$C(Z) = p \times Z \quad (51)$$

$p$  is use cost for local public goods :

$$p = \frac{C_z N^\gamma}{R} \quad (52)$$

By identification :

$$C(Z) \equiv C(Z)_v \quad (53)$$

It results a function  $v$  defined by the usage cost of locals public goods :

$$v = \frac{C(k N^\gamma)}{R} \quad (54)$$

$$v'_k = \frac{\partial}{\partial k} \left[ \frac{C(kN^\gamma)}{R} \right] = \frac{N^\gamma}{R} C'_k \quad (55)$$

The variables marginal recurrent cost expressed in term of stock per capita is similar to marginal use cost of local public goods in static.

In order to write the expense function per capita, we deduce the dynamic marginal use of local public goods to  $t+1$  order terms :

$$p_t = \frac{N_t^\gamma \left( C'_k + \frac{1+i_{t+1} n_{t+1}}{m_t} \right)}{R_{t+1}} \quad (56)$$

i.e. :

$$p_{m_t} = \left[ \frac{\left( C'_{k_t} \frac{1+i_{t+1} n_{t+1}}{m_t} \right) N_t^\gamma}{\prod_{i=1}^t (1+r_i)} \right] \frac{b_{m_t}}{b_t} \quad (57)$$

The public facilities function is :

$$d_t = k_0 (p_{m_t} \times p_t)^\alpha \times y_{m_t} \beta_2 \times G_t \beta_1 \times E_t \beta_3 \quad (58)$$

With  $\alpha$  price effect and  $\beta$  revenue effect. The intertemporal expense function per capita is :

$$\frac{1}{\prod_{i=1}^t (1+r_i)} \times \frac{d_t}{R_t} = \left[ \frac{\left( C'_k + \frac{FF_{t+1}/RK_{t+1}}{m_t} \right) N_t^\gamma}{\prod_{i=1}^t (1+r_i) R_{t+1}} \right]^{\alpha+1} \left( \frac{b_{m_{t+1}}}{\prod_{i=1}^t (1+r_i) b_{t+1}} \right)^{\alpha+\beta_1} \left( \frac{y_{m_t}}{\prod_{i=1}^t (1+r_i)} \right)^{\beta_2} \left( \frac{G_t}{\prod_{i=1}^t (1+r_i)} \right)^{\beta_1} \left( \frac{E_t}{\prod_{i=1}^t (1+r_i)} \right)^{\beta_3} \quad (59)$$

The originality of this paper compared to median voter static model is the first term of right . That's say the synthetic measure of number of users.

Indeed, in front of durable public goods, the congestion increased according to traditional parameters ( length of road, resident population ) but also according four news induction parameters : financial fees, repayment amortization, depreciation and marginal cost use.

Indeed, as we are rigidity public facilities, diminution of users of local public goods don't signify the reduction of burden. Because of fixed cost higher and variables cost resulting from capital accumulation.

In this case, reducing of resident population doesn't lied a diminution of expenses but contrary an increase of expenses per capita.

In the case of durable public goods, fixed cost are so important that local adjustment period almost infinite.

### **3. Conclusion**

This paper attempted to build a partial balance model of local financial behaviors, characterizing municipality financial choice as resulting of capital accumulation. This accumulation generates firstly internals risks tied either expenses (recurrent expenses operates et financial fie futur), or incomes (locals situation and tax bases mobility)

Now, it might be instructive to validate this theoretical model with an econometric approach.

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# THE SPECIAL PURPOSE VEHICLES AND THEIR USES

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## **Abstract**

*As the name suggests, a Special-Purpose Vehicles is an entity created to engage in a specific transaction, most commonly for asset acquisition, leasing, securitization and insurance. SPVs or SPEs (Special Purpose Entity) have been used for several decades as a preferred form to raise financing for large international projects and other projects with well-defined cash flows and risk characteristics. This paper analyzes some aspects concerning SPV and analyzes the securitization. SPVs are carefully designed to avoid bankruptcy. Finally, the paper insists on juridical aspects on SPV in Romania and their impact in our economy.*

**Keywords:** *special purpose vehicles, securitization, bankruptcy*

## 1. Introduction

The word "special purpose vehicle" or "special purpose entity" is a buzzword in structured finance and can be potentially confusing. Specially, after the Enron collapse, the word SPE has acquired an unpleasant connotation in public mind.

The word "vehicle" is a marketplace equivalent of "entity". Therefore SPV and SPE mean the same thing. As opposed to a general purpose vehicle or a trading corporation, a Special Purpose Vehicle, as the name suggests, is formed for a special purpose: therefore its powers are limited to what might be required to attain that purpose and its life is destined to end when the purpose is attained.

An SPE is either a Trust or a Company. SPEs can be either on shore or offshore. Special purpose corporations are used for a variety of legitimate purposes, including structured risk management solutions. In securitizations, the SPE houses the asset risk either through the purchase of the assets or in synthetic form.

When a corporation, call it the sponsor of the SPV, wants to achieve a particular purpose, for example, funding, by isolating an activity, asset or operation from the rest of the sponsor's business, it hives off such asset, activity or operation into the vehicle by forming it as a special purpose vehicle. This isolation is important for external investors whose interest is backed by such hived-off assets, etc., but who are not affected by the generic business risks of the entity of the originating entity. Thus SPVs are housing devices - they house the assets transferred by the originating entity in a legal outfit, which is legally distanced from the originator.

By its very nature, an SPV must be distanced from the sponsor both in terms of management and ownership, because if the SPV were to be owned or controlled by the sponsor, there is no difference between a subsidiary and an SPV.

Being an independent, an SPV is responsible for its own funding, risk capital and management decisions. Most SPVs, for example, securitization SPVs, run on a pre-punched program and do not have to take any management decision: they are almost "brain dead".

Apart from securitizations, SPVs are often used for many purposes. One common purpose is to use them for what is known as "synthetic leases" - a device by which assets are acquired under an off balance sheet lease from the vehicle that funds them with debt. After the Enron collapse, the public

has come to know for the first time the all kinds of obscure SPVs floated by US companies.

## **2. What are special Purpose Vehicles?**

A SPV, or a special purpose entity (SPE), is a legal entity created by a firm (known as the sponsor or originator) by transferring assets to the SPV, to carry out some specific purpose, or circumscribed activity, or a series of such transactions. SPVs have no purpose other than the transaction(s) for which they were created, and they can make no substantive decisions; the rules governing them are set down in advance and carefully circumscribe their activities. Indeed, no one works at an SPV and it has no physical location.<sup>1</sup>

Special purpose entities (SPE) are usually created for a single, well-defined and narrow purpose. An SPE does not have a single defining characteristic but is generally identified by the single purpose nature and a number of common features. The SPE may have any one of a number of legal forms: corporation, partnership, trust, unincorporated entity or a multi-user structure such as a protected cell company.

The common features that identify an SPE are:

1. Auto-pilot arrangements that restrict the decision-making capacity of the governing board or management;
2. Use of professional directors, trustees or partners;
3. Thin capitalization, the proportion of 'real' equity is too small to support the SPE's overall activities;
4. Absence of an apparent profit-making motive, such that the SPE is engineered to pay out all profits in the form of interest or fees;
5. Domiciled in 'offshore' capital havens;
6. Have a specified life;
7. Exist for financial engineering purposes;

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<sup>1</sup> Gary Gorton, Nicholas S. Souleles, 2005, Special Purpose Vehicles and Securitization, National Bureau of Economic Research, Cambridge, March 2005, <http://www.nber.org/papers/w11190>

8. The creator or sponsor may transfer assets to the SPE, often as part of a derecognizing transaction involving financial assets.

An essential feature of an SPV is that it be “bankruptcy remote,” that is, that the SPV never be able to become legally bankrupt. The most straightforward way to achieve this would be for the SPV to waive its right to file a voluntary bankruptcy petition, but this is legally unenforceable<sup>2</sup>.

The only way to completely eliminate the risk of either voluntary or involuntary bankruptcy is to create the SPV in a legal form that is ineligible to be a debtor under the U.S. Bankruptcy Code. The SPV can be structured to achieve this result. As described by Klee and Butler (2002): “The use of SPVs is simply a disguised form of bankruptcy waiver” (p. 34).

To make the SPV as bankruptcy remote as possible, its activities can be restricted, for instance it can be restricted from issuing debt beyond a stated limit. The SPV can also obtain agreements from its creditors that they will not file involuntary petitions for bankruptcy. Depending on the legal form of the SPV, it may require more structure to insure effective bankruptcy remoteness.

There is also the risk that if the sponsor of the SPV goes bankrupt that the bankruptcy judge will recharacterize the “true sale” of assets to the SPV as a secured financing, which would bring the assets back onto the bankrupt sponsor’s balance sheet. Or the court may consolidate the assets of the sponsor and the SPV. As a result of this risk, most structured financings have a two-tiered structure involving two SPVs. Often times the sponsor retains a residual interest in the SPV that provides a form of credit enhancement, but the residual interest may preclude a “true sale.” Consequently, the residual interest is held by another SPV, not the sponsor. The “true sale” occurs with respect to this second vehicle.

The presence of any of the features identified above does not automatically make an entity an SPE, nor does the absence of a feature or features mean that it is not an SPE. The decision about whether an entity is an SPE, and subsequently who controls it, is one of professional judgment requiring careful consideration of all relevant facts. Pension plans and equity compensation plans are not SPEs.

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<sup>2</sup> Klee, Kenneth and Brendt Butler (2002), “Asset-Backed Securitization, Special Purpose Vehicles and Other Securitization Issues,” *Uniform Commercial Code Law Journal* 35, 23-67.

### 3. The legal form of SPV

A SPV can take the form of a *corporation, trust, partnership, or a limited liability company*. SPEs often are created with legal arrangements that impose strict and some times permanent limits on the decision-making powers of their governing board, trustee or management over the operations of the SPE. Frequently, these provisions specify that the policy guiding the ongoing activities of the SPE cannot be modified other than perhaps its creator or sponsor.

The sponsor (or entity on whose behalf the SPE was created) frequently transfers assets to the SPE, obtains the right to use assets held by the SPE or performs services for the SPE, while other parties (capital providers) may provide the founding to the SPE. An entity that engages in transactions with an SPE (frequently the creator or sponsor) may in substance control the SPE.

A beneficial interest in a SPE may take form for example of a debt instrument, an equity instrument, a participation right, a residual interest or a lease. Some beneficial interests may simply provide the holder with a fixed or stated rate of return, while others give the holder rights or access to other future economic benefits of the SPE's activities. In most cases, the creator retains a significant beneficial interest in SPE's activities, even though it may own little or none of the SPE's equity.

SPV may be a subsidiary of the sponsoring firm, or it may be an "orphan" SPV, one that is not consolidated with the sponsoring firm for tax, accounting, or legal purposes (or may be consolidated for some purposes but not others).<sup>3</sup>

Most commonly in securitization, the SPV takes the legal form of a **trust**. Traditionally, a **trust** is "*a fiduciary relationship with respect to property, arising as a result of a manifestation of an intention to create that relationship and subjecting the person who holds title to the property (the trustee) to duties with it for the benefit of third party beneficiaries*". Often the SPV is a charitable or purpose trust. Traditional gratuitous or charitable trusts have been transformed into a vehicle with a different economic substance than perhaps contemplated by the law.

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<sup>3</sup> Gary Gorton, Nicholas S. Souleles, 2005, Special Purpose Vehicles and Securitization, National Bureau of Economic Research, Cambridge, March 2005, <http://www.nber.org/papers/w11190>

A purpose trust (called a STAR trust in the Cayman Islands) is a trust set up to fulfill specific purposes rather than for beneficiaries. A charitable trust has charities as the beneficiaries. For many transactions there are benefits if the SPV is domiciled offshore, usually in Bermuda, the Cayman Islands, or the British Virgin Islands.

#### **4. Taxation of the SPV**

There are two tax issues. First, how is the SPV taxed? Second, what are the tax implications of the SPV's debt for the sponsoring firm?

The first question is easier to answer. SPVs are usually structured so as to be tax neutral, that is, so that their profits are not taxed. The failure to achieve tax neutrality would usually result in taxes being imposed once on the income of the sponsor and once again on the distributions from the SPV. This "double tax" would most likely make SPVs unprofitable for the sponsor. There are a number of ways to design the SPV to achieve tax neutrality. Many SPVs are incorporated in a *tax haven jurisdiction*, such as the Cayman Islands, where they are treated as "exempted companies."

An exempted company is not permitted to conduct business in, for example, the Cayman Islands, and in return is awarded a total tax holiday for twenty years, with the possibility of a ten year extension. Because such entities are not organized or created in the U.S., they are not subject to U.S. federal income tax, except to the extent that their income arises from doing business in the U.S.

An investment trust that issues pass-through certificates is tax neutral, that is, the trust is ignored for tax purposes – there is no taxation at the trust level – and the certificate owners are subject to tax. Pass-through certificates represent pro rata interests in the underlying pool. It is important for maintaining this tax neutral tax status that the SPV not be reclassified as a corporation. To avoid this it is necessary that the trustee have no power to vary the investments in the asset pool and activities must be limited to conserving and protecting the assets for the benefit of the beneficiaries of the trust.<sup>4</sup>

More common than pass-through structures are pay-through structures. Pay-through bonds are issued by SPVs that are corporations or owner trusts. In these structures the SPVs issue bonds, but this requires that there be a party that holds the residual risk, an equity holder. If the SPV is a corporation, then the pay-through bonds have minimal tax at the corporate

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<sup>4</sup> Kramer, Andrea (2003), *Financial Products: Taxation, Regulation and Design*, 3 volumes (Aspen Publishers; New York City).

level because the SPV's taxable income or loss is the difference between the yields on its assets and the coupons on its pay-through bonds. Typically these are matched as closely as possible.

The second question is more complicated. Some SPVs achieve off-balance sheet status for accounting purposes but not for tax purposes. Securitizations can fit into this category because they can be treated as secured financing for tax purposes.

There is no easy answer to the question: "Where is the best place to set up an SPE?" It depends on the structured finance application among other considerations. SPEs are currently set up in a variety of tax friendly venues including Delaware (in the United States), New York, Luxembourg, the Caymans, Ireland, Jersey, Guernsey, and Gibraltar.

While SPEs in the United States are often, but not always, set up as trusts for tax reasons, in non-U.S. venues, the special purpose corporation is a common structure. Venues can be chosen wherever an SPE structure is allowable, but as a rule, only tax friendly venues for the specific structured finance application are chosen.

While choice of venue usually revolves around tax issues, other considerations can be important. For example, many investors in Germany will buy notes issued by SPEs, but often require an OECD issuer. Therefore, the SPE must be set up in an OECD country. Among the OECD countries, the Netherlands, Luxembourg, and Ireland are currently the most commonly used tax-friendly venues.<sup>5</sup>

In tax terms, we want the SPE to pay zero tax on payments flowing in and flowing out. We want to avoid corporate income tax at the venue of the SPE and the bank sponsor.

There are two withholding tax issues: 1) withholding tax at the source, the venue of the incorporation of the SPE, on EMTNs issued by the SPEs; and 2) withholding tax imposed on the underlying assets purchased by the SPEs by the country in which the assets were originated. The goal is that neither interest nor dividends paid by the SPEs is subject to withholding tax, so an ideal venue does not impose this tax.

If we choose a venue such as the Cayman Islands that does not have tax treaties in place with most jurisdictions, there is no mechanism for reclaiming tax withheld (if any) on the underlying asset income from the

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<sup>5</sup> Janet M. Tavakoli, 2005, SPECIAL PURPOSE ENTITIES: USES AND ABUSES  
Presentation to the International Monetary Fund

country of origination. The SPE will purchase assets that are not subject to withholding at the country of the assets' origination so that investors will not suffer a reduced return.

If instead we choose a venue with tax treaties in place, assets that suffer withholding tax may specifically be chosen so the withholding tax can be reclaimed. This is a legitimate use of an SPE. Tax evasion is illegal; tax avoidance is legal.

We do not want to suffer tax on the SPEs income. In Europe, we also want to avoid value added tax (VAT) and stamp duties. The goal is to have zero tax leakage, if possible. Venues such as the Caymans, Jersey, and Guernsey offer this advantage, but may not enjoy ready investor acceptability.

Other venues such as the Netherlands, Luxembourg, and Ireland, also offer several tax advantages. There is no withholding tax on note interest. There is no stamp duty. There may be a very small value added tax (VAT) on servicing and administration for the SPE. There is no withholding tax on deposits. Among these three venues, there are other considerations that may affect the final choice, however. The Netherlands seems to take several weeks longer to provide tax rulings for SPEs compared to Ireland and Luxembourg. In the Netherlands, there seems to be a turf war between Amsterdam versus Rotterdam, and most SPEs are set up in Amsterdam. For speed, one might choose Ireland or Luxembourg. In Ireland, the SPE must fit within the Irish tax securitization code. This may drive up the cost slightly relative to Luxembourg. U.K. based deal arrangers might find it more convenient to deal with Ireland, since Ireland uses an English law based system. Lately, Ireland has been the fastest of the three venues in actual set-up time; usually two to three weeks once the paperwork is in order.

## **5. SPV usage**

SPEs have been used to legitimately move assets off of a balance sheet and monetize them through repackaging combined with sales to investors. SPEs have also been used for embezzlement, money laundering, to mischaracterize revenues and losses, to perpetrate fraud on unwitting fund investors, to move money offshore for tax evasion, to channel funds to terrorist operations, and to disguise the source of money for illegal arms sales.

All of the following are examples of SPEs: Special Purpose Corporations (SPCs) which may or may not be Special Purpose Subsidiaries or captives; Master Trusts; Owners Trusts; Grantor Trusts; Real Estate Mortgage

Investment Conduits (REMICs); Financial Asset Securitization Investment Trust (FASIT); Multiseller Conduits; Single Seller Conduits.<sup>6</sup>

The SPE is formed concurrently with or immediately prior to the subject transaction, that is unlikely to become insolvent as result of its own activities and that is adequately insulated from the consequences of any related party's insolvency. The SPE is generally utilized in one of three different types of transactions:<sup>7</sup>

- the property-specific or large loan transaction;
- the pool transaction;
- the credit lease transaction.

#### ***Property-specific or large loan transaction***

Many property-specific transactions include, as part of their structure a deposit of one or more mortgage loans into a trust. As a result, in a property-specific transaction, multiple SPE's may be appropriate. In addition to each borrower being an SPE, the depositor and/or the holder of any securities or interests in mortgage loan received or retained in connection with a transfer of a loan or loans should be an SPE if the transfer of the loan or loans by the originator to the depositor, or by the depositor to a trust, could not otherwise be characterized properly as a "true sale".

#### ***Pool transaction***

In a traditional pool transaction, one or more mortgage loan sellers will transfer a portfolio of mortgage loans to the depositors which, in turn, will transfer a such mortgage loans to a trust. The trust will issues the rated securities, which are backed by the mortgage loans, to investors in exchange for the proceeds from the sale of securities.

In situations where a transfer cannot be characterized properly as true sale, the transferor generally should be an SPE. In addition, any securities or interests in the transferred mortgage loans received or retained by a loan originator in connection with such transfer generally should be held in an SPE.

The purpose of creating a SPE in this situations is to create an entity that should not become subject to a bankruptcy proceeding. The use of an SPE entity is designed to reduce the risk of the transferor becoming

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<sup>6</sup> Janet M. Tavakoli, 2005, SPECIAL PURPOSE ENTITIES: USES AND ABUSES  
Presentation to the International Monetary Fund

<sup>7</sup> Special-Purpose Bankruptcy-Remote Entities, Standard & Poor's Ratings Services, May 2003, The McGraw-Hill Companies

insolvent, filing a bankruptcy petition, and claiming that the transfer of the mortgage loans and other collateral to the depositor or the securization trust was not a true sale.

### ***Credit lease transaction***

In a credit lease transaction, the borrower, as landlord and owner of the fee interest in an income producing real property, obtains a loan that is secured by a “triple net” bondable lease to a rated tenant.

Special purpose entities are often classified as either ***passthrough*** or ***paythrough structures***.

***Passthrough structures*** pass through all of the principal and interest payments of assets to the investors. Passthrough structures are therefore generally passive tax vehicles and do not attract tax at the entity level.

***Paythrough structures*** allow for reinvestment of cash flows, restructuring of cash flows, and purchase of additional assets. For example, credit card receivable transactions use paythrough structures to allow reinvestment in new receivables so bonds of a longer average life can be issued.

For securitization of cash assets, the key focus is on non-recourse (non-recourse to the originator/seller) financing. The structures are bankruptcy remote so that the possible bankruptcy or insolvency of an originator does not affect the investors’ right to the cash flows of the vehicle’s assets. The originator is concerned about accounting issues, especially that the structure meets requirements for off-balance sheet treatment of the assets, and that the assets will not be consolidated on the originator/seller’s balance sheet for accounting purposes. For bankruptcy and accounting purposes, the structure should be considered a sale.

This is represented in the documentation as a true sale at law opinion. The structure should be a debt financing for tax purposes also known as a debt-for-tax structure. Tax treatment is independent of the accounting treatment and bankruptcy treatment. An originator selling assets to an SPE will want to ensure that the sale of assets does not constitute a taxable event for the originator. The securitization should be treated as a financing for tax purposes i.e., treated as debt of the originator for tax purposes. This is represented in the documentation in the form of a tax opinion.

The structured solution to the bankruptcy, true sale, and debt-for-tax issues varies by venue.

Synthetic securitizations do not get true sale treatment for accounting purposes, since no asset has been sold. This is true whether the vehicle is an

SPE or a credit-linked note. The motive behind these structures is to reduce regulatory capital according to regulatory accounting principles. Funding is a non-consideration or a minor consideration. These are usually balance sheet deals for bank regulatory capital relief. Partial funding is feasible with a hybrid structure. A corollary motive is to get credit risk relief.

Repackaging is another legitimate use of SPEs. U.S. banks often set up multi-issuance vehicles (MIEs) in the Cayman's or other tax friendly venues. These are Qualifying Special Purpose Entities (QSPEs) for Financial Accounting Standards Board (FASB) purposes. By definition, they are off balance sheet, bankruptcy remote entities. The assets are put presumptively beyond the reach of the bank transferor's creditors through a true sale. Furthermore, the bank is not obligated to repurchase the transferred assets. Setting up the SPE in this way insulates the customers from the bank's credit risk, and ensures the assets don't re-emerge on the bank's balance sheet, even though the SPE may often purchase assets from the bank sponsor's books.

The MIE issues notes that reference only the underlying collateral specific to each note (unlike the structure in which the collateral for all the EMTNs is a reference pool of assets). The noteholders do not have a claim to any other asset owned by the SPE. Each set of assets is funded separately with its own EMTN tranche combining the risk characteristics of the underlying assets and/or derivatives. The derivatives may be hedges or may actually be an underlying asset, such as a credit derivative.

In a typical vanilla repackaging, the SPE purchases assets. The assets are pre-funded from proceeds of an EMTN issued by the SPE and underwritten or sold by the bank arranger's (bank sponsor's) capital markets group. The SPE pays the asset cash flows to the bank arrangers swap desk as one leg of a swap payment. The bank arranger provides the structured coupons due to the investors under the EMTN issue.

The flexibility and privacy of offshore SPEs in particular makes them very powerful financial tools for legitimate securitizations, but also makes them attractive tools for illegal financial dealings. The key issue seems to be disclosure of the true ownership of the SPE. Legitimate businesses voluntarily disclose minority ownership interests in offshore SPEs as equity on their balance sheet. Offshore subsidiaries are also disclosed.

While SPEs are ideal for securitizing assets, they are also ideal for hiding assets. Many offshore venues do not divulge ownership of SPEs, and to complicate matters, the owner may be one or more SPEs in different venues. There is no easy answer to this dilemma, since any legitimate means can be exploited for illegitimate gain.

## **6. Juridical aspects concerning the SPV in Romania**

In this year has been issued the law of securitization in Romania which provides the general framework for obtaining financing through securitization, and also the rights and obligations of the participants at the securitization transaction.

The object of securitization:

- ❖ credit contracts;
- ❖ lease contracts;
- ❖ commercial contracts with the payment price in term, as well as commercial contracts with the payment rate;
- ❖ financial instruments, issued according to the law.

According to this law the SPV is defined as an entity with or without juridical personality, which has the single objective to issue securitized financial instruments.

The transfer as it is defined by the present law is exempted by the value added tax. The SPV is an entity set up as securitization fund, based on contracts of limited company or corporation. The SPV must be approved by CNMV (National Committee of Securities).

## **7. Conclusion**

The overall issue, however, is how do regulators wish to react to any illegal financial activity, including the abuse of SPEs. What is the best course of action for entities such as the International Monetary Fund that are in a position to distribute funds? One could suggest that each country must introduce rule of law and financial accountability before debt is forgiven or before new funds are lent. Even in strong financial venues like the United States, it is difficult to curtail abuse. In disadvantaged countries, especially venues in which corruption is suspected, it may be even more difficult to curtail financial abuse, and the issues are more difficult. There are broader humanitarian issues such as the effect of withholding funds on the general population and whether funds provided aren't diverted to special interests instead of employed as intended.

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# **A SHORT OVERVIEW ABOUT ESTIMATING THE BANKRUPTCY RISK: A CASE STUDY PERFORMED ON A SET OF ROMANIAN COMPANIES**

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## **Abstract**

*Various empirical studies regarding the bankruptcy risk were conducted using financial analysis of companies, with or without financial difficulties. The variables (mainly accounting variables) which influence the risk were determined. In this article, we propose a short overview which emphasizes the efficiencies of different methods of classification used so far. We describe the available techniques, compare their performances and underline various modalities of empirical applications. We also perform an empirical study on a set of Romanian companies. We are using two alternative models: Binary Logit and Binary Probit. Their performance is evaluated based on econometric criteria as well as a criterion of accuracy of predictions: receiver Operating Characteristic Curve.*

**Keywords:** *bankruptcy risk, logit, probit, ROC curve*

## 1. Introduction

The purpose of this paper is to present synthetically the evolution and the present state of research concerning the bankruptcy risk and to propose a modality of application on the Romanian market, where the chosen model is based on a prediction criterion, not on econometric criteria. The first part of the study displays the common methodology of the research concerned, as well as the various modalities of the empirical applications, the construction of the sample, the choice of the explanatory variables and the method to validate the results.

## 2. The construction of the sample

The elaboration of the sample is very important for the quality of the proposed prediction. The defining of the states of the endogenous variable and the choice of the prediction level play an essential part, because they determine the objective of the constructed indicator, and the selection of the units which form the given sample. The choice of the variables characterizing the selected units is also very important because these variables condition the homogeneousness and the representativeness of the sample, hence they influence the quality of the prediction.

**The explanatory variables:** the representativeness and the homogeneousness of the sample. For the binary models, the construction of two sub-samples raises the problem of how representative and homogeneous the two sub-samples are. For instance, in the case of a model of financial scoring related to the enterprise bankruptcy risk, the full sample must be representative for the economy: from the point of view of the sectors of activity, of the size of the enterprises, but also of the relation between the number of bankrupt enterprises and non-bankrupt enterprises. However, this representativeness creates a heterogeneousness which might generate a statistical displacement: explanatory factors could be rendered under the aspect of sectorial or size effects. In order to reconcile the two exigencies, several solutions have been found.

Recent studies have resorted to enlarged samples: over 1000 enterprises (Lennox,1999) and more than 40000 for the Bank of France score (Bardos,1998). If the number of the supervised enterprises (belonging to the given sample) is large enough, we have a good representativeness. However, the representativeness must be verified by comparing the characteristics of the sample with the characteristics of the global population. Another way of rendering a good representativeness is to limit the research to an economic

field or to a size interval (Trieschmann and Pinches, 1973; Calia and Ganuci, 1997). This particular method has the advantage of reconciling the representativeness and the homogeneousness.

### **3. Date analysis models and binary econometric models**

These techniques were used mainly in the enterprise bankruptcy analysis and the bankruptcy risk estimation, starting from a series of book-keeping data characteristic for the given enterprise, namely economic and financial indicators. The studies that propose or make use of such models generally fall into three classes, according to the classifying methods which are being used. The most frequent classifying methods are the parametric statistical methods: the discriminant-linear models analysis (Altman, 1968) or the square analysis (Lachenbruch et al., 1973)- and the techniques of the qualitative variables econometric (Ohlson, 1980; Zmijewski, 1984). Other studies resort to non-parametric statistical methods, such as: the recursive partition (Frydman et al, 1985) and the nucleus estimators (Calia and Ganuci, 1997). At the same time, more recently, there have been performed analysis concerning the artificial intelligence, such as the neuronal networks (Altman et al, 1994; Bardos and Zhu, 1997) and the genetic algorithms (Varetto, 1998). In the following lines, we are going to explain briefly the techniques mentioned above, resorting to the founding studies, as well as to the various improvements later suggested.

#### **The parametric methods of statistical classification**

The parametric methods of statistical classification establish a functional relation between the explanatory variables (the law of variable distribution is supposed to be known in this case) and the variable explained, the form of this relation being given a priori. Three types of such methods have been identified:

The one-dimensional methodology founded by Beaver (1966)

The discriminant analysis (liniary and non-liniary)

The regressions with qualitative variables

##### *a. Beaver's one-dimensional methodology (1966)*

Beaver (1966) elaborated a one-dimensional dichotomic classification, namely a classification based on a single book-keeping indicator: the most discriminant (in relation to which the sample is more heterogeneous). In a first sub-sample, he groups the enterprises according to the value given by a specific indicator. Next, a critical limit is being chosen, and all the enterprises that have an installment inferior to this limit are considered bankrupt, while the enterprises that have an indicator value superior to the limit are non-

bankrupt. This critical limit is determined by maximizing the percentage of the well-classified enterprises belonging to the first sample. A second sub-sample is further elaborated, starting from the critical limit previously established, and the percentage of the well-classified enterprises is calculated once again. This percentage lies at the basis of the final selection of the most discriminant book-keeping instalment. Although the method proposed by Beaver could supply an easy and efficient indicator for the characterization of the financial health of various enterprises, the shortcomings of the method related to the unicity of the book-keeping instalment, as well as the advantages provided by the multidimensional methods applied to the description of the state of the enterprise, drastically restrict the area of application of Beaver's methodology.

*b. Prediction models based on the discriminant analysis*

In 1968, Altman pointed out that the one-dimensional analysis does not take into account the complexity of the bankruptcy process. He was the first one to use simultaneously in his research several book-keeping instalments by means of a multidimensional linear analysis. In order to classify an enterprise as bankrupt or non-bankrupt, Altman (1968) uses the simple decision law, which refers to the inclusion of an enterprise in the group to which this particular enterprise is the closest. Accordingly, he resorts to the the discriminant analysis proposed by Fisher, based on a metrical criterion. Essentially, a function named **score** is being constructed, a linear combination of the explanatory variables given; the realization of this function suggests the risk level of the enterprise.

A number of  $k$  book-keeping indicators will be selected, the ones which are most likely to justify the bankruptcy. At the same time, the model maintains the indicators which limit the problem of the exogenous variables multicollinearity and provide the greatest power of discrimination between the enterprises. The sum of the enterprises could be represented in a  $\mathfrak{R}^k$  space. The purpose of the discriminant analysis is to divide this space into two sub-spaces: the bankrupt enterprises sub-space and the non-bankrupt enterprises space. This separation is made by determining the hyper plan  $H^*$  which separates most adequately the two groups of enterprises.  $H^*$  must be calculated so that on the one hand, the number of bankrupt enterprises related to the sub-space of the non-bankrupt enterprises should be minimum, while on the other hand, the number of the non-bankrupt enterprises included in the sub-space of the bankrupt enterprises should also be minimum. The enterprise whose bankruptcy risk will be estimated belongs to the group corresponding to the sub-space in which the enterprise is situated according to its coordinates. If  $A$  is an enterprise whose bankruptcy risk we intend to estimate, and  $x_A$  its coordinates, a value of the distance to a group will be

established. Thus, the distance to a group represents the distance to the middle point of the group, using a particular system of measure. If  $S(x)=0$  is the equation of the hyperplan  $H^*$  in the  $\mathfrak{R}^k$  space,  $S$  is a linear combination of the two  $k$  book-keeping installments we have in view. The value taken by the function  $S(\cdot)$  in the point  $x_A$  determines the classification of the enterprise  $A$  into one or another of the two sub-groups:

if  $S(x_A)>0$ , enterprise  $A$  belongs to the non-bankrupt enterprises

if  $S(x_A)<0$ , enterprise  $A$  belongs to the bankrupt enterprises

if  $S(x_A)=0$ , enterprise  $A$  cannot be classified.

There are, however, some disadvantages in the use of the linear discriminant analysis. Such disadvantages refer to a series of difficulties concerning the linearity of the the score-function constructed by Fisher's discriminant analysis, as well as to the necessity to satisfy some strict statistical conditions (the exogenous variables of the model must submit to a normal law, while their variation/co-variation matrix must be the same for the sub-sample of the bankrupt enterprises and for the sample of the non-bankrupt enterprises). The method was thus modified to some extent, although it had represented for 30 years the main technique used in predicting bankruptcy in several countries. A series of studies from the 80's and the 90's which confront the linear discriminant analysis with other techniques of classification (Collins, 1980; Rose and Giroux, 1984; Altman et al, 1994; Calia and Ganuci, 1997; Kira et al, 1997; Bardos and Zhu, 1997; Varetto, 1998) generally proves the superiority of the linear discriminant analysis.

*c. Models based on regressions upon the qualitative variables*

These methods imply the estimation of some qualitative variable regressions (at least the endogenous variable), based either on a logistical distribution of the errors (Logit), or on a normal distribution of the errors (Probit). The Logit regression was applied in predicting the bankruptcy risk by Ohlson (1980), Mensah (1984), Aziz et al (1988), Bardos (1989), Burgstahler et al (1989), Flagg et al (1991), Platt and Platt (1991), Weiss (1996), Bardos and Zhu (1997), Mossman et al (1998). The Probit model was used to a smaller extent (Zmijewski, 1984; Gentry et al, 1985; Lennox, 1999). According to the two models, the endogenous variable  $y$  is a qualitative variable, dichotomic, in the given case:  $y$  takes the values 0 or 1 if the enterprise is bankrupt, respectively- non-bankrupt. The  $x$  vector of exogenous variables includes a series of  $k$  economic and financial indicators, used in the operation according to their discriminant quality and their weak interdependence. The model requires that between the chosen indicators and

the bankruptcy risk there be a linear relation. The estimated model is expressed as follows:

$$y_i = 1 \text{ if } \beta x_i + \varepsilon_i > 0 \quad (1)$$

$$y_i = 0 \text{ if, } \beta x_i + \varepsilon_i \leq 0 \quad (2)$$

where  $\varepsilon$  is the error associated to enterprise  $I$ , while  $\beta$  is the coefficient vector. The a posteriori likelihood for the enterprise to be bankrupt is expressed as follows:

$$P\{y_i = 0\} = P\{\beta x_i + \varepsilon_i \leq 0\} = P\{\varepsilon_i \leq -\beta x_i\} = F(-\beta x_i) \quad (3)$$

where  $F$  is the function of  $\varepsilon$  error repartition. The a posteriori likelihood for enterprise  $I$  to be non-bankrupt is expressed as follows:

$$P\{y_i = 1\} = P\{\beta x_i + \varepsilon_i > 0\} = P\{\varepsilon_i > -\beta x_i\} = 1 - P\{\varepsilon_i \leq -\beta x_i\} = F(\beta x_i) \quad (4)$$

$$\text{See : } P\{y_i = 1\} = F(\beta x_i) \quad (5)$$

$$P\{y_i = 0\} = 1 - F(\beta x_i) = F(-\beta x_i) \quad (6)$$

The Logit model requires that the errors submit to a logistical law which has the following repartition function:

$$F(x) = (1 + e^{-x})^{-1} \quad (7)$$

In this case, the a posteriori likelihood for enterprise  $I$  to be bankrupt is expressed as follows:

$$P\{y_i = 0\} = (1 + e^{\beta x_i})^{-1} \quad (8)$$

According to the Probit model, the errors submit to a normal law, which has the following repartition function:

$$F(x) = \int_{-\infty}^x \frac{1}{\sqrt{2\pi}} e^{-\frac{t^2}{2}} dt \quad (9)$$

As a consequence, the a posteriori likelihood for enterprise  $I$  to be bankrupt is expressed as follows:

$$P\{y_i = 0\} = \int_{-\infty}^{-\beta x_i} \frac{1}{\sqrt{2\pi}} e^{-\frac{t^2}{2}} dt \quad (10)$$

Similarly to the previous case, the a posteriori likelihoods are of great help in taking the decision: they allow us to construct a series of risk classes. If we intend to classify a specific enterprise,  $A$ , into one of the two groups of enterprises (bankrupt or non-bankrupt) starting from the bankruptcy likelihood, we could determine a critical limit according to which we may take a decision. We note this critical likelihood with  $P$ . The judgment that

brings us to the decision is the following: if the bankruptcy likelihood estimated for enterprise  $A$  is higher than in the case of  $P$ , then enterprise  $A$  is considered bankrupt; in the opposite case,  $A$  is considered non-bankrupt. The  $P$  likelihood is chosen in such a manner as to maximize the quality of the classification operation. The predictions performed by several researchers on the basis of Probit and Logit models are of a very good quality (Platt and Platt, 1991; Mossman et al, 1998) and they are generally superior to the discriminant analysis (Kira et al, 1997; Lennox, 1999).

#### 4. Application

We start from a sample consisting of 25 commercial enterprises competing on the Romanian market. In order to form the sample, we have used a simple aleatory test. By observing the sample units, we came to the conclusion that 13 of the supervised enterprises were bankrupt, while the other 12 remained in the competitive economy. Consequently, we associate to the observation of the event  $y_i = 0$  in the case of the bankrupt enterprises, respectively  $y_i = 1$  in the case of the surviving enterprises, where  $y_i$  is the endogenous variable standing for the bankruptcy risk. The variables  $x_i$  are associated to the observation of the event  $y_i$ , where  $x_i$  with the value of  $i = \overline{1,5}$  represents the variables expressing accurately the economic and financial situation of the enterprises, as follows (Altman, 1968):

$X_1 = \text{Working capital/Total assets}$

$X_2 = \text{Retained Earnings/Total assets}$

$X_3 = \text{Earnings before interest and taxes/Total assets}$

$X_4 = \text{Market value equity/Book value of total debt}$

$X_5 = \text{Sales/Total assets}$

We have calculated these variables with the help of the data from the Balance-Sheet and the Profit and Loss Account for each enterprise. We have processed the data on the basis of the econometry soft LIMDEP 7.0.

d. The Probit binary estimation model

**Table 1. The estimation of the Probit binary model parameters**

*Binomial Probit Model*

*Maximum Likelihood Estimates*

*Log likelihood function -11.22305*

<i>Variable</i>	<i>Coefficien t</i>	<i>Standard Dev.of b</i>	<i>t=b/st.dev.</i>	<i>P[ Z &gt;z]</i>
<i>Constant</i>	-1.372	0.861	-1.594	0.111
<i>X1</i>	8.894	6.319	1.408	0.153
<i>X2</i>	1.008	8.194	0.123	0.902
<i>X3</i>	1.835	5.409	0.339	0.733
<i>X4</i>	0.288	0.274	1.053	0.292
<i>X5</i>	0.433	0.413	1.048	0.294

e. The Logit binary estimation model

**Table 2 The estimation of the Logit binary model parameters**

*Binomial Logit Model*

*Maximum Likelihood Estimates*

*Log likelihood function -11.29708*

<i>Variable</i>	<i>Coefficien t</i>	<i>Standard Dev.of b</i>	<i>t=b/st.dev.</i>	<i>P[ Z &gt;z]</i>
<i>Constant</i>	-2.292	1.431	-1.603	0.109
<i>X1</i>	14.92	10.32	1.447	0.148
<i>X2</i>	1.605	14.13	0.114	0.909
<i>X3</i>	3.144	8.849	0.355	0.722
<i>X4</i>	0.483	0.458	1.056	0.291
<i>X5</i>	0.721	0.673	1.070	0.284

Although the parameter estimators are very different for each of the two models, their representativeness is practically the same. We estimate for each enterprise the bankruptcy likelihood by using both models.

**Table 3 The estimation of the bankruptcy likelihood, Probit and Logit 1 models**

<i>Observ.</i>	<i>Observed Y</i>	<i>Predicted Y</i>	<i>Prob[Y=1] (probit)</i>	<i>Prob[Y=1] (logit)</i>
1	.000	.000	.3289	.3244
2	.000	.000	.0002	.0025
3	.000	.000	.0000	.0004
4	.000	.000	.0008	.0051
5	.000	.000	.2780	.2756
6	.000	1.00	.6702	.6772
.....				
20	1.00	1.00	.7203	.7244
21	1.00	1.00	.5264	.5256
22	1.00	1.00	.5797	.5864
23	1.00	1.00	.9957	.9880
24	1.00	.000	.3235	.3184
25	1.00	.000	.2699	.2661

The likelihoods are very similar and, as a consequence, the two models are equivalent, from an econometric point of view (the parameter representativeness), as well as from the point of view of the likelihood. The parameters of the models with all the explanatory variables might be however less representative due to the correlations between the X1-X5 variables. We might even think about obtaining superior results by eliminating some variables. We make the estimation for models from which we gradually eliminate one variable or another (Logit 2- Logit 6).

**Table 4. The estimation of the reduced models parameters : Logit 2- Logit 6**

	<i>Logit 2</i>		<i>Logit 3</i>		<i>Logit 4</i>		<i>Logit 5</i>		<i>Logit 6</i>	
	<i>Coe f.</i>	<i>Pro b.<sup>1</sup></i>	<i>Coe f.</i>	<i>Pro b.<sup>1</sup></i>	<i>Coe f.</i>	<i>Pro b.<sup>1</sup></i>	<i>Coe f.</i>	<i>Pro b.<sup>1</sup></i>	<i>Coe f.</i>	<i>Pro b.<sup>1</sup></i>
<i>Constant</i>	- 2.23	0.05	-2.28	0.11	- 2.15	0.10	- 1.47	0.19	- 1.47	0.15
<i>X 1</i>	-	-	15.2	0.13	13.6	0.12	17.0	0.08	13.2	0.12
<i>X 2</i>	6.15	0.61	-	-	5.71	0.48	- 7.09	0.54	4.65	0.73
<i>X 3</i>	0.054	0.99	3.97	0.42	-	-	6.73	0.37	1.03	0.89
<i>X 4</i>	0.83	0.42	0.46	0.28	0.51	0.24	-	-	0.33	0.34
<i>X 5</i>	0.85	0.18	0.73	0.66	0.67	0.30	0.52	0.39	-	-

<sup>(1)</sup>Prob=P[|Z|>z]

Here we notice that none of the models has a good parameter representativeness. According to this criterion it is difficult to choose between the models. We will thus focus on each one's prediction capacity.

**Table 6 The bankruptcy likelihood estimation, models : Logit 2- Logit 6**

<i>Observation</i>	<i>Logit 2 Prob[Y= 1]</i>	<i>Logit 3 Prob[Y= 1]</i>	<i>Logit 4 Prob[Y= 1]</i>	<i>Logit 5 Prob[Y= 1]</i>	<i>Logit 6 Prob[Y= 1]</i>
<i>1</i>	0.1378	0.3302	0.3336	0.5104	0.4651
<i>2</i>	0.1640	0.0023	0.0042	0.0023	0.0071
<i>3</i>	0.1677	0.0003	0.0007	0.0003	0.0013
<i>4</i>	0.3255	0.0044	0.0086	0.0029	0.0127
.....	.....	.....	.....	.....	.....
<i>22</i>	0.4269	0.5936	0.5771	0.5928	0.6422
<i>23</i>	0.7992	0.9884	0.9832	0.9836	0.9763
<i>24</i>	0.3696	0.2961	0.3546	0.2763	0.4784
<i>25</i>	0.1807	0.2826	0.2253	0.4709	0.3326

The likelihoods vary in a significantly in the case of each model. Therefore, in order to be able to choose the best model, we need an efficient criterion to evaluate the prediction capacity of each model. Such a criterion is the Receiver Operating Characteristics Curve.

*f. Receiver Operating Characteristic Curve*

We use the following symbols:

$y_i$  is the noticed value of the endogenous variable

$y_i = 1$  if enterprise  $I$  survives

$y_i = 0$  if enterprise  $I$  does not survive

$$\hat{y}_i = \begin{cases} 1 & \text{si } \text{Prob}(y_i = 1) \geq c \\ 0 & \text{sinon} \end{cases}$$

$c \in [0;1]$  is a cut-off

In most of the applications, cut-off  $c$  can be chosen by the user. For each value of  $c$  we may draw a cross-figure:

$\hat{y}_i$ $y_i$	<b><i>I</i></b>	<b><i>0</i></b>	<b><i>Total</i></b>
<b><i>I</i></b>	$N_{11}$	$N_{10}$	$N_{1T}$
<b><i>0</i></b>	$N_{01}$	$N_{00}$	$N_{0T}$
<b><i>Total</i></b>	$N_{T1}$	$N_{T0}$	$N$

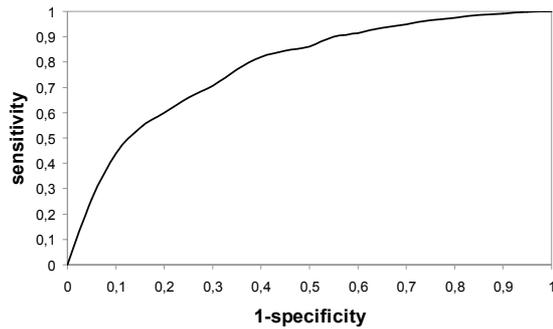
We note the relations as:

$\frac{N_{11}}{N_{1T}} = \textit{sensitivity}$  = the relative frequency of the correct predictions for the individuals for whom  $y_i = 1$

$\frac{N_{00}}{N_{0T}} = \textit{specificity}$  = the relative frequency of the correct predictions for the individuals for whom  $y_i = 0$

By changing the value of  $c$ , we obtain different values for *sensitivity* and *specificity*, which allows us to trace the R.O.C. *curve*.

**Figure 1 R.O.C. curve**



If  $c=1$ ,  $\hat{y}_i = 0 \quad \forall i = \overline{1, N}$  (for all enterprises)  $\Rightarrow$  *specificity* = 1 et *sensitivity* = 0 and the curve reaches the coordinates (0 ;0). If  $c=0$ ,  $\hat{y}_i = 1 \quad \forall i = \overline{1, N}$  (for all the individuals)  $\Rightarrow$  *specificity* = 0 and *sensitivity* = 1 and the curve is situated at the (1;1) coordinates. The ideal model curve traverses the abscissa and ordinate axis, passing trough the (0;1) coordinates, where *specificity*=1 and *sensitivity*=1, so there are 100% correct predictions for enterprises with  $y_i = 0$ , and 100% correct predictions for enterprises with  $y_i = 1$ . Consequently, the closer is the curve to (0;1) coordinates, the more efficient is the model in terms of likelihood. The value indicating the competitiveness of a particular model is the surface of the sub-diagram determined by the R.O.C. curve.

## 5. Conclusions

The academic research concerning the methods of bankruptcy prediction is still up-to-date, while they become more widely used. The linear discriminant analysis, after its probing phase from the 70's, is the most widely used operational method, providing trustworthy predictions. The score function provides many useful applications to the practitioners, and makes possible the calculation of *a posteriori* likelihoods or the construction of risk classes. Other methods, such as the square discriminant analysis, the regressions upon qualitative variables or the non-parametric techniques were also developed, with the view of avoiding the statistical compulsions imposed by the linear discrimination. Recent techniques borrowed from the artificial intelligence, such as the neuronal networks or the genetic algorithms are more and more popular in the academic medium. They allow us to obtain good predictions and, in addition to that, they have the advantage of not imposing statistical limitations.

As for the application, it proves that it is difficult to choose between the different possible models, even if they belong to the same class. We may

get to several competing models, which could be compared from the point of view of their quality, on econometric criteria. We could make the choice using a criterion of prediction efficiency (for instance: R.O.C. Curve), which is however preferred by the practitioners, a fact which stimulates the applications.

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# BANK RISK MANAGEMENT STRUCTURES IN ROMANIA<sup>1</sup>

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## Abstract

*The Romanian banking system comprises private banks mainly and has the following bank risk management structures:*

- 1. The Bank Risk Bureau - (BRB) is a structure specialized in collecting, storing and centralising information on the exposure of each crediting institution in the Romanian banking system to those debtors who were granted loans and/or have commitments that totalize more than the reporting threshold or the payments overdue more than 30 days, regardless the amount, of the natural persons against whom crediting institutions exposures are of approximately 5.700 Euro, as well as information on card frauds committed by the card holders;*
- 2. The Payment Incidents Bureau (PIB) is an intermediation centre that manages information specific to payment incidents both from the bank's point of view (overdraft), as well as from a social point of view (stolen). Information is sent to the PIB through the Interbank Communication Network which links the head office of the National Bank of Romania to the head offices of all banks;*
- 3. The Bank Deposit Guarantee Fund has the purpose of repaying natural persons' deposits according to the terms and conditions imposed by law..*

**Keywords:** *structure; risk; deposits; credit; debtors.*

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<sup>1</sup> The data presented in this paper are taken from the National Bank of Romania site.

## **1. Introduction**

Romania prepares to adhere to the EU, the countdown to January 1<sup>st</sup> 2007 having begun. Although the negotiations closed, the economic reform is still in development. The banking system, essential in developing the Romanian economy, improved, important progress in privatisation and aligning to the EU surveillance standards being made. The investments in infrastructure and in improving the financial indicators made by banks led to creating a banking system able to face the international standards after the adherence to the EU. On the whole, the banking system has improved from the point of view of monitoring the credit risk, very important being the regulations of the National Bank of Romania as well as of the risk management structures created by the banking authority.

## **2. Bank Risk Management Structures**

### ***2.1 The Bank Risk Bureau (CIB)***

This is a structure specialized in collecting, storing and centralising information on the exposure of each crediting institution in the Romanian banking system to those debtors who were granted loans and/or have commitments that totalize more than the reporting threshold or the payments overdue more than 30 days, regardless the amount, of the natural persons against whom crediting institutions exposures are of approximately 5.700Euro, as well as information on card frauds committed by the card holders.

The database of the Bank Risk Bureau is organized into:

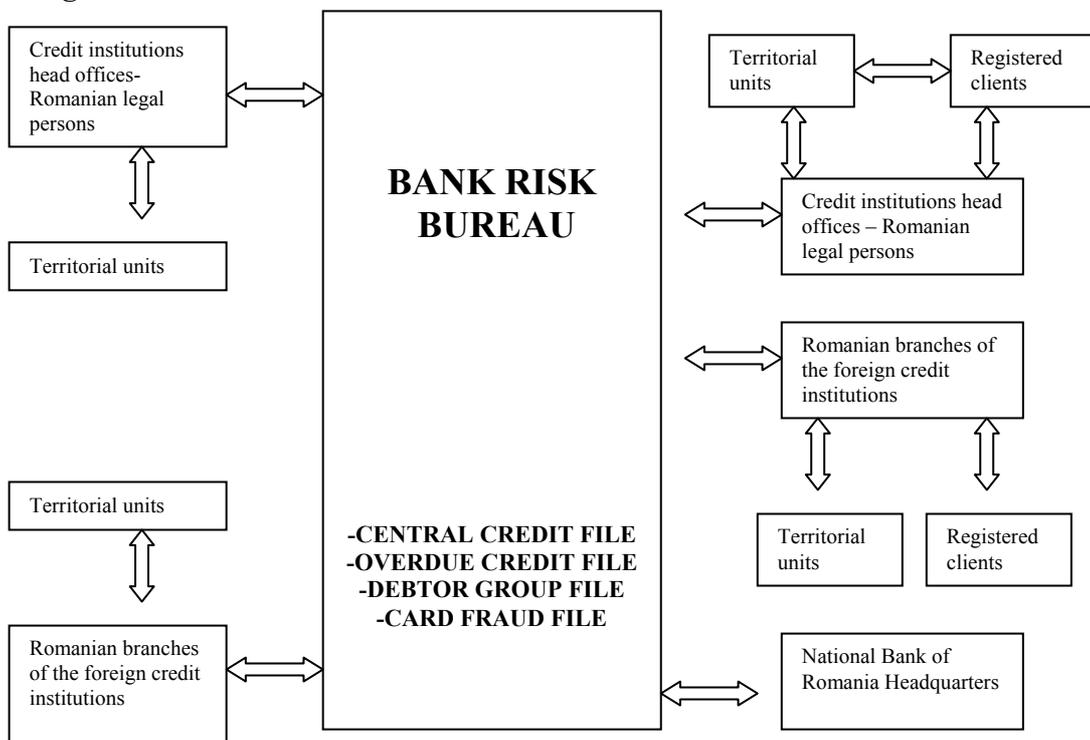
- ▶ The Central Credit File (CCF) which contains information on the bank risk reported by credit institutions and is updated monthly.
- ▶ Overdue Debt File (ODF) which contains credit risk information on delays at the repayment schedules over the past seven years at most and is updated monthly from the Central Credit File.
- ▶ The Debtor Group File (DGF) which contains information on groups of natural persons or/and legal persons representing one debtor and is updated monthly from the Central Credit File.
- ▶ The Card Fraud File (CFF) which contains information on card frauds made by the card holders as reported by the credit institutions and is updated on-line.

The users of the information from the data base of the Bank Risk Bureau are the reporting entities and the National Bank of Romania. The reporting entities are the credit institutions and the companies that deal with loans on mortgage and which are organised according to existing law.

The exchange of information on bank risk is done electronically through the Interbank Communication Network. The reports contain the following information:

- The identification data of the debtors against whom the credit institution has an exposure equal to or higher than the reporting threshold;
- Information on all loans and commitments of the debtor: the type of the loan, maturity, type of warranty, debt service, granting date and maturity date, amount granted, used and unused amounts, overdue loans;
- Information on the natural persons who do not fulfill the conditions imposed by the reporting threshold and are overdue more than 30;
- Information on the groups of natural or/and legal persons representing one debtor: the name of the group, the code of the group, the members of the group.
- Information on card frauds committed by the cardholders: the identification data of the cardholder, type of card, the currency, the date when the fraud was noticed, the amount of fraud.

**Figure 1 Bank Risk Bureau Information Flow**



Source: [www.bnro.ro/legislatie](http://www.bnro.ro/legislatie)

The information is disseminated by the Bank Risk Bureau in two ways:

1. Monthly reports containing information on all the debtors reported that month, all the information available at the Bank Risk Bureau, regarding the loans and commitments of the debtor from all the credit institutions, without mentioning the identity of those institutions (the overall risk situation).

2. In reply to the on-line queries in which the reporting entities may request two types of information: the overall risk situation and the overdue loan situation (on a 7 year period).

It must be underlined that the information is given unconditionally for the reported debtors, while for clients as possible debtors, the access of the reporting entities to the information is conditioned by having that client's approval

Similar credit information management systems are successful in EU countries with a high degree of financial intermediation such as: Austria, Belgium, France, Germany, Italy, Portugal, Spain, etc.

## ***2.2 The Payment Incidents Bureau (PIB)***

Is an intermediation centre that manages information specific to payment incidents both from the bank's point of view(overdraft), as well as from a social point of view(stolen).

Information is sent to the PIB through the Interbank Communication Network which links the head office of the National Bank of Romania to the head offices of all banks.

The database of the PIB is organised in two files:

1. The Payment Incidents National File (PINF) having the following structure:

- Cheques National File (CNF);
- Bills of Exchange National File (BNF);
- Promissory Notes File (PNF)

2. Risky Persons National File (RPNF), which is automatically fed from PINF.

Risky Persons National File is a permanent database. Information on major payment incidents (overdrafts, cheques issued without the approval of the drawee, cheques bearing a false date or lacking a compulsory specification, circular ceques and traveller cheques issued as bearer cheques, cheques issued by a drawer under ban on banking operations, bills of exchange discounted without a claim being assigned upon transfer) registered in the name of a natural/legal person can not be erased from the database unless they are cancelled by the same reporting persons who has previously submitted them to the PIB, on their own initiative, or following a court order.

Ban on banking operations is imposed by a bank on an account holder who is not allowed to issue cheques for a period of one year since the recording to the PIB of a major payment incident, in order to prevent the occurrence of further payment incidents as well as to sanction the account holders who generate them in the banking system.

On the basis of the information received by PIB from the reporting persons, it must:

- send a *Report on the ban* to issue cheques to all bank head offices that will disseminate this information in their own interbank system;

- send a *Report on the loss/theft/destruction/cancellation* of payment instruments to the remitting bank in order to prevent settlement of such cheques, bills of exchange or promissory notes, in case they are presented for settlement by a malevolent person.

The bank head office or the territorial branch, the account of the natural or the legal person is opened with, must recoup not filled-in or faulty filled-in cheques, except those used for cash withdrawal. In case they fail to recoup all the not filled-in or faulty filled-in cheques, they must cancel them and notify it to the PIB within 15 days from the PIB's Report on imposing the ban.

The information stored in the PINF and RPNF will be used:

- a) compulsory by banks and the National Bank of Romania, when remitting chequebooks to account holders

- b) on its own initiative by the PIB, in order to defend public interest, by sending the information to the Prosecutor's Office attached to the Supreme Court and to the Ministry of Interior with their territorial units, from its own evidence or by publishing the information in the mass-media.

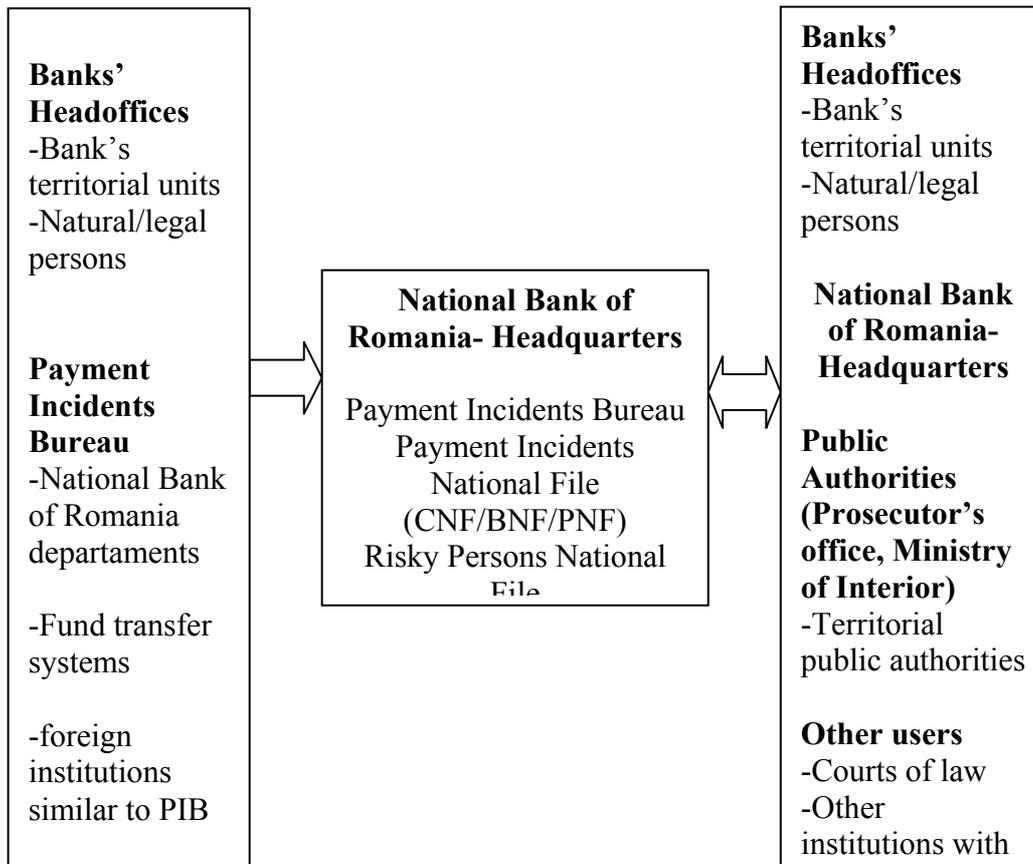
- c) by court, the institutions under letter b), other supervision and control institutions of the state, as well as mass-media based on the data required from the PIB;

- d) by natural or legal persons, other than those under letters a) – c), through banks;

- e) by foreign institutions similar to PIB, on the ground of data concerning payment incidents supplied by the PIB on its own initiative or at the request of these institutions.

Before signing a contract with a partner, a company may consult, through a bank, the PIB's database to verify if the partner is registered as having payment incidents with cheques, bills of exchange or promissory notes. According to the information received from the PIB, the company will be in the position to decide on continuing or ceasing the collaboration with that partner.

**Figure 2 Payment Incidents Information Flow**



Source: [www.bnro.ro/legislatie](http://www.bnro.ro/legislatie)

The database may be accessed by a trader, through a bank, before receiving a cheque from a partner, in exchange for the sold goods. In this case, the trader is able to find out whether the series and number of the cheque, he is going to receive, is part of the payment instruments approved by the NBR, or the cheque was previously declared to the PIB as lost/stolen/damaged or withdrawn.

When issuing a bill of exchange, the beneficiary may access the PIB's database, in order to get information on the drawee. The beneficiary may grant a commercial loan to the drawer if by the issue date of the bill of exchange the drawee (the person indicated to pay for the drawer) hasn't had any payment incidents with other credit incidents. The same prudent

behaviour may be shown by the beneficiary of a promissory note towards the underwriter as the beneficiary of a cheque towards the drawer.

The information stored in the RPNF on a natural or legal person and the specific analysis done by banks may contribute to making the decision of granting a loan or opening an account for a new client.

### ***2.3 The Bank Deposit Guarantee Fund***

The Bank Deposit Guarantee Fund, legal entity subject to public law, has the purpose of repaying natural persons' deposits according to the terms and conditions imposed by law. The Fund guarantees deposits held both by residents and non-residents in domestic or foreign currency.

In case of a bank insolvency, the Fund guarantees the payment in Lei of deposits, irrespective of the currency or the number and size of deposits, within the guarantee ceiling, updated half-yearly with the consumer price index. The guarantee ceiling includes interest on the respective deposits until the date they became unavailable.

The total amount of financial obligation of a bank towards a depositor is established by totalizing all the deposits held by the depositor, including due but not paid interest at the date the deposits became unavailable and by deducting the financial obligations of the depositor to the respective bank.

The Fund pays the compensation within 3 months from issuing the court order for commencement of bankruptcy proceedings, but not later than 3 years from beginning of compensation payments.

### ***2.4. The Credit Information Bureau***

In 2004 granting of loans for natural entities increased. Although they do not have money people buy more and more goods, especially household items. Loans can be obtained easily, sometimes an ID being enough, and within a short period of time, in two hours, without an endorser. An instalment could be under 10 Euro making the loan accessible to almost anyone. Due to the granting conditions crediting has increased alarmingly, as the whole banking system and mainly the National Bank of Romania noticed. A lot of Romanian citizens got loans from more than one bank, being unable afterwards to repay. It is eloquent the case of a person who had loans at no less than 10 banks, the total amount of granted money being of 168,000 USD. Creating an institution specialised in managing bank risk was necessary. This

was the point when the Credit Information Bureau, an institution that manages credit risk information, was set up.

Created at the initiative of the Romanian banking system, the Credit Information Bureau has the role to support the credit institutions, forwarding reliable, actualised and consistent information on natural entities who were granted loans by banks or other financial institutions, bought something through leasing, were insured against payment risk or are subscribed users of the mobile or national telecommunication companies.

The Credit Information Bureau began its existence on August 16<sup>th</sup> 2004 and at present manages positive and negative data received from banks or non-banking institutions.

The activity of the CIB refers to:

- Collecting/processing data regarding the clients- natural entities portfolio of the participants;
- Information/analyses offered to the participants so that they can:
  - Identify and estimate the credit risk;
  - Increase the credits quality;
  - Diminishing the fraud risk and protecting the granters;
- Establishing the scoring criteria;
- Financial and banking counselling;
- Confidentiality;
- Impartiality and correctness;
- Efficiency.

The CIB system develops in three phases:

*In the first phase*, begun in 16<sup>th</sup> 2004, the participants submit, daily, in electronic format, information on:

- ✓ Debtors whose payments are overdue more than 30 days
- ✓ Fraudsters – persons who committed a banking fraud
- ✓ Inaccurate or incomplete application forms

During *the second phase* of the system development, the so called “positive phase”, operational from July 11<sup>th</sup> 2005, the information received from the institutions mentioned above, on all crediting and insurance instruments for natural persons will be processed.

The CIB, through CREDIT – IT system, forwards the information to the participants, on-line, when the information is required. The information is sent within seconds in form of the Credit Report. Also, the CIB forwards at

request, once a year, the registered entities, information that comprises the name of the participant(s) where the registered entities have payment that are overdue.

*The third phase* is dedicated to developing the scoring, a product that will offer a synthetical image of the debtor, making the crediting decision easier. The calendar of this phase hasn't been established yet. The CIB is an efficient and secure source of information for the participants. This information adds to that the participants have from own sources or other external ones in order to decide whether to start or not a financial relationship with the person.

Similar institutions have proved their efficiency in many countries all over the world. Statistics prove that credit bureaus facilitate access to loans and also helps to reducing payment overdue in the financial and banking system.

### **3. Conclusion**

As a result of the activity of those structures, the expanding crediting process in the Romanian economy hasn't affected the quality of the loans portfolio, the insecure and overdue loans remaining constant.

Although the measures taken by the National Bank of Romania may be considered as 'drastical', they led to cleaning the loans portfolio, to granting performant loans and, the most important, to forming a banking culture.

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# EXIMBANK WITHIN THE SLOVAK EXPORT-PROMOTING SYSTEM

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## **Abstract**

*To expand foreign-trade relations and exports in particular states developed integrated national systems of export promotion. States – either in co-operation or without co-operation with the private sector – create organizations focused on the functional support to exporting companies (incl. information, advertising and education) and separately organizations for the financial promotion of exports, so called Export Credit Agencies. The Export-Import Bank of the Slovak Republic (Eximbank), representing the latter type of these specialized institutions, offers to the Slovak exporters a wide range of export-financing and insurance products. The article deals with the place of the Eximbank within the Slovak export-promoting system and provides an overview of offered products and the bank's activities in 2004.*

**Keywords:** *export promotion, financial instruments*

## 1. Introduction

While executing foreign-trade operations, exporting companies have to face a wide range of political, commercial and other risks. In response, a large number of states have established a national export-promoting system in order to eliminate or at least minimize these risks. Financial and informational promotion is a key element of these systems.

The establishment of first export-promoting policies is usually dated to the beginning of the 20<sup>th</sup> century.<sup>[1]</sup> This was closely connected with the creation of Export Credit Agencies (ECAs) that constitute up to this day the basis of the national systems of export promotion. At the end of the 19<sup>th</sup> century was the international exchange of goods realized through cash payments or through bills of exchange. Taking into account the political and commercial risks, the only considerable risk was that one of the purchaser's failure to pay. The political stability of the contemporary international environment resulting from the balance of powers significantly contributed to the development of the international trade at the end of the 19<sup>th</sup> century. The World War I represented – as any other military conflict – an enormous source of risks for exporting companies and for economic stability in general. The Great War led to the increase of disbelief among commercial partners, which together with the abolishment of the gold standard resulted in a breakdown of the international exchange of goods.

The economic development after the World War I directly supported the ideas of increasing state interventionism in the area of economic policy.<sup>[2]</sup> In relation to export-promoting policies this led to the establishment of ECAs with the objective to cover the risks resulting from the international exchange of goods and services. The need for such institutions appeared for the first time in states whose economies were characterized by a high dependence on international trade. One of the most important moments was the rising awareness of the linkage between exports (or foreign trade) and the domestic economy.

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<sup>[1]</sup> *Engelhard, J. E.*, Exportförderung: Exportentscheidungsprozesse und Exporterfolg, Gabler Verlag, Wiesbaden, 1992, p.20

<sup>[2]</sup> *Kubišta, V., Dvořák, P.*, Postavení a formy proexportní politiky ve světě a v České republice, *Acta oeconomica pragensia*, 1999, No. 1, pp. 99-132

### Box 1: Main Establishment Waves of ECAs

Phase	Term	Description
1 <sup>st</sup> wave	1918 – end of the 1920s	Establishment of first ECAs in developed industrial countries, which were prevalingly dependent on foreign trade, (e.g. Great Britain – 1919, Belgium – 1921, Germany – 1926, etc.) as a direct consequence of the World War I.
2 <sup>nd</sup> wave	The 1930s	In the aftermath of the 1930s Depression were ECAs founded in other developed economies (e.g., Japan – 1930, Sweden – 1933, USA and Switzerland – 1934, etc.). Export promotion philosophy of this period can be perceived as a result of the prevailing tendency towards state interventionism and protectionism.
3 <sup>rd</sup> wave	After 1945	This period after the end of the World War II is characterized by a dramatic expansion of ECAs. Their establishment was motivated by the necessity to promote the overall reconstruction of by war-destroyed Europe inter alia through mutual trade exchange. The economies of the increasingly liberalizing world started to benefit again from international trade as a source of economic growth.
4 <sup>th</sup> wave	From the beginning of the 1990s	Establishment of specialized institutions for export promotion in the countries of Central and Eastern Europe as a consequence of economic transformation. The main incentive behind was the effort to enable the exporting companies to act in at least comparable conditions as enjoy competing businesses abroad.

*Source: author*

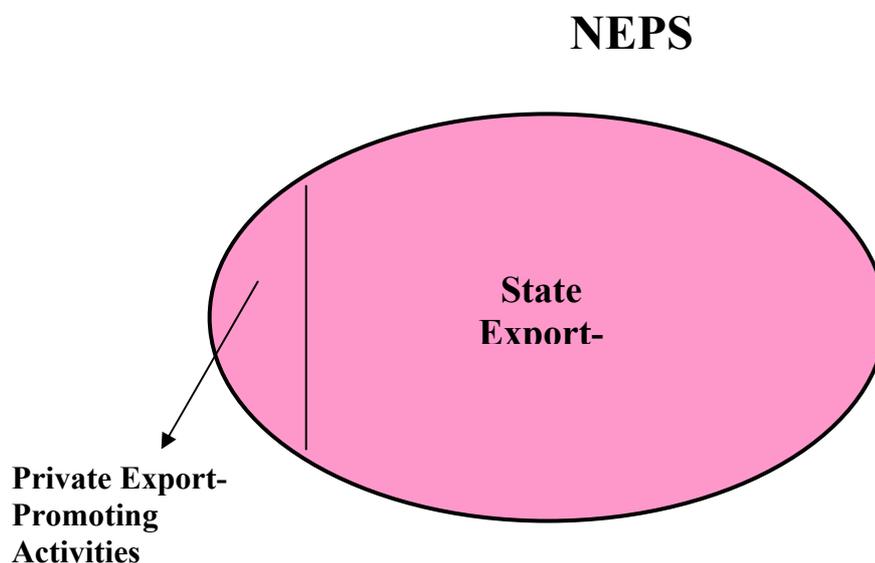
A positive impact on economic performance and employment provided theoretical and practical arguments that allowed the creation of national systems of export promotion. Britain's Export Credit Guarantee Department founded in 1919 in order to provide the companies exporting to risky East-European markets with short-term cash advance was the first in the long line of ECAs in public, private or combined ownership that were established almost in all states in the course of the 20<sup>th</sup> century. The whole history of national systems of export promotion could be characterized

through four major stages in the context of the 20<sup>th</sup> century's main political and economic events as it is described in *Box 1*.

## 2. National System of Export Promotion and Export-Promoting Policy

As we have already indicated, the above-mentioned development lead to the establishment of specialized institutional structures focused on the promotion of exports. State and private activities export-promoting activities together form in every state the national export-promoting system (see Figure 1). Thus it can be defined as a complex of institutions, activities, instruments and measures established and applied with the aim to increase exports.

**Figure 1: National Export-Promoting System (NEPS)**



*Source: author*

State activities are within the NEPS defined through the Export-Promoting Policy. It is possible to state in this regard, that every NEPS is a highly unique complex with particular parameters in every country. This special combination of its characteristics is a reflection of a unique economic

and political development in the particular state, its general economic development, economic structure and level of participation in the international division of labour. A distinctive impact has the development level of the private banking and insurance sector, which provides exporting companies with necessary financial services. Its strength usually defines its share within the NEPS. In a country with a weak or underdeveloped financial system it is the state that has to overtake the responsibility for providing these services to the exporting companies. Thus in many countries, including those in Central Europe, the export-promoting policy constitutes the dominant part of the NESP.

But the critical question always is, what actually the export-promoting policy is and how should it be defined. To give an answer we have to begin from a different point. From the viewpoint of the economic theory, all foreign trade theories are consistent in declaring the impacts of the international exchange of goods and services for contributing to the economic growth and welfare. Concerning the active participation of an economy in the international division of labour, certain differences could be observed. While the clear liberal theory is based on the strict application of the laissez-faire principle, other theories accept or even enforce state interventions. Meant are the first of all Keynesian or neo-Keynesian theories and also some neo-liberal theories (e.g., the Theory of the Social Market Economy) that were developed in the 1930s and after 1945. Efforts to succeed on foreign markets request co-ordination of many areas of the economic life. Economic policy is then called to create such strategies and economic conditions that would allow the achievement of a sufficient competitive advantage of the domestic production and its persistent or at least long-term tenability.

The level of economic development and differences in comparative advantages between economies determine the initial position of the national economy in the process of participation in the international division of labour. Modern (export oriented) economic policy is aimed at creating a competitive advantage by means of structural changes in favour of the most promising sectors. The nature of the process of creation of a competitive advantage allows the execution of such development strategies that do not need to be derived from areas in which the economy enjoys, or enjoyed, internal comparative advantages. The promotion of economic development and creation of an optimal economic environment with emphasis on its long-term tenability and competitiveness are also subsequently projected to the areas of the foreign trade policy and of the results in foreign trade.<sup>[3]</sup> Furthermore, the state has the opportunity to affect the success of its

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<sup>[3]</sup> *Baláž, P. et al., Medzinárodné podnikanie, Sprint, Bratislava, 1997, p. 261*

domestic legal entities in the competition with foreign rivals. Additional support can in particular emanate from measures implemented within the fiscal, monetary and financial, social or foreign policies.

Foreign-trade policy, as a part of the economic policy, represents a complex of principles and appropriate means through which the state centrally, directly, wittingly affects the stimulation or weakening of certain development tendencies in the foreign trade.<sup>[4]</sup> The application of the foreign-trade policy means and measures leads essentially to the regulation of import or to an increase of the volume of exported goods and services. If the result of the application of such means leads to a growth of export performance or to creation of more favourable conditions for realization of the domestic production on foreign markets, we speak about the export-promoting policy. The policy means that are used for this purpose are called active means of the foreign-trade policy.

Concerning the mutual relation of the export-promoting policy and the foreign-trade policy it is necessary to notice that while the foreign-trade policy affects both the development of the export and import sides of the foreign trade, the export-promoting policy is focused only on positive affection of export. However, by achieving this objective, the export-promoting policy uses not only the instruments of the trade policy but also a number of political instruments, means and measures that wittingly, directly and also indirectly lead to an increase of the volume of exported goods and services.

If all the measures that directly or potentially lead to a growth of the volume of exported goods (and services) should be understood as instruments of the export-promoting policy, it is clear that the traditional approach to the policy is widely exceeded. Export performance could be stimulated through a wide scale of policies, from which, for example, monetary policy, industrial policy, structural policy, regional policy, educational policy, state policy on the field of research and development, etc. can be considered as the most important. Traditional export policy realized by means of fiscal (subsidies), financial, informational and promotional instruments could be then understood as a consequent and necessary form of export promotion.

From the number of possibilities how to categorize the means and instruments of the export-promoting policy we can mention the most usual one – the division of all relevant instrument into:

- Financial
- Functional

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<sup>[4]</sup> *Lipková, L.*, Medzinárodné hospodárske vzťahy, Sprint, Bratislava, 2000, p. 95

Financial instruments usually include export financing instruments (export credits incl. refinancing credits) and insurance instruments (export credit insurance against risks in foreign trade, reinsurance and sometimes also state guarantees). States (when speaking about the official export promotion) establish either one or two (or even more) specialized financial institutions to offer these services. i.e. we can find one institution covering both financing and insurance services within the NEPS or two different institutions covering these two types of financial instruments separately.

Due to the relatively strong regulation of export promotion in form of financial instruments through international agreements (e.g., GATT, Consensus OECD, etc.), informational and promotional support – or the functional services – to exporters enjoys an increasing degree of importance. At the same time an increasing involvement of the state – through a network of official commercial representations – could be observed, too. Economic diplomacy (sometimes also called commercial or trade diplomacy, diplomacy in the marketplace, etc.<sup>[5]</sup>) represents, as an organic and inseparable element of the whole diplomatic activity of the state, a specific performance of relevant national institutions for international commercial relations and their representatives in relation to foreign subjects and is aimed at the realization of objectives and tasks of the official foreign-trade policy.<sup>[6]</sup> Since export promotion belongs to traditional objectives of the foreign-trade policy, economic diplomacy is according to the above-mentioned definition an important instrument of the export-promoting policy.<sup>[7]</sup>

### 3. Slovak National System of Export-Promotion

The system of export promotion in the Slovak Republic is a direct successor of the former federal system of export promotion that was established at the beginning of the 1990s in Czechoslovakia. The process of economic transformation towards a market economy was accompanied by the establishment of an institutional framework with the objective to execute the tasks of the state export-promoting policy. In charge of the issues related to foreign trade was the Federal Ministry of Foreign Trade that co-ordinated activities falling under economic diplomacy. In order to provide exporting companies with advanced financing possibilities, the Export Guarantee and

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<sup>[5]</sup> *Knapik, P.*, Hospodárska diplomacia alebo ekonomický rozmer diplomacie, Ekonomický časopis 48, 2000, No. 2, pp. 228-242

<sup>[6]</sup> *Tóth, L.*, Protokol a etiketa v diplomacii a obchode, THB, Bratislava, 1994, p. 9

<sup>[7]</sup> For more on Economic Diplomacy see e.g. *Rusiňák, P.*, Klasická verzus hospodárska diplomacia. In. Hospodárska diplomacia v 21. storočí. Bratislava: Ekonóm 2005, pp. 124-130

Insurance Company was founded. This institution was focused on export credit insurance against territorial and commercial risks. After the establishment of two independent successors in 1993 this company remained in the ownership of the Czech Republic and a new company was immediately founded in Slovakia – the Slovak Export Credit Insurance Company (SPE).

Great attention was given to foreign trade issues during the following years. Foreign trade policy of the newly independent state counted from beginning with a developed institutional framework for the promotion of the expansion to foreign markets. Ministry of Economy that was and still is in charge of foreign trade affairs in the Slovak Republic established a network of Trade and Economic Departments at diplomatic missions. In 1996 was the Foreign Trade Promotion Fund (FPZO) established with the objective to make the export promotion more effective with its linkage to business circles. The Fund was funded both from the state budget and from contributions of exporting companies. A parallel network of official commercial representations was created under its guidance. The idea behind was the application of solidarity principle among exporting companies when big exporters helped to promote internationalisation of small companies. Fund's sources were used mainly for activities that required higher costs at once.

In 1997 started its activities the Export-Import Bank of the Slovak Republic replacing the former SPE. It seemed then that the export-promoting policy as a part of the state's foreign-trade policy has the appropriate institutional framework for the realization of its extensive objectives. Although limited through the shortage of resources that characterizes all economies in transition, the export-promoting policy enjoyed the free space without any significant regulation, e.g. from Brussels. Unfortunately, it has come again to some systemic changes. From 1999 to 2002 were priorities in the area of export promotion set by the "Complex Programme of Export Promotion" adopted by the government in 1999.<sup>[8]</sup> Main activities were divided into three areas of financial, monetary and price policies, regional policy and of institutional organization with annual actualisation with reference to the development of foreign trade.

The Programme counted with the establishment of a new agency that would cover both areas of export and investment promotion. In consequence, the Slovak Investment and Trade Development Agency (SARIO) was founded and the activities of the Fund were damped at the same time starting

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<sup>[8]</sup> Government of the Slovak Republic, Government Decree No. 499/1999

with the dissolution of its representation network abroad.<sup>[9]</sup> This represented a serious weakening of the existing informational and promotional system, as economic departments at diplomatic missions consisted in the majority of cases of one diplomat and the new agency was established without any institutional network abroad. This problem was formally eliminated in the following years after the heads of Trade and Economic Departments were appointed as representatives of SARIO, but the network of official commercial representations remained understaffed. The lack of budgetary resources became the strongest argument against any major personal consolidation of the official representation network and the few cases were in general compensated by the termination of diplomatic missions in some territories. In comparison with extensive plans of the Complex Programme 1999-2002 it might seem to be an at least contradictory decision.

The Complex Programme of Export Promotion was in the time of its implementation more than a simple export promotion “action plan”. As implies the above-mentioned scope of main activities, its expected impact was considerably wider. It also included activities in the areas of foreign investment promotion and tourism, which naturally exceed the export-promoting policy. Despite their indisputable impact on balance of payments, their inclusion into one partial economic policy makes this harder to manage and thereby less effective. The need to coordinate the development of all economic sectors related to international exchange of goods and services prevailed over the necessity to define the export-promoting policy in a way that would allow its effective management. The development after parliamentary elections in 2002 led to a less extensive definition of the export-promoting policy, but the previous merger of export- and investment-promoting systems resulted in favour of the latter with the decision to put a higher priority on the attraction of foreign direct investments.

#### **4. Eximbank within the Slovak NEPS**

The Export-Import Bank of the Slovak Republic (Eximbank) is a part of the state system of pro-export policy. Pursuant to Act No 80/1977 Coll. on the Export-Import Bank of the Slovak Republic it is charged with supporting the export and import activities of domestic importers and exporters by financing export credit, insurance of export credit with the aim of supporting the growth of foreign trade and increasing the competitiveness of domestic

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[9] For more on SARIO see e.g. *Grešš, M.*, SARIO. In: Almanach 2002. Bratislava: Ekonóm 2003, pp. 18-25

products. It means that Eximbank is a type of specialized institution that covers both main areas of financial export promotion – export financing (or banking) and insurance services – under one roof. Performance of the Slovak export support function means that as regards the activity of Eximbank the primary criterion is not profit maximization, but the maximum volume of supported export with the concurrent ensuring of a return of funds by minimizing risks resulting from credit, financial and insurance activities.

Eximbank in its activity fully respects rules of the OECD Consensus, concerning state-supported export credits, and complies with the principles of the World Trade Organization. It complies with the rules ensuing to Slovakia from its membership in the EU and participates in the preparation of regulatory rules. It also respects regulations focused on evaluating the impact of the supported export on the environment in the importer's country, as well as directives related to the fight against corruption.

The role of the Eximbank includes as follows:

**A. Banking Activities**

- Refinancing Loans

- current interest rate 5.0% p.a. (+max. 3% p.a. margin from a commercial bank)
- maximum 1 year repayment schedule

- Direct Loans

- Bill of exchange and promissory note-based loans
- Discounting of exporters short-term accounts receivable
- Guarantees and bonds

- contract bonds
- counter guarantees
- payment guarantees

- **Support of Small and Medium Enterprises (SME's)**

- Bill of Exchange and promissory note based loans for the support of SME's

- lower interest rates (5.0% +max. 3% a commercial bank margin)
- bill of exchange based loans up to 1 mil. USD for a period not exceeding 12 months
- for a short term loan of 3-6 months it is possible to finance a specific contract up to the limit on the receivable for that contract

- Discounting of exporters short-term accounts receivable
  - minimum value of the discounted receivables is 10 000 USD
  - repayment period is 30 to 180 days

### **B. Insurance products**

- Insurance of short term export credits
  - against commercial risk
  - against political risk
  - against combined risk
  - insurance of production risk
- Insurance of export guarantees
- Insurance of a confirmed irrevocable export documentary letter of credit
- Insurance of medium and long term export credits
  - insurance of suppliers credit against political and commercial risk
  - insurance of buyers credit against political and commercial risk
  - insurance of production risk
- Insurance of the foreign investments of Slovak legal entities abroad

## **5. Eximbank in 2004**

Eximbank in 2004, through its banking and insurance activities, supported exports worth 66.9 billion SKK, where this figure exceeded budgeted expectations (60.5 billion SKK) by 10.62%.<sup>[10]</sup> Banking activities contributed to this volume in the amount of SKK 48.2 billion, where the figure for insurance activities was 18.7 billion SKK. In comparison with 2003, export support for Slovak businesses by Eximbank grew by 12.3 billion SKK (22.51%). According to preliminary data from the Statistics Office of the SR, Eximbank supported 7.5% of the total export of the Slovak Republic. Eximbank's priority in 2004 was again to endeavor to provide a maximum volume of export support, with a concurrent improvement in the efficiency of its own operation.

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<sup>[10]</sup> Annual Report 2004. Bratislava: Eximbanka SR 2005.

Direct financing of clients of Eximbank accounted, as at 31.12.2004, for SKK 454 776 thousand, and comprised discount loans to clients. Besides credit activities, Eximbank supported exports also by means of guarantees issued, achieving at the end of 2004 the level of SKK 2 106 227 thousand. Against the preceding year this figure represents an increase of SKK 1 081 838 thousand (105.61%), which was connected with the replacement of a part of discount loans by guarantees issued.

In 2004 Eximbank operated primarily on its own funds, which according to the Act on Eximbank comprise registered capital, funds and retained profit, totaling 4 588 275 SKK thousand, and entrusted funds in the amount of 1 694 236 000 SKK. Compared to 2003 the volume of own funds grew by 2 106 000 SKK, the balance of entrusted funds did not change. Likewise as in 2003, in 2004 Eximbank again succeeded in acquiring external funds on the money market, the balance of which at the end of the year reached 268 901 000 SKK. These resources were used exclusively for financing export-supporting loans.

**Table 1: Overview of Eximbank's Selected Indicators**

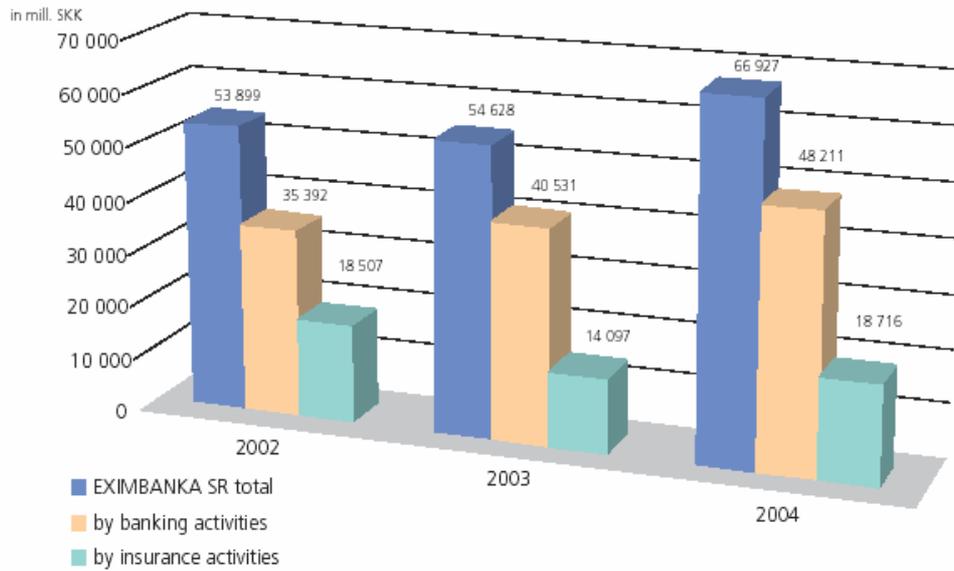
	2002	2003	2004	Index 2003/2002	Index 2004/2003
Export supported by EXIMBANKA SR (in mill. SKK)	53 899	54 628	66 881	101,3	122,4
of which: – by banking activities	35 392	40 531	48 211	114,5	118,9
– by insurance activities	18 507	14 097	18 716	76,2	132,8
Registered capital (in mill. SKK)	3 000	3 000	3 000	100,0	100,0
Balance value (in mill. SKK)	7 920	7 187	7 368	90,7	102,5
Total volume of credit in nominal value * (in mill. SKK)	4 470	5 735	5 402	128,3	94,2
Total volume of guarantees issued (in mill. SKK)	1 612	1 024	2 106	63,5	205,7
Level of insurance risk underwritten by EXIMBANKA SR (in mill. SKK)	11 290	11 664	13 906	103,3	119,9
Number of employees	104	88	80	84,6	90,9
General operating costs (in mill. SKK)	142	124	115	87,3	92,7
Profit after taxation (in mill. SKK)	138	96	50	69,6	52,1
Capital adequacy (in %)	97,78	167,65	124,97	171,5	74,5

*Source: Eximbank's Annual Report 2004*

In 2004 Eximbank supported exports worth 67 billion SKK, representing a 22.51% increase on 2003 through its banking and insurance activities. This value comprised export support via banking operations in the volume of 48 billion SKK (an increase of 18.95%) and insurance activities in the volume of 19 billion SKK (an increase of 32.77%).

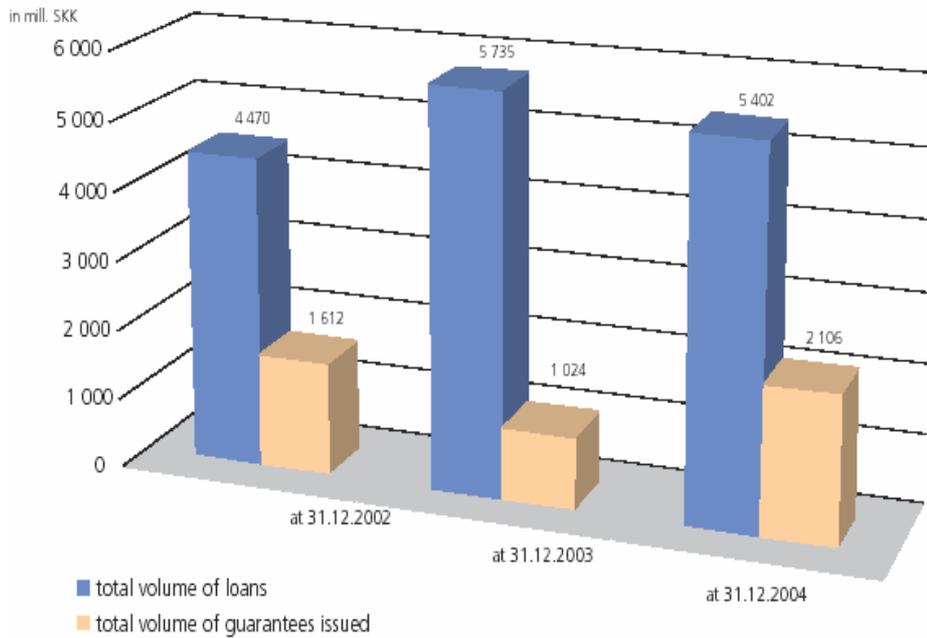
The total volume of credit activities as at the end of 2004 reached 5 402 million SKK, which represents a decrease of 333 million SKK on 2003, i.e. 5.8%. A fall in the total volume of loans was connected mainly with a decline in the balance of discount credit to clients, when a part of discount credit was replaced by guarantees issued. The total volume of guarantees issued to clients as at 31.12.2004 was 2 106 million SKK, representing a year-on-year increase of 1 082 000 SKK, i.e. of 105.61%.

**Figure 2: Export Supported by the Eximbank in 2002-2004 (in mil. SKK)**



Source: Eximbank's Annual Report 2004

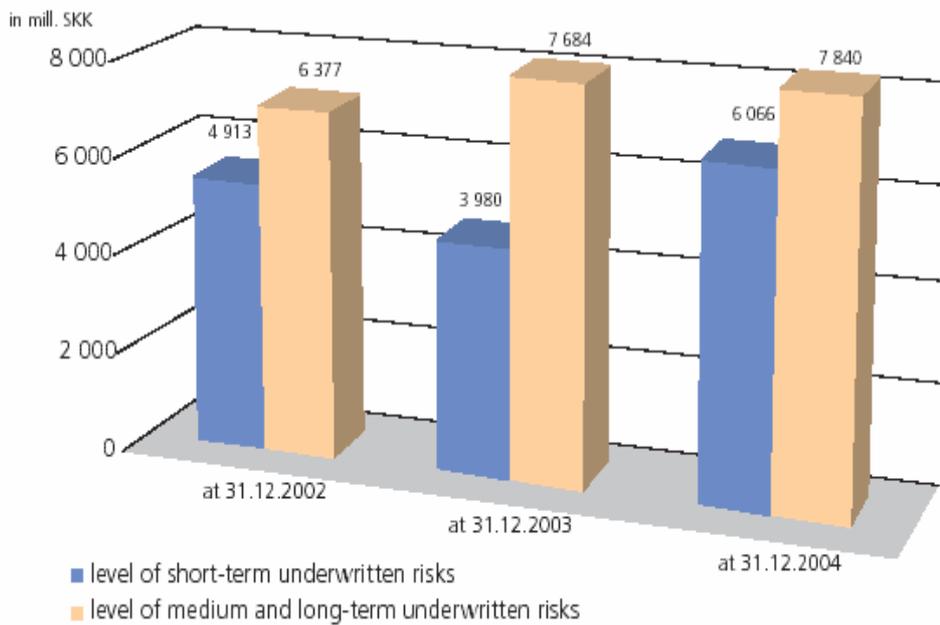
**Figure 3: Total value of credits and guarantees granted in 2002-2004**



*Source: Eximbank's Annual Report 2004*

The total amount of short-term underwritten risks at the end of 2004 totaled 6 066 million SKK. This is a 2 086 million SKK growth on 2003, i.e. an increase of 52.41%. The share of underwritten risks in the insurance of medium and long-term risks represented 7 840 million SKK, which is a year-on-year increase of 156 million SKK, i.e. an increase of 2.03%.

**Figure 4: Underwritten risks 2002-2004**



Source: Eximbank's Annual Report 2004

In looking at the results for the past year it may be said that the year 2004 saw further development in the field of banking products supporting Slovak exports. The amendment to the Act on Eximbank allowed a more flexible adaptation of the Bank's products to market conditions, in particular where this concerns the especially price of financing made more advantageous and the regulation of credit and guarantee conditions. The SR's membership in world economic groupings created opportunity for cooperation with foreign credit and insurance agencies (ECAs), as well as the acceptance of the institution on some foreign financial and capital markets.

The main product, with a continually growing trend in 2004, continued to be refinancing loans. Favorable development was recorded not only in the case of corporate clients, but also in the SME segment, in the provision of discount loans, in the field of approved and provided guarantees, where guarantees are from the long-term aspect becoming a core product of Eximbank. As regards loan products, Eximbank focused mostly on refinancing loans, i.e. short-term refinancing of operating capital of up to one year, transacted via commercial banks by means of a tripartite contractual credit agreement between the client, the commercial bank and Eximbank. By means of discount loans we supported exports worth 2 572 million SKK of which approx. 400 million was formed by the SME segment by way of

repurchasing receivables. Export support by insurance activities of Eximbank in 2004 amounted to 18.7 billion SKK, of which 93% represents export support from insuring marketable risk and 7% from insuring non-marketable risk. In 2004 the Eximbank insured export credits to 52 countries.

## 6. Conclusion

The Eximbank showed in 2004 the ability to adapt to new circumstances related to the accession of the Slovak Republic to the EU and also to the trends and requirements of the business sector. For the closest future, further capital strengthening is necessary. This can enable the Eximbank to reach the desired level of supported exports, what is in our opinion necessary especially with regard to the small and middle enterprises sector. Another proposal for the future activities of the Slovak Eximbank might be the establishment of consulting services as one of the major activities alongside the banking and insurance services to exporters. Unfortunately, this kind of services are suppressed in the competent institution – SARIO – as this is focusing almost completely on investment promotion and attracting foreign direct investments and thus there is no complex package of services for exporting companies. Eximbank, with its competence in financial services and having the analytical basis anyway, might then cross over to the functional export promotion.

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*Financial systems  
and markets*

# THE OBJECTIVITY OF INTEGRATING THE REGULATION AND SUPERVISION OF FINANCIAL MARKETS AND THE POSSIBILITIES OF ITS PRACTICAL IMPLEMENTATION<sup>1</sup>

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## **Abstract**

*The development of financial markets is to an increasing extent currently characterized by their interior and exterior integration, internationalization, evolution of a number of new highly sophisticated financial instruments, especially in the segment of financial derivatives, increasing securitization and creation of very complex international financial structures and financial flows within their framework. At the same time the necessity of restoring free market competition, growing volatility of monetary and financial quantities, institutionalization and intellectualization is more and more intensively discussed. Understandably, both regulation and supervision of the markets have to adapt to these objectively existing trends, including the growing call for increasing the efficiency of all activities. The integration of relations and processes carried out in financial markets requires a similar integration of relations and processes in the sphere of their regulation and supervision. However, there are a number of features of "lower level objectivity" or specific subjectivity and other characteristics functioning in this sphere which modify the implementation of the above mentioned trend, both in terms of depth and width of its intention and especially in terms of its concrete shape. The level of accepted specifics should never impair the very substance of the integration trend. That is the problem dealt with in the presented contribution.*

**Keywords:** *Financial markets; Integration tendency; Regulation and supervision; Specifics of integration of regulation and supervision*

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<sup>1</sup> The contribution has been made within the grant project: "Theoretical and methodological bases for the analyses of the systems of regulation and supervision of financial markets", for which the author has got a grant from the Grant Agency of the Czech Republic.

## 1. Introduction

Recent research in the field of regulation and supervision of the financial market is aimed at finding and defining theoretical and methodological bases for analysing existing systems and basic relations between the development stage of this market and corresponding system of regulation and supervision, so as to ensure the optimum and efficient range of these activities while respecting acceptable costs, and lastly to define quality and quantity criteria for efficient operating of the systems of regulation and supervision of the financial market, and to define theoretically the optimum organizational structure of the systems using the above mentioned criteria.

It is necessary for the effort and the possibility of their realization to be based and consequently elaborated respecting deep and valid knowledge of objectively working trends, which objectively define the content and scale of relations and processes, subjects and objects which should exist and work in this sphere, but also their form and ways of their realisation and selfrealisation. It is essential, in accordance with these efforts, chosen starting points and model forms of relations, processes, subjects and objects created on their base, to compare their identity with or differences from the forms of their real, practical and mainly subjective application. The possibility of such comparison and the level of its application is of course directly connected with the level of the knowledge of reality, with the feasibility of settled objectives and last but not least with the possibility of suggesting changes within the existing form and, in case of consensus with their principle and form, of their subsequent realization. Regarding the enormous complexity, relevance and expensiveness of everything hapenning in the mentioned sphere it is very difficult to come to such consensus and therefore it is essential to pursue with maximum prudence and coordination all partial steps which must unconditionally be taken to achieve more complex solutions. Activities such as the “Big Bang” are possible only exceptionally and such operations are mostly both factually difficult and time demanding. The factual, in complex meaning, and time demands are significantly increasing at present and characterised by globalization, internationalization, integration, intellectualization, institutionalization and who knows what else. Existing dimensions are becoming almost automatically totally different, and misunderstanding or even neglect of the fact is, in my opinion, unacceptable and could result in serious problems.

Another partial issue, though in my opinion a very relevant one, to be solved today within the studied area is the issue, or better to say the problem

of integration of the regulation and supervision of the financial market, maybe better to say markets. Objective changes in market economies unconditionally necessitate corresponding changes in the system of regulation and supervision of financial markets. Such changes have already been implemented in a lot of countries with more advanced financial markets than those in the Czech Republic, and here I mean especially EU member countries. In our country such changes are in preparation. It is impossible not to point out that it is the preparation, namely a significant change of its course and results which took place a few weeks ago, that made me accelerate the elaboration of my views on it. I am convinced that it is not positive change, but on the contrary that there are a lot of risks which can have negative impacts. The effort to avoid them or at least to explain them is thus one of basic reasons why I have prepared this contribution.

## **2. Systems of regulation and supervision and efforts of their optimization**

The contribution dealing with the issue of integration of the regulation and supervision of financial markets cannot be complete without at least a very brief remark<sup>2</sup> concerning its systems, their classification, main types and the effort to optimize them and thus ensure the most efficient meeting of their basic objectives and tasks.

The existing development of the regulation and supervision is connected with a vast set of specific systems, proving a lot of differences and diversities. The differences reflect the functioning of a lot of factors, e.g. different historical development in individual countries, different structures of financial systems, different political systems and their traditions and last but not least the size of areas of individual countries and that of their financial sectors. Besides the above mentioned differences, different systems have as well a lot of identical and general characteristics, e.g. the basic objective of regulation and supervision, which can be understood as the preservation of the integrity of the financial market, namely the protection of investors, in its concrete forms, together with retaining its maximum functionality and efficiency.

However, the individual systems differ in many specific items, especially in what they regulate, whether they regulate subjects acting in certain subsegments of the financial market, or the subjects activities in the same or different subsegments, what is the extent and depth of the regulation and

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<sup>2</sup> V. Pavlát, A. Kubiček: Regulation and Supervision of Capital Markets, pp. 12 - 40

supervision, whether the regulation and supervision are executed by one or more subjects, what are the powers of this subject or subjects, etc. Some of the mentioned items are of qualitative character, others of quantitative one, and it is also possible to encounter their combination.

### ***2.1 Classification of the systems of regulation and supervision***

The systems of regulation and supervision are partly based on legal standards approved by legislative bodies according to a proposal of an authorized subject (sometimes we meet such terms as the top regulator or the regulator of higher grade) and brought to perfection in implementing provisions issued by the regulatory body (usually called the regulator), and partly on the ways and forms of controlling activities (control, monitoring, supervision) carried out by supervision bodies, which can either make part of the regulator or be independent. Numerous classifications have been created for an easier orientation in individual systems according to specific items which constitute these systems. As an example I would like to give a classification used in the above mentioned publication.<sup>3</sup>

1. The subject of regulation – institutional or functional systems
2. The extent of regulation – universal (general, all-embracing, or so-called mega-systems) or specialized systems
3. The number of regulators of the financial sphere – systems with one or several regulators
4. The position of the regulator in the system of state institutions - centralized or decentralized systems, or a combination of both
5. The powers of the regulator – autonomous or subordinate systems
6. The democratic nature of the regulator's functioning – systems of the state regulation and supervision or systems with the elements of self-regulation of the regulated organizations or their craft associations
7. The way the regulator's activity is financed – either systems fully financed by the means of the regulated organisations or the systems fully financed by the means of the
8. national budget, or systems financed in a combined way
9. The way the regulation and supervision are exercised by the regulator – systems which use more formal and bureaucratic approach to solve the problems of regulation and supervision, or systems which lay the primary emphasis on the content (factual) side of a problem.

The above mentioned characteristics, which are intentionally given here as contradictions, however, do not occur in their absolute form in practice.

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<sup>3</sup> V. Pavlát, A. Kubiček: The Regulation and Supervision of Capital Markets, p. 13

Every concrete system of regulation and supervision is mostly a combination of individual elements while the importance of some of them is predominant. It is necessary and very difficult at the same time, while creating this real “mixture”, to keep a proper rate of combination, and that of compatible elements only. Although a generally acceptable optimal model is in practice almost unreachable, there is a theoretical possibility to create it by a combination of compatible elements. As an example we might possibly mention an autonomous functional system containing the elements of self-regulation, financed by the means of regulated subjects, which is factual, transparent and flexible, and it is necessary to add: relatively inexpensive and efficient. And it is, of course, possible to formulate quite easily an idea of the opposite to the optimal system defined that way. The created classification is an essential basis for a practical comparison of real systems existing in individual national economies, as well as for the creation of models of their further possible development. Similarly it creates the basis for the typology of these real systems and their possible future forms.

## ***2.2 Current main types of regulation and supervision of the financial market***

There are three main types of the regulation and supervision of financial markets in the contemporary world:

- a. **A mega-system**, in which the only one universal regulator of the whole financial sphere ensures the regulation and supervision of the whole financial administration realized in a given national economy. I am going to deal with this type in greater detail in the following part of my contribution because I consider it to be generally the most progressive;
- b. a system based on the existence of a **pair of regulators**, each of them being in charge of administration related to the regulation and supervision of the financial market;
- c. a system of regulation and supervision which is carried out by **one or more specialized regulators**.

As an example of the first type it is possible to mention the systems introduced quite recently in Great Britain, the Federal Republic Germany and Austria, which in my opinion represent one of the best possible forms

of a reaction to the trends in the development of financial markets; the second type, which is also called “a twin”, is currently used in Australia, and the third one exists for example in Italy, where the regulation and supervision of the capital market as a segment of the financial market is vested in one specialized institution, other segments being regulated by one or more specialized regulatory institutions.

Before any further deeper analysis of the mega-system it is necessary to say already here that it is usually internally differentiated. However, within this all-embracing system there are usually parts which fulfil the functions previously performed by independent regulatory subjects, and focused on the regulation and supervision of a certain group of institutions – banks, insurance companies, subjects of collective investing, securities dealers, etc., in an institutional system, or to certain sets of activities – securities dealing, collective investing, supplementary pension insurance, etc., in a functional system of regulation and supervision.

In the patterns used until now, the main types of systems of regulation were divided in such a way to see clearly the prevailing trend of development leading to uniting separate systems of regulation and supervision of individual segments of the financial market into a sole, universal and all-embracing entity – a mega-system or, in other words, **an integrated homogenous system**. However, this point of view is not only a view expressing an intention of the author, it is in the first place the necessity to emphasize the objectivity of the relationship between the development trends of the regulation and supervision, and the elementary development trend of the current financial market as a complex, internally differentiated system which moreover –with growing internationalization and globalization – will in future undoubtedly head for even more complex forms and ways of integration of the regulation and supervision of financial markets.

### ***2.3 Optimization of regulation and supervision of financial markets and its possible methods***

In any period of the current as well as the future development of the financial market, the views on the level and range of regulation differ considerably. The only thing they have in common is that the regulation has never been optimal. According to the views you may encounter on the level of individual subjects of the financial market, it is usually too severe and costly, not efficient enough, even unnecessary, etc. Under certain conditions

of the financial market situation, such assessment and the like can be agreed upon even by those subjects that under different conditions have different views resulting from their different interests. Such situation is usually called overregulation, which is mostly a considerable simplification. Under different conditions that can be associated, in a simplified way, with another stage of the business cycle and its usual excesses aimed at maintaining the so far achieved profit rate, the same subjects can consider the regulation too low, toothless, rigid, unable to predict future development, etc. but again too expensive and not efficient enough. This state is usually called, in a very simplified way, under regulation. Besides those two extremes there is also a third state, in my opinion more frequent, in which the views on regulation and supervision differ according to the interests of individual groups of subjects operating on financial markets represented by investors on the one hand and financial services provided.

The above mentioned facts and a whole range of other opinions result, both in theory and practice, in a permanent effort to optimize the regulation. Generally, it can be stated that this effort is carried out mostly in two levels, first in understanding the substance of optimization and its defining and consequently in realization of the defined. In any case, the third level of this effort, the level of permanent improvement of the result achieved in the previous two levels, cannot be neglected.

As far as the understanding or definition of an optimum system of regulation and supervision of the financial market is concerned, this issue was mentioned, though very briefly, in subchapter **2.1**, so now I am going to be more specific about the above mentioned and to show some possible ways how to achieve the required.

First, let us raise the question what is "required" of financial markets regulation and supervision. Because I neither can nor want to deal with all the pleiad of possible answers and their analysis and assessment now, I will help myself out of it by something more or less agreed upon by the majority of theorists and practitioners, by an example of the definition of the role and objectives of the Securities Commission in Article 2 Section 2 of the Act no.15/1998 of the Collection of Laws, as amended: "The role of the Commission is to strengthen investors' and issuers' confidence in the capital market. The objective of the Commission is to contribute to the protection of investors and the development of the capital market and to support education in this area." We may encounter similar definitions, some brief, others florid, not only in legislation but also in numerous publications of various nature published almost anywhere in the world in the past, at present and, undoubtedly, in the future, too. At the International Conference on

Regulation and Supervision, organized by VSFS in 2003, I defined the basic objective of the regulation and supervision as follows: "maintenance and further development of a fully functioning financial market, namely in all its particular forms and shapes, to enable it to fulfill its basic purpose . . ." <sup>4</sup> At the same time, it is necessary to emphasize that besides these basic, general, irrefutable, strategic objectives it is always necessary to define also the objectives and tasks concerning the changes in the financial system which took place in the past or are showing in outline as probable trends of development. In a modern dynamically developing economy, regulation and supervision must not lag behind the dynamism of financial markets development bringing new problems all the time, whose positive solution - in favour of investors - the existing regulation and supervision should contribute to.

If we consider an optimum system of regulation and supervision, then these considerations must unambiguously result in the premise of its **maximum flexibility**, which would not only secure a fast reaction to current problems by means of repressive measures (negative regulation) but also anticipate potential negative situations and apply the complex of its preventive measures in advance (positive regulation). Unfortunately, most of the currently used systems of regulation and supervision meet the prerequisite of flexibility and combination of suppression and prevention only partially.

When solving the optimization of the system of regulation and supervision, it is impossible to avoid the problem of efficiency of the institutions running the system. The efficiency of the whole system cannot depend on an optimum combination of its compatible elements only. As far as the costs are concerned, changes in the system are mostly connected with relatively high, but more or less nonrecurring costs, whereas the operation of executive bodies of regulation and supervision claims permanent supply of financial means. From this point of view, it is very important to define a set of materialized quantitative as well as qualitative indicators of results (positive or even negative) achieved by these bodies and compare them with the costs incurred. The procession of such a set of indicators is unfortunately still nascent and any complex agreement does not seem impending. There are still such extreme views as "the most effective regulation is no regulation at all". The elaboration of these issues will be the objective of our research team in the near future.

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<sup>4</sup> In: Regulation and supervision of financial markets. Proceedings of International Conference, VSFS, Prague, June 24 – 25, 2003, p. 28

### **3. Basic trends of the future development of financial markets and system of their regulation and supervision**

I have already mentioned some basic trends of the future development of financial markets, such as internationalisation, globalisation, integration, intellectualisation, etc. Now, I would like to deal with two concrete forms of applying those trends, and than also with the reflection of those changes in required and partly also accomplished modifications of the system of regulation and supervision.

#### ***3.1. Financial conglomerates***

The establishment of conglomerates, i.e. simply said economic subjects formed by joining units of various fields in the only one large complex, has been a momentous manifestation of trends in the economy since the last century. This phenomenon is quite new in the financial sphere mostly because the possibilities of free movement among individual segments of the financial market, at national and international scale, were until recently relatively considerably restricted due to the elements built in the existing regulatory systems. We can mention, for example, the strict separation, in force until recently in many countries, of commercial banking from securities dealing, as well as the separation of insurance activities from other fields of financial dealing. The gradual development of conglomerates, even in the financial sphere, could have occurred only at the moment of weakening of the field principle of regulation, and more generally at the moment when, as an important part of objective trends gaining ground in the field of financial market regulation, the principles of deregulation and harmonization were recognised by political will and projected into the relevant legal norms. It is also important to mention, and I will deal with this issue in greater detail in the following chapter, that this step has not been until now and cannot be very penetrative, and it is just because not everything is clear and solved down to the last detail and we do not wish for any unpleasant surprise.

Financial conglomerates are usually defined as: ‘a group of companies under common control whose exclusive or prevailing activities are based on services provision in at least two financial sectors (i.e. banking, securities, and insurance)<sup>5</sup>

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<sup>5</sup> The supervision of financial conglomerates. A report by the Tripartite Group of Banks, Securities and Insurance Regulators, July 1995, p. 13

There are not only financial conglomerates but also mixed conglomerates in the financial sphere which are mainly focused on trading or other industrial activities, but at least one regulated financial unit functioning within the framework of their overall structure must be included.

We may distinguish five types of financial conglomerates according to the form of their internal structure:

1. groups in which individual companies mutually own significant stakes in other companies within the given group
2. groups which are headed by a licensed holding group superior to other companies which are members of the group
3. groups which are headed by a non-licensed holding group superior to other members of the group
4. groups with highly integrated companies
5. groups with a different structure

The above mentioned types are, on the basis of their historical development, more or less connected with the individual national economies and, on top of that, they are regulated by legal regulations which are far from being fully compatible mostly because this is a new and not quite known issue, and various political and professional groups perceive it differently and their worries are different too. That is why these financial conglomerates regulated it with different intensity and by means of different instruments.

### **3.2 *Financial derivatives***

By financial derivatives we mean, for example for the purpose of our law of capital market dealings:

- a) options and investment instruments stipulated by this law,
- b) financial forward contracts (namely futures, forwards and swaps) concerning investment instruments stipulated by this law,
- c) difference contracts and similar instruments for the transfer of interest rate or exchange rate risks,
- d) instruments enabling transfer of credit risks,
- e) other instruments which result in the right to financial compensation, and the value of which is derived primarily from the investment securities rate, index, interest rate, exchange rate or the commodity price<sup>6</sup>.

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<sup>6</sup> Article 33 Section 3 of the Act no. 256/2004 of the Collection of Laws, dealing with business activities in capital markets

In addition to the above mentioned financial derivatives there exist a lot of others which our legislative has not accepted and our practice has not managed to term yet. They represent the most dynamically developing and at the same time, from the viewpoint of the possibility of their rational and effective regulation and supervision, also the most problematic objects of the financial market. A few weeks ago, not only me but also the members of the International Conference about the Situation on Financial Markets could listen to the opinion of one of our most erudite specialists saying that these investment instruments and insufficient regulation of trade (or maybe better quasi-trade) represent a significant threat not only for the development but even for the existence of national financial markets (an organized market with these instruments in the Czech Republic has not, luckily, come into existence yet), but also for international financial markets and not only for them. One of the most important regulation principles, in my opinion, was breached on derivatives markets, namely the ability to enter the market was offered only to such investment instruments which are by their nature transparent, clear and controllable and such is also their trading, including their content and aims.

The popularity of financial derivatives originates in the possibility to use them in two ways: on the one hand they successfully hedge securities dealings against possible risks and, on the other hand they are suitable for speculations. While the first way results in the risk reduction, which is an important factor of investor protection, the second way is connected with substantial risk increase, i.e. threat to investors, which could, together with a considerable institutionalisation growth in this segment, have fatal consequences.

Taking into consideration what has been said and the fact that not only the volume of derivatives trading but also the volatility on capital markets have considerably increased, it is quite understandable that the regulators have paid, in the last few years, a great attention to the speculative use of derivatives. Their effort – to elaborate and further develop methods of regulation and supervision of the activities of financial market institutions which deal with derivatives – is hampered by their unfinished integration at national as well as international levels, while integration and globalisation of derivatives trading is already in a more advanced stage. Since the mid 90s of the last century, it has particularly been the Committee for Technological Issues of IOSCO<sup>7</sup>, which,

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<sup>7</sup> International Organisation of Securities Commissions

in cooperation with the Basel Committee for Bank Supervision operating with the Bank for International Payments in Basel, has been dealing with the issue of regulation and supervision in the field of financial derivatives trading on financial markets.

### ***3.3 Main issues concerning regulation and supervision over financial conglomerates and business with financial derivatives***

As an attentive reader must know a number of issues of regulation and supervision have been already mentioned above, in addition to that they are mutually connected or sometimes even identical.

The key problem of regulation and supervision over financial conglomerates is the fact that these subjects represent heterogeneous group of companies with different kinds of business in individual segments of financial system. Some of these activities are subject to regulation and supervision but some not according to in which countries the companies are located.

Supervision over financial conglomerates deals with relatively wide range of phenomena and processes -the most important is examining of capital adequacy i.e. finding out if the capital of given financial conglomerate is sufficient for covering his business risk, and then a number of other specific problems as e.g. risk resulting from financial relationships inside the conglomerate, danger of so-called infection, examining of transparency of legislation and management etc. Traditional feature of supervision over performance of individual structural components is a practice where each supervisory body monitors only one type of regulated companies without sufficiently developed contacts with other regulators. This practice is not suitable and sufficient for supervision over financial conglomerates because only individual parts of the whole are being monitored and analyzed. It is almost impossible to get an overall overview on business risks concerning financial conglomerates without mutual co-ordination of activities of individual specialized regulators.

Gradual integration of regulation and supervision on national and also supranational level is, in my opinion, one of the most crucial way which is important to be followed in order to minimize if not totally eliminate consequences of this issue.

If we talk about regulation and supervision in the area of financial derivatives the cardinal problem is to define and create proper information

basis. One of the results of activities of international organizations that I have mentioned in preceding sub-section is recommendation to apply so-called minimal standard at supervision over firms doing business on supranational level, especially in such cases when the scope of transactions of regulated companies is significant. Elaborating these standards supposes initial compilation of list of items (information) that are considered to be essential for risk monitoring related to using of derivatives – loan risk, risk of liquidity, market risk connected with business of derivatives. Another step is compiling of these items into catalogue containing compact file of information being considered as a minimal standard.

The aim of supervisory bodies is to pursue a scope using of derivatives i.e. monitor volume of businesses being concluded by regulated companies and to identify trends of their use. This information must be sorted out according to individual types of derivatives i.e. for swaps, financial futures, forwards a options and simultaneously according to if it concerns stock exchange or out of stock exchange transactions i.e. to monitor the risks really connected with them. It is also important to follow if the regulated companies with shown derivatives get on doing business themselves and use them for securing their transactions. Qualitative information is information on organizational structure of regulated companies, on systems of their internal control, on their policy and practice related to measuring and managing of risks relevant to derivatives. Supervisory bodies can get this information from various reports being prepared by relevant departments of regulated companies for management of the company e.g. report on internal audit etc.

Without saying that doing business with derivatives is connected solely with financial conglomerates of supranational provenience, this connection cannot be ignored and objective requirement of integration of regulation and supervision over financial markets is being strengthened. Another significant relevant aspect is using of derivatives by subjects from all segments of financial market, wide scale of markets where transactions with them are being made and also technological integration of complex implementation of these deals beginning from supply and finished with their settlement. In my opinion, everything calls for gradual, thoughtful, multilaterally secured but urgent initiation of integration- first of all where it has not been instituted and where the reached level even requires it.

#### **4. Integration of regulation and supervision over financial markets and its Czech distinctiveness**

I have already mentioned two of three basic trends specifying development of financial market –i.e. deregulation and harmonization. I dare say some notes on this issue. Supporters of liberal conceptions that mind any regulations are quite benevolent about regulation of financial market but if they hear about integration they are usually very critical. I would like to assure them of the fact that for most theorists and practitioners of regulation of the financial market tendency for deregulation is fundamental and that integration can be understood as removing of overlap and useless requiring of unimportant information, bureaucracy and petrification of unneeded and obsolete matters but also as objectively essential step enabling deeper knowledge of substance of regulated, faster reaction to new subjects, objects, processes and relations and problems connected with this origin, higher level of accepted solutions, larger share of positive regulation and increasing its effectiveness.

As for the trend of harmonization, it is, in my opinion, the crucial one for understanding of objectiveness of integration of regulation and supervision as a form of its harmonization with objective developing trends of financial markets having been mentioned above. Integration, internationalization and globalization of financial markets requires the same level of regulation and supervision. The most important thing is that this simple relation -that is not simple from the perspective of its practical implementation, must be understood by relevant state authorities and first of all politicians and enable its realization.

##### ***4.1. Existing procedures of integration used in selected countries***

The contents of this paper cannot serve as an entire description of all existing procedures and changes in organization of regulation and supervision in individual national economies nor detailed specification of one of those. It would be beyond capabilities of this conference as well. Therefore I refer my readers to relevant parts of publication<sup>8</sup> having been issued before and draw our attention to several of given countries.

At present, working classical mega-regulators are to be found in Great Britain, Germany, and Austria. Institutions like FSA, BAFin and FMA are well-known to specialists.

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<sup>8</sup> V. Pavlát, A. Kubiček: The Regulation and Supervision of Capital Markets, str. 67 - 100

In Great Britain where the process of integration was finished as of December 1<sup>st</sup>, 2001 there was a change in responsibilities of Bank of England that saved its responsibility in the area of stability of financial system but responsibility concerning supervision over financial market has been transferred to FSA. Co-ordination of activity among the central bank, FSA and ministry of finance has been agreed on the basis of accepted memorandum. All the three institutions meet regularly on Permanent Committee discussing all system problems.

In Germany, an increasing significance of integrated financial strategies and financial conglomerates was clearly defined reason for origin of BAFin. A reform of German system of regulation and supervision was supported by novella of the main legal norms related to financial sphere: Act on Banks, Act on Supervision over Insurance Companies, Act on Security Transactions and Act on Stock Exchange of Securities. As for the relation between BAFin and Bundesbank in Germany exists so-called dual system. According to this system Bundesbank participates in bank supervision in co-operation with Bundesinstitution for supervision over financial services. “By comparison with some ideas existing in CR, the Bundesbank does not perform key function of banking supervision it is done by BAFin because only it is authorized by executive functions.”<sup>9</sup>

In Austria there has been the sole regulator – FMA since April 2002. Austrian federal ministry of finance transferred all responsibilities in the area of banking supervision, supervision over security market, insurance companies and pension funds. Responsibilities and rights of this institution have been stated in Act on Supervision over Financial Market.

#### ***4.2 Specifics of integrating the regulation and supervision of the financial market in CR***

The first official and generally valid document, in which the intention of creating a certain level of an integrated relationship among individual organs of the regulation and supervision of the Czech financial market was simply formulated, was represented by the 15/1998C/L Law about The Commission for Securities and changes and completion of special laws, especially its Part 6 “The Cooperation with Other Institutions and Administrative Bodies”, which defines in §§ 16 – 20 the basis and forms of

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<sup>9</sup> Peter Baier: Šance a rizika při vytváření integrovaného finančního dozoru v ČR, Pojistný obzor 9/2004, příloha

mutual cooperation of KCP (Commission for Securities), ČNB (Czech National Bank) and MF ČR (Ministry of Finance CR) and is more specific about it in the relation of KCP to individual above mentioned partners and in addition to The Chamber of Auditors of The Czech Republic and to relevant administrative bodies and institutions of other states with the competence in the area of the capital market regulation. It is also necessary to mention a completion of the Law about The Czech National Bank with § 60a worded this way: “The Czech National Bank in cooperation with the Ministry of Finance and the Commission for Securities will create a system of mutual cooperation in the capital market area at the latest in three months since the operation of a special statute ( 1 April 1998, AK remark). No substantial changes were done in the mentioned provisions of the 15/1998C/L Law with the exception of § 20 – International cooperation, which was cancelled and with a substantially wider extent included into § 26 – The Duty of Discretion and International Cooperation.

While preparing new laws compatible with EU Laws which came into force on 1 May 2004, the problems of integrating the regulation and supervision were already discussed but it was underlined in the government proposal of the law about the entrepreneurial activities on the capital market that: “The problems of double supervision will be solved only in the new conception of a consistent national supervision of the financial market.”<sup>10</sup>

Then because of the above mentioned fact there was a surprising contribution of the deputy minister of finance of that period, Ing Jaroslav Šulc, CSc, at an international conference held by the College of Finance and Administration with the subject “The Regulation and Supervision of the Financial Markets” on 24 – 25<sup>th</sup> June 2003, where he gave to the surprise of other supervision bodies – ČNB (Czech National Bank), KCP (Commission for Securities), The Office for Supervision of Cooperative Savings Banks and other participants, too an integral proposal of the integrating of the regulation and supervision of the financial market in CR with enough arguments, though not fully detailed.<sup>11</sup> A contribution of doc. Ing Jan Frait, CSc, the senior director and a member of bankers’ board ČNB was not so surprising. The contribution was called “The bank supervision and the stability of financial system” and was presented at the conference held by VŠB-TU (Mining University) Ostrava 3 September 2003 with the subject “The Financial Management of Firms and Financial Institutions”, from which I would like to give at least a quotation that in my opinion is possible to be taken as a

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<sup>10</sup> The government proposal of the law about the entrepreneurial activities on the capital market, pg 122, [www.sec.cz](http://www.sec.cz)

<sup>11</sup> The regulation and supervision of financial markets, The international conference file, pg 40-46

perfect prediction of contemporary stage in this area:”Countries which decided to create an integrated supervision institution as a more or less autonomous part of the central bank chose this way a solution which uses natural preferences of the central bank it smartly eliminates potencial conflicts and risks at the same time.”<sup>12</sup>It is possible to characterize the end of the year 2003 from the point of view of the development of oppinions in the problems in question by a quotation from the daily papers Právo: “ The financial market in the Czech republic will be supervised from 2009 – 2010 only by one institution instead of current four ones. The supervision of cooperative savings banks and banks should be united in two years, the control of insurance companies and pension funds will be amalgamated with the supervision of the capital market at first, in 2006.The two risen institutions should be united at least before the acceptance of euro.”<sup>13</sup>

During the remaining part of the year 2003 and the beginning of 2004 the Ministry of Finance CR was taking care especially to the activities related to accepting, publishing and ensuring a without-problem operation of new laws related to regulating capital market, which came into force on 1 May 2004 – the Law of trading on the capital market, the Law of group investments, the Law of bonds and so called Law of changes, and at the same time the problems of the integration and supervision were taken more care.

The result of all negotiations, which took part in that time, was in my oppinion a very serious decision which accepted the objectivity of the proces of integrating the regulation and supervision of the financial market and at the same time it took into consideration the real stage of the development of this market in CR, too, it estimated correctly the possibilities and the time horizon of its future development at last but not at least the deepness and the extent of all existing risks and necessary preparing and realizing steps ensuring the implementation of this objective trend into the Czech economic system without – of course while continuously monitoring, analyzing, evaluating and eventual correcting realized steps - redundant and its substance devaluating consequences. This determination was adopted by the Czech government valid decision on 12 May 2004 nr 452 and besides others individual phases of integrating and organizational steps related to their realization were determined here. In correspondence with the above mentioned decision the Ministry of Finance prepared a government law proposal, the aim of which was the realization of the first period of the integration – uniting the supervision of the capital market (KCP) and the supervision of insurance companies for pension additional insurance (MF)

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<sup>12</sup> [www.cnb.cz](http://www.cnb.cz)

<sup>13</sup> Právo, 25/11 2003

into the new originated Commission for the financial market and transferring the supervision of cooperative savings banks to ČNB. This proposal was adopted by the government in the decision nr 611 on 21 June 2005. First reading took place at 45<sup>th</sup> meeting of the Parliament and the proposal was commanded to be dealt with by the budget committee and by the permanent commission for banking, which has not been done yet.

On the basis of the above mentioned assessment, I must state that I was very surprised by the government resolution no.1079 from August 24, 2005 on the change in the intention to integrate the state supervision of financial market into a single institution<sup>14</sup> and by the reasons for that change as mentioned in part III of the document ref.no.1338/05 that was prepared by the Ministry of Finance and served as a basis for government proceedings.<sup>15</sup>

The essence of the proposed change is a significant shortening of the integration process - it should be fully completed in 2008 - and with effect from April 1, 2006 all the supervision should become an organizational part of the Czech National Bank.

I can agree, though with some reservations, with the views of the Securities Commission in its press release from August 11, 2005 and especially in the following materials: "Institutional arrangement of supervision - key factors" and "Alternatives to integrated supervision arrangement in the CR"<sup>16</sup>, prepared by the Securities Commission.

Now let me mention a few of my own comments and doubts about the proposed change, which, I hope, the Parliament won't pass. I have formulated them as questions for the authors of the material for government proceedings. "Are you sure that

- the current level of development of the Czech financial market really requires acceleration of the integration process of its regulation and supervision?
- it is really the best solution to transfer all the secondary regulation and all the supervision to an institution whose main mission lies somewhere else and where regulation and supervision will always be on the second place at the

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<sup>14</sup> [www.vlada.cz](http://www.vlada.cz)

<sup>15</sup> [www.mfcr.cz](http://www.mfcr.cz)

<sup>16</sup> [www.sec.cz](http://www.sec.cz)

best, although

a similar solution has already proved inappropriate?

- this transfer is sufficiently justified by the current importance of banking institutions

on the Czech financial market or even by the possibility of higher level salaries in

the Czech National Bank?

- passing the legislation enabling the integration represents a sufficient legislative

basis for such a performance of regulation and supervision that would enable

an efficient fulfillment of the objective mission, targets and tasks and also

the development of regulation and supervision?

- it is correct to speak exclusively about the integration of supervision if supervision

is mainly "an operational and feedback institute" for primary and secondary

regulation and the material mentions only primary and secondary legislation, maybe

for fear of the requirement to include primary regulation in the integrated system?

- it would not be really better to establish a relatively new and independent institution

of secondary regulation and supervision, on the right foundations and at the right

time, entitled with all the necessary rights and obligations which would enable it

to fulfill the tasks concerning its mission and target?

Understandably, there would be a lot more other questions, comments and topics, but let's wait for the answers to the questions raised so far before we decide to formulate others. In that way the other questions will be of higher quality.

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# THE ROMANIAN CAPITAL MARKET IN THE CONTEXT OF EUROPEAN INTEGRATION

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## **Abstract**

*This paper tries to identify the perspective of the romanian capital market in the context of european integration. The romanian capital market is an emergent market very attractive to foreign investors seeking international diversification and high profits. The major problem that investors have to face is political risk by which we refer to changes in tax policy and changes in the business climate of the country. The romanian capital market needs to provide a more stable environment for foreign investors in the near future. Even if before 2000, the activity of the stock exchange was very weak, after that year, the capital market registered a sustained growth. This denotes investors' interest on romanian securities which have evolved to meet the changing and complex needs of the participants in the financial system.*

**Keywords:** : emergent market, european integration

## 1. Introduction

The transitional countries of Central and Eastern need an inflow of foreign capital. The economies need high rates of investments and there is not enough domestic capital. The transition was accompanied by a strong decrease of the saving rate, caused by the liberalization of the markets, by the increased supply of goods and the real depreciation of the savings by the upcoming inflation. The need of investments being at a higher level than the economic possibilities of the countries the solution is the resort to foreign capital either by direct capital investments<sup>1</sup> (participation to the incorporation or development of an enterprise, in any of the legal form set by law, the acquisition of shares of the different types of companies, except for portfolio investments, the setting up or development of a branch by a foreign corporation) or by portfolio investments (the acquisition of securities on the organized and regulated capital markets). The foreign direct investments can substitute the national saving, soften the problems of the capital markets and sustain economic growth.

## 2. Considerations regarding emergent markets

In these days of high stock market volatility, the question of how to reduce risk is fore-most in portfolio manager's minds. Since Solnik<sup>2</sup> (1974) it is known that international diversification is one way of the best ways to achieve this goal.

There is a reduction in risk for a portfolio that includes foreign stocks, so rational investors should invest across borders. Adding international to national investments enhances the power of portfolio diversification. Even individuals can easily invest internationally. Many mutual funds cater to the demand for international diversification. There are separate index funds for Europe, the Pacific Basin and emergent markets.

Having too many choices, marketers face the challenge of determining which international markets to enter and which are the appropriate marketing strategies in the countries they are planning to penetrate in order to diversify their portfolios.

Like other transition countries, Romania is considered an emergent market.

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<sup>1</sup> According to the Government Emergency Ordinance no. 92/1997 in Romania

<sup>2</sup> Solnik B., 1974, Why Not Diversifying Internationally Rather than Domestically?, Financial Analyst Journal, July-August

Broadly defined, an emergent market is a country making an effort to change and improve its economy with the goal of raising its performance to that of the world's more advanced nations. These countries try to make their economies strong and more open to international investors, and more competitive in global markets but they face lots of problems in order to achieve these goals. Anyway, most nations have something of value for international trade in terms of natural resources, labor, technology, location or culture.

Emergent markets are an increasing part of today's investment opportunities but so far have been taken into account primarily by global institutional players, who having the opportunity to make sizable allocations have selectively invested early in the most promising sectors to obtain high returns in very short time even if the risk is also high.

Investors are attracted by above average returns but many of them remain hesitant to participate due to a lack of understanding of the market, restricted access to research, minimal corporate information, risks associated with yet under-developed market-economies and the need for liquidity. Still some international investors favor emergent market stocks and bonds because of the potential high return in a relatively short period of time. There is a great deal of risk involved in these investments because by definition emergent markets are in a state of transition and subject to unexpected political and economic upheavals. The value of their stocks, bonds, and currency change drastically and without notice.

Some of the more common risks of investing in emergent markets include:

- Political risk: The process of modernizing the economies and systems of emergent markets does not represent a steady or predictable process.
- Legal and regulatory transparency: Every country has a system for governing development. It goes without saying that an improper appreciation for how these systems work within a specific country could have a severe impact on investment returns and the problem is that frequently there is a lack of such transparency.
- Liquidity concerns: Lack of central databases as well as public records of transactions means that there is a deficiency of market pricing information to make comparisons as well as drive transactions. Reduced market transparency also means that transactions take longer to close. Word of mouth selling methods because of a lack of a database driven listing service impedes

transactions and liquidity. This is a serious problem that undeveloped market have to face.

- Infrastructure
- Currency Risks
- Imperfect fundamental data and research information
- Possible enforcement difficulties.

### **3. The Romanian Capital Market**

#### ***3.1 Legal framework***

Capital market organization in Romania is based on principals of investor protection, administrative supervision, and self - regulatory organizations, and principals of specialization of activities performed and limited contractual freedom.

The design and implementation of the regulatory framework of the capital markets in Romania began in 1994. Ten years ago, the Romanian capital market had a widely dispersed shareholder structure, an insufficiently regulated over-the-counter (OTC) market, and six significant players (the State Ownership Fund and five Private Ownership Funds) on the Bucharest Stock Exchange and on RASDAQ. The National Securities Commission (CNVM) had been created to administer and control compliance with the Securities and Stock Exchanges Act (Law 52 / 1994), as an autonomous administrative authority which is directly subordinated to the Romanian Parliament.

#### **The main laws that regulate Romanian capital markets are:**

- Law 52/1994 on the securities and stock exchanges;
- Government Ordinance 24/1993 on regulation for the establishment and operation of open investment funds, financial investment companies, depository companies, and investment administration companies;
- Government Ordinance 19/1993 regarding the over-the-counter transactions of securities and organisation of brokerage institutions;
- Government Ordinance 20/1996 regarding venture capital funds;
- From the 9 of April 2002, a new package of Emergency Government Ordinances are regulating the Romanian capital

market (Emergency Government Ordinances No.25 - 28/13.03.2002).

- On July 29, 2004, a new consolidated Romanian Capital Markets Law (Law no 297/2004, “the Law”<sup>3</sup>) became effective. It implements the directives of the European Union in creating and developing a capital market for transactions of modern financial instruments.

**The institution building process consisted in:**

- ✓ Establishment of the legal framework (Law no. 52 and Law no. 83) and capital market regulations which was a extremely large and difficult process started in 1992 and not finished even today even if important steps were made;
- ✓ Establishment of the competent authority, Romanian National Securities Commission (N.S.C.) as the autonomous administrative authority, which is as we mentioned above directly subordinated to the Romanian Parliament:
  - ◆ The National Securities Commission (NSC) is the market’s main rule maker and supervisor;
  - ◆ NSC is responsible for the all operation on the Romanian securities markets, the protection of investors against unfair, abusive, and fraudulent practices, the circulation of information regarding securities, holders and issuers, and the establishment of a legal framework for brokerage activities;

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<sup>3</sup> The Law respects Romania’s obligations regarding the negotiation of chapters on the free movement of services, the free movement of capital and the Economic and monetary union. The law encompasses the requirements of Council directive 93/22/EEC on investment services, Directive 97/9/EC of the European Parliament and of the Council on investor-compensation schemes, Council Directive 85/611/EEC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS), Directive 98/26/CEE of the European Parliament and of the Council on settlement finality in payment and securities settlement systems, Directive 2003/71/CEE of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading, Directive 2001/34/EC of the European Parliament and of the Council on the admission of securities to official stock exchange listing and on information to be published on those securities, Directive 2003/6/CEE of the European Parliament and of the Council on insider dealing and market abuse, Directive 2002/65/EC of the European Parliament and of the Council concerning the distance marketing of consumer financial services, and Council Directive 1993/6/EEC on the capital adequacy of investment firms and credit institutions.

- ◆ NSC set up the size of guarantee funds on both primary and secondary markets against failure of payment.
- ✓ The market's institutions, as follows:
  - Bucharest Stock Exchange (BSE);
  - RASDAQ (the OTC market, created to accommodate the trading of shares from the mass-privatization process; quote-driven market);
  - National Corporation for Clearing, Settlement and Depository (the clearing-settlement corporation for the trades executed on RASDAQ);
  - Independent Registrars;
  - The National Union of the Collective Schemes Organizations ( i.e. Union of Mutual Funds ).

The **National Bank of Romania's** main involvement in the functioning of the capital markets refer to authorisation of clearing and custodian banks, in co-operation with the NSC and cash settlement banks for both equity markets.

The **Bucharest Stock Exchange (BSE)** was initially established in 1882, but closed in 1948 following the nationalization of the private property.

BSE was reopened on **1995**. BSE is a legal entity, a self – regulated body. Trading is carried out through authorised securities companies that are members of the Stock Exchange Association-SEA. The executive body is the Exchange Committee (EC) elected by SEA. The Exchange Committee and the General manager of BSE are approved by NSC that designates a General Commissioner who acts as an observer at the Exchange Committee's Meetings but can propose the cancellation of any decision issued by EC.

The BSE has three listing sectors: corporate securities, public securities and international. The corporate sector of BSE is organised into two \* qualitative\* levels, namely First Tier and Base Tier, with different listing requirements. All listed are required to report quarter and annual financial results. The Bucharest Exchange Trading-BET index launched on September, 1998 monitors first-tier's ten listed stocks, while the BET-C (composite) index, launched on April, 1998 follows the performance of the entire market.

**RASDAQ- The Romanian Association of Securities Dealers Quotation or Romanian over-the counter- OTC – market** is the second segment of secondary capital market which tends today to merge with the **Bucharest Stock Exchange (BSE)**. The Romanian OTC market was

established on September 1996 along the lines of US NASDAQ. The official index of the RASDAQ called RASDAQ Composite was launched on July 1998. It is a market capitalization index, monitoring all the stocks listed on the OTC market.

In December 1994 the **Sibiu Monetary-Financial & Commodities Exchange (SMFCE)** is a very important Romanian exchange which was founded and in July 1997 it became the first financial futures and options exchange in Romania.

**Other structures and institutions acting on Romanian Capital Market:**

- ✎ Open Investment Funds established through a civil partnership contract;
- ✎ Risk Capital Funds set up as civil partnerships without legal personality or as investment joint-stock companies
- ✎ Investment administration companies organised as joint-stock companies for the administration of the open investment funds or investment companies
- ✎ Depositing companies, joint-stock companies that perform depositing activities for investment funds and companies
- ✎ Collective securities investment companies, organised as joint-stock companies, that gather financial resources and invest them in securities
- ✎ Authorised independent registers and independent private register companies

All these structures are authorised and supervised by NCS.

### ***3.2 The evolution of the Romanian Capital Market***

#### **3.2.1 The effect of privatization on the Capital Market**

Romania's capital market was mostly influenced by the way in which privatization was conceived and implemented. The first stage of the privatization process in Romania consisted of the conversion of state-owned companies into commercial companies. As part of the so-called institutionalizing process, six new entities were founded to smooth the progress of the privatization process: the State Ownership Fund (SOF), and five regional Private Ownership Funds (POFs). The SOF retained a 70 percent stake in these companies administering them on behalf of the

Romanian State. The remaining 30 percent stake in the newly created companies was distributed to the POFs under regional and sectoral criteria, which meant that their portfolios consisted of shares in both big and small companies. The POFs acted as administrators of the interests that were distributed to the citizenry.

In the second stage of the privatization process, in August 1992, tradable Certificates of Ownership were distributed to Romanian citizens (15.5 million). The Certificates of Ownership were freely tradable, although no organized market for them existed – similar to the situation on Wall Street before the Buttonwood Tree Agreement of 1792. The Certificates could also be exchanged for shares but only through either a MEBO privatization (in which the employees became owners in the company) or an issuance in an initial public offering (IPO). Statistics show that the MEBO method was used extensively since its start in 1994, with around 1,500 companies having been sold to associations of employees and management for Certificates of Ownership and/or cash from the POFs, and for cash from SOF. In March 1995, 113 IPO's were launched. The first listed stocks on the Bucharest Stock Exchange came from among those companies. In the same period, other companies were sold directly to strategic investors.

The scarcity of domestic capital, the inability to attract foreign investments, and the bureaucracy resulted in a disappointingly low participation in privatization efforts. As a result, in June 1995, a new Mass Privatization Program was commenced. This time, 49 percent to 60 percent of the shares in 3,905 companies were on offer. These companies were the remaining ones from the initial 6,280. Another 800 companies were retained by the SOF to be sold directly to foreign and local strategic investors. New, nominative, non-tradable vouchers with ROL 975,000 nominal value were allocated to 17 million citizens.

In the third stage, new vouchers were issued which, together with the Certificates of Ownership, could be exchanged with the shares of companies or shares in POFs. Each citizen had the right to exchange their vouchers in ROL 1.0m (approximately US\$290 at that time) worth of stock. The number of shares that could have been exchanged by one individual was limited in order to avoid the accumulation of Certificates of Ownership. In March 1996, when the subscription period came to an end, 95 percent of Romania's citizen holders had changed their vouchers for company shares.

The Mass Privatization Program created a widely dispersed shareholder structure for the privatized companies. This created problems for the newly-privatized companies that sought out methods to avoid decisional deadlock stemming from the difficulty in organizing and moderating

shareholder meetings due to the large number of participants, their divergent perceptions, and their total ignorance of economics, law, and the specific industry of the issuer. Meanwhile, portfolio investors gathered vouchers dispersed through the privatization process in order to pass them on to large institutional investors and ultimate acquisition of these packages by majority shareholders. This retail business was conducted by a considerable number of small brokerage firms, pooling the otherwise insignificant stakes of individuals. This process created a sort of boom in the brokerage business, but once it was over many brokerage firms went out of business.

Direct investments were made by purchasing the majority of shares from the SOF. This was followed by acquisitions of minority packages through brokerage firms that had collected shares from individuals. A third stage occurred in some instances in which an offer to the public to purchase all of the shares in a company was made with a view to changing the status of the company from a public to a closed one.

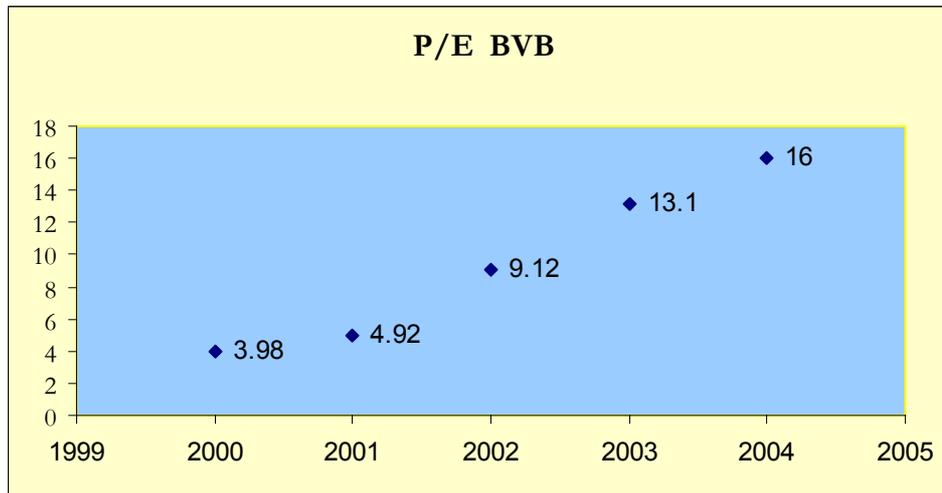
The SOF had to dissolve itself within seven years from its creation by selling 10 percent of its initial stake each year but it developed into a durable institution. In 2000, it was renamed the Authority for Privatization and Management of State Ownership, and merged in 2004 with the Authority for Recovery of Banking Assets under the name of the Authority for Recovery of State Assets. The five POFs were transformed in 1996 by Law 133/1996, drafted by Herzfeld & Ruben, P.C., into Financial Investment Companies (SIFs). Holding in their portfolios significant stakes in various companies, the five SIFs were able to nominate members to the boards of administrators of the companies, which allowed for a concentration of decision-making. Although in some cases the decisions imposed by SIF representatives in the boards of administrators were short sighted, or lacked coherence, the overall effect of their presence on the background of an otherwise widely dispersed shareholder structure was beneficial. Today all five SIFs are listed on the Bucharest Stock Exchange.

### **3.2.2 The Romanian Capital Market today**

The good results registered in 2005 come as a continuation of those seen in 2004, considered to be the best year the Bucharest stock exchange has had since its foundation in 1995. The total value of the transactions in 2004 stood at 600 million euros, with capitalization exceeding 9 billion euros, while the BET index rose by more than 100 percent.

It is interesting to underline the main reason for the increase of the stocks prices. Figure 1 illustrates the evolution of the price/equity index and we can observe that the increase was due to the adjustment of the Romanian index to those of other countries. Between 1979-1999 Romanian stocks were highly under-evaluated.

**Figure 1 Price per equity on BVB between 2000-2004**



*Source: www.kmarket.ro*

After a long recess, the year 2004 saw the listing of new issuers on the Bucharest Stock Exchange; these companies had their shares listed here, but they also listed their bonds. Another major event in 2004 was the broadening of a market niche consisting of instruments generating fixed returns. Many people voiced skepticism about the consolidation of this sector, shortly after its establishment in 2001, when a small decline was registered. However, a big step towards the consolidation of this sector was made in 2004, when important banks, such as BRD - Societe General, quoted significant amounts of corporate bonds on the Stock Exchange.

Under the consolidated capital market law, issued in 2004, the Bucharest Stock Exchange was turned from a state owned institution into a joint-stock company. The law also provides for the establishment of a new institution, namely the Investors' Compensation Fund, and enables banks to play the role of middlemen on the capital market, together with financial investment companies. In 2007, any broker from the EU space will be granted access to the Romanian stock exchange.

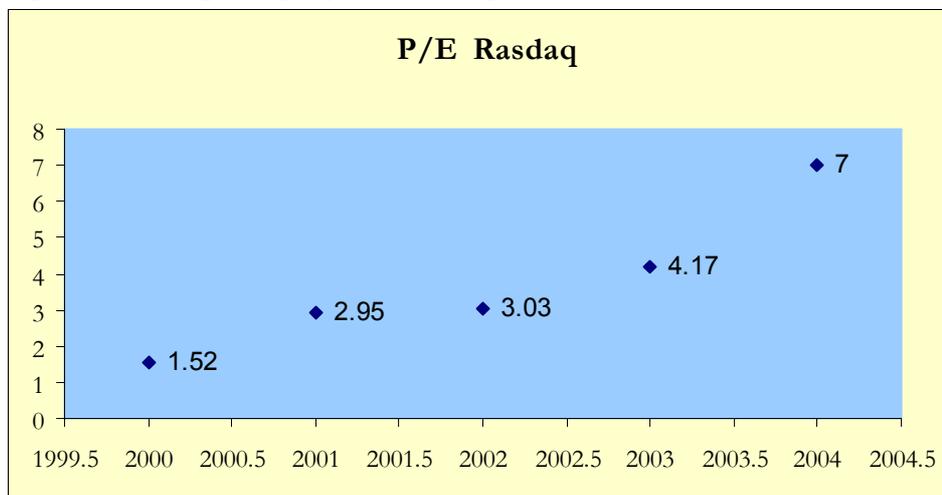
The electronic stock-exchange, RASDAQ, established in 1996 along the lines of the US NASDAQ, also behaved well in 2004. The composite

index witnessed an increase of almost 40%; however, the most important upturn was seen in the Category I and Category II indexes, 60% and 72% respectively.

Also, the stock exchange capital increased to almost 2 billion Euros. The shares of 11 companies are listed in the RASDAQ's Category I; 17 companies can be found in Category II, and the basic category consists of more than 3900 companies. Preparations for a merger with the Bucharest Stock Exchange started last year.

Figure 2 illustrates the evolution of P/E index for stocks listed on Rasdaq and we can observe that the values are appreciatively half of those encountered on BVB.

**Figure 2 Price per equity on Rasdaq between 2000-2004**



*Source:www.kmarket.ro*

A very promising market in our country is that of mutual funds. By the types of investment instrument that these investment companies acquire we distinguish<sup>4</sup>:

- Money market funds – are investment companies that acquire high-quality, short-term investment (money market investment). Individuals tend to use money market funds as alternatives to bank savings accounts because they are generally quite safe (although they are not insured, they typically limit their

<sup>4</sup> Reilly F., Brown K., 2000, Investment Analysis and Portfolio Management, The Dryden Press, USA, p.87

investments to high-quality, short-term investments), they provide yields above what is available on most savings accounts, and the funds are readily available.

- Bond funds – generally invest in various long-term government, corporate or municipal bonds. They differ by the type and quality of the bonds included in the portfolio as assessed by various rating services. Specifically, the bond funds range from those that invest only in risk-free government bonds included in the portfolio as assessed by various rating services. Specifically, the bond funds range from those that invest only in risk-free government bonds and high-grade corporate bonds to those that concentrate in lower-rated corporate and municipal bonds, called high-yield bonds or junk bonds. The expected rate of return from various bond funds will differ, with the low risk government bond funds paying the lowest returns and the high-yield bond funds expected to pay the highest returns.
- Common stock funds – invest to achieve stated investment objectives, which can include aggressive growth, income, and international stocks. Such funds offer smaller investors the benefit of diversification and professional management. They include different investment styles, such as growth or value, and concentrate in alternative-sized firms, including small-cap, mid-cap, and large-capitalization stocks. To meet the diverse needs of investors, funds are being created that concentrate in one industry or sector of the economy, such as chemicals, electric utilities, health, housing and technology. These funds are diversified within a sector or an industry, but are not diversified across the total market. Investors who participate in a sector or an industry fund bear more risk than investors in a total market fund because the sector funds will tend to fluctuate more than an aggregate market fund that is diversified across all sectors.
- Balanced funds – invest in a combination of bonds and stocks of various sorts depending on their stated objectives.

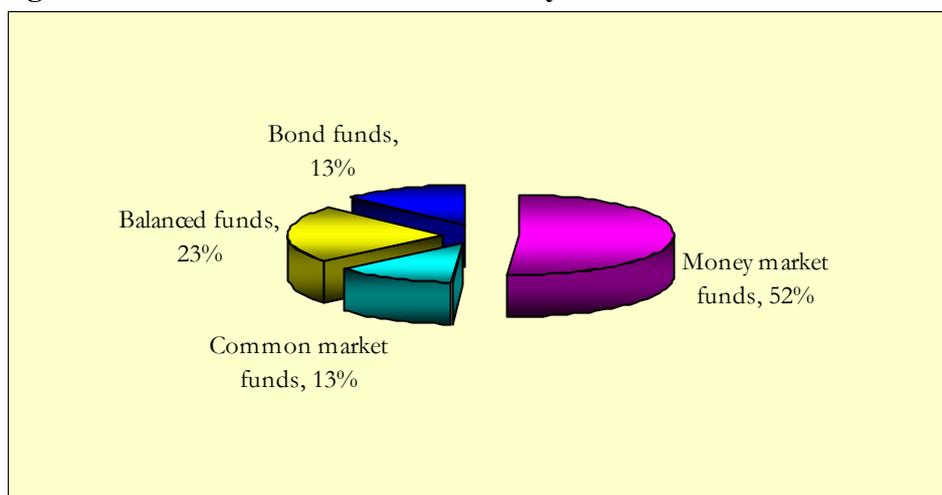
It isn't natural to compare the performances of a money market fund with those of a balanced fund or to compare the risk level of a bond fund with that of a common stock fund. They respond to different needs, the risk level is different and so is the return.

The Romanian Capital Markets Law (Law no 297/2004) defines intermediaries as investment firms authorized by the CNVM, credit institutions authorized by the National Bank of Romania according to

relevant banking laws, and any other such entities authorized in Member or non-Member states to carry out investment services. The financial instruments which are the object of such investment services are: transferable securities, units in collective undertakings, financial market instruments including governmental bonds with a less than 1 year maturity period and deposit certificates, financial futures contracts, forward interest rate agreements, options, derivatives on commodities, and any other instrument admitted to trading on a regulated market in a Member State or for which a request for admission to trading on such a market has been made. In addition, the new Law waives the obligation of SSIFs to get prior authorization for each market. Intermediaries can apply for authorization, granted by the CNVM, permitting the provision of one or more core or non-core services. The minimal capital requirement for these entities ranges from Euro 50,000 to Euro 730,000 depending on the services intended to be provided. The law provides for a gradual schedule until September 30, 2006 for these entities to augment their capital. Supervision of minimal net capital requirements is made through the monthly financial reports that assess the risk of investments in the different categories of financial instruments.

In the figure bellow are presented the market quotas of each type of Romanian fund in march 2005 and we can observe that money market funds were the majority.

**Figure 3 Funds Market Structure in may 2005**



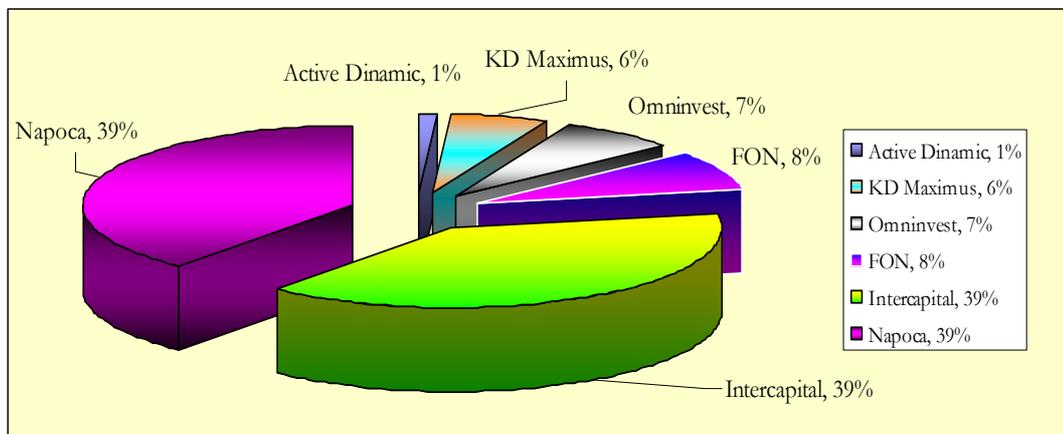
Anyway, the development of financial instruments on the Romanian capital market, the growing liquidity at the stock exchange determine a better

flexibility of investment funds with regard to the investments they are able to perform.

In consequence, these are able to diversify or to specialize on certain type of financial investment in order to offer the investors optimum rates of return in the risk parameters that they choose, and the market quotas the funds detain are likely to change.

Considering the stock exchange growth in the last years, common stock funds have offered high returns, several times higher than the interest offered by banks. The risk level of such funds is indeed big and their performance depends on the general evolution of the stock exchange. In 2004 the best results were achieved by two funds Napoca and Intercapital witch hold together 80% of the Romanian common stock funds market.

**Figure 4 Common stock funds market structure**



Anyway, even the other common stock funds have offered very good returns during 2005 and have good chances to become a strong sector in the conditions in which investors have matured and they prefer to offer their money to a fund administrator rather than to deposit at a bank or to invest directly at the stock exchange.

The administrators of Romanian common stock funds are very optimists and consider that in a short time these funds will become a majority on the market. This will signify an approach to the situation in UE, where the majority of investment funds invest on the stock exchange and create well diversified stock portfolios.

In the first eight months of the current year, balanced funds and common stock funds have attained benefits of over 14%, the bonds funds of

7.6% and the money market funds have offered to investors benefits of only 5%, below the interest rate which was of 5.2%. The interest for these common stock funds is very high and it is expected to appear more common stock funds with bigger levels of risk than the present ones as it seems that Romanian investors do not consider risk when investing, they only expect good returns.

#### **4. Conclusion**

With EU accession set for 2007, Romania represents an attractive emergent market for institutional investors. With a capital market that has flourished in the past years far beyond most expectations, Romania promises generous returns to investors willing to overcome the difficulties of doing business in an emergent market. A comparison of international trends with Romania's legal regime shows that only certain investment techniques and instruments are available in Romania and some new legislation is still necessary to nurture the interest of foreign investors in the local market.

An important step towards the harmonization of Romanian legislation in view of the country's accession to the EU was taken in July 2004 with new securities and capital markets legislation. The adoption of a consolidated law on capital markets, which aims at further alignment with the *acquis* on investment services, market abuse and undertaking for collective investments in transferable securities (UCITS) was a major step for the investment services and securities markets in Romania.

The Law provides for the possibility of the providers of investment services to operate on the markets of member countries upon authorizations granted in the country of origin. There are minimal requirements to be met regarding the Investment firms (SSIFs) and the Management companies (SAI) that will grant them the right to provide services in the member states of the European Union.

In Romania, it is upon the authorization of the CNVM. These requirements include the sufficiency of the financial resources for the proposed line of business, the standard of professional expertise and ethics of the administrative/executive personnel. Detailed provisions are set forth regarding the capital adequacy, the membership in the Investor Compensation Fund (for the SSIF) and prudential rules for the fund administrating firms (in accordance with Directive 85/611/CEE regarding undertakings for collective investment in transferable securities). The "Single Passport Principle" on issuers makes it possible for publicly held companies

to attract capital from the European market as a whole, and once the prospectus for a public offering is authorized in the country of origin, it will be valid for public offerings and/or admission to trading on any regulated market with the EU.

The consolidated version of the Law improves the supervision and the competitiveness of Romania's capital markets. It establishes a solid framework for the development of the Romanian market and its interconnection with European trading and clearing-settlements systems. It is, of course, just that – a framework. Much more will have to happen before the transition can succeed. Indeed, analysts consider that the hardest part is yet to come for CNVM but fortunately, the CNVM has been one of Romania's better-run agencies and there is every reason to believe that its members will live up to the challenge.

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# NEW TRENDS IN THE EUROPEAN CORPORATE BOND MARKET AFTER THE INTRODUCTION OF THE EURO

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## **Abstract**

*Compared with the United States, bonds long played a minor role as a financing instrument for European enterprises. However, during the past few years this market segment has undergone a sharp expansion and has become more important in corporate financing. The aim of this paper is to explain the transformation in this market and the factors influencing it. The analysis of the corporate bond markets in the individual "old" EU-countries shows dynamic development of the debt market since the introduction of the euro. It provides the evidence that the growing importance of the euro as an international currency has led to the integration of the national markets for corporate bonds and has made the market for euro-denominated issues more attractive for both issuers and investors. The current broadening and deepening of the corporate bond markets in the "old" EU-countries has the positive implications for the development of the debt securities markets in the "new" EU- members.*

**Keywords:** *corporate bonds, bond markets*

## **1. Introduction**

An important feature of a well-developed financial system is the existence of a robust corporate bond market working alongside a sound banking system. The existence of a mature corporate bond market including a deep high-yield bond segment has the positive implications for economic development. It allows corporations to raise funds more quickly and on more flexible terms. The existence of the corporate bond markets complementary to bank and equity finance is particularly beneficial for economies with a large number of small and medium sized firms. The introduction of the euro has opened the possibility for the development of the more integrated European capital market. The single currency, by eliminating exchange – rate risk, has removed the main barriers to integration of the debt markets. Before the European Monetary Union (EMU), the government and private bonds issued in different currencies were imperfect substitutes and traded at different prices. The EMU has eliminated this source of market segmentation.

It is now time, after six and a half years of the existence of the single currency, to give some assessment concerning the impact of the euro on the bond market. The aim of this paper is to show the major trends in the European corporate bond market after the introduction of the euro and to explain the transformation in this market.

The paper is structured into five parts. Section 2 provides an overview of developments in the corporate debt sector in Europe before and after introduction of the euro. Section 3 discusses the issues relating to the impact of the single currency on the supply and demand side of the corporate bond market. The problem of the integration of the European corporate bond market and its prospects is covered in section 4 followed by concluding remarks in section 5.

## **2. Overview of the corporate bond markets in Europe**

### ***2.1 Brief history of the European corporate bond market before EMU***

The corporate bonds are debt obligations, issued by private corporations. The companies use the funds from selling of the bonds for a variety of purposes, from building facilities to purchasing equipment and expanding the business. The issuers of the corporate bonds represent various sectors: public utilities, transportation companies, industrial corporations, financial services companies and conglomerates.

The early 20th century was a time of active corporate bond issuance in Europe. Industrialisation, the rapid diffusion and adoption of new

technologies and the development of capital markets to fund economic growth resulted in both supply- and demand-driven bond issuance. The worldwide depression of the 1930s and the Second World War effectively shut the European corporate bond market for nearly 50 years, though domestic credit markets continued to operate over that period. Since 1985, the bond market began to develop and the European corporate bond issuance has increased in relative as well as in nominal terms.

Before the introduction of the single currency, European bond markets were largely domestic and significantly smaller than those in the United States. In 1998 the value of the total bonds outstanding in the euro area was only 56 per cent of the value in the USA. This size differential existed for both the private and the public bond market. In addition, the volume of the domestic issues of corporate bonds in 1995 was low compared with other developed markets: for example USD 0.1 billion in Germany and USD 6.4 billion in France, compared with USD 20.7 billion in the United Kingdom, USD 77.2 billion in Japan, and USD 154.3 billion in the United States (Prati and Schinasi 1997).

In the late 1990s there was sustained growth in the issuance of bonds worldwide, and Europe shared in this growth of the market especially with much increased corporate bond issuance, representing the second most-active bond market in the world. It is interesting to note that the relatively small corporate bond market in Europe until the late 1990s was mirrored by the greater importance of bank lending. While in the USA bank loans play a negligible role in the financing of large companies, they have been traditionally the dominant source of debt financing for European companies. This feature of European corporate finance began to erode just in the second half of the 1990s.

## ***2.2. Issuing activity in the corporate bond segment after the introduction of the euro***

The euro area corporate bond market is the sector in which impressive changes have taken place following the launch of the single currency. In particular, this segment saw the strongest growth in the three years following the introduction of the euro. The size of the long-term bond markets in euro area is presented in Table 1.

**Table 1 Gross issues of long-term debt securities by euro area residents by sector from 1998 to 2004** (EUR billions, issues during the year)

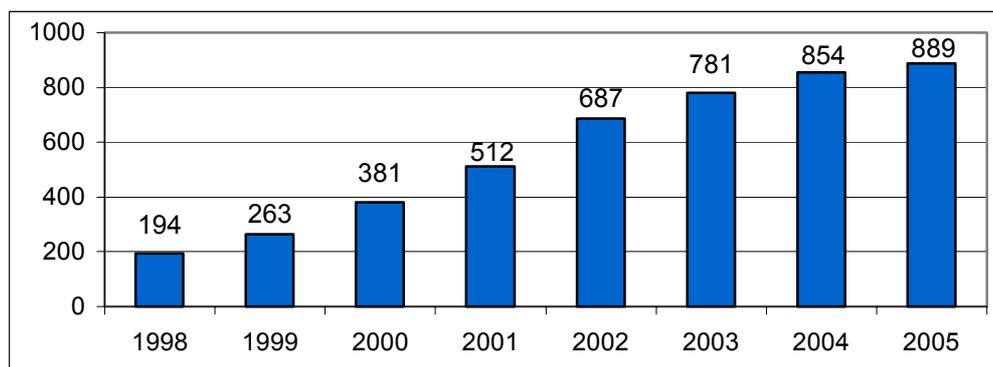
Item	1998	1999		2000	2001		2002	2003	2004	
		EUR	%		EUR	%			EUR	%
(MFIs)	460.4	608.6	43.0	599.1	647.2	40.8	949.5	787.5	866.3	46.8
Non-monetary financial corp.	57.0	141.7	10.0	188.5	242.4	15.3	208.2	203.5	178.3	9.6
<b>Non-financial corporations</b>	<b>33.7</b>	<b>63.4</b>	<b>4.5</b>	<b>94.6</b>	<b>137.1</b>	<b>8.6</b>	<b>79.8</b>	<b>113.6</b>	<b>96.9</b>	<b>5.2</b>
Central governments	609.1	602.4	42.5	517.0	558.7	35.2	644.4	711.1	707.9	38.3
TOTAL	1,160.2	1,416.1	100.0	1,399.2	1,585.4	100.0	1,881.9	1,815.7	1,849.4	100.0

Source: ECB (2005d)

As shown, the corporate bond market in the euro area experienced a major change in 1999, when gross issuing volume increased from EUR 33.7 billion in 1998 to EUR 63.4 billion, by almost 90 per cent. The issuance of corporate bonds by euro area residents in 2004 was EUR 96.9 billion. It is slightly below the EUR 137.1 billion recorded in 2001 but significantly above the levels recorded in earlier years. The gross issuance of euro area non-financial corporations tripled since 1998, compared with a growth rate of only 88 per cent in the case of bank bonds. The share of corporate bonds in the European bond market increased from 4.5 per cent to 8.6 per cent between 1999 and 2001. In 2004 the issuance declined to a share of 5 per cent and reflects the higher issuance activity of the monetary financial institutions (MFIs).

The impressive development of the corporate bond market in the euro area is illustrated by Figure 1. From 1999 to 2005 the outstanding amount of the bonds issued by non-financial corporations rose from EUR 250 billion to around EUR 900 billion. Despite this exceptional growth, the gap between the euro area and the United States is still large. The outstanding volume of the bonds issued by the corporations in the US is now around EUR 2.4 trillion (European Commission 2005).

**Figure 1 Euro area corporate bond market – outstanding amount (EUR billions)**



Source: ECB

According to Rajan and Zingales (2003) the introduction of the euro had a positive effect on the amount of net debt issues. Namely, the amount of debt issues almost tripled after the introduction of the euro. Before the adoption of the single currency the euro area countries had average total net debt issues of almost zero, while the non-euro countries had an average of 1 per cent of GDP. After the introduction of the euro, the non-euro countries remained at the level, while the euro countries jumped to the net issues of 2 per cent of GDP per year.

### ***2.3 Developments in the corporate bond segment in the euro area countries***

The greatest issuers of the corporate bonds among the eurozone countries are: France, Germany and Italy. In France during the 1990s, bond market development reflected the increasing importance of the market-oriented financing. In particular, the debt securities segment has been marked by a considerable growth since its creation in 1985, on account of a liberalization policy and the increase in the number of new debt securities. Moreover, the liberalization of the conditions of the issue in 1999 and a contingent rise in the number of foreign holders led to a higher growth (ECB 2002).

**Table 2 Amounts outstanding of the euro denominated long-term debt securities by euro area country** (EUR billions, at the end of June 2005)

Country	Total	General government	Monetary financial institutions	Non-monetary financial corporations	Non-financial corporations
Euro area	8,244	4,109	2,946	753	437
Belgium	304	231	48	3	22
Germany	2,524	999	1,453	0	71
Greece	171	168	0	1	2
Spain	671	302	171	189	9
France	1,456	838	364	31	222
Ireland	103	31	71	-	-
Italy	1736	1,090	464	141	42
Luxembourg	36	0	36	-	-
Netherlands	807	211	185	377	34
Austria	264	124	119	5	17
Portugal	98	64	21	5	8
Finland	71	49	13	1	8

*Source: ECB securities issues statistics*

The number of the debt securities issued by non-financial corporations in France expanded considerably over the second half of the 1990s. While non-financial corporations accounted for 15 per cent of the total issuance at the end of 1994, by 2000 this proportion has increased to 18.8 per cent, (or EUR 235.1 billion). The bond issuance strengthened significantly between 1998 and 2000 (by about 100%), in connection with the sharp increase in the need for financing arising in particular from the mergers and acquisitions (M&A) activity. At the end of June 2005 the issuance of long-term bonds accounted for a half of the total issue in the eurozone (Table 2).

The German financial system was, and still is, essentially bank-based, which implies that most corporations are largely dependent on bank financing. However, after the introduction of the euro and the integration of the national bond markets, the non-financial corporations have obtained an increasing amount of their funding through the issuance of corporate bonds. Since the launch of the monetary union, there has been a sixfold increase in

the German corporate sector's volume of debt securities outstanding in the euro area. Among the larger European economies, this dynamic growth has been outplaced only by Italy (Table 3).

Although German enterprises' outstanding amount of bonds has increased to 6 per cent in relation to GDP, it is considerably lower than in the US and the UK or France where bonds have long played a significant role in corporate financing. The American, English and French non-financial enterprises' outstanding volume of bonds and money market instrument was equivalent to around one-quarter of their GDP.

**Table 3 Corporate bonds outstanding – an international comparison, September 2003**

Item	Non-financial corporations domiciled in				
	Germany	France	Italy	UK	US
Outstanding amount as %-age of GDP	6	23	12	26	26
Percentage market growth since 1993	907	280	1,522	524	63
Percentage market growth since 1998	613	144	1,119	139	22

*Source: Deutsche Bank (2004).*

In Germany the issuance of corporate bonds is concentrated on a small number of industries. In the first place is the car and air transport industry (28 per cent of the overall volume), followed by telecommunications and IT enterprises (23 per cent) and the energy sector (12 per cent). The average outstanding volume per bond issue in the telecommunications and IT sector amounts to about EUR 1 billion, while the issues of enterprises in the car and air transport sector are on average less than half as large (around EUR 400 million).

The issues consist very largely of papers which the rating agencies classify as "investment grade". Just under two-thirds carry a rating in the highest category (Aaa to A3). These are primarily the bonds of car, air transport and energy enterprises. Telecommunications and IT enterprises are mostly rated lower, however, with a B rating being dominant. The higher-risk "high yield bonds" accounted for 5 per cent of the bonds outstanding.

### **3. Impact of the euro on the development of the corporate bond market**

#### ***3.1 Consequences for the supply side of the market***

The introduction of the euro has been an important catalyst for European issuance over the past six years. Although the member states of the eurozone did not formally adopt the single currency until 1999, the euro-denominated issuance commenced two years earlier, in 1997. From an issuer's perspective, the introduction of the euro has provided access to a larger pool of potential investors and has facilitated the comparison of returns offered by various international issuers. Furthermore, the introduction of the euro enhanced the corporate bond market. For example, in the period 2000-2001, the volume of euro issues in the corporate sector increased by more than 100 per cent. In addition, during the late 1990s many European corporations engaged in the mergers and acquisitions and euro bonds provided a means of their financing. The euro bonds were also the attractive sources of funding for corporations because of the low interest rates.

According to Rajan and Zingales (2003) the boom of the corporate bond market after the introduction of the euro was indeed stronger in the euro area than outside. The authors have conducted a simple panel data analysis for a sample of European countries since 1990 and find that the net private debt issues have become significantly larger for countries that adopted the euro. This suggests that the introduction of the euro had a causal impact on the development of the corporate bond market in Europe.

#### **3.1.1 Changes in the issue size, number of issues and the maturities**

The national currencies were the main cause of the corporate bond market segmenting in Europe. On the one hand, firms were reluctant to issue large number of bonds denominated in foreign currencies, because of the exchange risk involved in repayments. On the other hand, the demand for bonds denominated in national currencies was limited because institutional investors, such as pension funds, had to face exchange risk as well. In consequence of the euro adoption the average size of new bond issues rose considerably, as the number of very large issues, of EUR 1 billion or more, grew significantly. In the period 1999-2005 the average size of corporate issues has almost tripled. In January 1999, the average size of a corporate bond issue in the euro area was EUR 0.3 billion, but by June 2005 it increased to EUR 0.8 billion. That is 60 per cent larger than the average issue size in the US-market.

Although in general the issue sizes in Europe have increased significantly since 1999, with issues above EUR 1 billion becoming more and more frequent, the institutional investors in particular stay away from the private bond market because of a relative lack of liquidity. While the government bonds issued by the large EU-countries tend to amount to EUR 15 billion to EUR 20 billion per line, the standard size of a corporate bond is only one – tenth of the amount or even less. Nevertheless, some progress has been made: among the corporate bonds the proportion of smaller issues below EUR 500 million decreased considerably from about 40 per cent of total issuance in 1999 to well below 20 per cent in 2003. At the same time, the percentage of issues above EUR 2 billion, which was more than 30 per cent in 2001, also decreased to less than 10 per cent in 2003. These changes show that the newly created euro-denominated bond market, because of its size and high degree of openness, is more able to absorb very large issues than the individual bond markets of the predecessor currencies of the euro. (European Commission 2003).

The number of outstanding corporate issues has also slightly decreased, namely by one-third since the creation of the euro. In January 1999, there were more than 1,600 issues outstanding whereas in June 2005 there were 1,077. This decrease is a global trend not confined to Europe. Over the same period, the number of corporate issues outstanding in the US market decreased by 44 per cent.

Concerning the bond maturities, while the government bonds provide nearly the complete range of maturities from 1 to 30 years, the corporates dominate in the short – and medium – term segments. The proportion of longer maturities of the newly issued bonds rose distinctly during the period from 2001 to 2004. In the first half of 2004 there were also a lot of buybacks and bond exchanges in the corporate bond market. In most cases the aim of these activities was to issue bonds with even longer maturities in order to lock in the low interest rates. In the early 2005 Telecom Italia opened the 50-year segment in the euro corporate bond market, just several weeks after the French Treasury had done so in the government bond market (ECB 2005b).

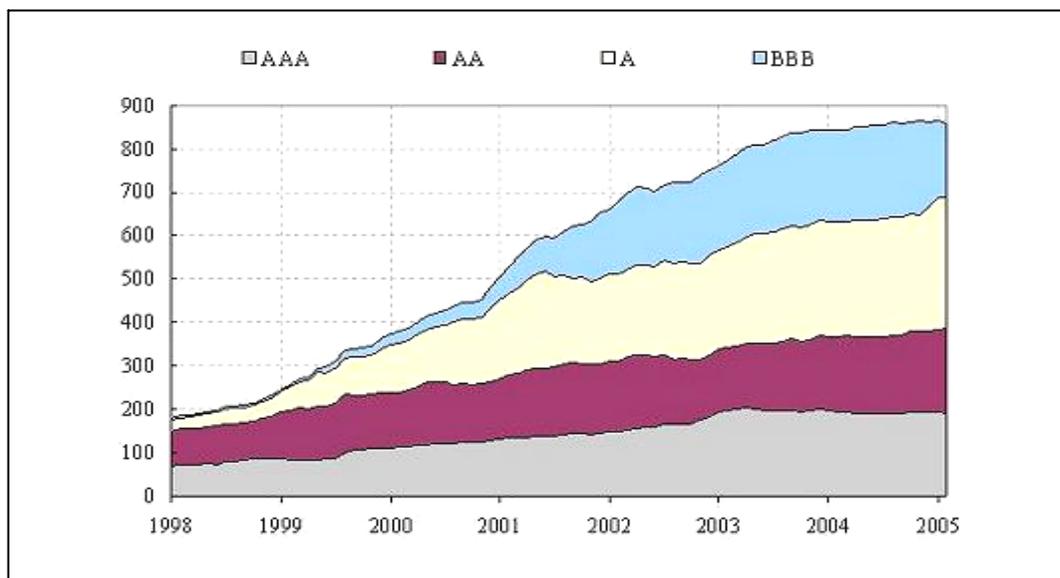
The long maturity market is well developed only in the UK, with the euro market lagging behind. Only 4 per cent of the euro area corporate bond market has maturity over 10 years compared with 50 per cent in the UK-market. A notable feature of 2003 and 2004 was the willingness of euro investors to support the very long-dated issues that had previously only been seen in the UK-market. This highlighted not only the continuing development of the European market at the long end of the maturity spectrum but also demand for lower credit quality at that longer maturity.

### 3.1.2 Decrease in the credit ratings profile and the development of the high-yield bonds

The corporates have a wide range of credit rating and fall into two broad credit classifications: the investment-grade and the speculative grade bonds. The speculative – grade bonds are issued by the companies perceived to have a lower level of credit quality compared with the more highly rated investment – grade companies. The speculative – grade bonds tend to be issued by the companies that have troubling fundamentals. While a speculative-grade credit rating indicates a higher default probability, the higher risk of these bonds is often compensated for by higher interest payments or yields.

As the corporate bond issuance in Europe has expanded, the ratings profile of issues has also undergone a change. In particular, the average credit rating has fallen significantly since the EMU. Prior to the launch of the monetary union, the majority of the bonds were classified as AAA and AA issues. After the adoption of the euro, 50 per cent of all corporate bonds issued in 1999 received a single A credit rating and BBB (Luengnaruemitchai and Ong 2005). Since then, the corporate bonds tend to have the lowest credit ratings in the bond market (Figure 2)..

**Figure 2 Euro area corporate bond market – outstanding amount per rating category**  
(EUR billions)



Source: ECB

As Table 4 shows, roughly just under 90 per cent of the corporate bonds outstanding in Europe were classified as investment grade. However, the shift in the distribution away from Aaa ratings has been marked, falling from 22 per cent in 1985 to 7 per cent in 2001. At the same time, the share of issuers in the Aa rating category has grown to 28 per cent. The percentage of rated issuers in the lowest investment-grade and lowest speculative-grade categories has also increased. The speculative-grade ratings have grown from 11 per cent of the total to 14 per cent. The distribution of ratings shows a much higher proportion of B and Caa-rated issuers than in 1985. Nonetheless, the average A2 credit rating of Europe's corporate debt market still remains higher than the average Baa2 rating of its US counterpart. The changes in the credit ratings distribution since 1985 reflects a new issuance in the lower rating categories rather than credit deterioration by existing issuers.

**Table 4 Distribution of European corporate ratings, 1985-2001 (per cent)**

Rating	1985	1990	1995	2001
Aaa	22.2	29.5	12.3	6.6
Aa	5.6	38.8	33.2	27.9
A	50.0	27.3	41.6	36.3
Baa	11.1	1.4	7.3	15.1
Ba	5.6	2.2	3.1	3.8
B	5.6	0.7	2.1	8.2
Caa-C	0.0	0.0	0.3	2.1
Investment-Grade	88.9	97.1	94.5	85.9
Speculative-Grade	11.1	2.9	5.5	14.1
Total Number of Issuers Outstanding	18	139	382	918

*Source: Moody's (2002).*

As mentioned above, the corporate bonds tend to have the lowest credit ratings in the bond market and are therefore the most strongly affected by economic downturns. This was reconfirmed after the 2001 economic slump, when many prominent companies (among them British Airways, ABB, Ericsson and Ahold) became "fallen angels", that is they were downgraded from investment grade to non-investment grade (Moody's 2002).

Although the growth of the speculative-grade segment of the European bond market over the last years has been an important feature in the market's development, the speculative-grade segment still represents a relatively small proportion of debt issues. In the euro area, these make up only around 15 per cent of the corporate bond market, compared to around 40 per cent in the USA. However, if one includes the fact that market capitalisation in the euro area is relatively low compared to the USA, Europe may be said to be an emerging market for the high-yield bonds i.e. below the investment-grade rated.

The high-yield bonds form an interesting segment of the financial market for the following reasons:

Firstly, these bonds provide a larger degree of flexibility than the bank loans, which are subject of more strict conditions. In consequence, a high-yield bond market can provide funds complementary to bank-based debt or equity.

Secondly, financing via high-yield bonds can encourage a reallocation of funds from economically declining sectors, to fast-growing sectors with urgent needs of funds. Consequently, a well-developed financial sector, in which the bonds are either rated below the investment grade or unrated, should facilitate the transition of medium-sized firms into large enterprises.

Thirdly, the market pricing of speculative-grade bonds takes place by the interplay of market participants. In this way a financial system with a well-developed high-yield bond market provides discipline for lower credit quality of the corporations.

Finally, the high-yield segment of the corporate bond market can be a useful source of information on the future economic activity and on the current credit conditions in the economy. (Bondt and Marques 2004).

Unlike in the US, where the high yield bond market developed in the early 1980s, in Europe the high-yield segment of the corporate bond market is a phenomenon of the late 1990s. The European high-yield bond market had shown the first signs of developing in 1997 and began to grow in the run of the introduction of the euro. The European high-yield bond market was established finally after significant issuances to fund the telecom market in late 1999 and is constantly evolving. In 2003 the issuances reached the record levels of 1999 when the market took-off. In the United Kingdom, the high-yield segment of the corporate bond market grew quicker than in the euro area, benefiting from having a more market-based financial structure. Another determinant of the high-yield bonds issuance are mergers and

acquisitions. During the 1990s there was an increase in the amount of M&A which peaked in 2000.

The high yield bond market has become an increasingly important source of capital for European corporations. At the end of 2003 the share of these bonds accounted for 7 per cent of the total corporate bond market. The size of transactions has increased alongside the greater liquidity in this market (notably with Heidelberg Cement EUR 700 million, Vivendi Universal EUR 325 million and USD 935 million, EMI EUR 425 million and Eircom EUR 835 million and USD 250 million). The performance of high yield bonds has significantly benefited from the general improving credit environment and has been demonstrated by both high returns for investors and European spreads breaking the 400 basis point barrier (the traditional minimum spread seen for a non-investment grade credit (KPMG 2004).

The European high yield market has maintained a very important diversification trend. In terms of the industry structure, the telecommunication sector was initially the dominant force in this field. At the end of 1999, it held a roughly 50 per cent share of the European market for high-yield bonds. However, in 2003, only 10 per cent of the issuances were telecom related and 61 per cent were the issuers of other industries.

In terms of ratings, in the period 1999-2005 the quality of issued high-yield bonds in Europe has declined. In June 2005, the percentage of B-rated bonds amounted to 33.5 per cent, BB-rated 49 per cent and CCC-rated 12%. The current composition of the euro high yield market is more reflective of a mature market.

**Table 5 Default rates in the period 2003-2004 (per cent)**

	Global	U.S.	EU <sup>1</sup>
<b>a. 2003</b>	e.	i.	m.
b. Investment-grade	f. 0.10	j. 0.00	n. 0.28
c. Speculative-grade	g. 4.89	k. 5.55	o. 3.42
d. All rated	h. 1.89	l. 2.31	p. 0.82
<b>q. 2004</b>	u.	z.	dd.
r. Investment-grade	v. 0.00	aa. 0.00	ee. 0.00
s. Speculative-grade	w. 1.83	bb. 2.30	ff. 1.23
t. All rated	x. 0.70	cc. 0.99	gg. 0.23
	y.		

<sup>1</sup> European default rates refer to EU-15 countries

Source: *Standard & Poor's (2005)*.

In 2003, the distressed and defaulted debt represented 32 per cent of the total high-yield market in Europe. This was down considerably from 58 per cent of the market at the end of 2002 due to defaults in the

telecommunications, technology and energy industries and down from almost 100 per cent at the end of 2001. This decline follows the global trend in default rates. As presented in Table 5, the default rates for global speculative grade fall from 4.89 per cent in 2003 to 1.83 per cent in 2004, with the comparative fall in Europe from 3.42 per cent to 1.23 per cent. It is interesting to note that at the end of 2004, the American and European default rates were similar, with the European default rate of 1.23 per cent and the American one at 2.30 per cent.

The European defaults, similar to those in the US, were concentrated in the media and telecommunication industry. For example, telecom and media issuers accounted for over 88 per cent of total defaults in 2002. In 2003 however, defaults were much more diversified. In fact, the share of telecom and media defaults dropped to less than 10 per cent. In 2003, although the defaults were somewhat fairly distributed across the industry categories, the consumer products industry was responsible for over 50 per cent of the total European default volume. Among the EU-15 countries Italy had in 2003 the largest total number of defaulting issuers (5) and volume (EUR 5.9 billion) due entirely to the default of Parmalat and its subsidiaries.

### ***3.2. Consequences for the demand side of the market***

#### **3.2.1. Corporates as the new investment opportunity**

On the demand side, the introduction of the euro opened up some new investment opportunities especially for internationally operating institutional investors such as investment funds and insurance companies. Namely, the launch of the euro meant the abolition of legal investment restrictions for many institutional investors which were previously not allowed to invest in foreign currencies. In addition to such structurally higher demand other factors have also helped to make corporate bonds more attractive. One factor was that life insurance companies and pension funds switched from equities to bonds, leading to great demand for such securities.

Since the creation of the euro, bond market investors have no longer been concerned by intra-euro exchange rate risks. As a result of a lower foreign exchange risk and an environment of low inflationary expectations, the credit risk has gained more importance in the pricing of financial instruments and the investment decisions of investors. Moreover, the decline in yields in the market for the government bonds encouraged investment in more risky corporate bonds.

After the creation of the euro and the increase in the supply of the euro area bonds, on the demand side a geographical diversification increased strongly in euro area bond portfolios. While until 1998 bond distribution in

the euro area for the largest firms was almost exclusively domestic, the larger bond issues in 1999 were sold on the European scale. A typical example was the EUR 1 billion issue of the French telecom firm Alcatel, in February 1999, 28 per cent of which was placed with Italian and more than 20 per cent with German investors. In addition, the adoption of the euro was associated with a large increase in the asset share of internationally investing bond funds in Austria, Finland, France, and Germany. The euro area unweighted average of the share of assets invested in bonds funds with a Europe-wide strategy rose from 17 per cent in 1998 to 60 per cent in 2002. A similar shift occurred also in the investment policies of pension funds and life-insurance companies. (Pagano, Thadden 2004).

### **3.2.2. Liquidity in the corporate bond market**

A study by Paul Harrison in 2001 stressed the importance of liquidity for the composition of the corporate bond market. If liquidity is restricted, investors emphasise the size and “familiarity” of issues, and so for the smaller and less prominent companies market access becomes difficult.

The expansion in the euro-denominated corporate bonds market has coincided with the other major trend in the bond market, namely the declining supply of treasury bonds. This development is a consequence of the consolidation of central government finances in the euro countries. In addition, at the same time, the introduction of the euro has led to increased competition. Previously, the governments were alone in their domestic markets. Today, they are doing battle for loans from the same source of financing. This competition has led to a number of changes to increase liquidity on the secondary market for treasury bonds. For instance, the average size of the issues has increased. The editions have also become increasingly standardised.

There is a key interrelation between the liquidity of a market and the existence of hedging opportunities. Without the possibility to hedge positions, the tendency to invest in this market remains subdued. The most commonly used instruments for the hedging of bond positions are bond futures. These are typically developed on the basis of government bonds. When these futures are used to hedge corporate bonds, major basis risks are incurred. In case of financial turmoil the prices of government and corporate bonds move in opposite directions. For this reason, the development of indices in non-government bonds and the introduction of futures and exchange-traded funds based on these indices may be a possible answer to these problems. Another possible solution to the liquidity problem could be to increase the issue size or to issue bonds fungible with previous bonds with a limited set of maturities. One of the main problems of the demand side

development is also the transparency of the private bond market, that can be improved by quotations on electronic trading systems (ECB 2004).

### **3.2.3. Development level of the secondary market**

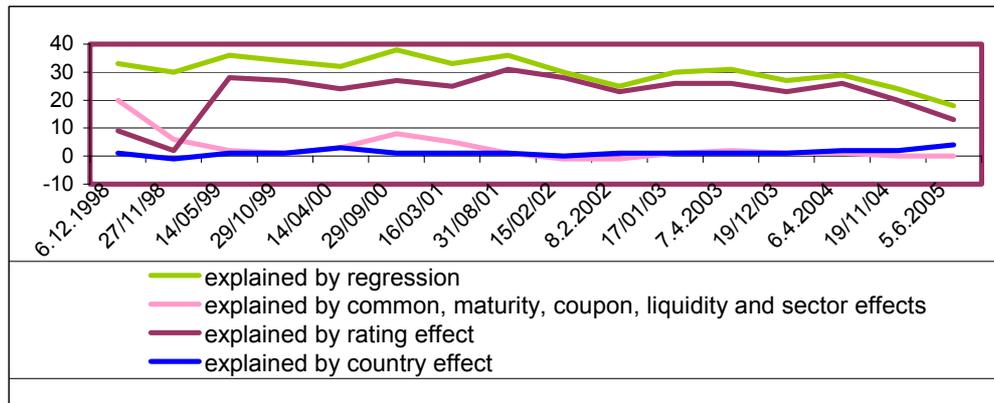
The secondary corporate bond market is fragmented. Most of this fragmentation is due to the fragmentation of clearing and settlements systems in Europe. Although the problem has been well known since the late 1990s, progress has been slow. Securities settlement in the euro area is still dominated by national players, whose number had only come down from 23 to 14 by 2003, compared to two in the USA, and hampered by national rules that restrict cross-border activities of settlement houses.

According to the study of Santos and Tsatsaronis (2003), the introduction of the euro reduced the cost of underwriting services for issuers in the single currency to levels similar to those prevailing in the US dollar – denominated segment of the market. The average gross fees in the euro-denominated segment of the bond market halved in the year the euro was introduced, dropping from 1.7 per cent in 1998 to 0.8 per cent in 1999, and remained at the average level of 0.6 per cent in the 1999-2001 period exactly the same figure as in the USD-denominated segment. It should be noted, that the reduction in underwriting fees was largely due to a greater competition of the investment banks in the post-EMU European market and connected to the rapid penetration of the market by the US investment banks. The European corporate issuers moved away from their home bankers towards the larger US investment houses.

## **4. Integration of the European corporate bond market**

The yield differential between corporate bonds depends on a number of factors, such as the credit rating, time-to-maturity and liquidity. Under full integration, the impact of these specific factors should be totally independent of the country of issuance. Using the same set of factors, it is possible to obtain measures of corporate bond market integration by investigating whether or not risk-adjusted the yield spreads have a systematic country component. In an integrated market, the proportion of the total yield spread variance that is explained by country effects should be close to zero. Following this approach the indicator shows that the euro area corporate bond market is fairly well integrated. Country effects are seen to explain only a very small proportion of the cross-sectional variance of corporate bond yield spreads (Figure 3).

**Figure 3 Proportion of cross-sectional variance of corporate bond yield spreads, explained by various factors (percentages).**



Source: ECB (2005c).

It should be concluded, that the bond-market integration does not require complete convergence of bond yields. Even in an integrated market, differentials may persist because they are a reflection of the various bonds' different risk, maturity, or cash-flow characteristics, rather than stemming from trading costs, taxes, clearing and settlements costs, or other institutional barriers to trade.

## 5. Conclusion

The euro area corporate bond market has grown considerably after the introduction of the euro. The evidence for the first 6 years of the euro suggests that the single currency has had a sizeable direct impact on bonds issued by non-financial corporations. Issuance of corporate bonds has taken off on an unprecedented scale in euro area. In this process, both investors and issuers have reaped the considerable benefits afforded by greater competition in the underwriting of private bonds and by the greater breadth and liquidity of secondary markets. The benefits have been very important for European companies, which have acquired cheaper access to a market. The single currency also appears to be a catalyst for restructuring the European corporate sector and for the emergence of new companies.

The euro area corporate bond market has not only remarkably grown in quantitative terms, but also its qualitative nature has changed. The euro area corporate bond market is nowadays characterised by large issues with all possible investment and speculative grade ratings from all types of economic sectors and typically low underwriting fees. As a consequence,

bond markets are gaining importance as means of obtaining corporate finance. The indicators for the corporate bond market, which has grown considerably since the adoption of the single currency suggests that this market is already fairly integrated in the sense that the country of issuance is only of marginal importance in explaining yield differentials.

Based on the findings in this paper it should be concluded, the following trends will play a major role in the improvement of the European corporate bond market in the future: convergence of structures towards the US style debt. This will lead to increased transparency; diversification of issues; growing debt issuance will attract more investors and will increase a competition. The challenge is to overcome the persistent fragmentation of clearing and settlement systems in the euro-area bond market, which prevents a full integration of the market for private sector bonds.

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# EFFICIENT WAYS OF MONTE CARLO SIMULATION IN OPTION PRICING UNDER COMPLEX UNDERLYING PROCESSES<sup>1</sup>

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## **Abstract**

*In general, there are available many ways to detect the value of financial derivatives. Very useful approach is Monte Carlo simulation, mainly in case of complicated payoff functions or complex underlying processes. Unfortunately, the plain Monte Carlo simulation needs a very high number of independent paths to get reliable results. Fortunately, there exists many ways to decrease the number of paths via application of the variance reduction methods. In this paper we present some of them. First, we generate (i)  $\mathcal{N}[0;1]$  and (ii)  $\mathcal{VG}\{\theta, \vartheta, \nu\}$  random numbers. The second one was chosen as an example of a complex model which results in complicated applications. On the other hand it allows us to model the underlying distribution more reliably. Later we apply each of the methods to estimate the value of the European call option and barrier up-and-out call option within both settings – the Black and Scholes (1973) and the Variance gamma model (Madan et al., 1998).*

**Keywords:** *option pricing, MC simulation, VG process, variance reduction method*

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## 1. Introduction

The essential condition of functional financial markets is the knowledge of methods to determine the prices of secondary financial assets (financial derivatives). It is regularly supposed that markets are efficient, prices of primary assets are given by the interaction of demand and supply, and there are no models to determine the price of primary assets more or at least such precisely as the market do.

However, the definition of a financial derivative says that its price is derived from the price of particular underlying asset. Therefore, there should exist some way to get the fair price of any financial derivative with respect to the price of the underlying asset. Simultaneously, this price must correspond with the market view. Otherwise the arbitrage opportunity will arise.

A very interesting type of financial derivatives is an option, since the payoff function is non-linear. It causes the risk resulting from short positions to be (almost) unlimited. It implies the requirement on efficient risk management of options. Of course, it also requires to know the ways to pricing and hedging.

By an option we generally mean a non-linear financial derivative that gives its owner (*long position*) the right to buy (*call options*) or the right to sell (*put options*) the underlying asset under predefined conditions. Simultaneously, the seller of the option has an obligation to meet the right of the owner (hence *the short position*). The predefined conditions concern, for example, the underlying amount of assets, the maturity time or the exercise price. Sometimes also other non-standard conditions are defined (average price, barrier level, etc.) and such options are referred to as exotic options.

Usually, there is a plenty of methods to price, and subsequently hedge, any option, to name some of them: solving of PDE (partial differential equation) or PIDE (partial integro-differential equations) if jumps occur, or applying the notion of martingales, the expectation operator with useful probability density functions to get analytical formula. It is naturale, that each method must lead to the same result, respecting the same inputs.

However, in some cases we can only run numerical procedures, such as binomial or multinomial lattice models, apply FDM (finite difference method), solve PDE and PIDE numerically or apply Monte Carlo simulation. For example, it is the case of options with complicated payoff functions, multifactor models or complex processes.

Some complex processes allow us to model higher moments of the distribution of asset returns. Although the non-normality of asset returns is

documented starting by Fama (1965), models incorporating skewness and kurtosis of asset returns were provided relatively recently, see e.g. Variance Gamma model (VG model) (Madan and Seneta (1990) for the symmetric case and Madan and Milne (1991) and Madan *et al.* (1998) for the asymmetric case), Normal Inverse Gaussian (NIG) model (Barndorff-Nielsen (1995)) and its generalization Hyperbolic Model by Eberlein and Keller (1995), Meixner model introduced by Schoutens (2001) or CGMY model (according to Carr, Geman, Madan and Yor (2003)) which further generalized VG model. In this paper we will suppose the VG model which can be regarded as a Brownian motion subordinated by a gamma time or, alternatively, as a difference between two gamma processes.

The task of this paper is to present the application of Monte Carlo simulation in case of estimating the price of financial derivatives. We describe and apply several approaches aiming on improvement of plain Monte Carlo simulation.

All such methods are applied in order to: (i) generate random numbers from standard normal distribution; (ii) random numbers from variance gamma process; (iii) estimate the price of vanilla call under BS model; (iv) estimate the price of vanilla call under VG model; (v) estimate the price of barrier call under VG model.

The next section is devoted to basic stochastic processes. Subsequently we describe the Monte Carlo approach in option pricing. In this section we also provide the most important variance reduction techniques (the general ones). Finally, we proceed to running the simulation in order to price the vanilla call and the barrier call option.

## 2. Stochastic processes

In this section we briefly define all processes related to this paper. The simplest building blocks of almost all process applicable in modelling of asset prices are the Poisson process (or closely related ones as a gamma process) and the Wiener process, which provides ingredients for construction of almost all processes with diffusion part.

The Wiener process  $w_{dt}$  can be defined as  $w_{dt} = \tilde{\varepsilon}_1 \cdot \sqrt{dt}$ , where random number  $\tilde{\varepsilon}_1$  belongs to the standard normal distribution, thus  $\tilde{\varepsilon}_1 \in \mathcal{N}[0;1]$ , and  $dt$  describes the (infinitesimal) time increment. Hence, the Wiener process is a martingale, its expected increment is zero at any time and the variance is closely related to the time change.

We can, besides others, build on the basis of Wiener process *the geometric Brownian motion* (GBM). It is the process which was supposed to be the one followed by stock prices in Black and Scholes (1973).<sup>2</sup> The typical property is the normal distribution of asset returns and logarithms of prices – which is equivalent to lognormal distribution of prices. Two key facts are that the financial assets gains return continuously and that their prices cannot be negative. Both ideas are supported by GBM, since the price is given by an exponential formula.

It is assumed that the price dynamic can be described by the following stochastic differential equation

$$dS = \mu \cdot S \cdot dt + \sigma \cdot S \cdot w_{dt}, \quad (1)$$

where  $dS$  is the price change over time interval  $dt$ ,  $\mu$  is the (continuous-time) expected return and  $\sigma$  is its volatility, both  $\mu$  and  $\sigma$  are supposed to be deterministic constants. The solution to stochastic differential equation (1) is according to Itô's lemma:

$$S_{t+dt} = S_t \cdot \exp\left[\left(\mu - \frac{\sigma^2}{2}\right) \cdot dt + \sigma \cdot w_{dt}\right] \quad (2)$$

Note also, that in the risk neutral setting the preceding formulation changes by  $\mu \rightarrow r$  to ensure that the asset gains riskless return  $r$ .

Since the volatility of asset returns is very difficult to measure and forecast, some slightly more realistic models suppose its stochastic feature. However, a candidate to model the volatility must respect the empirical fact that it regularly reverts back to its long run equilibrium. Besides others, it is the case of *Hull and White (HW) model* (1987). Hull and White supposed the volatility to put into (2) can be modelled by

$$d\sigma = a \cdot \sigma \cdot (b - \sigma) \cdot dt + s \cdot \sigma \cdot w_{dt}. \quad (3)$$

Here,  $a$  describes the tendency of mean-reversion,  $b$  is the long-run mean (equilibrium) and  $s$  is the volatility of the volatility. The Wiener process of HW (3) which drives the volatility is usually supposed to be independent to the one of the GBM (1).

## 2.1 Lévy models

Under a family of Lévy processes, in honour of Paul Lévy, are generally understood such processes that are of independent and stationary

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<sup>2</sup> Although it is known at least starting from the Fama's work (1965), that the financial returns are not-normally distributed, the geometric Brownian motion has been the most commonly applied process to model asset prices and to price financial derivatives.

increments. These processes are also typical by the stochastic continuity – the probability of jump occurrence for given time  $t$  is zero. The Lévy process can be, besides others, decomposed into a diffusion part and a jump part. Clearly, not all parts must be present.

The modelling of financial prices is usually restricted to exponential Lévy models. The price dynamic is given by an exponential of a Lévy process  $\mathcal{X}_t$  and some (deterministic) drift  $\mu$

$$S_{t+dt} = S_t \cdot \exp[\mu \cdot dt + \mathcal{X}_{dt} - \varpi \cdot dt] \quad (4)$$

Moreover, we must deduce the term  $\varpi = -\frac{1}{v} \cdot \ln(1 - \theta \cdot v - \frac{1}{2} \cdot g^2)$  to ensure that  $E[S_{t+dt}] = S_t \cdot e^{\mu \cdot dt}$ . In fact, it is equivalent to deducing  $\frac{1}{2} \cdot \sigma^2 \cdot dt$  in case of geometric Brownian motion. We can therefore interpret  $\varpi$  as a mean correcting parameter to the exponential of the Lévy process  $\mathcal{X}_t$ .

The classical works incorporating jumps in price returns were based on jump-diffusion models such as the Merton model (1976). These models were typical by a finite number of jumps in any time interval. However, the modern models of financial returns are of infinite activity – thus, the jumps, although small in scale, occur infinitely many times in any time interval. In fact these models do not need to be constructed of diffusion components, since the infinite activity allows us to describe the true feature (either jumps or skewness and kurtosis in the distribution of returns) well enough. In addition, the terminal price can be produced by simulation within one step.

Many Lévy models are regarded as subordinated Brownian motions. If  $w(t)$  denotes a Wiener process in time  $t$ , we can define the subordinated Brownian motion  $\mathcal{X}_t$  with drift  $\mu$  and volatility  $\sigma$  by subordinating with another Lévy process  $g(t)$  just replacing  $t$  by  $g(t)$ . Thus

$$\mathcal{X}_t = \mu \cdot g(t) + \sigma \cdot w(g(t)) \quad (5)$$

Hence, the subordinated process  $\mathcal{X}_t(g(t); \mu, \sigma)$  is driven by another process  $g(t)$  which is referred to as the subordinator. In such case we need to imagine “an internal time” given by process  $g(t)$ . Of course, the process still evolves in time  $t$ . However, so called internal time give us very nice economic interpretation of subordinated processes – the (geometric) Brownian motion given in a random business time, which is stipulated by the

economic activity, the mass of information etc.<sup>3</sup> In other words, “the time increments” are not constant but stochastic. This feature allows us to model also other parameters of the distribution.

The very popular subordinators are *the Gamma process* resulting into *Variance gamma model* (the name is since the variance of the primary component is not given by the classical time but by the “gamma-time”) and the *Inverse Gaussian process* which results into *Normal Inverse Gaussian model* (see e.g. Barndorff-Nielsen, 1995).

In this paper we apply the Variance gamma (VG) model<sup>4</sup> (for more details see e.g. Madan and Seneta (1990), Madan and Milne (1991) or Madan *et al.* (1998)). Consider the VG process  $\mathcal{VG}(g(t; \nu); \theta, \vartheta)$ , where  $g(t; \nu)$  is the (random, but strictly increasing) gamma time from gamma distribution  $G[1; \nu]$ , (here  $\nu$  describes its variance and allows us to control the kurtosis),  $\theta$  is the drift (by which we can control the symmetry), and  $\vartheta$  describes the volatility. Hence the asset price dynamics can be expressed as<sup>5</sup>

$$S_{t+dt} = S_t \cdot \exp[\mu \cdot t + \mathcal{VG}_t - \varpi \cdot dt] = S_t \cdot \exp[\mu \cdot t + \theta \cdot g_t + \vartheta \cdot w(g_t) - \varpi \cdot dt]. \quad (6)$$

One step further is to incorporate the notion of stochastic environment into Lévy models. Although many Lévy models allow fitting well the empirical structure of returns including skewness and kurtosis, the calibrated parameters in general do not stay the same over time. Besides the stochastic volatility approach of Hull and White (1987) or Heston (1993), it can be done either by applying of Lévy-driven Ornstein-Uhlenbeck processes to model volatility (this direction was developed mainly by Barndorff-Nielsen and Shephard) or time changed Lévy processes (which was suggested by Carr *et al.*, 2003). A brief review of all approaches is provided e.g. by Cont and Tankov (2004) or Schoutens (2003).

Here, we proceed according to the approach of Carr *et al.* (2003), in which it is according to Brownian scaling property supposed that the change in volatility can be captured by the (random) change in time. Thus, although the VG model is given by time changed Brownian motion (by gamma time), it is further extended by introducing a stochastic time  $Y(t)$  given by mean-reverting CIR square-root process (Cox, Ingersoll and Ross, 1985):

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<sup>3</sup> For example, if the economic activity is above average, the internal time grows rapidly comparing with the classical time. And vice versa.

<sup>4</sup> VG model can be alternatively defined as a difference between two increasing gamma processes, one for positive increments in the price, the other for negative ones.

<sup>5</sup> Note, that this is the true (statistical) evolution of the price. However, to price a financial derivative we need to change the drift to be risk-neutral and, probably, also change other parameters of the VG process.

$$dy = \kappa \cdot (\eta - y) \cdot dt + \lambda \cdot \sqrt{y} \cdot w_{dt} \quad (7)$$

with long run time change  $\eta$ , the rate of mean reversion  $\kappa$  and time volatility  $\lambda$ .<sup>6</sup> Thus, the  $\mathcal{VG}(g(t; \nu); \theta, \mathcal{G})$  model can be reformulated into  $\mathcal{VG}(g(y(t; \kappa, \lambda); \nu); \theta, \mathcal{G})$ . Note, that (7) describes the dynamics of the *time rate*  $y$  – the change of  $\mathcal{Y}$ -time over the interval  $dt$ . Thus,  $y_{t+dt} = y_t + dy$  and the alternate time describing the stochastic environment is given by

$$\mathcal{Y}_t = \int_0^t y_u du. \quad (8)$$

As before to get the asset price dynamic in either true or risk-neutral setting, we must incorporate the mean correcting parameter. For example, in the risk-neutral setting we need to get  $E[S_{t+dt}] = S_t \cdot e^{r \cdot dt}$ . And therefore

$$S_{t+dt} = S_t \frac{\exp[r \cdot dt + \mathcal{VG}(\mathcal{Y}(dt))]}{\mathcal{E}[\exp[\mathcal{VG}(\mathcal{Y}(dt))]]}. \quad (9)$$

## 2.2 Option pricing within Lévy models

Lévy models must be usually regarded as incomplete ones. Standard Black and Scholes arguments (replication with the underlying) cannot be used since there are more sources of risk. Alternative risk-neutral approach is also problematic since there do not exist unique martingale probability which is equivalent to the original space of true market probabilities. The pricing problem can be solved by incorporating of mean correcting parameter, introducing of characteristics functions or applying of suitable transform techniques. Some interesting questions of martingale measures of Lévy processes are examined e.g. by Fujiwara and Miyahara (2003).

For illustrative reasons, we will now state the European call option pricing formula within VG model  $\mathcal{V}^{\mathcal{VG}}(S, \mathcal{G}; \tau)$ , which is probably the only one available in the “user-friendly” expression:

$$\mathcal{V}^{\mathcal{VG}}(S, \mathcal{G}; \tau) = \int_0^\infty g(t) \mathcal{V}^{\mathcal{BS}} \left( S \cdot \exp \left( \theta g + \frac{1}{2} \mathcal{G}^2 g - \omega \tau \right), \mathcal{G} \sqrt{\frac{g}{t}}; \tau \right) dg. \quad (10)$$

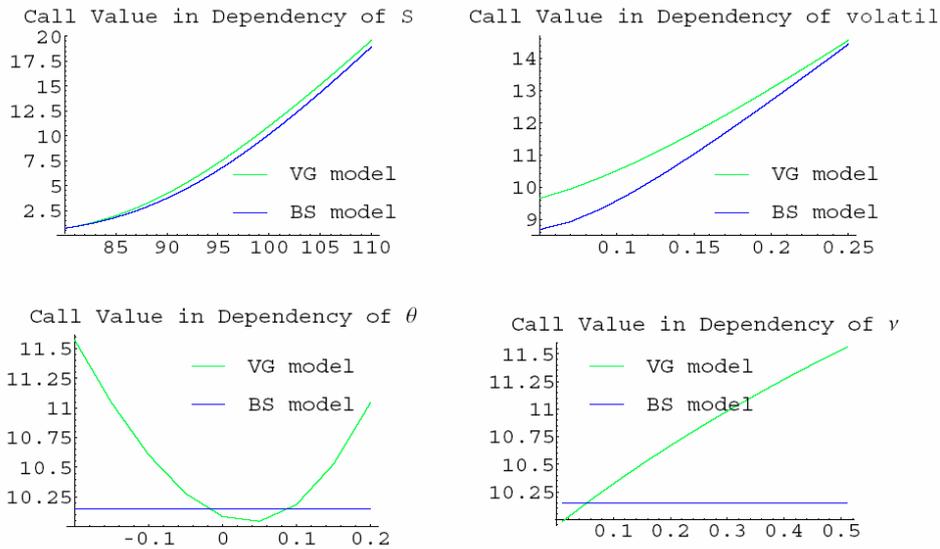
As before,  $S$  is the underlying asset price,  $\mathcal{G}$  is the volatility,  $\theta$  is the drift,  $\tau$  is the time to maturity,  $\omega$  is the mean correcting parameter,  $\mathcal{V}^{\mathcal{BS}}(\cdot)$  is the Black and Scholes pricing formula and  $g(t)$  denotes the probability density function of the gamma distribution.

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<sup>6</sup> The CIR model should lead to positive values only if  $2 \cdot \kappa \cdot \eta \geq \lambda^2$ .

Following Figure 1 illustrates the effect of particular parameters to the VG model on the vanilla option price ( $S = 100$ ,  $K = 101$ ,  $\tau = 1$ ,  $\theta = 0.1436$ ,  $\rho = 0.12136$ ,  $\nu = 0.3$ ). Clearly, there is no significant difference to BS model considering various levels of  $S$ . The effect of volatility is much more considerable. Finally, we can see how  $\theta$  and  $\nu$ , not included into the BS model, influence the option price within VG model.

**Figure 1 – The effect of VG process parameters on vanilla call option price**



### 3. Monte Carlo simulation in option pricing

The application of Monte Carlo simulation in pricing of options was firstly analyzed by Boyle (1977) and complexly treated in Boyle *et al.* (1997). Suppose first a European plain vanilla call. The word "European" means that the option can be exercised just at the maturity time. "Plain vanilla call" indicates that the payoff function is following:

$$\Psi_{\mathcal{T}} = (S_{\mathcal{T}} - K)^+ \equiv \max(S_{\mathcal{T}} - K; 0). \quad (11)$$

Here,  $\mathcal{T}$  denotes the maturity time,  $S_{\mathcal{T}}$  is the price of the underlying asset at maturity, and  $K$  is the exercise price. Depict the value of an option  $f$ , whose payoff function  $\Psi_{\mathcal{T}}$  is defined by equation (11), at time  $t$  by  $\mathcal{V}_t$ . Now, define

the set of risk-neutral (martingale) probabilities  $\mathcal{Q}$  – such probabilities of future states under which the (risky) stochastic process  $\mathcal{S}(t)$  behave as it would be martingale. Hence, if

$$\dot{\mathcal{S}}(t) = \mathcal{S}(t) \cdot e^{-r(t)} \quad (12)$$

we get

$$\mathbb{E}_0^{\mathcal{Q}}[\dot{\mathcal{S}}_t] = \dot{\mathcal{S}}_0 \quad \forall t \geq 0. \quad (13)$$

In this case, we can define the value of an option  $f$  as its payoff expected at maturity and discounted at the riskless rate  $r$  up to the beginning:

$$\mathcal{V}_t = e^{-r\tau} \cdot \mathbb{E}_0^{\mathcal{Q}}[\Psi_{\tau}], \quad (14)$$

where  $\tau = \mathcal{T} - t$ .

Suppose also that  $\omega$  depicts future states of the world,  $\Omega$  is the set of all such states,  $\omega \in \Omega$ , and the option payoff at maturity is uniquely determined by  $\omega$ ,  $\Psi_{\tau}(\omega)$ . Thus, we can rewrite (4) in more details as follows

$$\mathcal{V}_t = e^{-r\tau} \cdot \mathbb{E}_0^{\mathcal{Q}}[\Psi_{\tau}(\omega)] = e^{-r\tau} \cdot \int \Psi_{\tau}(\omega) d\mathcal{Q}. \quad (15)$$

Hence, due to (15) it is clear that to get an estimate of the option value  $\hat{\mathcal{V}}_t$  it is sufficient to generate (simulate) enough relevant future states  $\omega$ . Note, that relevant states are all states which can affect the option payoff – the future evolution of stock prices, interest rates, volatility, dividend yields, foreign exchange rates, etc. However, if we study the plain vanilla European call option – the only relevant state is the underlying asset price at the maturity time,  $\omega^{(n)} \cong \mathcal{S}_{\tau}^{(n)}$ .

Denote by  $N$  the number of generated future states  $\omega$  – or random scenarios of the underlying asset price evolution. Then it holds that

$$\mathcal{V}_t \approx \hat{\mathcal{V}}_t = e^{-r\tau} \cdot \frac{1}{N} \sum_{n=1}^N \Psi_{\tau}^{(Q)}(\omega^{(n)}). \quad (16)$$

Obviously, in order to get an estimate of the price we first determine the option payoff for each relevant (risk neutral) state  $\omega$  (price of the underlying asset at the maturity time  $\mathcal{S}_{\tau}$ ). Subsequently, we have to calculate an average payoff and discount its value to the beginning. Note, that to get reliable estimate we must realize sufficiently high number of different future paths.

Suppose once again, that the underlying asset price follows geometric Brownian motion given by equation (1). Clearly, if we want to realize a random evolution of an asset  $\mathcal{S}$  in order to price an option, we must change

its statistical (risky) drift  $\mu$  into the risk neutral one – the riskless rate  $r$ . Moreover, we are interested only in the price at time  $\mathcal{T}$ . Hence, an  $n$ -th risk neutral estimate of the future price is

$$\mathcal{S}_{\mathcal{T}}^{(n)} = \mathcal{S}_t \cdot \exp(\Delta \mathcal{S}_{\mathcal{T}}^{(n)}) = \mathcal{S}_t \cdot \exp\left[\left(r - \frac{\sigma^2}{2}\right) \cdot \tau + \sigma \cdot \tilde{\varepsilon}^{(n)} \cdot \sqrt{\tau}\right] \quad n = 1, \dots, N. \quad (17)$$

From (17) it is evident that the only source of uncertainty is  $\tilde{\varepsilon}$ . Therefore, the optimal  $N$  is such which ensure target probability distribution (unit variance and zero mean, skewness and excess kurtosis) of the random element with minimal time cost.

The second model on which we concern here more particularly is the Variance gamma process. The model is determined by three parameters. It can be defined either as a subordinated Brownian motion  $\mathcal{VG}(g(t; \nu); \theta, \vartheta)$  or as a difference between two gamma processes. In both cases it consists of two independent processes which results into requirements of efficient simulation techniques.

### 3.1 Variance reduction methods

In this subsection we describe few techniques required to increase the efficiency of option pricing. In order to get reliable estimate of the price we should realize huge number of (independent) paths – usually we need  $N$  at least 100 000. Although it can be very time consuming to produce such huge number of paths, the result still need not be reliable. It is the reason why efficient improvements to plain Monte Carlo simulation (PMC) are still developed. These techniques are commonly referred to as *variance reduction techniques*, since applying them we aim on reduction of the variance (error term).

Brief review of most important methods is included for example in Charnes (2000) or Hull (2002). More complete and rigorous treatment with many applications is provided by Boyle *et al.* (1997) and Glasserman (2004).

The simplest technique, both from the theoretical and application point of view, is commonly called the *Antithetic variate method* (AVM, AMC). The method was firstly applied in option pricing by Boyle (1977). The key idea is, that if  $\tilde{\varepsilon} \in \mathcal{N}[0;1]$  then the same must be true also for  $-\tilde{\varepsilon} \in \mathcal{N}[0;1]$ . The perfectly negative correlation of these two samples substantially reduces the error in estimating the price.

The improvement is presented in two aspects. First, if we set the target number of independent paths to be  $N$  then we have to generate only  $M = N/2$  paths. Hence, applying the method we can significantly decrease the

time cost. Second, since  $(\tilde{\varepsilon}_m - \tilde{\varepsilon}_m)/2 = 0$ , the method will also have positive effect on all symmetry measures (mean, skewness), whose values will be exactly as we need. The shortcoming of this approach is that it can be applied primarily for symmetric distributions.

The *Moment matching method* (MM), which aims on matching the selected moment of the underlying distribution, can be regarded as an alternative. Of course, an inevitable condition is to know the right value to be matched. Basic applications of this method are presented e.g. by Barraquand (1995), Boyle *et al.* (1997) and Duan and Simonato (1998). Very similar is the *Control variate method* (CVM), see Boyle (1977). However, the application aims more on particular problems, such as pricing of geometric Asian options by virtue of arithmetic solutions, see Kemma and Vorst (1990).

More sophisticated method is the *Stratified sampling* (SS, SMC). In general, there exist two approaches to SS. The first way is direct. It consists of stratifying the interval of admissible values into equiprobable strata, that is with equal probabilities. Suppose random number from standard normal distribution:  $\tilde{\varepsilon} \in \mathcal{N}[0;1]$ . Therefore, the interval of admissible values is  $\tilde{\varepsilon} \in (-\infty; +\infty)$ . The next step is to divide this interval into  $M$  subintervals in such a way that

$$\Pr\{\tilde{\varepsilon} \in (\varepsilon_m; \varepsilon_{m+1}]\} = p_m, \quad p_m = \frac{1}{M}, \quad m = 1, \dots, M, \quad (18)$$

and for example

$$\varepsilon_1 = -\infty, \quad \varepsilon_{M+1} \rightarrow +\infty.$$

Subsequently, we need to generate  $M$  random numbers uniformly distributed between zero and one:  $\tilde{\mathcal{U}} \in \mathcal{R}[0;1]$ . Finally, we can generate random numbers from target distribution as follows:

$$\tilde{\varepsilon} = \varepsilon_m + \tilde{\mathcal{U}} \cdot (\varepsilon_{m+1} - \varepsilon_m). \quad (19)$$

Clearly, if  $M = N$ , then we take just one number from each equiprobable interval. Similarly, if  $M = N/5$  we have to generate five random values from each interval.

However, sometimes it is difficult to handle with plus or minus infinity. In this case, we can prefer indirect stratification. Applying this procedure, we generate (stratify) 'probabilities', first. Hence, we stratify the unit interval into  $M$  subintervals of equal length. Next we produce uniformly distributed random numbers from these subintervals:

$$\tilde{u}_m = \frac{m-1}{M} + \frac{\tilde{\mathcal{U}}}{M}. \quad (20)$$

Finally, we transform each  $\tilde{u}$  into its related value of the target distribution by inverse transform. For example, considering normal distribution:

$$\mathcal{N}^{-1}(\tilde{u}_m).$$

Another very interesting approach, which extends the application of SMC also for more dimensions, is *Latin hypercube sampling* (LHS). This approach was firstly introduced by McKay *et al.* (1979) and later analyzed by Stein (1987).

Suppose that we need to generate two-dimensional random processes. An obvious way for one dimension would be stratified sampling. However, here we need to get two independent coordinates for each random state. Hence, we cannot stratify the interval since results obtained in this way were not strictly independent.

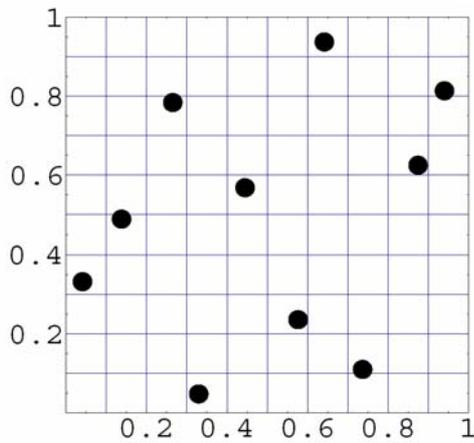
Fortunately, the solution is easy. We can put randomly the subintervals of both dimensions together. Suppose that  $M = N = 10$  and denote the coordinates by  $\{x, y\}$ . The first step is to stratify the unit interval into ten equiprobable subintervals. Next we randomly permute these subintervals. Subsequently, we can generate both coordinates for each  $N$  applying the indirect SS method. That is, we first get values of the inverse distribution function for both coordinates, where  $x$  is based on the origin subintervals and  $y$  on theirs permutation, and finally we transform them into target two-dimensional random numbers. For example, for  $n = 1$  we get  $x \in [0, 0.1)$  and  $y \in [0.3, 0.4)$  and therefore  $\{x, y\} \in \{0.043, 0.314\}$ . Figure 2 illustrates location of all coordinates within stratified subintervals.

It is clear that the method of stratified sampling (as well as its LHS extension) can be used only to price plain vanilla options with European payoff – since here only the price of the underlying asset at the maturity play role.

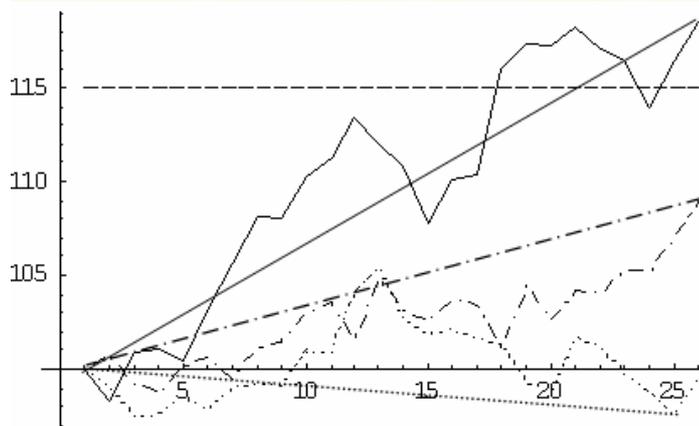
Figure 3 illustrates this effect. We present three distinct paths of asset price evolution (vertical axe) in time (horizontal axe). The initial price is 100. The method of stratification allows us to get directly the price at the terminal time,  $\mathcal{T} = 25$ . However, if we want to price some option whose payoff depends on the historical path (e.g. barrier

option) we must create other extension – *the bridge sampling* – since we need to recover the intermediate prices.

**Figure 2 - The technique of Latin Hypercube Sampling for two dimensions**

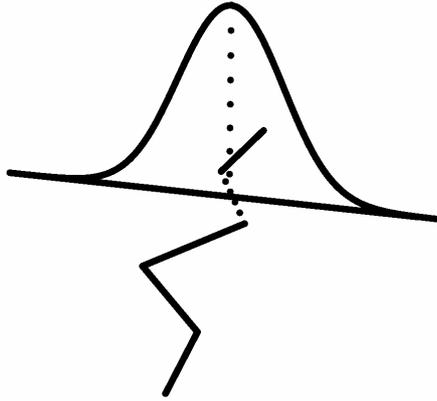


**Figure 3 – Stratifying the terminal price**



Thus, the technique of bridge sampling allows us to model whole part of the price trajectory via stratification. Knowing the value at time zero and the value at final time we can easy apply the bridge sampling to generate the value also for any intermediate time (depending on the conditional distribution), see Figure 4 for the case of Wiener process.

**Figure 4 – Wiener bridge sample**



The thin black line illustrates the random evolution of the process in discrete time. We know the endpoints. Denote the midpoint in time as  $t$ . Then we denote the endpoint values as  $w(t - \Delta t)$  and  $w(t + \Delta t)$ . Although the unconditional distribution of  $w(t)$  is  $\mathcal{N}(0; 1)$ , the conditional mean, for example, is given by linear interpolating of  $w(t - \Delta t)$  and  $w(t + \Delta t)$ . Hence, the intermediate value can be recovered by

$$w(t) = \frac{w(t + \Delta t) + w(t - \Delta t)}{2} + \sqrt{\frac{\Delta t}{2}} \cdot \tilde{\varepsilon}, \quad (21)$$

Very similar is the application of bridge sampling in the VG model, see e.g. Ribeiro and Webber (2003) for VG bridge or Avramidis *et al.* (2003) for double gamma bridge. Conditional VG-random numbers can be obtained by incorporating of related *Beta distribution*,  $\tilde{\beta} \in \text{Beta}(\frac{\alpha}{\nu}; \frac{\alpha}{\nu})$ . Thus

$$\begin{aligned} \mathcal{V}\mathcal{G}(t) &= \theta g_t + \mathcal{G}\sqrt{g_t} \varepsilon \\ &= \tilde{\beta}[\mathcal{V}\mathcal{G}(t + \Delta t) - \mathcal{V}\mathcal{G}(t - \Delta t)] + \mathcal{V}\mathcal{G}(t - \Delta t) + \mathcal{G}\sqrt{\tilde{\beta}[g(t + \Delta t) - g(t)]} \tilde{\varepsilon}, \end{aligned} \quad (22)$$

where  $g(t)$  can be stratified in this way:

$$g(t) = \tilde{\beta}[g(t + \Delta t) - g(t - \Delta t)] + g(t - \Delta t). \quad (23)$$

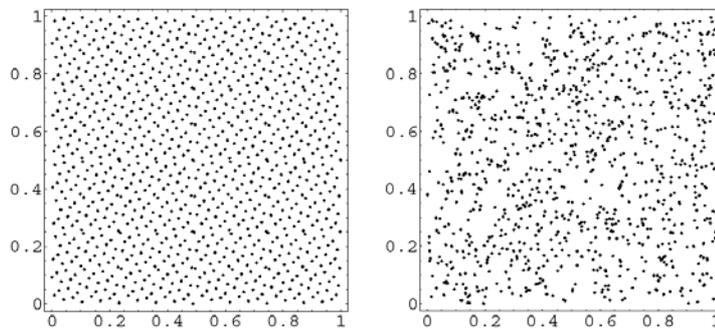
The double gamma bridge can be implemented on the basis similar to (23), since in this

case, the VG process is interpreted as a difference of two increasing (and independent)

gamma process,  $\mathcal{G}_u - \mathcal{G}_d$ .

All methods described above can be regarded as special cases of Monte Carlo simulation. However, it is not the case of the Quasi Monte Carlo simulation. While applying Monte Carlo simulation we primary need to generate pseudorandom numbers uniformly distributed on the unit interval and fulfilling prespecified tests of randomness, applying Quasi Monte Carlo simulation we proceed according to the chosen algorithm and generate quasirandom numbers in deterministic rather than random sequence. The review of basic approaches has been provided e.g. by Niederreiter (1992) or Glasserman (2004). Figure 2 shows the difference between pseudorandom and quasirandom numbers in two-dimensional cube for  $N=1000$ . In order to produce quasirandom numbers we have proceed according to Woźniakowski (1991).

**Figure 5 – Comparison of quasirandom numbers and pseudorandom**



## 4. Numerical study

In this chapter we compare chosen approaches of Monte Carlo simulation. First, we will aim on two types of probability distribution –  $\mathcal{N}[0;1]$  and  $\mathcal{VG}(g(t;v);\theta,\vartheta)$ . Next, we apply these methods in order to obtain the price of (i) plain vanilla call option and (ii) up-and-out call option.

All computation is done in Mathematica® software (version 5.1) on 512 MB PC with Pentium 4 3.2 GHz HT processor. If not stated otherwise, all cases are studied for five different numbers of random (and “independent”) paths – more particularly  $N=100, 1\ 000, 10\ 000, 100\ 000$  and  $1\ 000\ 000$ .

### 4.1 Generating random numbers

The first step to analyze the efficiency of particular approaches to Monte Carlo simulation is to generate random numbers from selected probability distribution and subsequently examine whether their actual

characteristics are close to target values. More particularly, we will evaluate mean, variance, skewness, kurtosis, and time costs.

The selected probability distributions are standard normal distribution, specified by  $\mathcal{N}[0;1]$ , and variance gamma distribution – the case of parametric one, specified by  $\mathcal{VG}(g(t;v); \theta, \vartheta)$ .

First we summarize some results of random numbers generated from standard normal distribution. Target values are zero mean, unit variance, zero skewness and zero excess kurtosis.

With plain Monte Carlo (PMC) we are able to be close to these target values only with huge  $N$ . Significant improvement can be done by incorporating of antithetic variates technique (AVM). Clearly, if the method is applied in right manner, we must get target values of mean and skewness, although the number of paths  $N$  is low. Relevant time costs are approximately one half of time needed to execute PMC. Note, that e.g.  $N = 10$  indicates  $N/2$  of independent paths.

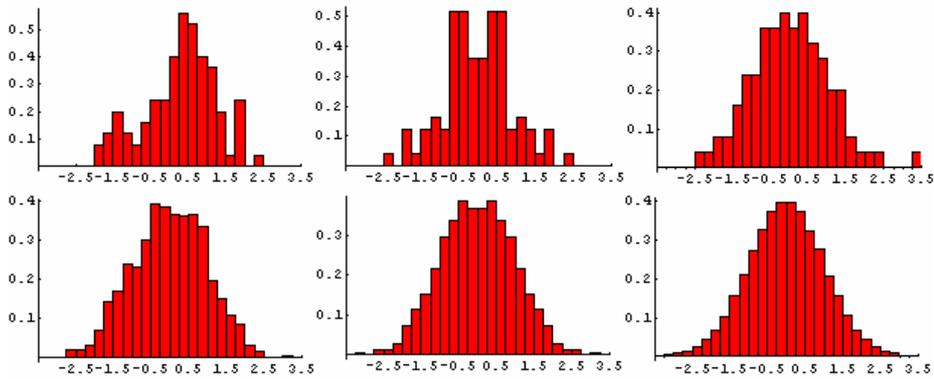
Next, we have evaluated stratification method (SS). In other words, we have stratified the interval of admissible values in order to get smoother curve of implied probability distribution even for low  $N$ . There is no surprise, that our expectations are fulfilled. However, respecting total time costs, there is no clear improvement against AVM. All observed results are included in Table 1.

**Table 1 Characteristics of random numbers from  $\mathcal{N}[0;1]$  for particular methods**

A Random numbers from $\square[0;1]$ – PMC						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	0.2954	0.9555	0.9130	-0.4117	2.7803	0.0000
1 000	-0.0049	0.9820	0.9643	-0.0177	2.8005	0.0310
10 000	-0.0038	1.0091	1.0183	0.0382	3.0018	0.0930
100 000	-0.0045	0.9998	0.9995	0.0094	3.0093	1.0470
1 000 000	0.0007	1.0001	1.0002	0.0012	3.0013	9.6720
B Random numbers from $\square[0;1]$ – AVM						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	0.0000	0.9047	0.8185	0.0000	3.2804	0.0000
1 000	0.0000	0.9738	0.9482	0.0000	3.0468	0.0160
10 000	0.0000	1.0036	1.0071	0.0000	2.9772	0.0620
100 000	0.0000	0.9996	0.9993	0.0000	3.0097	0.3910
1 000 000	0.0000	1.0000	0.9999	0.0000	3.0032	4.1250
C Random numbers from $\square[0;1]$ – SS						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	0.0120	1.0194	1.0392	0.2317	3.3918	0.1090
1 000	0.0010	1.0023	1.0046	0.0374	3.0942	0.3280
10 000	0.0000	0.9999	0.9998	0.0006	2.9932	3.0940
100 000	0.0000	1.0000	1.0000	0.0001	2.9992	31.7180
1 000 000	0.0000	1.0000	1.0000	0.0000	2.9998	322.8440

Furthermore, we include graphical presentation of some results – histograms of implied distribution for  $N = 100$  and  $N = 1\,000$ . There is no surprise, that results of PMC are very plain. Histograms of AVM exactly indicate the improvement of the method – it provides us with a distribution which is symmetric around mean. However, the histogram of SS indicates more smooth distribution, mainly around the mean and in tails.

**Figure 6 Histograms of random number from  $\mathcal{N}[0;1]$  PMC (left), AVM (middle) a SS MC (right)**



Last applied approach was simulation based on quasi random numbers (QMC) which give us similar results as SS MC for comparable  $N$ , but the time costs are significantly lower.

We have also tried to examine the results for the sum of two independent random numbers from  $\mathcal{N}[0;1]$ . Here, AVM does not provide clear improvement. Thus, the only possibility, how to get more reliable results is to apply Latin hypercube sampling (LHS). The results of LHS are better for the same  $N$ . However, if we compare these two methods for approximately same time costs, there is apparent only slight improvement. Of course, the convergence of LHS is better.

**Table 2 Characteristics of random numbers from  $\mathcal{V}\mathcal{G}((1;0.3);-0.14;0.12)$  for particular methods**

A Random numbers from $\mathcal{V}\mathcal{G}((1;0.3);-0.14;0.12)$ – PMC						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	-0.1023	0.1289	0.0166	-0.9190	4.1671	0.0150
1 000	-0.1424	0.1412	0.0199	-0.7940	3.8087	0.0470
10 000	-0.1435	0.1452	0.0211	-0.7590	4.2174	0.5160
100 000	-0.1441	0.1448	0.0210	-0.8063	4.3376	4.8440
1 000 000	-0.1435	0.1446	0.0209	-0.8095	4.3738	48.4060

B Random numbers from $\square\square((1;0.3);-0.14;0.12)$ – AVM						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	-0.1213	0.1330	0.0177	-0.1450	3.7442	0.1560
1 000	-0.1472	0.1487	0.0221	-0.8926	4.4165	0.0780
10 000	-0.1444	0.1458	0.0212	-0.7640	4.1759	0.5630
100 000	-0.1433	0.1441	0.0208	-0.7876	4.3085	5.6870
1 000 000	-0.1435	0.1445	0.0209	-0.8036	4.3570	57.1570

E Random numbers from $\square\square((1;0.3);-0.14;0.12)$ – LHS						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	-0.1423	0.1458	0.0213	-0.4828	4.0969	0.2340
1 000	-0.1443	0.1460	0.0213	-0.7755	4.3094	2.0470
10 000	-0.1437	0.1453	0.0211	-0.7843	4.1595	19.8280
100 000	-0.1436	0.1446	0.0209	-0.8214	4.4640	196.7660
1 000 000	-0.1436	0.1447	0.0209	-0.8046	4.3391	2197.5900

F Random numbers from $\square\square((1;0.3);-0.14;0.12)$ – QMC (LHS)						
Number of scenarios	Mean value	Standard deviation	Variance	Skewness	Kurtosis	CPU (seconds)
100	-0.1385	0.1323	0.0175	-0.9017	4.2937	0.2500
1 000	-0.1428	0.1430	0.0204	-0.7587	4.0679	2.2500
10 000	-0.1437	0.1454	0.0212	-0.8422	4.5940	20.4060
100 000	-0.1436	0.1444	0.0209	-0.8039	4.3717	255.1720
1 000 000	-0.1436	0.1445	0.0209	-0.8055	4.3619	2321.7200

The next step is to examine the efficiency of these approaches to Monte Carlo simulation in case of generating the complex Variance gamma process regarded as a combination of two independent random numbers – from standard normal distribution and from gamma distribution.

Here, we suppose following parameters  $\theta = -0.1436$ ,  $\vartheta = 0.12136$ ,  $\nu = 0.3$ , and  $\tau$  is one year, which imply *mean* = -0.1436, *standard deviation* = 0.1446, *skewness* = 0.8055, *kurtosis* = 4.1424.

In this case the results are summarized in Table 2. Since the problem is formulated as a generation of two independent processes, one of which is not symmetric, there is almost no effect of AVM, see Part B of the table.

Part E and F provided results obtained by LHS method either based on pseudorandom or quasi random numbers. Here, the method using quasirandom numbers takes about 10% much more time, while the results can be regarded as slightly better (except for low  $N$ ).

As before, if we are interested only in approximate results and respecting the time costs, it is suitable to apply simple method (PMC). However, if we need exact results, LHS should be applied.

#### 4.2 Vanilla call option valuation

Suppose a call option  $f$  with following parameters:  $r = 0.1$ ;  $\tau = 1$ ,  $S_0 = 100$ ,  $K = 101$ . We suppose two types of underlying distribution: GBM ( $\sigma = 21\%$ ) and VG (parameters as before). Results are included in Table 3: GBM/BS model (Black and Scholes, 1973) in Part A and VG model (Madan *et al.* 1998) in Part B.

As it is apparent from Part A, PMC is relatively far from theoretically true result even for huge  $N$ . AV MC does slightly better. Note, that there is almost no time improvement (time costs for generating random numbers are only a fraction of total time costs).

If we compare SS with PMC, we see that it provides very good results as early as  $N = 1\,000$ . Relating time costs are very low, so that there is no reason to apply simple methods (PMC, AV MC). Moreover, SS MC beats also QMC, although time costs of SS are approximately twice as much as of QMC for the same  $N$ .

Proceed now to the Part B. We can see that the complexness of the VG model plays big role. Although the simple methods (PMC, AV MC) can provide good result, the convergence is low and the error of estimated result is significant.

**Table 3 Approximating the value of plain vanilla call by simulation**

A Plain vanilla call in BS setting ( <i>GBM</i> )								true price = 13.0295	
method	PMC		AV MC		SS		QMC		
$N$	value	time (seconds)	value	time (seconds)	value	time (seconds)	value	time (seconds)	
100	17.7456	0.0000	11.8243	0.0000	12.9683	0.0780	13.0268	0.0160	
1 000	12.8686	0.0310	12.7975	0.0160	13.0265	0.3590	13.0766	0.0780	
10 000	13.0780	0.1560	13.0897	0.1250	13.0312	3.3440	13.0382	1.1560	
100 000	12.9633	1.3910	13.0267	1.0150	13.0295	32.4530	13.0305	13.7820	
1 000	13.0419	13.6090	13.0303	10.2190	13.0295	345.1410	13.0296	164.2960	

B Plain vanilla call in VG setting ( <i>Variance gamma process</i> )							true price = 10.9815	
method	PMC		AV MC		LHS		QMC (LHS)	
$N$	value	time (seconds)	value	time (seconds)	value	time (seconds)	value	time (seconds)
100	13.9800	0.0320	11.3148	0.0630	10.9701	0.3750	10.6830	0.2030
1 000	11.0006	0.0930	10.9513	0.0930	10.9302	2.1400	10.9353	2.0310
10 000	11.0352	0.5940	11.0041	0.6410	11.0210	24.0310	10.9800	21.9060
100 000	10.9509	5.8750	10.9800	5.8900	10.9751	198.3130	10.9986	211.4220
1 000	10.9845	57.9060	10.9762	58.7660	10.9840	1994.3600	10.9801	2249.1600

Thus, even if LHS based either on pseudorandom numbers or quasirandom numbers does not provide us with exactly the same value as the theoretically true price is (and time costs are huge), its error is acceptable. Notice, that LHS using quasirandom numbers gives us again slightly more interesting results (once again, except low number of scenarios).

Finally, we provide also some convergence results, see Appendix I for BS setting (PMC, AV MC and SS MC). When building the chart, we start with  $N = 5\,000$  and proceed up to  $N = 500\,000$ , the step is 500.

We can see that according the scenarios we have run the convergence of PMC is very pure. Although it can happen that the simulation will provide right number, we cannot be sure of that. By contrast, AV MC is very close to the line indicating the true price starting at  $N = 100\,000$ . Unfortunately, even if we increase the number of scenarios far behind  $N = 1\,000\,000$ , the estimated price will probably not be equal to the true value.

More importantly, the convergence of SS MC starts to be very good for  $N = 10\,000$  and with  $N = 150\,000$  there are almost no errors in price estimate. Thus, the improvement is clearly visible.

## 4.2 Up-and-out call option valuation

Suppose a call option  $f$  with barrier  $\mathcal{U}$  set initially above the price of an underlying asset  $S$  at time zero,  $S_0 = 100$ ,  $\mathcal{U} = 125$ . Other parameters are the same as before. For simplicity, we will suppose, that the price is monitored 16 times per option life (the intervals are of equal length).

Now, we will study only results for VG model executed with LHS

method.<sup>7</sup> Thus, as a first step we generate the terminal price of the underlying asset. Next we calculate the vanilla option payoff. At this moment, we can make a test – if the payoff is zero, also the payoff of barrier options must be zero and it is not useful to recover intermediate prices; if the terminal price is above the barrier, we know, that up-and-out option cannot be exercised and once again, there is no need to know intermediate prices; otherwise we must recover intermediate prices applying bridge sampling.

Results are apparent from Table 4. Since we monitor the underlying asset price at discrete times, we are not able to provide any theoretically true value. We can see that both approaches give us for higher  $N$  approximately same (and stable) results.

**Table 4 Approximating the values of call options under VG model**

B Plain vanilla call in VG setting (Variance gamma process)					True prices = {10.9815, ?, ?}		
method	LHS MC				QMC (LHS)		
$N$	vanilla value	up-and-in value	up-and-out value	time (seconds)	vanilla value	up-and-out value	time (seconds)
100	10.8154	4.8681	5.9473	0.391	10.4917	5.7820	0.422
1 000	10.9398	5.1459	5.7939	3.75	11.0262	6.1559	4.156
10 000	10.9650	5.0017	5.9632	37.609	10.9986	5.9699	42.516
100	10.9828	5.0450	5.9378	377.078	10.9813	5.9353	432.032
500	10.9801	5.0503	5.9298	1919.67	10.9814	5.9246	1982.22

## 5. Conclusion

In this paper we have focused on basic ways to improve the efficiency of Monte Carlo simulation. We have described and applied the most important ones, which can be also regarded as a general – thus they are useful for general pricing problems.

We have examined the efficiency of selected approaches in case of (i) generating random numbers from prespecified distributions and (ii) option pricing. In the first case, we have seen that the effect (improvement) of these methods cannot be clear. However, when applied in pricing procedure the usefulness was clear.

Simultaneously, we have observed convergence of particular pricing problems. Relevant charts give us clear conclusion of efficiency of these methods. Note however, that pricing of barrier options is a complex problem

<sup>7</sup> Convergence of up-and-out as well as up-and-in call option under BS model is apparent from Appendix II and Appendix III.

through the (dis)continuous set of relevant prices. Therefore, it is much more important to examine whole family of variants – when to stratify, when to make the test, etc.

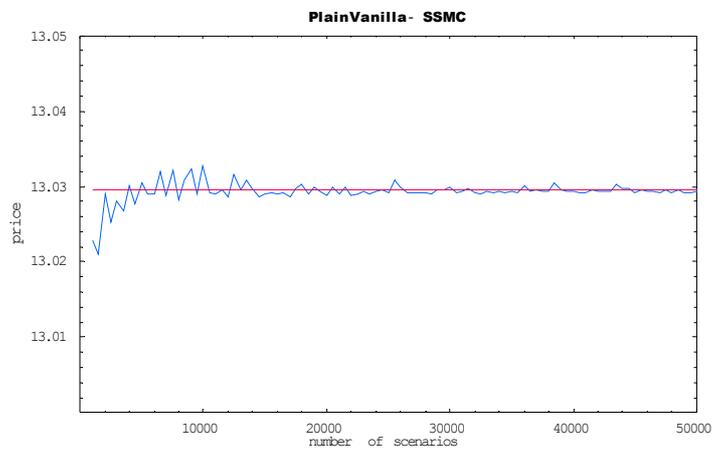
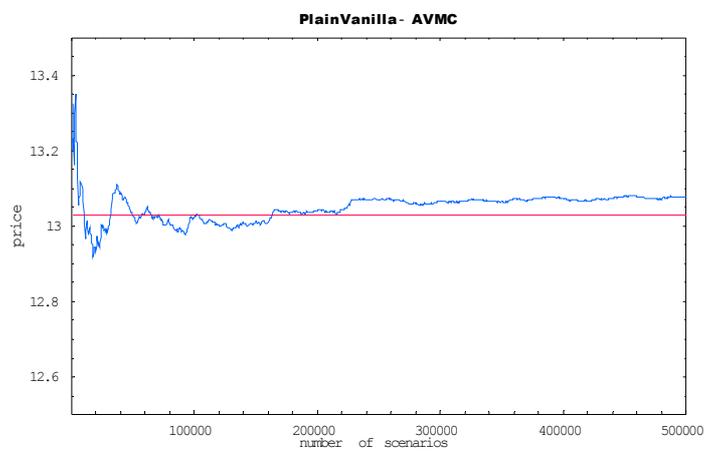
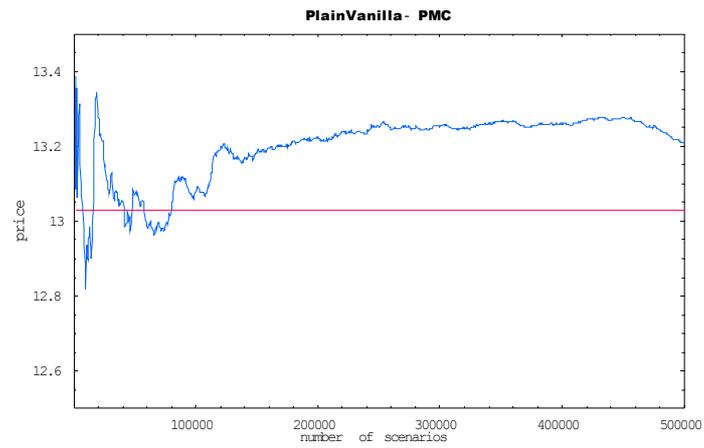
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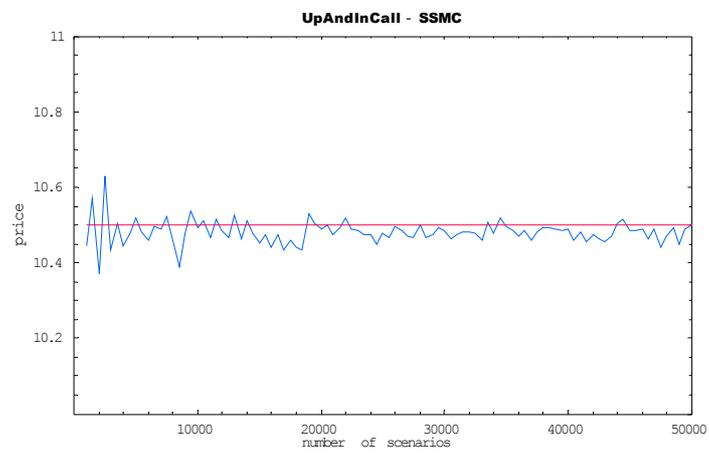
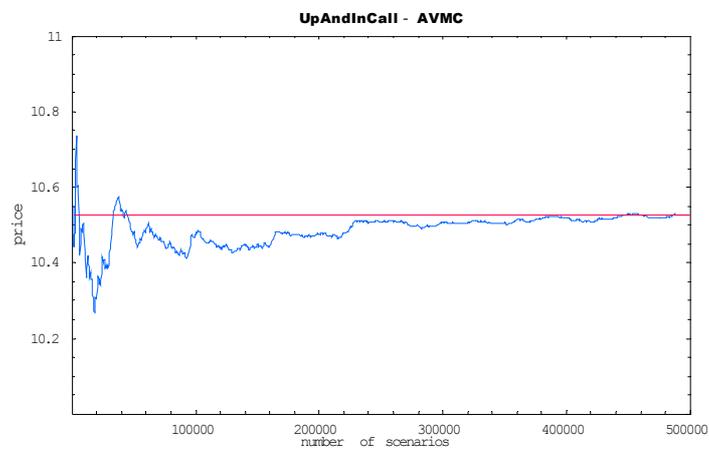
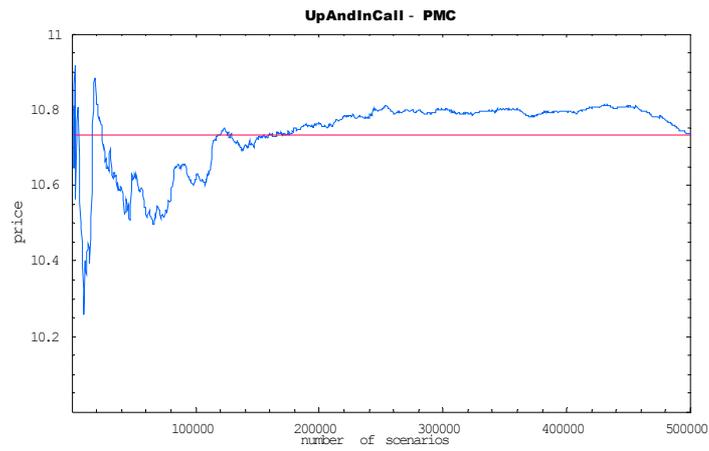
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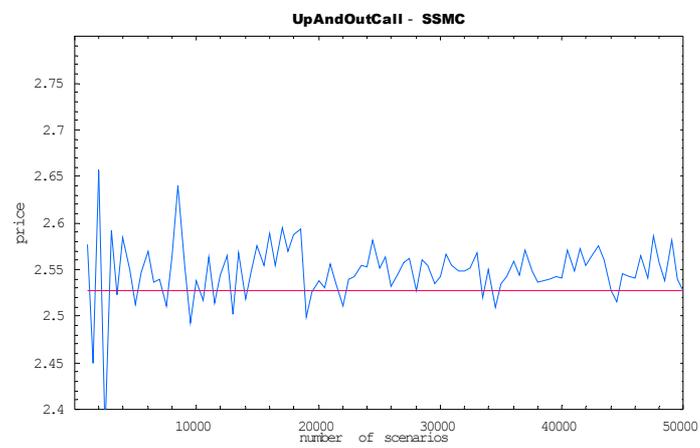
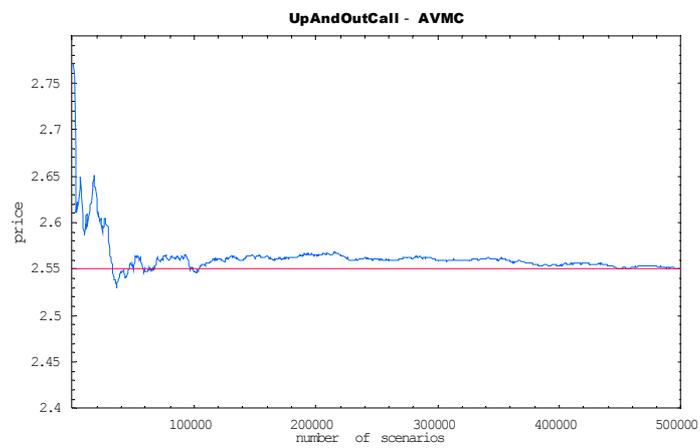
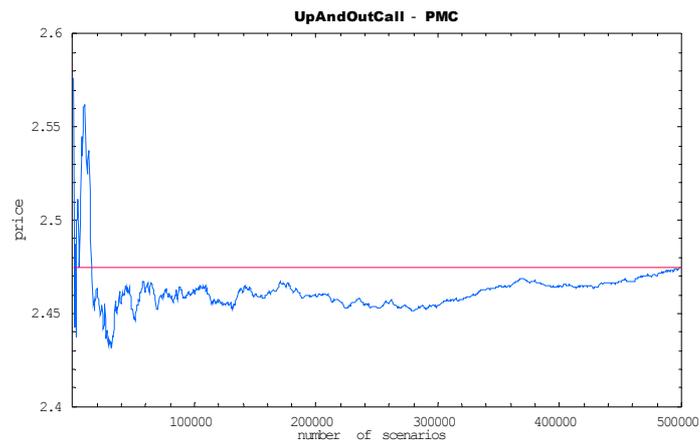
## Appendix I – Convergence of plain vanilla call within BS setting



## Appendix II – Convergence of up-and-in call within BS setting



### Appendix III – Convergence of up-and-out call within BS setting



# M/B RATIO AND SIZE ON A SMALL STOCK MARKET

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## **Abstract**

*This study examines the relationship between the market-to-book (M/B) ratio, size, and current returns of Icelandic stocks. The study uses monthly return data on stocks from the Iceland Stock Exchange from July 1997 to June 2003. The methodology applied in this research can be divided into two parts. First, the data from individual stocks are analyzed; portfolios are then formed and their returns examined. Analysis of the results of studying individual stocks reveals no relationship between size and returns, but a very significant one between M/B ratio and returns. However, there is no significant relationship between returns, M/B ratio, and size when the performance of portfolios is analyzed.*

**Keywords:** *Market efficiency, Icelandic stock market, Market-to-Book ratio, size*

## 1. Introduction

In this paper, empirical tests are performed to determine whether the Icelandic stock market shows clear signs of the market inefficiency that is apparent in other capital markets. Empirical tests are performed to study the relationship between market-to-book (M/B) ratios, i.e. the market value of common stocks divided by the book value of ordinary shareholders' funds, size, and returns of Icelandic stocks. This research is divided into two parts. First, data on returns, M/B ratios, and size of individual stocks are analyzed. Portfolios are then formed based on the variables examined and their performance compared. The findings are that there is no apparent relationship between the size measured by market value of common stocks and their returns. On the other hand, there is a statistically significant relationship between M/B ratios and returns when using data from individual stocks, but those results are not statistically significant when analyzing the performance of portfolios.

An efficient capital market is one in which stock prices fully reflect available information. The notion that stocks already reflect all available information is referred to as the efficient market hypothesis (EMH). A precondition for the strong version of the hypothesis is that information and trading costs, the costs of getting prices to reflect information, are always zero (Grossman and Stiglitz, 1980). A weaker and economically more sensible version of the efficiency hypothesis states that security prices reflect information to the point where the marginal benefits of acting on information, i.e., the profits to be made, do not exceed the marginal costs (Jensen, 1968). Therefore, according to the EMH, stock prices change in response to new and unpredictable information and they follow a random walk—i.e., they are random and unpredictable.

It is common to distinguish between three versions of the EMH: the weak, the semistrong, and the strong forms. The weak form of the hypothesis asserts that stock prices already reflect all information that can be derived by examining trading data. The semistrong form of the hypothesis states that all publicly available information regarding the prospects of a firm must already be reflected in the stock price. Finally, the strong version of the EMH states that stock prices reflect all information relevant to the firm, even information available only to company insiders.

The relationship between risk and returns is an important subject when studying capital market efficiency. It is obvious that investment in riskier assets such as stocks should generate higher return than investment in less risky assets. It was not until the Capital Asset Pricing Model (CAPM) was developed that academics were able to measure risk and its return.

CAPM is based on the assumption that asset returns are linearly related to their covariance with the market's return. The CAPM assumes that assets with higher systematic risk have a higher return than assets with lower systematic risk, and that assets with the same systematic risk should give the same return. Therefore, if investors own stock with the same systematic risk as the market, i.e., the beta coefficient is 1, then the expected return is the same as the market return. If the beta coefficient is 0 then the expected return is the same as the risk-free rate of return. The CAPM also implies there is no relationship between firm-specific risk and returns because, by diversification, specific risk can be eliminated.

Markowitz (1959) laid the groundwork for the CAPM. In that seminal research, he cast the investor's portfolio selection problem in terms of expected return and variance of return. He argued that investors would optimally hold a mean–variance-efficient portfolio—i.e., a portfolio with the highest expected return for a given level of variance. Sharpe (1964) and Lintner (1965a) built on Markowitz's work to develop economy-wide implications. They showed that if investors have homogeneous expectations and optimally hold mean–variance-efficient portfolios, then, in the absence of market friction, the portfolio of all invested wealth, or the market portfolio, is itself a mean–variance-efficient portfolio.

The Sharpe and Lintner derivations of the CAPM assume the existence of lending and borrowing at a risk-free rate of interest. Using this version of the CAPM, for the expected returns of asset  $i$  we have:

$$E[R_i] = R_f + \beta_{im}(E[R_m] - R_f) \quad (1)$$

$$\beta_{im} = \frac{\text{Cov}[R_i, R_m]}{\text{Var}[R_m]}, \quad (2)$$

where  $E[R_i]$  is the expected return of a security,  $R_f$  is the risk-free return, and  $E[R_m]$  is the return of a market index.

The purpose of this study is to examine whether there has been a relationship between the size of Icelandic stocks, their M/B ratios, and the returns. A significant relationship between these variables and returns might be interpreted as a violation of EMH. These two variables, M/B ratio and size, were chosen because previous research has shown significant relationship between returns and those variables on international stock markets.

## 2. Previous Research

Considerable research has been undertaken to test the CAPM. The main findings have been that the CAPM is not entirely valid as a model that explains stock returns, and that factors other than beta provide a better explanation. The Lintner (1965b) study of the American stock market from 1954 to 1963 found that the Security Market Line, i.e., the line that shows the relationship between systematic risk (beta) and returns, was too flat. Higher returns were not proportional to higher systematic risk. Later research where the CAPM was tested on the American stock market has shown that for periods, even for a decade, stocks with higher systematic risk do not give higher returns. Research by Black et al. (1972) and Fama and MacBeth (1973) showed that returns of high beta stocks were lower than the CAPM model would have predicted. In their seminal research, Fama and French (1992) found no relationship between returns and beta on the US stock market from 1963 to 1990, but a weak positive relationship between 1941 and 1990.

These findings have led to the development of multifactor models. These models are based on the classical CAPM with a factor additional to the return of the market included to explain returns. The Fama and French (1992) findings were that a multifactor model where stock returns were explained by their M/B ratio (market value/shareholder's equity), size (market value of common stocks), and the market's return was considerably better at explaining stock returns than the classical CAPM.

Reinganum (1992) analyzed the returns of New York Stock Exchange stocks ranked by size from 1926 to 1989. He found that small firms gave returns with a higher average arithmetic mean for that period. The returns of the small firms were superior even when accounting for risk. In a study of UK market data from April 1961 to March 1985, Levis (1989) found that small firms outperformed larger firms in that they gave excess returns when adjusted for risk.

Small stocks' out performance of large stocks has been related to the higher cost of trading. The bid/ask spread is generally much higher for small stocks, making the cost of trading much higher. Another explanation is that smaller firms have different sector or industry distributions than do larger firms.

In their extensive study, Haugen and Baker (1996) analyzed data for five countries from 1985 to 1993. They found that stocks with low M/B ratios gave excess returns in the US, Germany, France, the UK, and Japan. The excess return was statistically highly significant in all of these countries. In recent research, Chan and Lakonishok (2004) studied American stocks from 1979 to 2002. They found that stocks with low M/B ratios had

considerably higher average returns than other stocks and that they were less risky.

Low M/B ratio stocks' out performance of high M/B ratio stocks has been related to the tendency of investors to overestimate growth for high-growth companies and to underestimate growth for low-growth companies. High-growth companies often sell at high M/B ratios, whereas low-growth companies sell at low M/B ratios, with the result that the stocks with low M/B ratios outperform the others.

An extensive study by Gunnlaugsson and Jonsson (2004) on the Icelandic stock market from January 1993 to June 2003 they applied the methodology of forming portfolios based on the variable examined. They found that there was a significant relationship between the P/E ratio and return. There was also an indication of relationship between sizes, i.e., small stocks gave higher returns, but that was not statistically significant, and a low M/B ratio correlated with higher returns; that relationship also was not statistically significant.

This research is a continuation of Gunnlaugsson and Jonsson's study. Data on size and M/B ratios of individual stocks are examined and the relationship with returns analyzed. Portfolios are formed based on the variables examined and their performance and risk studied.

### 3. Data and Methodology

The purpose of this research is to examine whether there has been a significant relationship between the M/B ratios, size, and returns of Icelandic stocks. The period this study covers is from July 1997 to June 2003. To represent the Icelandic stock market, 34 stocks were randomly selected and their monthly returns, M/B ratios, and size, i.e., market value of common stocks, were measured every month of the period covered by this study.

Statistical tests were then performed to assess whether there was a significant relationship between returns, size, and M/B ratios by applying ordinary least squares (OLS) on the following regression:

$$R_i - R_f = \alpha + \beta(R_m - R_f) + \gamma(M/B) + \lambda(S) + u \quad (3)$$

where  $R_i$  is the return of individual stock,  $R_f$  is the risk-free return and, as a proxy, the monthly return of a three-month T-bill is used,  $\alpha$  is the intercept,  $\beta = \text{Covar}(R_i, R_m)/\sigma^2$  is the slope,  $R_m$  is the market return, and the ICEX-15 is used as a proxy for the market,  $M/B$  is the market to book ratio,  $S$  is the size of the stocks, i.e., their market value, and  $u$  is an error term. The

coefficients  $\gamma$  are  $\lambda$  key coefficients. They measure if there has been a significant relationship between returns, M/B ratio, and size, when controlling for the market return. If these coefficients are statistically significant, that might be an indication of market inefficiency.

In addition to the regression, using data on individual stocks, the previously mentioned portfolios were formed based on the variables examined, i.e., size and M/B ratios, and their performance was analyzed. For every month from July 1997 to June 2003, four portfolios were constructed based on the value of the variable examined. The stocks were equally weighted in the portfolios; i.e., the return of the portfolio was equal to the average return of the stocks. Then the returns of the stocks were measured and compared, and the returns of the extreme portfolios were tested to determine whether they were statistically different when accounting for systematic risk. As an example, when studying the relationship between size and returns, four portfolios were formed in the beginning of every month this research covered. Stocks were ranked according to their size into four portfolios. The smallest stocks were in Portfolio 1, and the largest in Portfolio 4. The performance (return) of the portfolios was then measured in the month. Each month this process was repeated and new portfolios were formed based on the market value of common stocks, and so on for the following months.

Statistical tests were then performed to examine whether there was a significant difference in return between the extreme Portfolios 1 and 4 when controlling for systematic risk. These statistical tests are based on an approach known as Jensen's alpha, which is one of many performance measures that are based on the classical CAPM. It is easily computed by finding the intercept,  $\alpha_p$  in the regression:

$$R_p - R_f = \alpha_p + \beta_p (R_m - R_f) + u_p \quad (4)$$

This method was introduced by Jensen (1968). The procedure allows the efficient estimation of  $\alpha_p$ , a measure of the monthly excess return after adjustment for portfolio risk. Assuming the CAPM holds, the alphas on passively managed portfolios are expected to be zero because all securities are expected to lie on the security market line. Therefore, a significantly positive alpha of a portfolio indicates an excess return.

The goal of this study is to compare the performance of portfolios by applying the methodology of Jahnke et al. (1987). Rather than estimating the previous equation for two extreme portfolios, the required performance is estimated by using OLS on the following regression:

$$R_{pt} - R_{ft} = \alpha_p + d_L D_{pt} + \beta_p (R_{mt} - R_{ft}) + s_L S_{pt} + u_{pt} \quad (5)$$

where  $R_{pt}$  is the return in month  $t$  ( $t = 1, \dots, 72$ ) earned by a portfolio purchased at the beginning of the month;  $\alpha_p$  is the intercept, which equals the monthly abnormal performance of the portfolio that is not represented by a dummy variable, i.e.,  $\alpha_H$ ;  $R_{ft}$  is the risk-free rate, i.e., the return of one-month Treasury bills in month  $t$ ;  $\beta_p$  is the slope, which equals the systematic risk of the portfolio  $\beta_H$ , which is not represented by a dummy;  $R_{mt}$  is the rate of return on the ISEX-15 index in month  $t$ ;  $D_{pt}$  is equal to zero for observations of the portfolio that are not represented by a dummy and one for all observations of the portfolio that are represented by a dummy variable; and  $u_{pt}$  is an error term assumed to have an expected value of zero and to be serially uncorrelated.  $S_{pt} = D_{pt}(R_{mt} - R_{ft})$  for all observations. The coefficient  $\alpha_p$  in the equation equals  $\alpha_H$ , i.e., the measure of monthly abnormal performance for the portfolio that is not represented by a dummy variable, which means that  $D_{pt} = 0$  for that portfolio. The coefficient  $d_L$  is a key parameter in this regression. It measures the difference between the excess returns of the portfolio that is not represented by a dummy variable and the portfolio that is represented by a dummy variable. It should be noted that  $\alpha_p + d_L$  is equal to the alpha of the portfolio, which is represented by a dummy variable. Thus, we may use a t-test to determine if  $d_L$  is significantly different from zero. If  $d_L$  is significant, then the returns of the portfolios are significantly different when differences in systematic risk are taken into account.  $\beta_p$  equals  $\beta_H$ , i.e., the systematic risk (beta) of the portfolio, which is not represented by a dummy variable. Finally,  $s_L$  provides an estimate of the difference in systematic risk between the portfolio that is represented by a dummy variable and the one that is not, with  $\beta_p + s_L$  being the systematic risk of the portfolio that is represented by a dummy variable,  $\beta_L$ .

## 4. Results

### 4.1 Individual stocks

In Table 1 the main results of the regression are from data used in regression applying Equation 3. The main finding is that there is a significant relationship between the M/B ratio and the return of Icelandic stocks. The coefficient  $\gamma$  is negative and statistically significant. This means that stocks with low M/B ratios had significantly higher average returns than stocks with high M/B ratios. The coefficient  $\lambda$  is not statistically significant so there was no significant relationship between the size and return of Icelandic stocks.

**Table 1. Result of the regression applying data on individual stocks**

	$\alpha$	$\beta$	$\gamma$	$\lambda$	$R^2$
Coefficient	0.0076	0.81	-0.0021	-0.045	0.15
t-statistics	(*2.82)	(*19.09)	(* -6.24)	(-0.21)	
p-statistics	0.0048	<0.0001	<0.0001	0.83	
Durbin W.	1.63			n = 2,181	

\*Significant at the 5% level.

### 4.2 Portfolios

Figure 1 shows the average return of portfolios formed according to the size of the stocks (market value). The figure shows that the portfolio with the smallest stocks had the highest average return, approximately 0.8% per month. The portfolio with the largest stocks had the second highest return, 0.7% per month. The portfolios of stocks of medium size, portfolios 2 and 3, had the lowest average returns.

**Figure 1. Returns of portfolios constructed according to firm size**

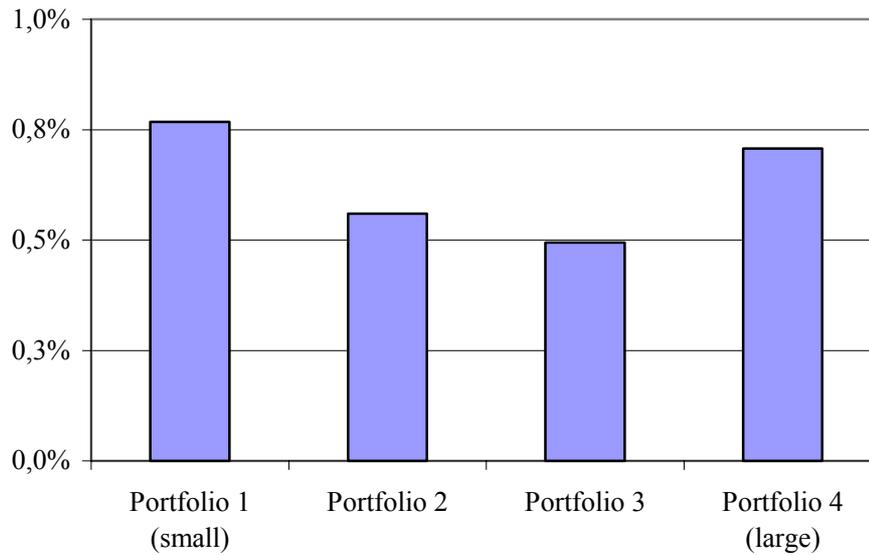


Table 2 shows the main result where the performances of Portfolios 1 and 4 are compared using regression applying Equation 5. Not surprisingly, the findings are that there is no difference in risk-adjusted returns between the portfolios as shown by the very insignificant  $d_L$  coefficient. The systematic risk (beta) of the portfolio formed from the smallest stocks is lower than the systematic risk of the largest stocks as indicated by the negative  $s_L$  coefficient. The difference in systematic risk is not statistically significant. These results clearly indicate that there was no relationship between the size and return of Icelandic stocks.

**Table 2. Results of the regression of portfolios constructed according to firm size**

	$\alpha_p$	$d_L$	$\beta_p$	$s_L$	$R^2$
Coefficient	0.0023	0.00019	0.94	-0.16	0.57
t-statistics	(0.59)	(0.03)	(*10.4)	(-1.22)	
p-statistics	0.56	0.97	<0.0001	0.22	
Durbin W.	1.99			n=144	

\* Significant at the 5% level.

Figure 2 shows the average return of portfolios constructed according to the M/B ratios. The figure shows that the return of Portfolio 4, i.e., the

portfolio with the stocks with the highest M/B ratio was lowest, at only 0.18% per month. Portfolio 2 had the highest average return or 1.03% per month. The figure indicates a possible relationship between M/B ratios and returns on the Icelandic stock market.

**Figure 2. Returns of portfolios constructed according to firms' M/B ratios**

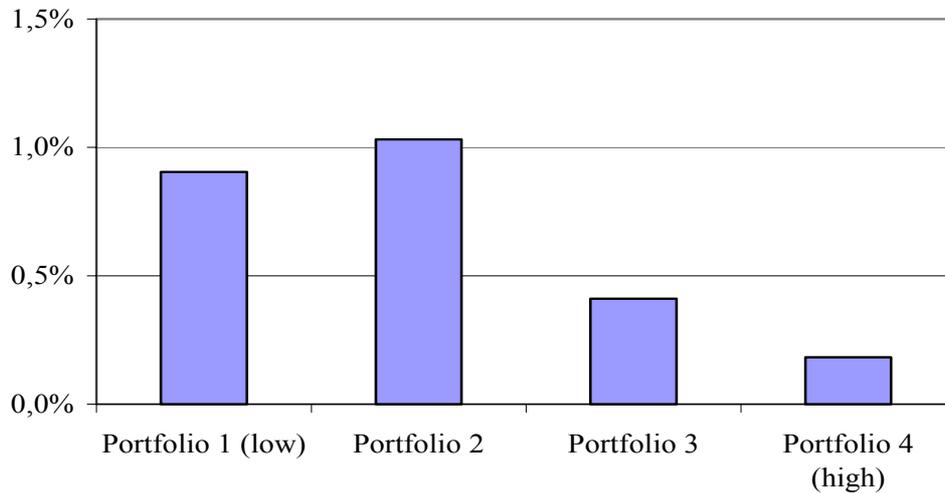


Table 3 shows the main result where the performances of Portfolios 1 and 4 are compared applying regression using Equation 5. The findings are that there is a difference in return between Portfolios 1 and 4 when adjusting for systematic risk as the coefficient  $d_L$  indicates. The coefficient is, however, not statistically significant, so the difference in return also is not statistically significant. Portfolio 1 has lower systematic risk than Portfolio 4 as the negative  $s_L$  indicates; however, the difference in systematic risk between the portfolios is not statistically significant.

**Table 3. Results of the regression of portfolios constructed according to M/B ratios**

	$\alpha_p$	$d_L$	$\beta_p$	$s_L$	$R^2$
Coefficient	-0.0027	0.0066	1.04	-0.23	0.47
t-statistics	(-0.51)	(0.91)	(*8.71)	(* -1.35)	
p-statistics	0.61	0.37	<0.0001	0.18	
Durbin W.	2.02			n=144	

\* Significant at the 5% level.

## 5 Conclusion

This paper reported empirical tests that were performed to determine whether the Icelandic stock market showed the clear signs of market inefficiency that have appeared on other capital markets. Empirical tests were performed to study the relationship between the M/B ratios, size, and returns of Icelandic stocks. This research was divided in two parts. First, data on returns, M/B ratios, and size of individual stocks were analyzed. Portfolios were then formed based on the variables examined and their performance was compared. The findings are that there is no apparent relationship between the size measured by market value of common stocks and returns. On the other hand, there was a statistically significant relationship between M/B ratios and returns when using data from individual stocks, but those results were not statistically significant when analyzing the performance of portfolios. The reason for that might be the number of data points, which are more than 15 times more numerous than when analyzing individual stocks rather than portfolios.

The finding that stocks with low M/B ratios provide high returns on the Icelandic stock market is consistent with findings on other stock markets. It is interesting that the small and underdeveloped Icelandic stock market shares the same signs of inefficiency that appear in larger and more developed stock markets.

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# DETERMINANTS OF AGENCY COSTS IN SLOVAK CORPORATIONS

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## **Abstract**

*The paper builds on theoretical arguments suggesting that the debt-equity ratio is related to agency costs. Two predictions prevail. First, leverage aggravates agency conflicts between shareholders and bondholders. Frequently cited examples are (1) the direct wealth transfer problem, (2) the asset substitution problem and (3) the underinvestment problem. Second, leverage mitigates agency problems that arise from managerial behavior that conflicts with the interest of shareholders. Well-known example is the overinvestment problem. For analysis, we used questionnaire data of non-financial firms in Slovakia. The analysis itself uses structural equations modeling with confirmatory analysis. The structural equations model describes the relationships between the variables in the model and the endogenous variables are four agency problems mentioned above. Each of these four endogenous variables is potentially determined by a wide set of exogenous variables. The main result of the research is that direct relations between leverage and agency problems seem to be absent. This does not imply that the agency problems are irrelevant. However, other instruments than leverage affect agency problems.*

**Keywords:** *agency cost; leverage; capital structure*

## **1. Introduction**

In the paper we develop a model that helps to examine the presence of agency cost in financing decisions and capital structure decisions. For the purpose of this paper, we define agency cost as a direct and indirect cost caused by conflicts between stakeholders in the corporation. Many empirical studies provide tests of the relevance of agency problems in a capital structure setting. In these studies, it is assumed that direct relations between determinants of agency problems and leverage are caused by agency problems. The contribution of this paper is to apply and investigate potential influences of determinants of agency problems from these studies on decision making process in Slovak corporations.

## **2. Theories and hypothesis of agency problems and debt**

The pioneering work in the field of corporate capital structure is the paper of Modigliani and Miller (1958) about the irrelevance of financing choice between debt and equity. After this paper a vast and rapidly growing literature deals with potential relations between this choice and agency problems. We can briefly summarize the ideas behind the theories that we test in the present article. Additionally, we mention and discuss empirical studies and hypothesis used to test the theories.

### ***2.1 Shareholder – bondholder conflicts***

In the shareholder-bondholder conflicts shareholders make decisions transferring wealth from bondholders to shareholders. However, the bondholders are aware of the situations in which this wealth expropriation may occur. Therefore, they will demand a higher return on their bonds. Shareholders, foreseeing the bondholders' reaction, can mitigate the potential conflicts. Three potential conflicts can be distinguished: direct wealth transfer, asset substitution, and underinvestment. In the case of direct wealth transfer conflicts, dividends are increased or debt with higher priority is issued (Smith and Warner (1979)). In the case of asset substitution, the firm is substituting current projects for projects which have higher risk (Jensen and Meckling (1976)). As the bondholders are compensated given the risk of the current projects, wealth is transferred from bondholders to shareholders. In Myers' (1977) underinvestment problem, growth options will not be exercised because, due to the overhang of debt, the equity needed to finance these growth opportunities will not be provided by the shareholders. The shareholder-bondholder conflicts can be mitigated by adjusting the properties of the debt contract. This can take several forms. First, the contents of the debt contract can be adjusted by including covenants (Smith and Warner

(1979)). For example, a covenant can contain restrictions on the payment of dividends or the disposition of assets. Second, debt can be secured by collateralization of tangible assets in the debt contract. Third, convertible debt or debt with warrants can be issued (Jensen and Meckling (1976) and Green (1984)). Fourth, the maturity of debt can be shortened (Myers (1977)).

The empirical studies related to the shareholder-bondholder conflicts mainly focus on the degree to which a firm can secure its debt and the firm's growth opportunities, both in relation to the relative amount of debt. In Titman and Wessels (1988) the relative amount of fixed assets is used to approximate the relative amount of secured debt, which is a potential mitigating factor of wealth distribution and asset substitution. Titman and Wessels find no significant relationship for the expected positive relationship. However, it remains unclear whether this result is caused by agency problems or, for example, by decreasing bankruptcy costs. In Titman and Wessels (1988), Smith and Watts (1992), McConnell and Servaes (1995), and Lang, Ofek, and Stulz (1996) variables are used to approximate growth opportunities, which are hypothesized to aggravate underinvestment. The results are mixed, which is probably caused by the difficulty to measure growth opportunities from publicly available data. Titman and Wessels (1988) do not find the expected negative influence of proxies for growth opportunities on leverage, whereas Smith and Watts (1992) find the predicted effect. McConnell and Servaes (1995) and Lang, Ofek, and Stulz (1996) perform similar tests for a subsample of high-growth firms. The former study notices a significantly negative relationship between growth opportunities and leverage, while the latter finds no relationship. In these studies the properties of the debt contract that are mitigating factors of the underinvestment problem are not taken into account.

## ***2.2 The shareholder – management conflicts***

The conflicts between shareholders and management that stem from the separation of ownership and control are introduced by Jensen and Meckling (1976). The overinvestment problem of Jensen (1986) is a further elaboration of their theory. According to the overinvestment hypothesis, managers have incentives to cause their firm to grow beyond the optimal size and to accept projects with a negative value to the firm. Jensen argues that overinvestment is aggravated by more free cash flow and less growth opportunities. The overinvestment problem can be mitigated by issuing debt and Jensen refers to this nondiscretionary nature as the disciplining role of debt. Alternative mechanisms to control overinvestment exist. First, the managers' income can be made dependent upon the performance of the firm. This can be accomplished by means of managerial shareholdings or option plans, or by compensation schemes. Second, internal and external corporate

control mechanisms may mitigate overinvestment. The internal control mechanisms include monitoring by the board, large shareholders, or banks. An example of an external control mechanism is the market for corporate control, which is characterized by hostile takeovers.

Several empirical studies examine the overinvestment problem by analyzing the relationship between growth opportunities and free cash flow on the one hand, and leverage on the other. Smith and Watts (1992) do not differentiate between overinvestment and underinvestment and find the predicted negative relationship between debt and growth opportunities. McConnell and Servaes (1995) amend the test by examining the overinvestment hypothesis for a sample of low-growth firms, and include managerial shareholdings as a mitigating factor. They conclude that the results confirm the overinvestment hypothesis. In the study of Lang, Ofek, and Stulz (1996) the overinvestment hypothesis is also tested for a sample of low-growth firms, and a proxy for the availability of free cash flow is included. In line with the overinvestment hypothesis, a significantly negative relationship between debt and proxies for growth opportunities is found. Berger, Ofek, and Yermack (1997) test the influence of governance characteristics on leverage. Both studies find that alignment of interest, through managerial shareholdings and option plans, induces leverage. As a result of monitoring, the presence of large shareholders is found to increase leverage. Similarly, relationships with banks induce leverage.

### ***2.3 Summarization of the hypothesis***

In the following Table 1 we present theoretical relations (positive or negative) between four agency problems specified above and potential determinants of agency costs.

**Table 1 The endogenous relations between leverage and agency costs**  
**Theories and determinants** **Expected relationship**

<i>1. Shareholder vs. bondholder conflict</i>	
• direct wealth transfer problem	
○ leverage	positive
○ covenants	negative
○ secured debt	negative
○ convertible debt	negative
○ short-term debt	negative
• asset substitution problem	
○ leverage	positive
○ covenants	negative
○ secured debt	negative
○ convertible debt	negative
○ short-term debt	negative
• underinvestment	
○ leverage	positive
○ growth opportunities	positive
○ covenants	negative
○ secured debt	negative
○ convertible debt	negative
○ short-term debt	negative
<i>2. Shareholder vs. manager conflict</i>	
• overinvestment	
○ free cash flow	positive
○ growth opportunities	negative
○ managerial incentive structure	negative
○ control structure	negative

### **3 The empirical model and data**

The analysis is based upon results of questionnaires sent to the CFOs of over 100 non-financial firms. We received 46 usable questionnaires, what means the response rate of 45%. The questionnaire was completed anonymously. By means of questionnaire we asked financial managers for their opinion about firm characteristics. The reason for using questionnaire in opposite to accounting data was that we need specific information and the knowledge of the managers goes beyond publicly available data and includes internal information such as the presence of agency problems.

The data from questionnaires we included in the model. For model we used structural equations modeling with confirmatory analysis. The structural

equations model describes the relationships between the variables in the model. The endogenous variables are four agency problems – direct wealth transfer, asset substitution, underinvestment and overinvestment. Each of these variables is potentially determined by a wide set of exogenous variables and related to a subset of the other endogenous variables. The variables in the models are proxies of unobservable determinants that are derived from the theory. From the hypothesis in Table 1 we can derive a system of equations that describes the expected relationships. Summary of these relations in the structural equations model with both explained and explanatory variables is shown in the Table 2.

**Table 2 Structural model**

<i>Explained variable</i>	<i>Explanatory variables</i>
<i>Wealth transfer</i>	covenants, secured debt, convertible debt, short-term debt
<i>Asset substitution</i>	covenants, secured debt, convertible debt, short-term debt
<i>Underinvestment</i>	growth opportunities, covenants, secured debt, convertible debt, short-term debt
<i>Overinvestment</i>	free cash flow, growth opportunities, managerial incentive, structure, control structure

#### **4 Results and conclusions**

In the single-equation context we simplify each equation until all parameter estimates have absolute t-values that exceed a particular constant. Following suggestions in Haitovsky (1969), this is done by a series of estimations and t-tests, which we call the specification process. The first estimation model includes all variables. After the first estimation round the variable that has the lowest absolute t-value for its parameter estimate, is eliminated from the model. The resulting smaller model is re-estimated and a similar elimination procedure follows. The estimations and eliminations are stopped as soon as all t-values are larger in magnitude than the specified value. The constant in the model is, of course, never eliminated in this process. The single-equation method and the subsequent specification process lead to a relatively small system of equations than can be estimated by a full-information method. This estimation approach will lead to more efficient parameter estimates than those obtained in the single-equation context. The system includes among the explanatory variables the endogenous variables that are also present in the most general model and the exogenous variables that were not eliminated in the specification process.

Table 3 presents the OLS (Ordinary Least Squares) estimation results of the single equation models with stepwise deletion (in columns 2 – 4) of the variables reporting the lowest absolute t-value (t-value are in parentheses).

**Table 3 Determinants of the agency problems**

(1)	(2)	(3)	(4)
<i>Direct wealth transfer:</i>			
intercept	6,08 (7,32)	5,86 (14,47)	
short-term debt	-0,05 (-3,81)	-0,04 (-5,10)	
covenants dividend	-0,32 (-3,98)	-0,31 (-4,22)	
covenants investments	0,05 (0,34)		
secured debt	-0,04 (-0,36)		
R <sup>2</sup>	0,4245	0,4496	
<i>Substitution of assets:</i>			
intercept	5,01 (3,81)	4,39 (4,25)	
short-term debt	0,01 (0,27)		
covenants dividend	-0,28 (-2,19)	-0,27 (2,31)	
covenants investments	0,17 (0,84)		
secured debt	-0,05 (-0,29)		
R <sup>2</sup>	0,0718	0,1001	
<i>Underinvestment:</i>			
intercept	7,07 (4,89)	6,40 (9,11)	
short-term debt	-0,02 (0,07)		
growth opportunities	-0,76 (-4,18)	-0,72 (-4,39)	
covenants investments	-0,36 (-2,05)	-0,35 (-2,42)	
secured debt	-0,07 (-0,52)		
R <sup>2</sup>	0,3243	0,3519	
<i>Overinvestment:</i>			
intercept	9,63 (12,82)	8,79 (19,11)	8,00
growth opportunity	0,19 (1,53)		(43,51)
free cash flow investment	-0,27 (-2,27)	-0,12 (-1,89)	
managerial shareholdings	0,07 (1,03)		
performance-based income	-0,65 (-4,99)	-0,48 (-8,19)	
asymmetric information	-0,03 (-0,52)		-0,39 (-
market control threat	-0,78 (-12,22)	-0,71 (-22,60)	11,52)
R <sup>2</sup>	0,9348	0,9352	-0,72 (-
			22,04)
			0,9311

Analyzing the wealth transfer, the remaining two variables in the model confirm the expected relationship and have negative influence on the agency costs. Asset substitution seems to be statistically irrelevant for the research. Underinvestment problem is central in many theoretical and empirical studies. Both remaining variables in this model confirm theoretical assumptions. Overinvestment is theoretically considered as a very important factor influencing the capital structure. Exogenous variables in the model – performance based income and market control threat are fully correspondent with expected relations. Nevertheless, the variable “market for corporate control threat” seems to be very interesting, because of absence of this market in Slovakia.

The main result from the Table 3 is that direct relations between leverage and agency problems seem to be absent. This does not imply that the agency problems are irrelevant. However, other instruments than leverage affect agency problems. As expected, a positive relation between some exogenous variables and agency problems determinants has been found in the model.

In developing a sensible approach to capital structure strategy, the CFOs should start by thinking about firm’s target capital structure, which is a ratio of debt to total capital, that can be expected to minimize taxes and contracting costs. In sum, to make a sensible decision about capital structure, CFOs must understand both the costs associated with deviating from the target capital structure and the costs of adjusting back toward the target. The next step forward in solving the capital structure problem is to involve a more formal weighing of these two sets of costs.

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# VALUE MATRIX FOR THE PERFORMANCE OF ISTANBUL STOCK EXCHANGE

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## **Abstract**

*Performance analysis in stock markets is an area of great interest in both academic and commercial circles. Many trading strategies have been proposed and practiced from the perspectives of technical analysis, market making, external data indication, etc. This paper finds out evidence of a performance search based on a strategic planning approach suggested by Eren (2002) as Mcnamee used (1984). The paper examines corporate values of shares on Istanbul Stock Exchange (ISE), the only securities exchange in Turkey which is a growing emerging market with an increasing number of publicly traded companies and foreign participation. It provides an alternative analysis of firms listed on the Istanbul Stock Exchange (ISE) to value their performance as a guidance for investors. The ratios of return on equity of the firms and the cost of an alternative investment are taken to attain their value matrix (v-matrix) results. The v-matrix results point out to the rational sectors to invest in ISE and the rational investment in Turkey.*

**Keywords:** *performance of stocks; return on equity; t-bills; value matrix*

## 1. Introduction

It is well-known that the majority of fund managers, financial planners, and investment advisors hold that investment in equity is the most appropriate way to build funds to meet major goals that are at least five to ten years off. This optimism about future stock returns has also become conventional wisdom for general investors. Many individual investors now expect not only that the stock market will outperform all other kinds of investments, but also that stock returns will exceed their long-run historical averages into the foreseeable future. It is equally well-known that these expectations are based largely on past experience rather than sound theory. In newspaper or journal articles, introductory textbooks, and news reports, and at professional meetings, the public is bombarded with data showing that in the long run no investment alternative comes close to stocks. In the last decade, for instance, the 15% average annual return on stocks was substantially higher than returns on other securities, as well as higher than the 10% average return on stocks over the previous 100 years.<sup>1</sup>

There are some market analysts like Pennar, Quinn and Zuckerman who do not believe that the current optimism about the future stock market is warranted. First of all, these skeptics believe that stock prices are too high relative to their fundamental value and anticipate a correction.<sup>2</sup> There are some critics that point to increased risk due to globalization, noting that as learned by various cases like that of US on October 27 in 1997, in a global economy, nobody is immune from shocks heard around the world.<sup>3</sup> Quinn notes that investors have forgotten or never knew that the stock market is a risky place.<sup>4</sup>

Studies of stock returns in emerging markets indicate that these markets are characterized by high volatility and abnormal returns. Investor interest in emerging markets exploded during the last decade as a result of the quest for higher returns. Yet little is known about the nature of stock in those markets. Variables like PAT/EQ (Profit After Taxes/Equity) ratios and dividend yields are reported to have some explanatory power for average market returns.<sup>5</sup> Like Bekaert et al., past empirical work of Basu (1983) and

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<sup>1</sup> Ahmet Baytaş; Nusret Çakıcı, "Do Stocks Really Provide The Highest Return In The Long Run?", **Journal of Investing**, Fall 99, Vol. 8 Issue 3, 1999, p. 89.

<sup>2</sup> Gregory Zuckerman. "Asset Allocators, Cautious on Stocks, Pile Into Bonds." **The Wall Street Journal**, June 3, 1997, p. C1.

<sup>3</sup> Karen Pennar. "After the Shock." **Business Week**, November 10, 1997, p. 38

<sup>4</sup> Jane B. Quinn, "What Should You Do?" **Newsweek**, November 10, 1997, p. 36

<sup>5</sup> Geert Bekaert; Claude Erb; Harvey Campbell; Tadas Viskanta, "The Cross- Sectional Determinants Of Emerging Market Equity Returns", **Quantitative Investing For the**

Ball (1988) on asset pricing has identified a number of variables that help explain stock returns in addition to the market risk variable. P/E ratio is found to have significant indicator in asset pricing tests.<sup>6</sup>

Odean (1998) developed a theoretical model of financial markets where investors suffer from overconfidence. This overconfidence model predicts that investors will trade to their detriment.<sup>7</sup> Barber and Odean (2000) estimated the monthly time-series regression of the monthly return on t-bills and the monthly return on a value-weighted market index for testing net performance of individual investors.<sup>8</sup> Similar to that, Asness (2000) tested the expected bond returns and stock returns in a model pointing the equity risk premium in investments.<sup>9</sup>

The study is concentrated on Istanbul Stock Exchange providing information on investing in Turkey. Turkey is a country offering significant opportunities for foreign investors with its geographically perfect position to function as a gateway between Europe, Middle East and Central Asia. The opportunities exist not only in the dynamic domestic market, but also throughout the region.

Turkey has a developed market economy, with a rich history of private enterprise. The Turkish financial sector is well developed in both technology and legal procedures. It is primarily built upon universal banking system and related areas like insurance, leasing, factoring and stock brokerage. Banks operate in accordance with international rules and practices offering a wide variety of services.<sup>10</sup>

Before 1980's, political turmoil, economic instability and institutional underdevelopment have traditionally been powerful obstacles regarding Turkish Financial Markets. But recently, markets in Turkey have witnessed an economic and financial development -merely the case of deregulation and

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**Global Markets**, Chicago, 1997, p. 221-272,  
[http://faculty.fuqua.duke.edu/~charvey/Research/Chapters/C11\\_The\\_cross-sectional\\_determinants.pdf](http://faculty.fuqua.duke.edu/~charvey/Research/Chapters/C11_The_cross-sectional_determinants.pdf)

<sup>6</sup> Levent Akdeniz; Aslıhan Altay Salih; Kürşat Aydoğan, A Cross-Section Of Expected Stock Returns On the Istanbul Stock Exchange, **Russian And East European Finance And Trade**, Vol. 36, No. 5, September-October 2000, p. 6.

<sup>7</sup> Terrance Odean, "Volume, Volatility, Price, and Profit When All Traders Are Above Average", **Journal of Finance**, No. 53, 1998, pp. 1887- 1934.

<sup>8</sup> Brad M. Barber; Terrance Odean, "Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors", **The Journal Of Finance**, No. 2, April 2000, p. 774.

<sup>9</sup> Clifford Asness, "Stocks Versus Bonds: Explaining The Equity Risk Premium", **Financial Analysts Journal**, March/April 2000, p. 98.

<sup>10</sup> ISE, [www.ise.gov.tr](http://www.ise.gov.tr)

liberalization (financial openness). During 1990's, the accessibility to capital markets (especially the Istanbul Stock Exchange) has increased.

The Turkish economy and the stock market is characterized by high, sustained and variable inflation which is detrimental to an economy in terms of long-term growth, investments and operation of the financial system as a whole. Inflation is known to intensify all kinds of risk such as credit, capital, interest rate, investment, and liquidity risks in the financial system resulting in increased uncertainty. Inflationary effects on stock market result in puzzling-stock return behavior. Recently, Barnes et al., (1999) clearly put forward that high inflation rates lead not only to greater inflation variability, but to greater variability in other rates of return as well.<sup>11</sup>

This paper does not focus directly on the future possibilities of the ISE. Its contribution lies more in shedding additional light on the past experience of the market. In terms of a performance measure (PAT/EQ), we show that the performance of stocks compares much less favorably with that of treasury bills whereas Barber and Odean (2000) used as variables in another method they followed.

Accordingly, the paper is organized as follows: Section 2 gives information about ISE. Section 3 provides the data and the methodology in detail. Section 4 discusses the results, and Section 5 is devoted to the conclusions of the research.

## **2. Istanbul Stock Exchange (ISE)**

The financial markets in Turkey were highly inefficient and strictly regulated until 1980. Attempts for the liberalization of the country in general and financial markets started at the beginning of 1980s. Things changed then when the Capital Markets Board was set up as the main regulatory board, capital instruments were defined and laws governing the issuing of securities were drawn up. The establishment of the legal framework and regulatory agencies for the stock market was completed in 1982.

At the end of 1985 the Istanbul Stock Exchange in its current form was established and it started trading in 1986. The exchange has shown remarkable growth both in terms of trading volume and number of listed companies. Today market capitalization, trading volume and the number of

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<sup>11</sup> Cemal B. Oğuzsoy; Sibel Güven, "Stock Returns and The Day-of-the-week Effect in Istanbul Stock Exchange", *Applied Economics*, No. 35, 2003, p. 960.

companies listed in ISE are above those in Eastern European exchanges. ISE now, is the eighth largest market in Europe.<sup>12</sup>

ISE is responsible for developing and maintaining the central securities market of Turkey, under the supervision of Capital Markets Board. The CMB is a member of the International Organization of Securities Commission (IOSCO), and has chaired the Emerging Markets Committee of IOSCO since May 2002. The CMB is also a member of the Capital Market Regulatory and Supervisory Consultative Group.

Along with the Istanbul Stock Exchange, the Istanbul Gold Exchange started operations in 1995. An ISE International Market was set up in 1996 and started trading in 1997 but volumes still remain minimal.

Although segmented, Turkish Capital Markets have recently shown interest in opening their borders and relaxing foreign ownership and capital repatriation restrictions. Turkey is more integrated with the world markets in its region. It seems to process information flows from global markets and act as conduits to other smaller markets.<sup>13</sup>

Turkish market is also characterized by high risk free rates, therefore market timing or appropriately switching between the fixed income securities and the equities might create higher returns for portfolio managers. ISE changes its basic characteristics quickly and carries additional risks due to the fact that it operates in a high and volatile inflation economy.<sup>14</sup>

The most important characteristics of capital market in Turkey is the predominance of the government securities. Because of tax burdens and availability of high income from government securities there is no encouragement for prospective issuers of corporate debt.<sup>15</sup>

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<sup>12</sup> Kürşat Aydoğan; Gülnur Muradoğlu, "Do Markets Learn From Experience? Price Reaction To Stock Dividends In The Turkish Market", **Applied Financial Economics**, No. 8, 1998, p. 42.

<sup>13</sup> **Eric Girard; Enrico J. Ferreira, "On the Evolution of Inter- and Intra-regional Linkages to Middle East and North African Capital Markets"**, Quarterly Journal Of Business & Economics, **Volume 43, 2004, p. 42.**

<sup>14</sup> Aslıhan Altay Salih; Gülnur Muradoğlu; Muhammet Mercan, "Performance Of The Efficient Frontier In an Emerging Market Setting", **Applied Economics Letters**, 2002, p. 180

<sup>15</sup> TBB, Banks Report March 2005

**Table 1: Financial Assets Of Capital Markets In Turkey (As percentage of GNP, %)**

[1] CAPITAL MARKET	[2] 2001	[3] 2002	[4] 2003
[6] SHARES (ISE)	[7] 38	[8] 21	[9] 27
[11] BILLS AND BONDS	[12] 68	[13] 55	[14] 55
[16] INVESTMENT FUND	[17] 1	[18] 2	[19] 4
[21] TOTAL	[22] 107	[23] 76	[24] 82

*Source: Capital Market Board (CMB), Central Bank Of Turkey (CBT)*

Some other distinct characteristics of the Turkish Stock Market are the frequency and volume of stock dividends and right offerings. Stock dividends are declared from a revaluation fund, an equity account created as a result of inflation adjustment of fixed assets. Inflation in Turkey has decreased a great deal but still the problem with the revaluation fund remains and that leads to a change in balance sheets. Since 1983, corporations are permitted to adjust their financial statements for inflation by using revaluation method as a standard procedure. Revaluation, as exercised in Turkey, requires the increase of the book value of plant assets by a constant ratio, usually comparable to the inflation rate, announced by the Ministry of Finance. When the value of plant assets and related depreciation expenses are adjusted to inflation, an account called revaluation fund is credited and this account is listed under the equity. Corporations are also permitted to transfer the revaluation fund to paid-in capital by declaring stock dividends.<sup>16</sup>

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<sup>16</sup> Aydoğan; Muradoğlu, p. 42.

### 3. Data and Methodology

The data used in this analysis contain the average yearly return (according to the latest year published- 2004) of the highest five and lowest five sectors traded in the ISE. After the initial sample selection and addressing the 10 sectors of ISE, the return on equity (PAT/EQ) of the firms listed on these sectors are calculated. The financial statement data were obtained from various ISE publications. In the second step, the yearly average compound rate of treasury bills (2004) is taken. The aim of comparison through the research as a whole was carried in another study whereas Gürsoy and Erzurumlu (2001) used returns of stocks and t-bills to be tested in another model.<sup>17</sup>

To facilitate the interaction between variables, we follow a methodology named as the Value Matrix used by McNamee (1984). The V-matrix suggested by Walsh and Mack is an alternative type of corporate planning. Walsh and Mack claimed that the cost of capital and the profitability of investments are crucial for business planning and portfolio analysis. It helps investors to quickly analyze past trends, assess their position and plan future strategic actions.<sup>18</sup> The aim of this research is to show the correct direction of investment in ISE for foreigners.

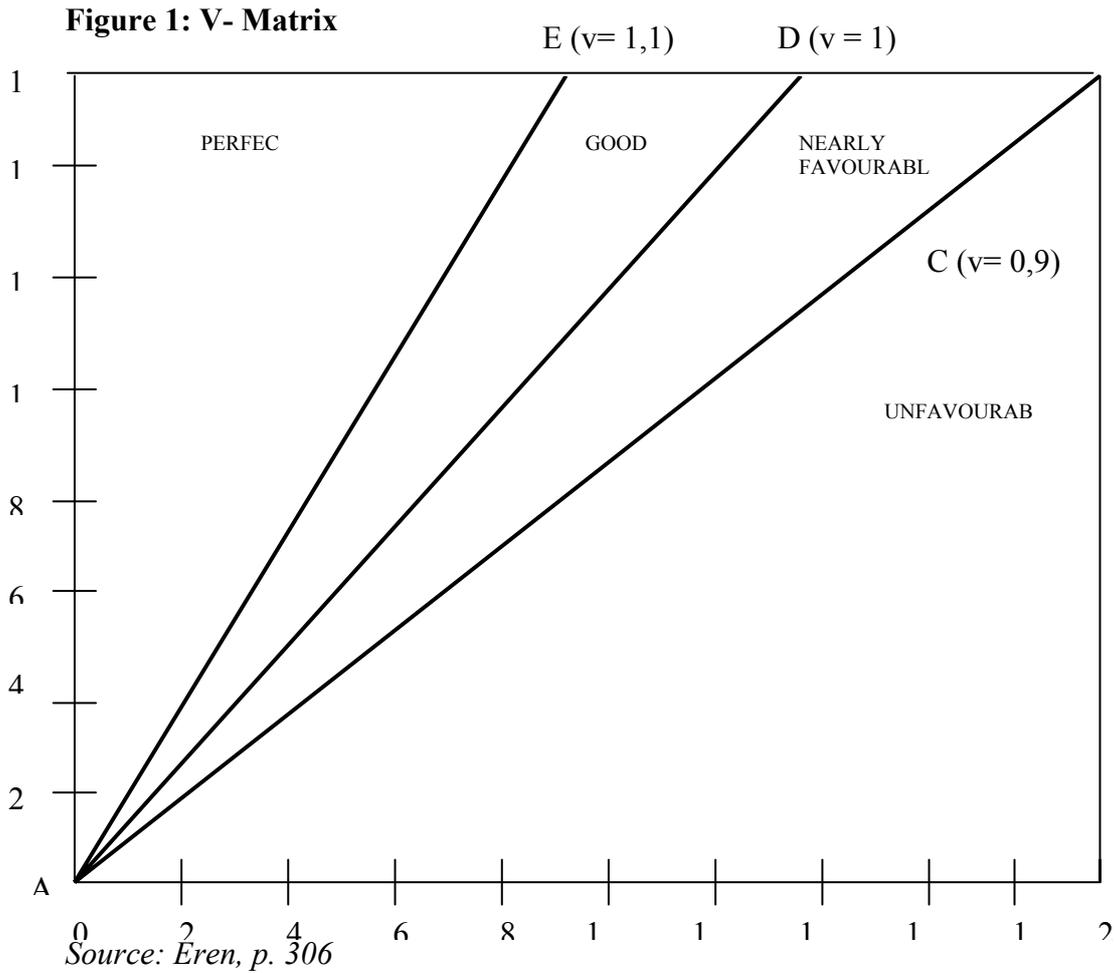
According to Walsh and Mack, the value matrix needs to be developed by the ratios of cost of capital and the profitability of investments. The cost of capital (representing t-bills in this research) based on current prices is on x-axis whereas the profitability (representing stocks in this research) of the business based on its investments is on y-axis. When the profitability of investments is equal to the cost of capital, it is shown with the AD diagonal. The value matrix -shown in Figure 1- is as follows: When the value of V is less than 1, the funds are invested unprofitably. On the other hand, when the value of V is 1, the funds are not profitable and when the value of V is greater than 1, the funds are invested to grow. The Strategic Business Units that are in the right below of the AD diagonal are unsuccessful whereas the SBUs that are in the left above of the AD diagonal are successful. The ADC triangle shows the area that is just below the equilibrium whereas the ADE triangle shows the area that is just above the equilibrium. The value matrix is used in the strategic planning of the companies. It is used to analyze the current situation and the annual trends. It

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<sup>17</sup> Cudi Gürsoy; Ömer Erzurumlu, "Evaluation of Portfolio Performance of Turkish Investment Funds", **Doğuş Üniversitesi Dergisi**, No. 4, 2001, pp. 44-58.

<sup>18</sup> P. McNamee, "The V Matrix - A New Tool For Plotting", **Long Range Planning**, Vol. 17, No. 1, February 1984, p. 19-22.

is also used to keep the strategic plan and fix the unsuccessful performance of the company. The value matrix is important to compare the company with its competitors.<sup>19</sup>



## 5. Research Findings

<sup>19</sup> Erol Eren, *Stratejik Yönetim ve İşletme Politikası*, Beta, 6. Baskı, 2002, pp. 305-306.

We computed the performance of ISE sectors and average t-bills in compound rate (Table 2). When we calculated for each year t-bills have a tendency to outperform. Just to show the results that resemble nearly the same in every year we chose 2004 to brief our study and Figure 2 represents the results of the v-matrix of the ISE's performance in 2004 compared with the performance of t-bills in 2004.

The results indicate that the ISE sectors do not show a satisfactory performance where they are unfavorable in v-matrix. One sector, *Defence* lays on over a little from t-bills where it is good in v-matrix. Two of the sectors, *Transportation* and *Manufacture Of Non-Metallic Mineral Products* are on the verge of growing and yet not profitable. Others are all unfavorable leading no growth. But more importantly, it was found that the best investment during the entire period is t-bills. The results of Gürsoy and Erzurumlu (2001) support our research that found t-bills to be the best investment rather than stocks over the entire analysis period in Turkey.

**Table 2- Performance of Investments in Turkey- 2004 (stocks; t-bills)**

[44] INFORMATION TECHNOLOGY	[45] Return on equity (%)		
[26] ISE SECTORS*			
[46] FOOD BEVERAGE	[47] 23,5		
[28] DEFENCE	[29] 23,5		
[30] ISMIR	[30] Return (%)		
[32] MARKET**	[33] 12,3		
[51] IZMIR	[52] 23,34		
[31] IZMIR	[35]		
[34] INSURANCE COMPANIES	1		
	0		
	9		
[36] BANKS	[37] 10,6		
[38] RESTAURANTS AND HOTELS	[39] 10,14		Source: *
[40] ELECTRICITY COMPANIES	[41] 7,4		own calculation;
[42] OTHER MANUFACTURING INDUSTRY	[43] 4,5		** Central Bank Of

## *Turkey*

The case described above indicates two important points. Firstly, all the efforts of analyzing ISE to outperform market become highly questionable. This fact draws our attention to the second point, t-bills and their performance in Turkey, which interprets the results on ISE.

The results presented in Table 2 and Figure 2 show that t-bills are the best financial instruments merely helping to judge the ISE and its sectors' performance. The macroeconomic conditions under which the Turkish economy operates long before suggest a potential role for the results of our research. Turkish economy had and still has so many obstacles that investment incentives move towards financial instruments which are not risky. As a result of economical factors some risky investments alienate and their risk premium increases.

Despite the poor performance of ISE, we still can say that there are profitable stocks according to their good company profile. But sectors' performance is pushed down by companies that do not apply for the accepted company profile definition.

## **6. Conclusion**

According to the conventional wisdom, stock portfolios are the best investment vehicles for long-term investors. But once returns are adjusted for risk, whether the risk measured is total risk or systematic risk, the worst performer is the stock market, while the bond market outperforms the convertible bond market. Even in terms of mean returns, unadjusted for risk, the convertible bond market outperforms stocks.

Of course, historical returns cannot tell us much about future returns in ISE. But they should prompt us to ask several questions. First of all, in light of the above research and critiques, the question of how to make ISE more outperforming and efficient and in what ways the new legal regulations could be introduced to achieve such goals are possible areas for new studies. Secondly, can a fund manager continue to advise clients as before? Or is more caution required? Have we all forgotten that stock market is a risky place, and that expectations of continually higher returns from the stock market might be unrealistic?

Economical conditions of countries and the resistance power against expected and unexpected fluctuations would change homogeneity in specific situations. The nation is heterogeneous in the case of critical evaluations and

expectations. Because of that reason analytical consideration changes dramatically from country to country.

Treasury bills outperform stocks in Turkey and this is alright as there is a strong effect of macroeconomic obstacles prevailing in the country since the early 1980s. There has been (and still is to some extent) a substantial amount of inflation, volatility, and political and economic uncertainty in the Turkish economy. After 1990s, Turkey has made progress in improving the functioning of markets and in strengthening the institutional framework for a fully functioning market economy. However, macroeconomic stability and predictability has not yet been achieved to a sufficient degree. Inflationary pressures have not sufficiently declined to allow economic agents to conduct medium term planning. High real interest rates impede productive investment. The banking sector is channeling financial capital towards the private sector only to a limited degree and the sector's consolidation process is not yet completed. The considerable costs of servicing the huge public sector debt are a considerable burden, absorbing a large fraction of Turkey's economic potential. As a result of a narrow capital market and the crowding out of private investment by the public sector financing requirement, the investment incentives do alter. These conditions increase the risk premium demanded by investors and can reduce investment demand or change investment incentives to some other instruments having lower risk.

A broader discussions of these problems goes beyond the scope of our present data and therefore of this paper. However, facts assembled in this paper constitute a background for the design of investments in Turkey. Meanwhile, efforts to address those remaining issues must be maintained.

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*Empirical analyses  
of financial markets*

# INFORMATION EFFICIENCY IN CENTRAL EUROPEAN EQUITY MARKETS<sup>1</sup>

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## **Abstract**

*The paper focuses on testing a weak form of market efficiency as regards capital markets in the Czech Republic, the Slovak Republic, Hungary, Poland and the United States. We have used a variance ratio test as a research method. Informational efficiency was tested using weekly and monthly values of relevant market indices in a period from 1993 until August 2004. We concluded that the US market reports the weak form of efficiency. Furthermore, the main results of our research concerning Central European markets show: (i) the weak form of the efficient market hypothesis could not be rejected for Central European capital markets, (ii) an improvement of market efficiency was observed over time on all the observed markets one can observe an improvement of market efficiency in these markets over time and (iii) the Central European capital markets converged to the U.S. capital market (in terms of the weak form of market efficiency).*

**Keywords:** market efficiency; hypothesis testing; market index; variance ratio test; PX-50;

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## 1. Introduction

The aim of the paper is to follow previous research (Hanousek [6], Vošvrda [13]) and to test a weak form of market efficiency of capital markets in the Czech Republic, the Slovak Republic, Hungary, Poland and in the United States. When using standard statistical methods, we want to answer following questions:

1. Can we observe any information efficiency in Central European capital markets?
2. Can we observe an improvement of information efficiency in these markets during time?
3. What gap is among Central European capital markets and the US (mature) capital market?

Based on our results we also want to address an issue if one can see any consolidation within Central European equity markets or any convergence to the U.S. market.

## 2. Informational efficiency of the capital market

Let us start with few definitions. An efficient capital market theory focuses on ability of a market to absorb new information and to react on it. A capital market is said to be efficient if fully and correctly reflects all relevant information in determining security prices. In other words, nobody can benefit from the information relevant to the stock prices that are not known to the other market participants.

Formally, the market is said to be efficient with respect to some information set if revealing that information does not affect security prices (Campbell [3]). Moreover, one cannot make economic profits by trading on the basis of that information set. Economists often define three levels of market efficiency, which are distinguished by the degree of information reflected in security prices.

A market would be described as being **weak-form efficient** if the security price reflects all information contained in the record of its past prices. In other words, this form of efficiency implies that relative changes of prices follow the random walk hypothesis and therefore price changes are unforecastable. Strategies used by technical analysts are failing in such a market.

**Semi-strong efficiency** of a market means that the information set includes both the history of prices and all publicly available information. Since publicly known information is incorporated in security prices, buying or selling recommendations from fundamental analysts are useless.

Finally, if market prices reflect all available information (both public and private), a market is said to be **strong-efficient**. In such a market, there is no such special information based on which an investor can make abnormal profits. In other words, insider information is valueless and therefore insiders do not post better trading results than other market participants (Filer [4]).

Formally, we can describe afore-mentioned definitions as follows:

$$E_t(P_{t+1} | \Phi_t) = P_t \quad (1)$$

Where:

$E_t$  = expected value operator

$P_{t+1}$  = price of security at time t+1

$P_t$  = price of security at time t

$\Phi_t$  = the set of information available to investors at time t

It follows from equation 1 that the best estimate for the future price of security is the current price of security.

### 3. Models of testing efficiency

Basic models, which are used by most methods mainly for testing the weak-form of efficiency, are based on various types of the random walk hypothesis including its generalization.

#### 3.1 The Random Walk – type 1 (RW1)

The simplest version of the random walk hypothesis assumes independent and identically distributed (IID) increments and is given by the following equation:

$$p_t = \mu + p_{t-1} + \varepsilon_t, \varepsilon_t \approx IID \quad (2)$$

Where:

$P_t$  = price of security at time t,  $P_{t-1}$  = price of security at time t-1

$p_t = \ln P_t, p_{t-1} = \ln P_{t-1}$

$\mu$  = the expected price change (drift)

$\varepsilon_t$  = independently and identically distributed value.

If we consider normality of  $\varepsilon_t$  (i.e. with the mean value 0 and variance  $\sigma^2$ ), we are talking about a Brownian motion. Such a distributional assumption implies that continuously compounded returns are IID varieties with mean  $\mu$  and variance  $\sigma^2$ .

### 3.2 *Random Walk – type 2 (RW2)*

However, the assumption of identically distributed increments of security prices is not fulfilled in the long-term run. The shift in the economic, social, technological, institutional, and regulatory environment affect security prices in the capital markets and therefore it changes the parameters of distribution of price increments over the long-term.

For reasons outlined above we relax the assumption of RW1 to include processes with independent but not identically distributed (IID) increments and we shall refer it to as the Random walk 2 (RW2). Clearly, RW1 is a special case of RW2. RW2 also allows modeling of more general price processes in the capital markets. For instance, the models with the time-variation volatility that assumes heteroscedasticity in the time series  $\{\varepsilon_t\}$  are the case.

### 3.3 *The Random Walk – type 3 (RW3)*

An even more general type of the random walk hypothesis is the one that relaxes the independence assumption of RW2 to include processes with dependent but uncorrelated increments. We shall call such a type the Random Walk model (RW3). It is clear that RW3 contains RW1 and RW2 as special cases.

For example, the following process satisfies assumptions of RW3 but not of RW1 or RW2 is any process for which:

$$Cov[\varepsilon_t, \varepsilon_{t-k}] = 0, \forall k \neq 0 \quad (3)$$

but where

$$\exists k \neq 0, Cov[\varepsilon_t^2, \varepsilon_{t-k}^2] \neq 0 \quad (4)$$

Such a process has uncorrelated increments, but is clearly not independent since its squared increments are correlated (Campbell [3]).

## 4. Methods of testing market efficiency

### 4.1 The break event point test

The Break event point test ranks to one of the most used nonparametric tests of the random walk hypothesis, i.e. of the tests being independent on particular distribution of increments. For more details see Campbell [3].

### 4.2 The runs test

The runs test is another test of RW1. This test investigates the number of sequences of consecutive positive and negative returns called *runs* in a particular sequence. More information about the runs test could be found in Levene [9] or Anděl [1]. Let us mention that the break event point test and the runs test are fully equivalent and differ only in a definition of a test statistic.

### 4.3 The variance ratio test

The variance ratio test (Ayadi [2] or Urrutia [12]) could be applied to all three types of the random walk hypothesis (if properly modified). The test follows the idea that if a time series of the natural logarithm of prices fulfills the random walk hypothesis, then variance of  $q$ -th derivations has to increase directly as a degree  $q$  of derivation increases. The variance ratio is defined as follows:

$$VR(q) = \frac{\sigma^2(q)}{\sigma^2(1)} \quad (5)$$

where  $\sigma^2(q)$  is variance of  $q$ -th derivations divided by  $q$  and  $\sigma^2(1)$  is variance of the first derivations (for more details see Lo[10]):

$$\sigma^2(q) = \frac{1}{m} \sum_{t=q}^{nq} (\ln P_t - \ln P_{t-q} - q\hat{\mu})^2 \quad (6)$$

$$\sigma^2(1) = \frac{1}{(nq - 1)} \sum_{t=1}^{nq} (\ln P_t - \ln P_{t-1} - \hat{\mu})^2 \quad (7)$$

whereas

$$m = q(nq - q + 1)\left(1 - \frac{q}{nq}\right)$$

$$\hat{\mu} = \frac{1}{nq}(\ln P_{nq} - \ln P_0)$$

and  $P_0, P_{nq}$  are the first and last values in times series of prices.

If the random walk hypothesis holds, the variance ratio  $VR(q)$  shall converge to 1. Then two test statistics  $z(q)$  and  $z'(q)$  could be derived in dependence on the fact if we assume for  $\varepsilon_t$  from equation (2) homoscedasticity (constant variance), which corresponds with RW1, or heteroscedasticity (variable variance), which corresponds with RW2 or RW3.

The formulas of the test statistics  $z(q)$  and  $z'(q)$ , which under RW1 shall converge to the standard normal distribution  $N(0,1)$ , are as follows:

$$z(q) = \frac{VR(q) - 1}{\sqrt{\Phi(q)}} \approx N(0,1) \quad (8)$$

where

$$\Phi(q) = \frac{2(2q-1)(q-1)}{3q(nq)}$$

$$z'(q) = \frac{VR(q) - 1}{\sqrt{\Phi'(q)}} \approx N(0,1) \quad (9)$$

where

$$\Phi'(q) = \sum_{j=1}^{q-1} \left[ \frac{2(q-j)}{q} \right]^2 \hat{\delta}(j)$$

and

$$\hat{\delta}(j) = \frac{\sum_{t=j+1}^{nq} (\ln P_t - \ln P_{t-1} - \hat{\mu})^2 (\ln P_{t-j} - \ln P_{t-j-1} - \hat{\mu})^2}{\sum_{t=1}^{nq} [(\ln P_t - \ln P_{t-1} - \hat{\mu})^2]^2}$$

Technically, if we reject the hypothesis for the reason that the variance ratio equals 1 (for any time lag), it is enough for rejection of the random walk hypothesis. Nevertheless, we can consider all time lags together and only one confidence interval (Stolin [11]) that can influence testing results. When using the test statistics  $z(q)$ , one shall not neglect that it is derived for RW1 and therefore it shall be tested if natural logarithms of price increments  $\varepsilon_t$  are IID. On the contrary, when using the test statistics  $z'(q)$  one shall test only independence or even the uncorrelation between the increments.

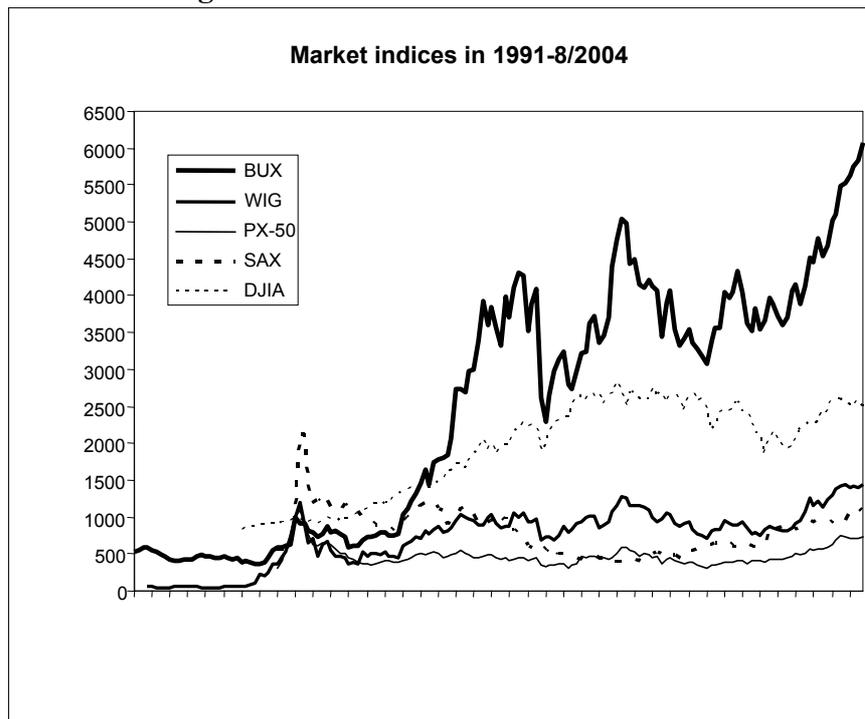
## **5. The results of testing market efficiency**

Regarding the scope of the paper and strength of the used tests we present only results of the variance ratio test, which has the highest predicative power.

### ***5.1 Data used***

When testing the market efficiency, we have used weekly and monthly data as regards capital markets in the Czech Republic, Poland, Hungary, Slovakia and in the United States. The US market is usually considered as highly effective and as a benchmark for other capital markets. This fact we have tried to prove or falsify. We have used the market indices of the particular markets as representatives of these markets: PX 50 for the Czech Republic, the Warsaw Stock Exchange Index (WIG) for Poland, the Budapest Stock Index (BUX) for Hungary, the Slovak Share Index for Slovakia and Dow-Jones-Industrial-Average (DJIA) for the US (see Figure 1):

**Figure 1 Development of stock market indices in the period from 1991 until August 2000**



*Source: Own calculations based on data of the stock exchanges*

Note: All indices were recalculated to the closing value of 1,000 as

Apart from the closing monthly and weekly values of market indices, end-of-month values recalculated to dollars were used. This fact can play an important role in the view of foreign investors that want to invest monies in the analyzed capital markets. Such obtained results can variegate the conducted research of market efficiency (under the assumption of no transaction costs occurred in relation to terms of trade).

### ***5.2 The variance ratio test***

In contrast to the break event point test and the runs test used by some authors (Ayadi [2] or Urrutia [12]), the variance ratio test considers drift  $\mu$  in the test statistics. On the other hand, a pitfall of the variance ratio test is its dependence on the parameters of data distribution respectively on data normality (at least in case of testing RW1).

Considering every lag being independent and homoscedasticity of the time series  $\varepsilon_t$  (see formula (2)), we concluded relatively clear results for the

weekly values in the period from September 1993 until August 2004 with the lags of 1, 2, 3 and 6 months (more precisely 4, 8, 13 and 26 weeks). While we reject the hypothesis in Central European markets, the US market seems to be effective under RW1. Technically, if we reject the hypothesis for the reason that the variance ratio equals 1 (for any time lag), it is sufficient for rejection of the random walk hypothesis. When thinking about a) all lags from the interval from 2 to 26 weeks together and b) the unique confidentiality interval of the maximum value of the test statistics for all time lags, we concluded the same result as mentioned above (i.e. we reject the hypothesis in Central European markets, but we do not disaffirm for the US market) – see Table 1.

Although we have found some statistical support for the weak-form efficiency in the US market, one shall investigate why RW1 was rejected in Central European markets. One of the reasons could be heteroscedasticity in the time series  $\varepsilon_t$  (from formula (2)) being explained by increasing market capitalization, a rise in trading activities and by nonsystematic interference in Central European markets (e.g. privatization deals - a direct sale of state-owned companies to an investor etc.). All these factors could lead to various-frequented stock price movements in the capital market per time unit and therefore a variable variance of  $\varepsilon_t$  (or heteroscedasticity) in time series could occur.

For reasons outlined above one shall study also the second test statistic  $z'(q)$ , which is resistant to heteroscedasticity in data and denoted in Table 1 in square brackets. As it follows from table 1, we do not reject RW1 in any analyzed market.

**Table 1: The variance ratio test (weekly data, local currencies, long period)**

Weekly returns September 1993 - August 2004 ( <i>z</i> – homoscedasticity assumption) [ <i>z'</i> – resistance against heteroscedasticity]					
Lag	Hungary	Poland	C R	SR	USA
<i>q</i> =4	1,33 (4,76)* [0,40]	1,28 (3,89)* [0,21]	1,62 (7,92)* [0,71]	1,71 (9,13)* [0,77]	0,94 (-0,85) [-0,07]
<i>q</i> =8	1,57 (5,14)* [0,46]	1,44 (3,95)* [0,23]	2,08 (8,74)* [0,87]	2,11 (8,95)* [0,87]	0,85 (-1,21) [-0,10]
<i>q</i> =13	1,59 (4,00)* [0,37]	1,70 (4,73)* [0,29]	2,18 (7,18)* [0,77]	2,26 (7,65)* [0,85]	0,80 (-1,29) [-0,11]
<i>q</i> =26	1,65 (3,05)* [0,30]	2,10 (5,06)* [0,33]	1,82 (3,43)* [0,39]	1,54 (2,25)* [0,29]	0,75 (-1,07) [-0,10]
<b>max <i>z</i>(<i>q</i>=2..26)</b>	(5,30)*	(5,06)*	(8,76)*	(9,13)*	(-1,87)
<b>max <i>z'</i>(<i>q</i>=2..26)</b>	[0,48]	[0,33]	[0,87]	[0,91]	[-0,14]

\* The variance ratio significantly differs from 1 on 5% significance level and therefore we reject RW1.

If we do similar calculations for weekly returns in local currencies in the shorter period from January 1998 until August 2004, we reject RW1 under homoscedasticity assumption only for the Czech market. If we suppose data heteroscedasticity, we do not reject RW1 in all markets.

**Table 2: The variance ratio test (weekly data, local currencies, short period)**

(Weekly returns January 1993 - August 2004 (z –homoscedasticity assumption) [z' – resistance against heteroscedasticity])					
Lag	Hungary	Poland	C R	SR	USA
<i>q=4</i>	1,15 (1,51) [0,18]	1,14 (1,35) [0,10]	1,33 (3,32)* [0,38]	1,01 (0,06) [0,01]	0,95 (-0,53) [-0,06]
<i>q=8</i>	1,31 (1,93) [0,24]	1,22 (1,41) [0,12]	1,47 (2,96)* [0,38]	1,05 (0,32) [0,04]	0,87 (-0,82) [-0,09]
<i>q=13</i>	1,15 (0,72) [0,10]	1,27 (1,29) [0,11]	1,42 (2,03)* [0,28]	1,12 (0,59) [0,08]	0,77 (-1,10) [-0,13]
<i>q=26</i>	0,98 (-0,05) [-0,01]	1,24 (0,78) [0,07]	1,43 (1,41) [0,21]	1,26 (0,85) [0,14]	0,67 (-1,07) [-0,13]
<b>max z(q=2..26)</b>	(2,10)	(1,41)	(3,32)	(0,85)	(-1,36)
<b>max z'(q=2..26)</b>	[0,26]	[0,12]	[0,40]	[0,14]	[-0,14]

\*The variance ratio significantly differs from 1 on 5% significance level and therefore we reject RW1.

The table 3 shows results of testing RW1 assuming foreign investments (monthly dollar market returns) in the period from September 1993 until August 2004.

**Table 3: The variance ratio test (monthly data, dollars, long period)**

Monthly returns September 1993 - August 2004 ( <i>z</i> – homoscedasticity assumption) [ <i>z'</i> – resistance against heteroscedasticity]					
Lag	Hungary	Poland	C R	SR	USA
<i>q</i> =3	0,93 (-0,51) [-0,13]	1,05 (0,35) [0,06]	1,27 (2,01)* [0,35]	1,43 (3,28)* [0,50]	0,92 (-0,67) [-0,11]
<i>q</i> =6	0,89 (-0,53) [-0,13]	0,95 (-0,22) [-0,03]	0,96 (-0,16) [-0,03]	0,92 (-0,39) [-0,07]	0,85 (-0,73) [-0,12]
<i>q</i> =9	0,97 (-0,11) [-0,03]	0,71 (-1,06) [-0,16]	1,00 (0,01) [0,00]	0,93 (-0,26) [-0,05]	0,88 (-0,44) [-0,07]
<i>q</i> =12	1,07 (0,22) [0,05]	0,64 (-1,10) [-0,17]	1,11 (0,34) [0,06]	1,04 (0,12) [0,03]	0,99 (-0,04) [-0,01]
<b>max <i>z</i>(<i>q</i>=3..12)</b>	(-0,78)	(-1,10)	(2,01)	(3,28)	(-0,76)
<b>max <i>z'</i>(<i>q</i>=3..12)</b>	[-0,19]	[-0,17]	[0,35]	[0,50]	[-0,12]

\*The variance ratio significantly differs from 1 on 5% significance level and therefore we reject RW1.

When comparing results in the Table 3 (monthly dollars returns) with the results for the same period for local currencies returns (this table is not concluded in the paper), we can see a movement in the Polish market, where we do not refuse under heteroscedasticity assumption, other changes did not occur. Assuming heteroscedasticity, we do not reject RW1 in any market in both periods.

However, the main pitfall of the variance ratio test is its sensitivity to normality of the time series  $\varepsilon_t$  (see formula (2)). In practice, this assumption is equivalent to normality of market returns and is to be tested. The table 4 shows the results of such testing on dollars market returns.

**Table 4: The data normality test (monthly data, dollars, both periods)**

Distribution of dollar returns on capital markets										
	Hungary		Poland		CR		SR		US	
Period	7/93 - 8/04	<b>1/98</b> - <b>8/04</b>	7/93 - 8/04	<b>1/98</b> - <b>8/04</b>	10/93 - 8/04	<b>1/98</b> - <b>8/04</b>	11/93 - 8/04	<b>1/98</b> - <b>8/04</b>	1/93 - 8/04	<b>1/98</b> - <b>8/04</b>
<b>Average</b>	1,4%	<b>0,7%</b>	0,9%	<b>0,6%</b>	0,8%	<b>1,1%</b>	0,5%	<b>0,4%</b>	0,8%	<b>0,3%</b>
<b>Standard deviation</b>	10,4%	<b>9,9%</b>	<b>12,5%</b>	<b>9,9%</b>	9,8%	<b>8,6%</b>	11,0%	<b>6,6%</b>	4,4%	<b>5,0%</b>
<b>Skewness</b>	-0,40	- <b>1,75*</b>	-0,34	- <b>1,17*</b>	0,48*	- <b>1,00*</b>	2,85*	<b>0,23</b>	- 0,75*	- <b>0,60*</b>
<b>Kurtosis</b>	4,92*	<b>6,57*</b>	2,39*	<b>4,04*</b>	4,03*	<b>3,23*</b>	20,18*	<b>0,72</b>	1,49*	<b>1,03</b>
<b>Max. return</b>	43,2	<b>20,5</b>	35,2	<b>20,6</b>	45,1	<b>20,7</b>	76,5	<b>21,9</b>	10,1	<b>10,1</b>
<b>Min. return</b>	-48,2	<b>-48,2</b>	-43,7	<b>-43,7</b>	-34,4	<b>-34,4</b>	-36,8	<b>-14,9</b>	-16,4	<b>-16,4</b>
<b>Student spread</b>	8,8**	<b>6,9**</b>	6,3**	<b>6,5**</b>	8,1**	<b>6,4**</b>	10,3*	<b>5,5</b>	6,0	<b>5,3</b>
<b>Number of observations</b>	134	<b>79</b>	134	<b>79</b>	131	<b>79</b>	130	<b>79</b>	139	<b>79</b>

Notes:

returns=100\*ln(P<sub>t</sub>/P<sub>t-1</sub>)

standard error (S.E.) skewness =  $[6/N]^{1/2}$

standard error (S.E) kurtosis =  $[24/N]^{1/2}$

N=number of observations

Student spread = (Max return – Min return)/ relative variance

\*It significantly differs from 1 on 5% significance level

\*\* If Student spread is greater than 6, we reject data normality on 5% significance level.

It follows from the Student spread results that monthly dollar returns in the period from September 1993 until August 2004 do not satisfy the normality assumption except for the US market, which therefore confirms its property of a benchmark of the capital market. We can see from the Table 4 an improvement of the vast majority of the test statistics for the shorter period from January 1998 until August 2004. As a result, the tests assuming heteroscedasticity reflect reality more precisely than the other ones. Such tests are not so sensitive to data normality and provide us relatively good statistical evidence for non-rejection of RW2 and RW3. Furthermore, the tests imply that not only the US market but also the Czech, Slovak, Polish and Hungarian ones post the weak-form of market efficiency.

### ***5.3 The results of testing***

1. Can we observe any information efficiency in Central European capital markets?

**We could not reject the weak form hypothesis of Central European capital markets – see the results in tables 1-3 (especially the results concerning heteroscedasticity).**

2. Can we observe an improvement of information efficiency in these markets during time?

**Yes, we do not reject RW1 in all markets in the shorter of period from January 1998 until August 2004 – compare results in tables 1 and 2 or with previous research (Hanousek [6], Vošvrda [13]).**

3. What gap is among Central European capital markets and the US (mature) capital market?

**Central European capital markets converge to the US one also through distribution characteristics (see Table 4).**

## **6. Conclusion**

The methods, calculations and obtained result proof the general statement that the U.S. market is mature and effective. We concluded that the US market reports the weak form of efficiency. On the other hand, we are aware of simplifications we made when using the U.S. market index (DJIA) as a representative of the market (the same simplification was made for other capital markets as well).

Despite the restrictive assumptions of some used test (e.g. data normality), we could not unambiguously reject the weak form of efficiency in any researched market. Concerning the results of the relatively robust variance ratio tests, we share the opinion that current stock prices in the analyzed markets reflect the past price movements. Therefore strategies used by technical analysts are useless and could not help investors to make abnormal returns. The same holds when assuming foreign portfolio investments. In other words, the examined markets effectively incorporate information about exchange rates movements of the local currencies against the world ones (in our case against the US dollar).

When analyzing the shorter period commencing in January 1998, one can see an improvement in the test statistics. For this reason, we claim that

stabilization (or an improvement in market efficiency) of Central European has been happening. The U.S. market still seems to be more effective compared to Central Europe, but the gap is getting smaller. The fact behind it could be an implementation of standard bourse rules, IT development, Internet and other manners that make informational flows quicker and more accurate.

In conclusion, our analysis answered three questions to be asked at the beginning of the paper. On the other hand, we know that our research is not comprehensive. Other topics are to be addresses to do our work more precise. These topics include using more robust tests as GARCH models, testing the semi-strong form of efficiency of Central European markets, testing efficiency not only on market indices but also on particular stocks and finally focus on intra-day stock trading etc.

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# A TEST OF MARKET EFFICIENCY: EVIDENCE FROM THE ICELANDIC STOCK MARKET

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## **Abstract**

*This extensive study examines the relationship between the price-to-earnings (P/E) ratio, the market-to-book (M/B) ratio, dividend yields, size, past returns, and current returns of Icelandic stocks. The study uses monthly return data on stocks from the Iceland Stock Exchange from January 1993 to June 2003. The model, which uses multiple regression analysis with dummy variables, is based on the classical Capital Asset Pricing Model, so the beta coefficient is the sole measure of risk. The findings are that the returns of stocks with a low P/E ratio are much higher than returns of other stocks, and that these returns are statistically significantly higher when differences in systematic risk are accounted for. The returns of small stocks and stocks with a low M/B ratio are higher than that of other stocks but the difference is not statistically significant. However, there is no relationship between current returns and historical returns, or between returns and dividend yields.*

**Keywords:** *Market efficiency, Icelandic stock market, P/E ratio*

## 1. Introduction

An efficient capital market is one in which stock prices fully reflect available information. The notion that stocks already reflect all available information is referred to as the efficient market hypothesis (EMH). A precondition for the strong version of the hypothesis is that information and trading costs, the costs of getting prices to reflect information, are always zero (Grossman and Stiglitz, 1980). A weaker and economically more sensible version of the efficiency hypothesis states that security prices reflect information to the point where the marginal benefits of acting on information, i.e., the profits to be made, do not exceed the marginal costs (Jensen, 1968). Therefore, according to the EMH, stock prices change in response to new and unpredictable information and they follow a random walk—that is, they are random and unpredictable.

It is common to distinguish between three versions of the EMH: the weak, the semistrong, and the strong forms. The weak form of the hypothesis asserts that stock prices already reflect all information that can be derived by examining market trading data. The semistrong form of the hypothesis states that all publicly available information regarding the prospects of a firm must already be reflected in the stock price. Finally, the strong version of the EMH states that stock prices reflect all information relevant to the firm, even information available only to company insiders.

Testing capital markets for signs of inefficiency is difficult because ambiguity about information and trading costs causes problems. The joint-hypothesis problem is even more serious. It states that we can only test whether information is properly reflected in prices in the context of a pricing model that defines the meaning of “properly”. Consequently, when we find anomalous evidence on the behavior of returns, we cannot be sure whether it is clear evidence of market inefficiency or if the model we use is ambiguous. Therefore, market efficiency *per se* is not testable (Fama, 1991).

Despite these problems, a great deal of research has been done on capital market efficiency. Most of the research supports the EMH, but some studies have found signs of capital market inefficiency. The most important signs are:

- Size. Small stocks, i.e., stocks with small market capitalization, have outperformed stocks with large market capitalization over long periods. The general belief is that small stocks give superior returns, even when accounting for risk (Fama and French, 1992).
- Temporal anomalies. Studies indicate that average stock returns have been higher in January than in other months. Across the days of the

week, average stock returns have been found to be lowest on Mondays (Berument and Kiymaz, 2001).

- Value vs. glamour. A number of studies have shown that stocks with low price-to-book ratios and/or low price-to-earnings (P/E) ratios, generally called value stocks, outperform stocks with high ratios, called glamour stocks (Fama and French, 1992).
- Reversals. Several studies have found that stocks that perform poorly in one time period have a strong tendency to experience sizeable reversals over the subsequent period. Likewise, the best performing stocks in a given period tend to perform poorly in the following period (De Bondt and Thaler, 1985).

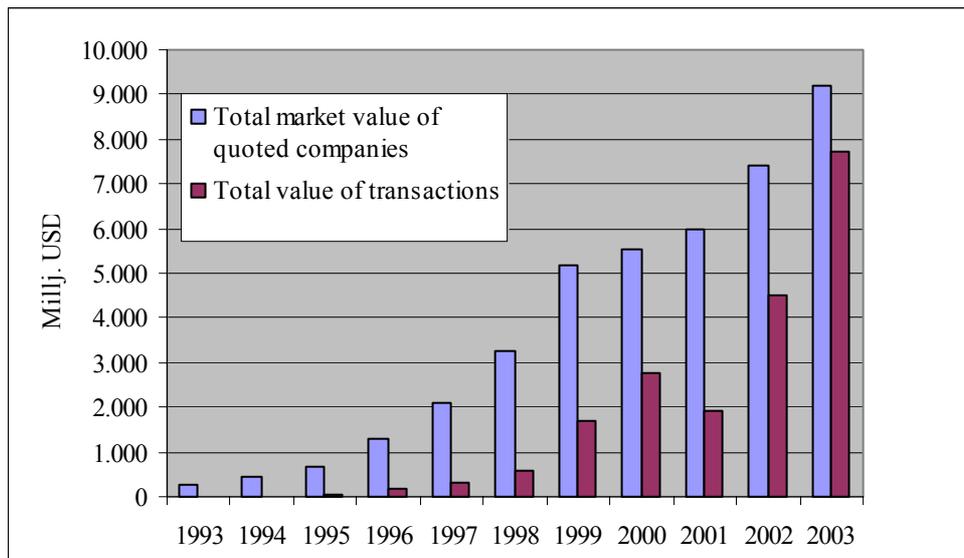
In this paper, empirical tests are undertaken to determine whether the Icelandic stock market shows signs of market inefficiency. The results of these tests are discussed in relation to the EMH and alternative theories that might explain the findings. The empirical tests search for the appearance of the abovementioned important signs of market inefficiency, which have been found on other capital markets. Therefore, the relationships between the P/E ratio, the market-to-book (M/B) ratio, size, historical returns, dividend yields, and returns on the Icelandic stock market are examined.

## **2. The Icelandic Stock Market**

### ***2.1 Size and Activity***

The total market value of quoted companies on the Icelandic stock market at the end of 2003 was approximately 9,200 million USD, or 82% of GDP. By contrast, in 1993, the total market value was only 270 million USD, which was then 4% of GDP. Figure 1 shows the total value of transactions of stocks on the Icelandic Stock Exchange (ICEX) and the total market value of quoted companies from 1993 to 2003. As the figure shows, the size of the market and its turnover has increased exponentially. In 1993, the total volume of stock trading on the ICEX was only 13 million USD but by 2003, it had grown to 7,750 million USD.

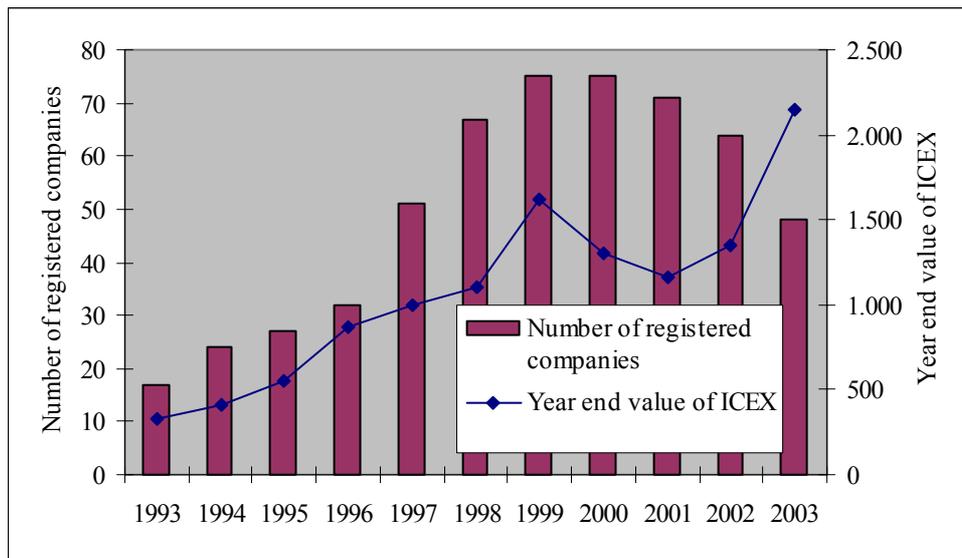
**Figure 1. Total market value of stocks and the total value of transactions, 1993–2003**



*Source: The Icelandic Stock Exchange.*

The number of registered companies reached a peak in 1999–2000, when 75 companies were trading on the exchange. Since then, the number has declined steadily, mainly because of mergers and acquisitions. Figure 2 shows the number of registered companies on ICEX and the year-end value of the ICEX-15 index. The ICEX-15 index is an index consisting of the 15 largest stocks quoted on the ICEX weighted by market capitalization. The figure shows clearly that the Icelandic stock market has been an excellent place in which to invest. The geometric mean annual return of the ICEX-15 index was 17.1% from the beginning of 1993 to the end of 2003. The return of the market was negative only in 2000 and 2001.

**Figure 2. Number of registered companies on ICEX and the year-end value of the ICEX-15.**



Source: The Icelandic Stock Exchange.

### 3. Data

This study uses monthly return data of ICEX stocks from January 1993 to June 2003. The data used to calculate monthly returns was obtained from the ICEX price database. End of the month prices were used to calculate monthly returns for every stock. Returns were adjusted for stock splits and dividends; i.e., dividends were included in returns. Data on earnings, dividends, stockholders' equity, and the total number of shares outstanding were obtained by examining each firm's financial reports for the period observed. To avoid the look-ahead bias, the previous years' figures were not used until they were made available to investors

The stocks used in this research were randomly selected. There are 20 stocks in the sample for 1993, with five in each portfolio during that year. For 1994, there are 24 stocks, with six in each portfolio, and for 1995 to June 30, 2003, there are 28 stocks in the sample, with seven in each portfolio.

## 4. Methodology

Finding a suitable methodology for this study was a problem. The limited number of stocks quoted and the short period of trading on the Icelandic stock market reduce the scope for a suitable methodology. The methodology used is almost identical to that used by Jahnke, Klaffke, and Oppenheimer (1987) to analyze the performance of low and high P/E portfolios. The main difference is that they constructed a portfolio and held it for the entire period. In this paper, new portfolios are constructed each month because new information regarding earnings, yield, etc., is published for some of the stocks almost every month. Therefore, by regrouping the portfolios every month, the new information is incorporated into the research sooner. In addition, the denominator of most of these factors changes every month because the prices of the stocks change.

The main fault in this methodology is that some of the variables examined here may be related. For example, it is likely that the size of firms may be related to their P/E ratios, i.e., the price per share divided by earnings per share. To overcome this problem, it would have been necessary to split the available sample into a number of portfolios that combine attributes in a controlled manner. Because of the limited number of stocks observed, this was impossible. The reader should bear these limitations in mind when interpreting the results.

This methodology is based on grouping procedures and the construction of portfolios. For every month from January 1993 to June 2003, four portfolios were constructed based on the value of the variable examined. The stocks were equally weighted in the portfolios; i.e., the return of the portfolio equals the average return of the stocks. Then the returns of the stocks were measured and compared, and the returns of the extreme portfolios were tested to determine whether they were statistically different when accounting for systematic risk.

Markowitz (1959) laid the groundwork for the Capital Asset Pricing Model (CAPM). In his seminal research, he cast the investor's portfolio selection problem in terms of expected return and variance of return. He argued that investors would optimally hold a mean-variance-efficient portfolio—that is, a portfolio with the highest expected return for a given level of variance. Sharpe (1964) and Lintner (1965) built on Markowitz's work to develop economy-wide implications. They showed that if investors have homogeneous expectations and optimally hold mean-variance-efficient portfolios, then, in the absence of market friction, the portfolio of all invested wealth, or the market portfolio, is itself a mean-variance-efficient portfolio.

The Sharpe and Lintner derivations of the CAPM assume the existence of lending and borrowing at a risk-free rate of interest. Using this version of the CAPM, for the expected return of asset  $i$  we have:

$$E[R_i] = R_f + \beta_{im}(E[R_m] - R_f) \quad (1)$$

$$\beta_{im} = \frac{\text{Cov}[R_i, R_m]}{\text{Var}[R_m]}, \quad (2)$$

where  $E[R_i]$  is the expected return of a security,  $R_f$  is the risk-free return, and  $E[R_m]$  is the return of a market index. An approach known as Jensen's alpha is one of many performance measures that are based on the classical CAPM. It is easily computed by finding the intercept,  $\alpha_p$ , in the regression:

$$R_p - R_f = \alpha_p + \beta_p(R_m - R_f) + u_p. \quad (3)$$

This method was introduced by Jensen (1968). The procedure allows the efficient estimation of  $\alpha_p$ , a measure of the monthly excess return after adjustment for portfolio risk. Assuming the CAPM holds, the alphas on passively managed portfolios are expected to be zero because all securities are expected to lie on the security market line. Therefore, a significantly positive alpha of a portfolio indicates an excess return.

The goal of this study is to compare the performance of portfolios by applying the methodology of Jahnke et al. (1987). Rather than estimating the previous equation for two extreme portfolios, the required performance is estimated by using ordinary least squares (OLS) on the following regression:

$$R_{pt} - R_{ft} = \alpha_p + d_L D_{pt} + \beta_p(R_{mt} - R_{ft}) + s_L S_{pt} + u_{pt}, \quad (4)$$

where:  $R_{pt}$ , is the return in month  $t$  ( $t = 1, \dots, 126$ ) earned by a portfolio purchased at the beginning of the month;  $\alpha_p$  is the intercept, which equals the monthly abnormal performance of the portfolio that is not represented by a dummy variable, i.e.,  $\alpha_H$ ;  $R_{ft}$  is the risk-free rate, i.e., the return of one-month Treasury bills in month  $t$ ;  $\beta_p$  is the slope, which equals the systematic risk of the portfolio  $\beta_H$ , which is not represented by a dummy;  $R_{mt}$  is the rate of return on the ICEX-15 index in month  $t$ ;  $D_{pt}$  is equal to zero for observations of the portfolio that are not represented by a dummy and one for all observations of the portfolio that are represented by a dummy variable; and  $u_{pt}$  is an error term assumed to have an expected value of zero and to be

serially uncorrelated.  $S_{pt} = D_{pt}(R_{mt} - R_{ft})$  for all observations. The coefficient  $\alpha_p$  in the equation equals  $\alpha_H$ , i.e., the measure of monthly abnormal performance for the portfolio that is not represented by a dummy variable, which means that  $D_{pt} = 0$  for that portfolio. The coefficient  $d_L$  is a key parameter in this regression. It measures the difference between the excess returns of the portfolio that is not represented by a dummy variable and the portfolio that is represented by a dummy variable. It should be noted that  $\alpha_p + d_L$  is equal to the alpha of the portfolio, which is represented by a dummy variable. Thus, we may use a t-test to determine if  $d_L$  is significantly different from zero. If  $d_L$  is significant, then the returns of the portfolios are significantly different when differences in systematic risk are taken into account.  $\beta_p$  equals  $\beta_H$ , i.e., the systematic risk (beta) of the portfolio, which is not represented by a dummy variable. Finally,  $s_L$  provides an estimate of the difference in systematic risk between the portfolio that is represented by a dummy variable and the one that is not, with  $\beta_p + s_L$  being the systematic risk of the portfolio that is represented by a dummy variable,  $\beta_L$ .

## 5. Performance According to Firm Size

### 5.1 Previous Research

The size of a company is normally measured by the market value of its ordinary shares. Over long periods, and in many countries—for example, Australia, Belgium, Canada, Finland, France, Japan, the Netherlands, the UK, the US, and former West Germany—small firms have produced higher returns than large firms (Lofthouse, 1994). In an extensive study, Fama and French (1992) analyzed data from the American stock market from 1963 to 1990. They constructed portfolios based on betas and the size of firms. They found that small firms outperformed large firms for both low- and high-beta stocks. Reinganum (1992) analyzed the returns of New York Stock Exchange (NYSE) stocks ranked by size from 1926 to 1989. He found that small firms gave returns with a higher average arithmetic mean for that period. The returns of the small firms were superior even when accounting for risk. In a study of UK market data from April 1961 to March 1985, Levis (1989) found that small firms outperformed larger firms in that they gave excess returns when adjusted for risk.

The reason that small stocks outperform large stocks has been related to the higher cost of trading. The bid/ask spread is generally much higher for

small stocks, making the cost of trading much higher. Another suggested reason is that smaller firms have different sector or industry distributions than do larger firms.

### 5.2 Study and Results

For every month covered by this study, four portfolios were constructed according to the market capitalization of common stocks. The returns of the portfolios were measured and the performance of the extreme portfolios (the smallest and largest stocks) was measured by using standard OLS to estimate the parameters in equation 4.

Figure 3 shows the geometric mean returns of the portfolios. The portfolio with the smallest stocks has the highest returns, whereas the portfolio with the largest stocks has the lowest returns.

**Figure 3. Returns of portfolios constructed according to firm size**

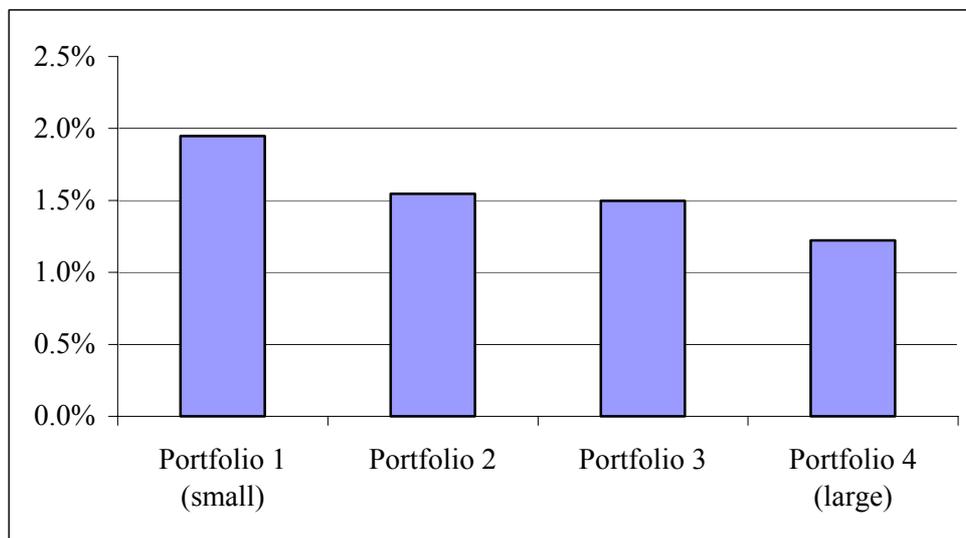


Table 1 gives the most important results of the regression when applying equation 4. The systematic risk (beta) is estimated to be 0.97 ( $\beta_p$  equals  $\beta_H$ ) and 0.76 ( $\beta_p + s_L$ ) for the highest and lowest market capitalization portfolios, respectively. The difference in systematic risk is statistically significant as the t-statistic of  $-2.13$  for ( $s_L$ ) indicates. The alphas of the higher and lower market capitalization portfolios are estimated to be 0.15% ( $\alpha_p$  equals  $\alpha_H$ ) and 1.04% ( $\alpha_p + d_L$ ), respectively. The difference is not statistically significant as the t-statistic of 1.93 for ( $d_L$ ) indicates. Therefore, the returns of portfolios 1 and 4 are not statistically different even

when the lower systematic risk of portfolio 1 is taken into account. The Durbin–Watson coefficient of 1.90 indicates that there is not a significant first-order autocorrelation.

**Table 1. Results of the regression of portfolios constructed according to firm size**

	$\alpha_p$	$d_L$	$\beta_p$	$s_L$	$R^2$
Coefficient	0.0015	0.0089	0.97	−0.21	0.56
t-statistics	(0.45)	(1.93)	(*14.03)	(*−2.13)	
p-statistics	0.65	0.054	<0.0001	0.034	
Durbin W.	1.90				

\* Significant at the 5% level.

## 6 Performance According to dividend yield

### 6.1 Previous Research

Dividend yield is defined as dividends per share divided by the market value of the share. There has been some debate as to whether high-yield stocks offer superior returns. There are many reasons for different findings. For instance, in many countries, income, including dividends, is taxed at a higher rate than are capital gains. Another reason may be that some clients prefer income and will buy high-yield stocks, whereas other investors may prefer capital gains.

Litzenberger and Ramaswamy (1979) examined the effects of taxes and dividend yields on returns. They used NYSE data from January 1936 to December 1997. They found that high returns and high yields went together and that high-yield stocks offered excess returns. In his investigation of the UK market, Levis (1989), studying data from April 1961 to March 1985, found that high-yield stocks gave excess returns. Levis tested many variables and found that yields affected returns for most of the variables tested. In a study analyzing NYSE data from January 1927 to December 1976, Elton, Gruber and Rentzler (1983) examined the effects of dividend yields on returns. They found that there was a persistent relationship between dividend yields and excess returns. In particular, except for those stocks that had

previously paid zero dividends, the higher the dividend yield was, the higher was the excess return.

### 6.2 Study and Results

For every month covered by this study, we constructed four portfolios according to the dividend yield of common stocks. Figure 4 shows the geometric mean returns of the portfolios. Portfolio 1, the portfolio with the lowest dividend yield, had the highest monthly return. The portfolio with the highest dividend yield had the second highest average return.

**Figure 4. Returns of portfolios constructed according to the dividend yields of firms**

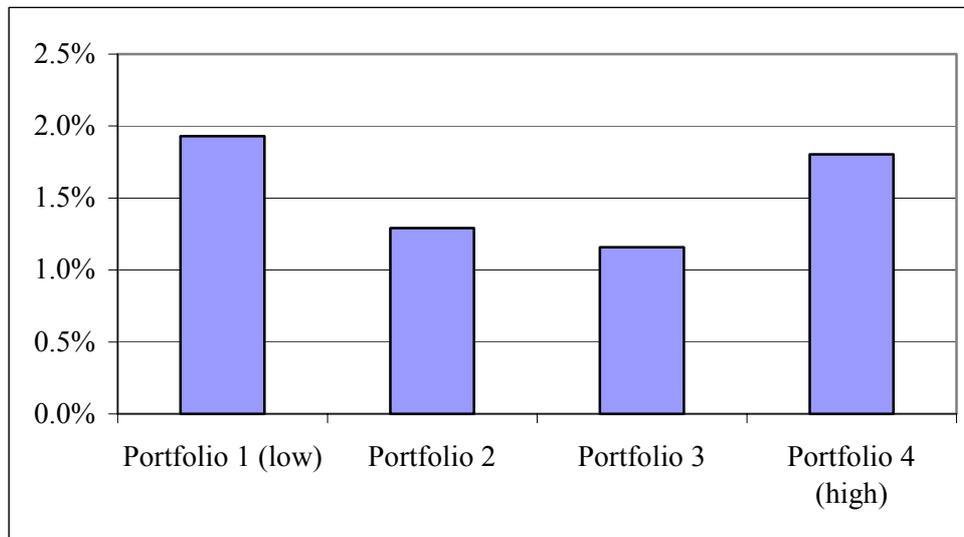


Table 2 shows that there is no statistically significant difference between the returns of portfolios 1 and 4 because the coefficient  $d_L$  is not statistically significant. Therefore, it is safe to conclude that there has not been a relationship between returns and dividend yields for Icelandic stocks.

**Table 2. Results of the regression of portfolios constructed according to dividend yields**

	$\alpha_p$	$d_L$	$\beta_p$	$s_L$	$R^2$
Coefficient	0.0083	0.0015	0.79	0.14	0.46
t-statistics	(2.09)	(0.26)	(*9.37)	(1.19)	

p-statistics	0.037	0.79	<0.0001	0.23	
Durbin W.	1.84				

\* Significant at the 5% level.

## 7 Performance According to P/E ratios

### 7.1 Previous Research

The performance of stocks based on P/E ratios is one of the most widely analyzed issues in relation to capital markets. Many US studies have shown that low P/E-ratio stocks outperform high P/E-ratio stocks over long periods. Studies of other markets have come to similar conclusions (Lofthouse, 1994). In an extensive study on the US, German, French, English, and Japanese equity markets, Haugen and Baker (1996) studied data from 1985 to 1993. They found that the ratio of earnings to price, that is, the reciprocal of the P/E ratio, affected returns in all these markets. In all countries studied, low P/E stocks gave excess returns during the period. The effect of the P/E ratio was highest in the US and France. Basu (1977) attempted to determine empirically whether the investment performance of stocks was related to their P/E ratio. He analyzed data from the NYSE between September 1956 and August 1971 and found that a low P/E portfolio gave, on average, a 13.5% return per year, whereas a high P/E portfolio gave a 9.5% return. This higher return was not associated with higher levels of systematic risk. Indeed, the systematic risk of the low P/E portfolio was lower than that of the high P/E portfolio. In an extensive study on the UK stock market from 1961 to 1985, Levis (1989) found that low P/E stocks gave excess returns during that period.

The reason for low P/E ratio stocks outperforming high P/E ratio stocks has been related to the tendency of investors to overestimate growth for high-growth companies and to underestimate growth for low-growth companies. High-growth companies normally sell at high P/E ratios, whereas low-growth companies sell at low P/E ratios, with the result that the stocks with low P/E ratios outperform the others.

### 7.2 Study and Results

In this study, earnings are defined as profits after tax plus exceptional and extraordinary items. To rank the stocks into portfolios and compare the

performance of high and low P/E portfolios, we used the E/P ratio (i.e., earnings divided by price) because companies with negative earnings are automatically ranked as having the lowest E/P ratio. For every month under study, we constructed four portfolios based on E/P ratios. The performance of the extreme portfolios, portfolios 1 and 4, was measured by estimating parameters in equation 4 using OLS.

**Figure 5. Returns of portfolios constructed according to the P/E ratios of stocks**

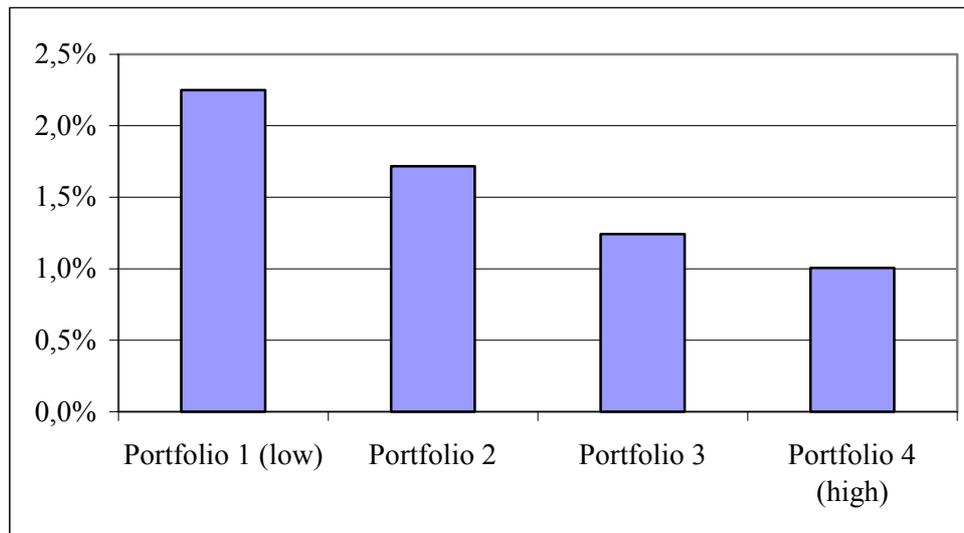


Figure 5 shows the average returns of the four portfolios. The returns of portfolio 1, which contained the stock with the lowest P/E ratios, were much higher than the returns of other portfolios. Portfolio 4's returns were the lowest. The figure indicates that a relationship between returns and P/E ratios might have existed.

Table 3 shows the results of the regression. The systematic risk (beta) is estimated to be 0.89 and 0.74 ( $\beta_p + s_L$ ) for the low and high P/E ratio portfolios, respectively. The alphas of the low and high P/E ratio portfolios are estimated to be 1.3% and 0.1% ( $\alpha_p + d_L$ ), respectively. The difference is statistically significant as the t-statistic of  $-2.06$  for ( $d_L$ ) indicates.

**Table 3. Results of the regression of the portfolios constructed according to P/E ratios**

	$\alpha_p$	$d_L$	$\beta p$	$s_L$	$R^2$
Coefficient	0.013	-0.012	0.89	-0.15	0.43
t-statistics	(*3.16)	(*−2.06)	(*10.03)	(−1.23)	
p-statistics	0.0018	0.041	<0.0001	0.22	
Durbin W.	1.82				

\* Significant at the 5% level.

Forming portfolios based on low P/E-ratio stocks provides considerably higher returns than portfolios based on high P/E-ratio stocks. Moreover, the difference in returns is statistically significant.

## 8 Performance According to M/B ratios

### 8.1 Previous Research

M/B ratios, also referred to as price-to-book ratios, express the market value of common stocks divided by the book value of ordinary shareholders' funds. Many studies have found that buying stocks with low M/B ratios has resulted in excess returns. Rosenberg, Reid and Lanstein (1985) analyzed the performance of a strategy of purchasing stocks with low price-to-book ratios using data from January 1973 to March 1980 from the COMPUSTAT database. The stocks analyzed were mainly NYSE stocks. The study was constructed as a hedge study, which means that stocks with low price-to-book ratios were bought and stocks with high price-to-book ratios were sold short. The study showed that this strategy gave excess returns; i.e., it resulted in a positive return of 0.32% per month. In their extensive study, Haugen and Baker (1996) analyzed data for five countries from 1985 to 1993. They found that stocks with low price-to-book ratios gave excess returns in the US, Germany, France, the UK, and Japan. The excess return was statistically highly significant in all of these countries. Capula, Rowley, and Sharpe (1993) analyzed the performance of stocks with low price-to-book ratios (called value stocks) and stocks with high price-to-book ratios (called growth stocks) from January 1981 to June 1992 in France, Germany, Switzerland, the UK, Japan, and the US. They found that the value stocks outperformed the growth stocks in all countries studied, as they gave higher average returns when adjusted for risk during the period under study.

## 8.2 Study and Results

For every month of the study, we constructed four portfolios according to the M/B ratios of the stocks in the sample. Figure 6 shows that portfolio 1, which consisted of the stocks with the lowest M/B ratios, had the highest average returns, whereas portfolio 4 provided the lowest average returns.

**Figure 6. Returns of portfolios constructed according to firms' M/B ratios**

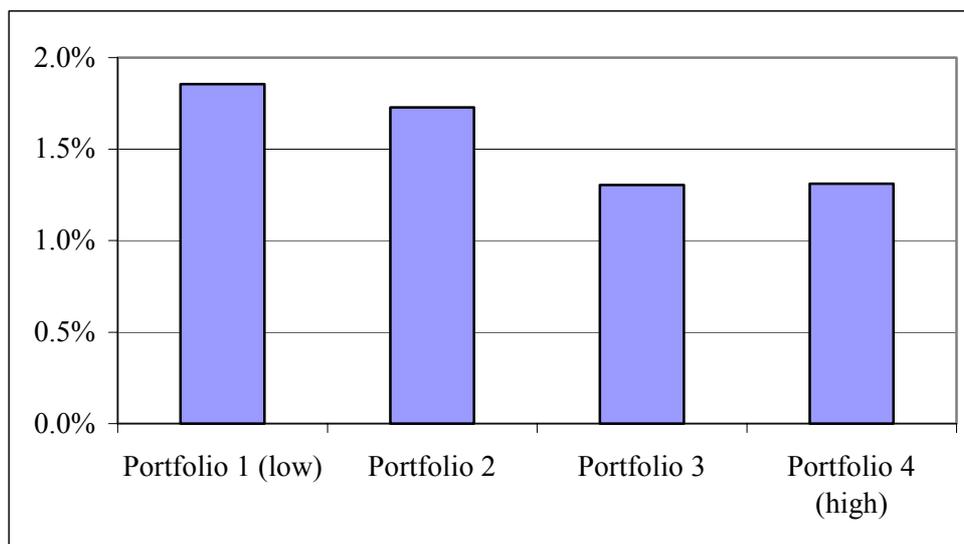


Table 4 shows that the systematic risk (beta) is 1.04 and 0.71 for the highest and lowest M/B portfolios, respectively. The difference in systematic risk between the portfolios is statistically significant as the t-statistic of  $-2.76$  for  $s_L$  indicates. The alpha is estimated to be 0.29% and 0.94% for the highest and lowest M/B portfolios, respectively. The difference between the alphas of the portfolios is not statistically significant. Therefore, there is not a statistically significant difference in returns between the two portfolios when accounting for risk.

**Table 4. Results of the regression of portfolios constructed according to M/B ratios**

	$\alpha_p$	$d_L$	$\beta p$	$s_L$	$R^2$
Coefficient	0.0029	0.00653	1.04	-0.33	0.47
t-statistics	(0.73)	(1.17)	(*12.22)	(* -2.76)	
p-statistics	0.46	0.245	<0.0001	0.006	
Durbin W.	2.07				

\* Significant at the 5% level.

A portfolio based on stocks with low M/B ratios provides a considerably higher return than does a portfolio with high M/B stocks. The risk (beta) of the low M/B portfolio is significantly lower than that of the high M/B portfolio. However, the difference in risk-adjusted returns between the portfolios is not statistically significant.

## 9 Performance According to Previous Returns

### 9.1 Previous Research

De Bondt and Thaler (1985) studied market behavior by analyzing monthly return data for NYSE common stocks from January 1936 to December 1982. They found that the market did overreact. They formed portfolios based on winners—i.e., stocks that had provided positive abnormal returns—and losers—i.e., stocks that had given negative risk-adjusted returns over the previous three years. Then they held the portfolios for 36 months. They found that, over this time, the portfolios of the 35 loser stocks outperformed the market by 19.6%, on average. In contrast, the winner portfolios performed about 5.0% below the market average. Thus, the difference in the cumulative average residual between the extreme portfolios equaled 24.6%. Jagadeesh (1990) studied the behavior of security returns using NYSE data for the period 1934 to 1987. He found that there was a negative first-order serial correlation in monthly stock returns and that it was statistically highly significant. This meant that high returns were followed by low returns. In addition, Jagadeesh found that there was significant positive serial correlation of longer lags, with the 12-month serial correlation being particularly strong. He found that the overreaction was most notable in January. Jagadeesh concluded that his research reliably rejected the hypotheses that stock prices follow a random walk. Haugen and Baker (1996)

studied data from the US, Germany, France, the UK, and Japan from 1985 to 1993. They found that, in all of these countries, stocks that had given excess returns relative to an index in the previous month underperformed the following month.

The reason for the overreaction of markets has been related to the overreaction of investors to new information. Investors observe each other and the market as a whole, and some investors chase trends. This makes the market excessively volatile, as trends persist for overly long periods and then reverse.

## 9.2 Study and Results

To compare the performance of winners and losers and to analyze the difference, we formed four portfolios for each month of the study according to the previous month's return.

**Figure 7. Returns of portfolios constructed according to previous returns**

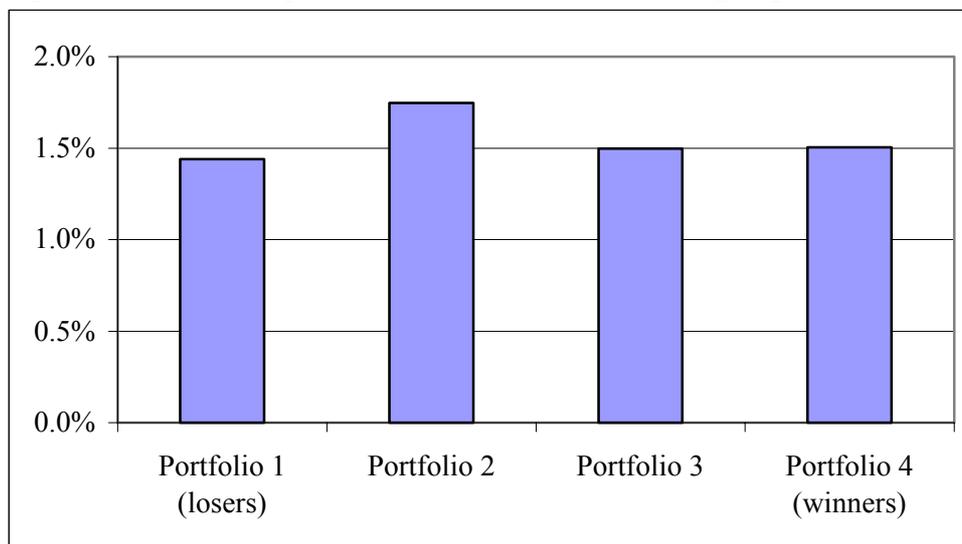


Table 5 shows the results of the regression, and figure 7 shows the returns of the portfolios. The average monthly returns are similar for all the portfolios: there is no statistically significant difference in returns. Therefore, there was no apparent relationship between the returns of Icelandic stocks and the previous returns.

**Table 5. Results of the regression of portfolios based on losers and winners**

	$\alpha_p$	$d_L$	$\beta p$	$s_L$	$R^2$
Coefficient	0.0051	-0.00001	0.87	-0.18	0.47
t-statistics	(1.45)	(-0.02)	(*11.56)	(-1,48)	
p-statistics	0.15	0.99	<0.0001	0.14	
Durbin W.	2.07				

\* Significant at the 5% level.

## 10 Conclusion

In this paper, empirical tests were performed to determine whether the Icelandic stock market showed clear signs of market inefficiency, which have appeared on other capital markets.

The performance of portfolios was measured and compared both in absolute terms and when accounting for systematic risk. The model applied in this research, which used multiple regression analysis with dummy variables, was based on the classical Capital Asset Pricing Model, so the beta coefficient was the sole measure of risk. The findings were that returns of stocks with low P/E ratios were much higher than returns of other stocks, and that the returns were statistically significantly higher than those of other stocks when accounting for differences in systematic risk. The returns of small stocks and stocks with low M/B ratios were higher than that of other stocks, but the difference was not statistically significant. However, there was no relationship between current returns and historical returns, or between returns and dividend yields.

The finding that stocks with low P/E and M/B ratios provide high returns on the Icelandic stock market is consistent with findings on other stock markets. It is interesting that the small and underdeveloped Icelandic stock market shares the same signs of inefficiency that appear in larger and more developed stock markets.

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# THE LONG AND SHORT RUN INTERDEPENDENCES BETWEEN THE ROMANIAN EQUITY MARKET AND OTHER EUROPEAN EQUITY MARKETS

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## **Abstract**

*The present paper examines the short and long run dynamics between the Romanian equity market and different stock markets from the European Union. By using the Johansen's cointegration test we find evidence to support cointegration between the nine European markets chosen. Our short run investigation is done within a VECM framework. We examine the impact of shocks to external equity markets on the Romanian market by using the Impulse Response and Variance Decomposition analyses. No evidence is found to support short run integration of the Romanian market with other stock markets from EU. We reveal that the most important Romanian index, BET, responds mostly to its own shocks. Our findings are consistent with the fact that foreign investors still choose to diversify their portfolios by buying stocks at the Bucharest Stock Exchange, which offers them the possibility to obtain very large speculative profits.*

**Keywords:** *cointegration, VECM, stock market indices, interdependences*

## 1. Introduction

The last decades of the world history can be characterized by the process of globalization. As time goes by, the effects of this process are more widely and faster spread. Moreover, they penetrate a wide range of domains (the economic one, as well as the social, political and cultural ones).

In the economic field, the globalization process implies that cash flows between different national economies are bigger, faster and more and more frequent. This phenomenon has caused –over time- an increasing integration of national economies, especially of national capital markets. The integration of world capital markets has increased also due to a process of relaxation of restrictions on capital flows and exchange controls in many countries.

There is a lot of research regarding the integration of world capital markets. This interest of researchers towards this subject can be explained first of all by considering the impact of this phenomenon on portfolio international diversification, as well as on the arbitrage possibilities between different national stock exchanges. In addition, the fast propagation of the crises settled on different capital markets to other capital markets was another factor that gave a strong impulse to the research in this field.

This article investigates the cointegration between the Romanian Stock Exchange and other stock exchanges from the European Union. The selection criterion of the European stock exchanges regards the level of the economic relationships with Romania. We chose stock exchange indices from Austria, Belgium, France, Germany, Holland, Hungary, Italy and United Kingdom. We work with blue-chip indices: BET for Romania, ATX for Austria, BFX (BEL 20) for Belgium, CAC 40 for France, DAX for Germany, AEX for Holland, BUX for Hungary, MIB 30 for Italy and FTSE 100 for England. The analysis covers the period from the 1<sup>st</sup> of January, 2000 to the 22<sup>nd</sup> of June, 2005.

In section 2 we review the literature written in this field of research. Section 3 describes briefly the Romania's transition to a market economy after 1989, as well as the appearance and the development of a capital market. In Section 4 we present the data and the methodology we consider. We use the Johansen's cointegration test, as well as a VECM approach for the short-run analysis. Section 5 is a presentation of our results, while in section 6 we draw the conclusions.

## 2. Literature Review

Over time, researchers have had a strong interest in the linkages among international stock markets. The first studies in this area were done by Levy and Sarnat (1970), Ripley (1973), Lessard (1976) and Hillard (1979). They found low correlations between national stock markets.

Identifying the co movements of various stock markets became a constant preoccupation of specialists after the 1987 international market crash. Eun and Shim (1989) find evidence sustaining the existence of a co-movement between the US stock market and other world equity markets by using the VAR approach. Malliaris and Urrutia (1992) analyze “lead-lag relationships for six major stock market indexes” (from New-York, Tokyo, London, Hong Kong, Singapore and Australia) before, during and after the 1987 crisis. By using Granger causality methodology, they find no important causality relationships before and after the crisis. However, they detect uni-/bi-directional causalities for the month of the crash. Furstenberg and Jeon (1990), Lee and Kim (1994) find that the linkages between stock markets became stronger after the October 1987 crash.

Kasa (1992), Blackman et al. (1994), Jochum et al.(1999) examine the existence of a long run equilibrium for different mature as well as emerging equity markets and find evidence to sustain the cointegration of these markets. On the contrary, Richards (1999) finds no cointegration by using the small sample critical values proposed by Cheung and Lai (1993).

As during the last decade of the 20<sup>th</sup> century a wide range of emerging stock markets appeared and started to develop, a lot of research was done on the integration between these markets or between them and mature equity markets.

Studies like Gelos and Sahay (2000), Scheicher (2001), Gilmore and McManus (2002) investigate the extent to which the equity markets from Central Eastern Europe are integrated with the global markets and whether they are subject to global shocks. Linne (1998) tries to find whether the emerging Eastern European markets (Russia, Poland, Hungary, the Czech Republic and Slovak Republic) are cointegrated between themselves, as well as with mature markets (Germany, UK, France, Italy, Switzerland, US and Japan). The results show that among the emerging markets, Poland displays a common trend with the world portfolio proxied by MSCI-World Index. Russia doesn't display any linkages with any of the analyzed markets, while the Slovakian stock market is cointegrated with all mature stock markets.

Gelos and Sahay (2000), Hernandez and Valdes (2001), Dungey et al. (2003) investigate the repercussions of the Russian currency and debt crisis on other world stock markets.

Numerous studies aim to reflect the integration of emerging markets from South Asia, South Africa, South America or Middle East. Ratanapakorn and Sharma (2002) use the cointegration analysis and Granger causality test to analyze the short run and long run relationships between stock indices from the Middle East, US, Europe, Latin America and Eastern Europe. They find no long run relationship between the Middle East indices and the rest of the stock markets. Maysami et al. (2000) examines interactions between the Singapore equity market and the stock markets of the US and Japan, by using unit root tests and the VAR methodology. The same methodology is used by Phylaktis (1999) to determine the influence of the US and Japan markets on the markets from the Pacific Basin countries.

All the studies mentioned above represent only a small part of the vast literature written in this area. The Romanian stock market was not part of any research concerning the other emerging markets from CEE. This is probably due to the slow development of the capital market in Romania during the last decade of the 20<sup>th</sup> century, mostly as a result of the severe recessions that characterized the Romanian economy during that period.

### **3. The Romanian Capital Market –a mirror of the Romanian economy in transition**

The Romanian transition to a market economy after the collapse of the socialism has been more difficult than the transition of other former socialist countries, being characterized by a range of severe economic periods of recessions. The recession of the first years of transition was due mostly to more objective causes such as: the whole Romanian economy before 1989 was completely nationalized and centralized; its management was irrational and refused to take into account any signals from the real economy; there was no competition on any market of the national economy; after 1989, the politicians, but also the managers and entrepreneurs had no experience at all. Unlike this first period of recession, the severe depression between 1997 and 1999 was caused by the lack of continuity in the macroeconomic policies. This period was characterized by a fall of 12% in the GDP, high external deficits and a very high inflation rate. All these led to the “edge” of the crisis in 1999, when Romania was close to bankruptcy (cessation of payments).

Starting from 2000, several measures were adopted in order to stop the economic fall and achieve stabilization. The GDP grew in 2000 with

2.1% and this trend was continued afterwards. The last three years were characterized by deflation, due to the prudent monetary policy led by the National Bank, but also to the austerity Government policy concerning public expenditures. The foreign direct investments, as well as the Romanian exports increased.

The Romanian capital market followed the same trends as the national economy. The legal basis of the capital market was put in 1994. In 1995, after almost 50 years of interruption, the Bucharest Stock Exchange was refounded<sup>1</sup>. During 1995 and the 1<sup>st</sup> trimester of 1997 the stock exchange was characterized by a slow growth and lack of liquidity. During the second and the third trimesters of 1997, a boom in the transactions volume took place. This boom was mostly due to massive foreign investments, while only 5% of the transactions were done by residents. The cause of this phenomenon was the increasing trust in the Romanian economy, as a result of the politic shift in 1996 (from left wing to right wing) and the promising policies of the new government.

The Romanians didn't choose to invest at the stock exchange for several reasons:

- ✓ they lacked the education and the trust in such kind of investment;
- ✓ in this period, the state bonds offered very high interest rates (in general, higher than any other investment)
- ✓ the level of income in Romania was continuously depreciating.

However, the legislative hesitations of the new government, the slow rhythm of privatization, the high level of political instability, the resignation of the government in 1998 led to diminishing foreign investments at Bucharest Stock Exchange. Certainly, the period of economic recession between 1997 and 1999 left marks on the stock exchange activity.

However, the economic growth achieved beginning with 2000 was reflected in the stock exchange activity as well. The main stock exchange index, BET, grew from 814.85 points on the 5<sup>th</sup> of January 2000 to more than 5000 points in March 2005. The liquidity has improved and the transactions volumes has increased. The ratio between residents transactions and nonresidents transactions also grew. Nowadays, about 80% (in average per month) of the transactions are done by residents.

Apart from the Bucharest Stock Exchange, several other organized capital markets were founded:

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<sup>1</sup> On the 23<sup>rd</sup> of June 1995 the Association of the Stock Exchange was founded.

- ✓ On the 1<sup>st</sup> of November 1996, the RASDAQ market (Romanian Association of Securities Dealers Automated Quotations) was founded. This is an OTC market where the companies that do not fulfill the requirements to be traded at BSE are negotiated.
- ✓ In 1994, The Sibiu Merchandise Stock Exchange was founded. In 1997, this institution became The Monetary – Financial and Merchandise Stock Exchange, and derivatives started to be negotiated (especially futures on currencies and indices).
- ✓ In November 1998, following the model of the stock exchange mentioned above, The Romanian Merchandise Exchange was founded. Futures on currencies, interest rates, as well as options on currency futures are traded here.

At the Bucharest Stock Exchange (BSE), the variations in stock prices are mostly reflected by three important indices.

The first one, BET, a blue chips index, was launched in September 1997. It measures the price variations of the top ten companies in terms of liquidity and market capitalization. It is a Laspeyres index, weighted with the market capitalization of the stocks.

BET-C (1998) reflects the global evolution of the market, while the third index, BET FI is a sectorial one. It measures the price variation of the five close investment funds listed at the Bucharest Stock Exchange.

#### **4. Data and Methodology**

We use the natural logarithms of weekly indices for the period from the 1<sup>st</sup> of January 2000 to the 22<sup>nd</sup> of June 2005. We chose to collect Wednesday prices in order to avoid any “day of the week” effects on data. All the indices are based on prices denominated in Euros. Adjustments were made for those indices denominated in other currencies.

Concerning our methodology, first of all, we determine the number of unit roots of each index series by using the Augmented Dickey Fuller Test and the Philips Perron Test.

Then, cointegration is tested by using Johansen’s cointegration test.

Finally, if the cointegration hypothesis is confirmed, we proceed to a short-run analysis, by using the VECM methodology, impulse response functions, as well as variance decomposition.

The data processing was made by using software packages like: Microsoft Excel, Fox Prow, EViews 3 and Stata 9.

### 4.1 Unit Root Tests

i. Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF)

The starting point in testing the presence of unit roots is an AR(1) model with one of the next three forms:

$$\Delta y_t = \gamma y_{t-1} + \varepsilon_t \quad (1)$$

or  $\Delta y_t = \mu + \gamma y_{t-1} + \varepsilon_t$  - a drift term is added (2)

or  $\Delta y_t = \mu + \beta t + \gamma y_{t-1} + \varepsilon_t$  - both a drift term and a linear time trend are added. (3)

In the above equations,  $\varepsilon_t$  is a white noise.

In all equations, we test whether the parameter  $\gamma=0$ , which is equivalent with testing the presence of a unit root.

The test described above is only valid when the series is an AR(1) process. In the case of higher order serial correlation, in order for  $\varepsilon_t$  to be a white noise, a correction must be made. The Augmented Dickey-Fuller method of solution to this problem was based on assuming that the  $y$  series follows an AR(p) process and adding lagged difference terms of the dependent variable  $y$  to the right-hand side of the regression:

$$\Delta y_t = \mu + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \delta_2 \Delta y_{t-2} + \dots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t \quad (4)$$

The null hypothesis is the same as in Dickey Fuller test:  $H_0: \gamma = 0$ , while the alternative is:  $H_1: \gamma < 0$ .

The t-statistic under the null hypothesis of a unit root does not have the conventional t-distribution. The critical values for the t-test were first simulated by Dickey and Fuller (1979) and more recently by MacKinnon (1991).

#### 4.1.1 The Philips Perron Test (PP test)

The test regression for the PP test is the same as the one for the DF test. But, Philips and Perron (1988) propose a non-parametric correction for higher order correlation. An estimate of the spectrum of  $\varepsilon$  at frequency zero that is robust to heteroskedasticity and autocorrelation of unknown form is used. The Newey-West heteroskedasticity autocorrelation consistent estimate is:

$$\omega^2 = \gamma_0 + 2 \sum_{j=1}^q \left(1 - \frac{j}{q+1}\right) \gamma_j, \quad (5)$$

$$\gamma_j = \frac{1}{T} \sum_{t=j+1}^T \tilde{\varepsilon}_t \tilde{\varepsilon}_{t-j}, \quad (6)$$

where  $q$  is the truncation lag.

The PP t statistics is:

$$t_{PP} = \frac{\gamma_0^{1/2} t_\gamma}{\omega} - \frac{(\omega^2 - \gamma_0) TS_\gamma}{2\omega\tilde{\sigma}}, \quad (7)$$

where  $t_\gamma$  and  $S_\gamma$  are the t-statistic and standard error of  $\gamma$  and  $\tilde{\sigma}$  is the standard error of the test regression.

The PP statistics has the same asymptotic distribution as the DF or ADF statistics.

#### 4.1.2 The Johansen's cointegration test

The starting point for this test is a VAR(p) process:

$$y_t = A_1 y_{t-1} + A_2 y_{t-2} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t, \quad (8)$$

This can also be written:

$$\Delta y_t = \sum_{i=1}^{p-1} \Pi_i \Delta y_i + \Pi y_{t-p} + Bx_t + \varepsilon_t, \quad (9)$$

where  $y_t$  is a  $k$ -vector of non-stationary I(1) variables,  $x_t$  is a  $d$  vector of deterministic variables, and  $\varepsilon_t$  is a vector of innovations. Also,

$$\Pi = \sum_{i=1}^p A_i - I \quad \text{and} \quad \Pi_i = - \sum_{j=i+1}^p A_j.$$

If the series are cointegrated,  $\Pi$  has reduced rank  $r \leq k-1$  and can be factorized into  $\Pi = \alpha\beta'$ , where  $\alpha$  and  $\beta$  are two ( $k \times r$ ) matrices.  $\alpha$  represents the speed of adjustment to disequilibrium and  $\beta$  is a matrix of long run coefficients, such that  $\beta'y_{t-p}$  represents up to  $k-1$  cointegration relationships in the multivariate model.

Johansen (1988) obtains estimates of  $\alpha$  and  $\beta$  using the procedure known as reduced rank regression. He estimates the  $\Pi$  matrix without imposing any VECM restrictions, by calculating  $k$  eigenvalues<sup>2</sup> ( $\lambda_1, \dots, \lambda_k$ ). The  $r$  eigenvectors -  $\hat{V} = (\hat{v}_1, \dots, \hat{v}_r)$  - corresponding to the first  $r$  eigenvalues contain, in fact, the estimations of the elements of the  $\beta$  matrix. The combinations  $\hat{v}_i'y_t$ ,  $i=1 \dots r$ , are all stationary. The other  $k-r$  combinations obtained with the last  $k-r$  eigenvectors are nonstationary. In order for the series to be cointegrated (this implies that  $\beta'y_t$  is stationary), the last  $k-r$

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<sup>2</sup> For more information, see Harris and Sollis (2003)

eigenvalues must be very small (zero). Therefore, Johansen proposes to test the null:

$$H_0 : \lambda_i = 0, \quad i=r+1, \dots, n \quad (10)$$

In order to test the null above, the so-called trace statistic is used:

$$\lambda_{trace} = -T \sum_{i=r+1}^k \log(1 - \hat{\lambda}_i), \quad r=0, 1, 2, \dots, k-1. \quad (11)$$

Asymptotic critical values for the trace statistics were provided by Johansen and Juselius (1990), Osterwald-Lenum (1992), Pesaran et al. (2000) and Doornik (1999)<sup>3</sup>. EViews 3, the statistical software we use, tabulates the critical values for the reduced rank test as given by Osterwald-Lenum (1992).

Johansen considered the following five possibilities of conducting the test<sup>4</sup>:

1. Series  $y$  have no deterministic trends and the cointegrating equations do not have intercepts;
2. Series  $y$  have no deterministic trends and the cointegrating equations have intercepts;
3. Series  $y$  have linear trends but the cointegrating equations have only intercepts;
4. Both series  $y$  and the cointegrating equations have linear trends;
5. Series  $y$  have quadratic trends and the cointegrating equations have linear trends.

#### **4.2 The short-run analysis**

If the index series are proved to be cointegrated, the short-run analysis must be done within a VECM framework. Therefore, after establishing the number of cointegration relationships, we need to estimate the short-run vector autoregression (VAR) in error-correction form with the cointegration relationships explicitly included:

$$\Delta y_t = \sum_{i=1}^{p-1} \Pi_i \Delta y_i + \Pi y_{t-p} + Bx_t + \varepsilon_t \quad (12)$$

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<sup>3</sup> See Harris and Sollis (2003), pg 122

<sup>4</sup> see Johansen, 1995, p. 80–84 for details

Considering that all the components of the VECM are stationary  $I(0)$  variables, standard OLS regression and inference can be used in estimating the coefficients.

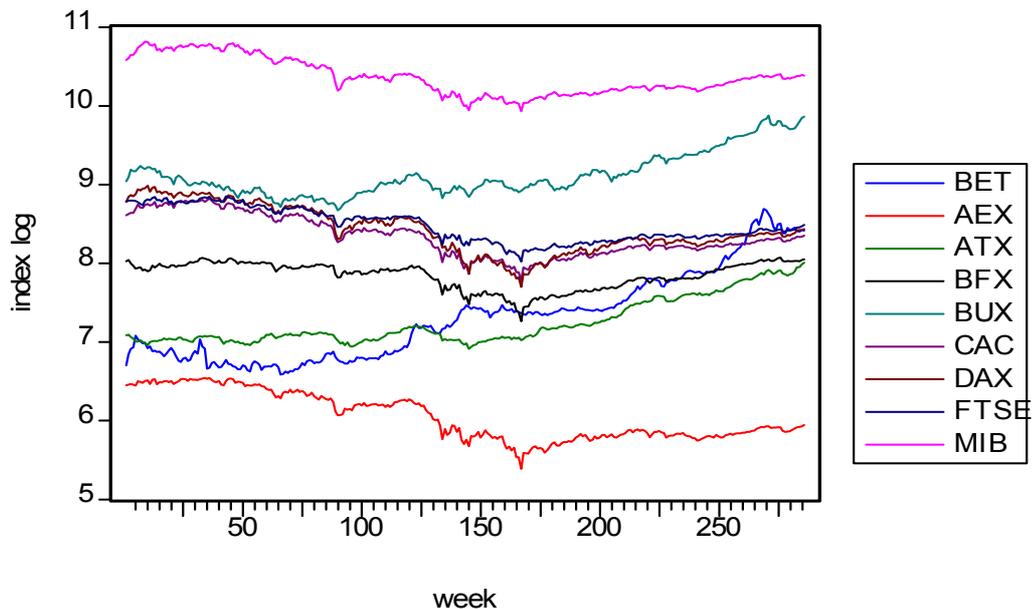
Our short-run approach also concerns the analysis of impulse-response functions and variance decomposition, which are estimated within a VECM framework as well. The impulse-response functions are meant to trace the impact of one standard deviation shock in the innovations on the endogenous variables of the VECM. Briefly, the impulse-response analysis involves that the errors are orthogonalized by a Cholesky decomposition so that the covariance matrix of the resulting innovations is diagonal.

The variance decomposition decomposes variation in an endogenous variable into the component shocks to the endogenous variables in the VAR. Such an analysis provides information on the relative importance of each random innovation to the variables in the VAR.

## 5. Results

Before running any tests, a chart was made, representing the variations of the logs of the nine series:

**Figure 1 The Variations of the Logs of the Index Series**



*Source: Author's calculation*

By analyzing the chart, we can observe that the line graphs representing the variations in the indices of most of the mature markets (MIB, DAX, FTSE, AEX, BFX, CAC) are quite parallel, suggesting a common trend. The line graphs of BET (the Romanian index) and BUX (the Hungarian index) seem to be parallel as well.

### 5.1 Unit Root Tests

We conducted the Augmented Dickey Fuller Test with a number of four lagged differences on the right hand of each equation tested. For the Philips Perron Test, we chose a truncation lag equal to five. This truncation lag was determined using the Newey-West method:

$$q = \text{floor}(4(T/100)^{2/9}),$$

where  $T$  is the total number of observations.

The results of the Augmented Dickey Fuller and Philips Perron tests can be summarized in the following tables:

1.1.1. Table 1 The ADF and PP statistics for the nine index series		
	<i>ADF STATISTIC</i>	<i>PP STATISTIC</i>
<i>AEX</i>	-0.972028	-1.111446
<i>ATX</i>	-0.421773	-0.732197
<i>BET</i>	-2.95374	-1.806125
<i>BFX</i>	-0.605546	-0.873784
<i>BUX</i>	-1.532198	-1.048656
<i>CAC</i>	-0.682541	-0.80589
<i>DAX</i>	-0.819667	-0.902629
<i>FTSE</i>	-0.346169	-0.588957
<i>MIB</i>	-0.77107	-0.972134

*Source: Author's calculation*

Table 2 MacKinnon critical values for rejection of hypothesis of a unit root.		
<i>for the ADF test</i>	1% Critical Value	-3.9941
	5% Critical Value	-3.4272
	10% Critical Value	-3.1366
<i>for the PP test</i>	1% Critical Value	-3.9937
	5% Critical Value	-3.427
	10% Critical Value	-3.1365

Comparing the test statistics in Table 1 with the critical values in the Table 2, we can conclude that in all the cases the null hypothesis of one unit root is accepted for all the significance levels considered (1%, 5%, 10%).

## 5.2 Johansen's Cointegration Test

In conducting Johansen's cointegration test, we encountered two kinds of problems.

The first one concerns the number of lags of the first differenced terms included in the right hand side of equation (1). In solving this problem, we used all information criteria available: the Hannan Quinn Information Criterion (HQ)<sup>5</sup>, the Akaike Information Criterion (AIC), the Schwarz criterion (SC). According to these criteria, we chose to perform the test with 1 lag in levels.

The second problem was selecting one of the five possibilities proposed by Johansen to run the test. We eliminated the first model (no deterministic components in the data or in the cointegration equations), especially because the intercept is needed to account for the units of measurement of the variables  $y_i$ <sup>6</sup>. In order to choose one of the models 2 to 5, we applied the so-called Pantula principle suggested by Johansen in an article written in 1992<sup>7</sup>. According to this principle, all models are estimated and the results are presented from the most restrictive model (2) to the least restrictive (5). "The test procedure is then to move from the most to the least restrictive model and at each stage to compare the trace statistic to its critical value and only stop the first time the null is not rejected."<sup>8</sup> Following this procedure for 1 lag in the differenced terms, the first time the null was not rejected was for the third model (series  $y$  have linear trends but the cointegrating equations have only intercepts) and for a rank  $r=1$ .

We didn't include in the test regression any other exogenous variables, such as dummies.

Table 3 presents the results of the Johansen's test performed in its third form and for 1 lag in levels:

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<sup>5</sup> Johansen et al (2000) recommend using the HQ criterion in establishing the lag length of a VAR.

<sup>6</sup> The series means differ from zero. Therefore intercepts are needed in the cointegrating equations.

<sup>7</sup> For more information, see Harris and Sollis (2003), pages 134, 135

<sup>8</sup> Harris and Sollis (2003), page 134

<b>Table 3 The results of Johansen's cointegration test</b>				
<i>Eigenvalue</i>	<i>Likelihood Ratio</i>	<i>5 Percent Critical Value</i>	<i>1 Percent Critical Value</i>	<i>Hypothesized No. of CE(s)</i>
0.1748	205.7967	192.89	205.95	None *
0.1359	151.0397	156	168.36	At most 1
0.1049	109.3944	124.24	133.57	At most 2
0.0874	77.8050	94.15	103.18	At most 3
0.0631	51.7547	68.52	76.07	At most 4
0.0453	33.1803	47.21	54.46	At most 5
0.0428	19.9756	29.68	35.65	At most 6
0.0222	7.5017	15.41	20.04	At most 7
0.0039	1.1118	3.76	6.65	At most 8

Source: Author's calculation

\*(\*\*) denotes rejection of the hypothesis at 5%(1%) significance level.

In the table above, L.R. test indicates one cointegration relationship at 5% significance level. The normalized coefficients of this cointegration

relationships are presented in the following table (Table 4):

<b>Table 4 Normalized Cointegrating Coefficients: 1 Cointegrating Equation</b>									
<i>BET</i>	<i>AEX</i>	<i>ATX</i>	<i>BFX</i>	<i>BUX</i>	<i>CAC</i>	<i>DAX</i>	<i>FTSE</i>	<i>MIB</i>	<i>Intercept</i>
1	22.96	-3.18	5.24	2.71	52.32	-13.96	-58.62	-18.75	183.37

Source: Author's calculation

The cointegration analysis suggests that the Romanian stock market is integrated in the long-run with other European stock markets. This is not in contradiction with the fact that at the Bucharest Stock Exchange, nonresidents are still able to obtain very large profits, performing every year about 20%<sup>9</sup> of the transactions. Such transactions are mainly speculative and capital flows have a transitory nature. There are large foreign capital flows during winter and spring, when the returns at BSE are very high. Such capitals are withdrawn in a few months. Therefore, while displaying a long-run equilibrium with EU stock markets, the Romanian market offers the possibility of large profits in the short run.

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<sup>9</sup> In average, 24.96% in the first seven months of 2005 and 18.28% in 2004 (Source: www.bvb.ro).

### 5.3 The short-run analysis

As described in section 4, in the case of cointegration, the VECM methodology is required in the short-run analysis. Therefore, we estimated a restricted VAR containing one cointegrating relationship and 1 lag in levels. The results of our estimation can be seen in Table 5:

Table 5 The VECM estimation output					
	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P&gt; t </i>	<i>R-sq</i>
<b>D_bet</b>					
<i>Coint Eq</i>	-0.0027	0.0019	-1.41	0.158	0.026
<i>Constant</i>	0.0061*	0.0025	2.38	0.018	
<b>D_aex</b>					
<i>Coint Eq</i>	<b>-0.0067*</b>	0.0016	-4.15	0	0.0594
<i>Constant</i>	-0.0016	0.0022	-0.75	0.451	
<b>D_atx</b>					
<i>Coint Eq</i>	-0.0002	0.0009	-0.19	0.849	0.0256
<i>Constant</i>	0.0032*	0.0012	2.72	0.007	
<b>D_bfx</b>					
<i>Coint Eq</i>	<b>-0.0031*</b>	0.0013	-2.32	0.02	0.0187
<i>Constant</i>	0.0001	0.0018	0.08	0.937	
<b>D_bux</b>					
<i>Coint Eq</i>	<b>-0.0032*</b>	0.0014	-2.25	0.024	0.0249
<i>Constant</i>	0.0029	0.0020	1.5	0.133	
<b>D_cac</b>					
<i>Coint Eq</i>	<b>-0.0064*</b>	0.0015	-4.33	0	0.0628
<i>Constant</i>	-0.0008	0.0020	-0.4	0.689	
<b>D_dax</b>					
<i>Coint Eq</i>	<b>-0.0057*</b>	0.0016	-3.44	0.001	0.041
<i>Constant</i>	-0.0011	0.0022	-0.49	0.622	
<b>D_ftse</b>					
<i>Coint Eq</i>	-0.0018	0.0012	-1.53	0.127	0.0096
<i>Constant</i>	-0.0010	0.0016	-0.63	0.531	
<b>D_mib</b>					
<i>Coint Eq</i>	<b>-0.0036*</b>	0.0013	-2.8	0.005	0.0275
<i>Constant</i>	-0.0006	0.0017	-0.36	0.717	

Source: Author's calculation

In the above table, all the 5% statistically significant coefficients are marked with \*. The coefficients of the cointegration relationship denote the speed of adjustment to disequilibrium. Within these coefficients, only some of them are statistical significant: the ones for the AEX, BFX, BUX, CAC40,

DAX and MIB30 equations. For all the VECM equations, the  $R^2$  coefficients are very low, indicating a reduced degree of statistical significance of the models. Although the Romanian market represents for foreign investors an opportunity for obtaining speculative profits, it does not display short-run interdependences with other EU markets. We also believe that in the short-run, an analysis based on daily data would be more appropriate.

### **5.3.1 Impulse-Response functions**

As described in Section 4, the impulse response functions provide information on the expected response of each market to shocks affecting that market, as well as to shocks on other stock markets considered. The response of BET to one standard deviation shock in BET, AEX, ATX, BFX, BUX, CAC40, DAX, FTSE100 or MIB30 are presented within the figure in Annex 1. As expected, shocks on itself display a high and constant impact on BET. Shocks to ATX, BFX and BUX have an insignificant effect on the Romanian index, while shocks to AEX, DAX and MIB30 exert a small, but constant influence on BET. AEX has a negative impact on BET, while the German and the Italian indices have a positive influence. From all the EU stock indices, CAC40 and FTSE100 exhibit the largest, increasing in time effects on the Romanian index. The French index has a negative impact, while the British one displays a positive effect on BET.

### **5.3.2 Variance decomposition**

To further assess the relative importance of shocks in prices, we decompose the forecast error variance of BET into parts attributable to shocks to BET, as well as to the other indices considered. The variance decomposition of BET is graphed in Annex 2. Shocks from the Romanian market explain most of its own forecast uncertainty (about 98%). Within the possible external shocks, the ones from FTSE100 account for only 1% -2% of the forecast error variance of BET, as the forecast horizon increases.

Although the Romanian market displays a long-run equilibrium with the equity markets from the EU, in the short-run it does not react promptly to shocks emanating from EU markets. Both the impulse-response and the variance decomposition analyses show that the Romanian index, BET, responds, most of all, to its own shocks.

## **6. Conclusions**

This paper investigates to what extent the Bucharest Stock Exchange is integrated with eight European stock markets (Austria, Belgium, England, France, Germany, Holland, Hungary, Italy). First, we determine the order of

integration for each index series, by using unit root tests (ADF and PP). We find that every index series displays one unit root. Then, in order to identify a long run relationship between the nine markets, we apply Johansen's cointegration test. We find one cointegrating relationship between the nine equity markets. We can say that in the long run the Romanian stock exchange is integrated with the other European equity markets.

Our investigation in the short run implies the estimation of the VECM, as well as impulse-response functions and variance decomposition analyses. We find that responses of the Romanian stock market to external shocks are neither significant nor prompt. About 98% of the forecast error variance of the Romanian index, BET, is due to shocks of itself. Our findings are consistent with the fact that foreign investors still obtain very large speculative profits at the Bucharest Stock Exchange. We cannot speak of a short-run integration of the BSE with other stock markets from EU.

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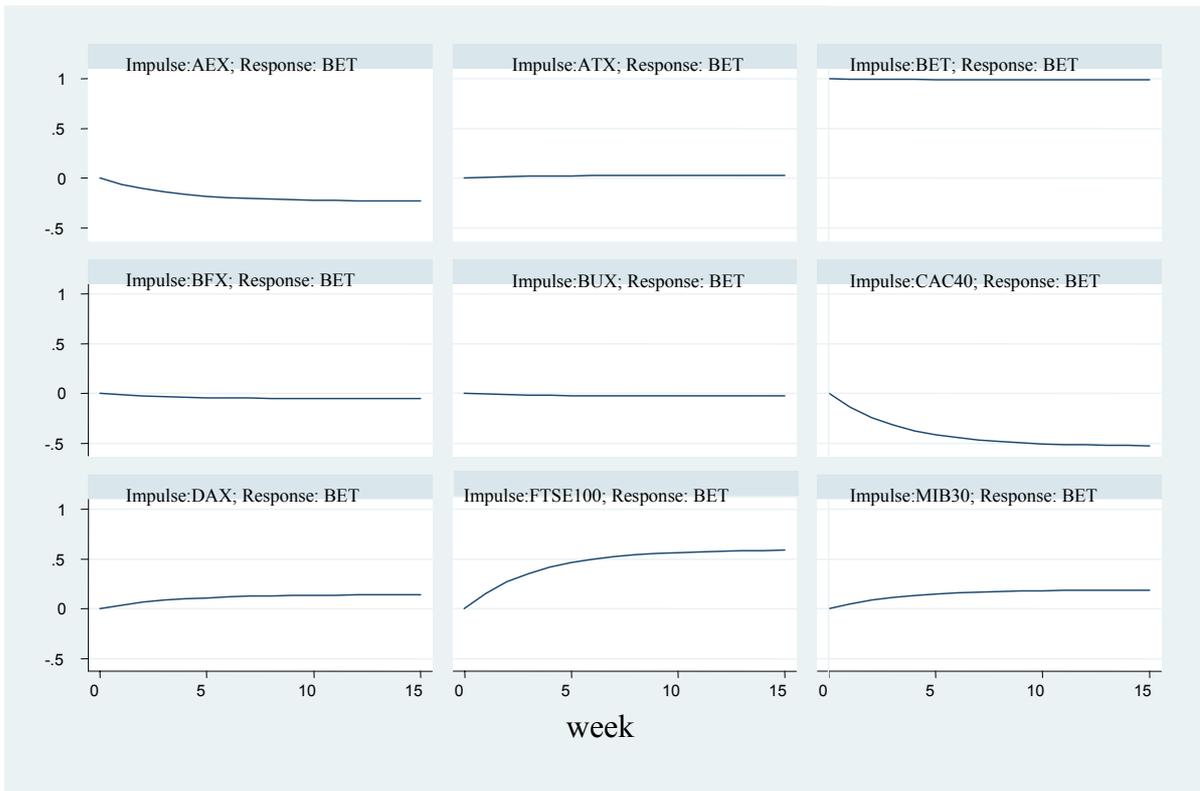
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**Annex1:**

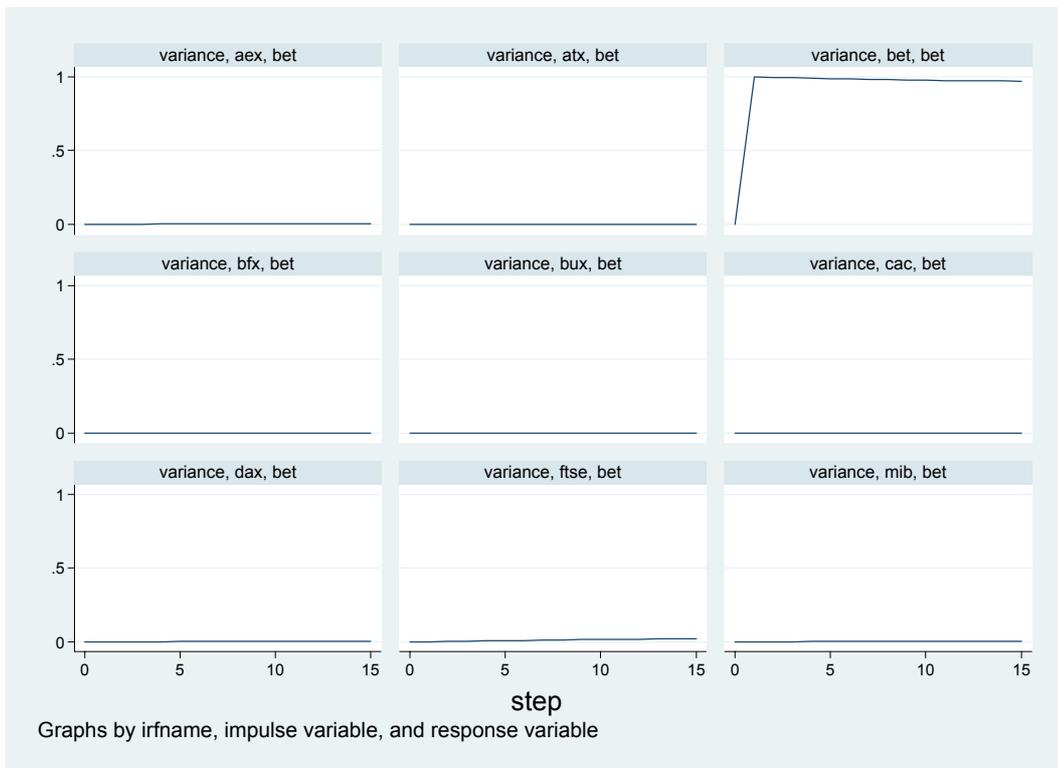
**Figure 2 Impulse-Response of BET to One Standard Deviation Innovation in AEX, ATX, BET, BFX, BUX, CAC40, DAX, FTSE100 and MIB30**



*Source: Author's calculation*

**Annex 2:**

**Figure 3 Forecast Error Variance Decomposition for BET**



Source: Author's calculation

# THE CROSS-SECTION OF EXPECTED STOCK RETURNS FOR THE ATHENS STOCK EXCHANGE

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## **Abstract**

*Two easily measured variables, size and book-to-market equity, combine to capture the cross-sectional variation in average stock returns associated with market  $\beta$ , size, book-to-market equity, and earnings-price ratios for the Athens stock exchange for the period from 1997 to 2003. Creating portfolios on the basis of beta values produces no reliable relation between betas and average returns. Moreover, when portfolios are formed on size alone there is no relation between size and average return. When portfolios are formed on E/P alone there seems to be no evidence about any relation between E/P and average returns while when portfolios are formed on their estimated book-to market-equity no relation between average return and book-to-market equity can be derived. Variables like size, E/P and book-to-market equity are all scaled versions of a firm's stock price. They can be regarded as different ways of extracting information from stock prices about the cross-section of expected stock returns. Since all these variables are scaled versions of price, it is reasonable to expect that some of them are redundant for explaining average returns.*

**Keywords:** *Athens Stock Exchange, portfolio returns, beta, risk free rate, stocks*

## 1. Introduction

Investors and financial researchers have paid considerable attention during the last few years to the new equity markets that have emerged around the world. This new interest has undoubtedly been spurred by the large, and in some cases extraordinary, returns offered by these markets. Practitioners all over the world use a plethora of models in their portfolio selection process and in their attempt to assess the risk exposure to different assets.

One of the most important developments in modern capital theory is the capital asset pricing model (CAPM). The capital asset pricing model (CAPM) of William Sharpe [1964], John Lintner [1965] and Fischer Black [1972] marks the birth of asset pricing theory. Four decades later, the CAPM is still widely used in applications, such as estimating the cost of capital for firms and evaluating the performance of managed portfolios. The attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk. Unfortunately, the empirical record of the model is poor – poor enough to invalidate the way it is used in applications.

The efficiency of the market portfolio implies that a) expected returns on securities are a positive linear function of their market  $\beta$ s (the slope in the regression of a security's return on the market's return), and b) market  $\beta$ s suffice to describe the cross section of expected returns.

There are several empirical contradictions of the Sharpe-Lintner – Black (SLB) model. The most important is the size effect of Banz [1981]. He finds that market equity, ME (a stock's price times shares outstanding), adds to the explanation of the cross section of average returns provided by market  $\beta$ s. Average returns on small (low ME) stocks are too high given their  $\beta$  estimates, and average returns on large stocks are too low.

Another contradiction of the SLB model is the positive relation between leverage and average return documented by Bhandari [1988]. It is plausible that leverage is associated with risk and expected return, but in the SLB model leverage should be captured by market  $\beta$ .

Stattman [1980] and Rosenberg, Reid, and Lanstein [1985] find that average returns on U.S stocks are positively related to the ratio of a firm's book value of common equity, BE, to its market value, ME. Chan, Hamao and Lakonishok [1991] find that book to market equity, BE/ME, also has a strong role in explaining the cross section of average returns on Japanese stocks.

Finally, Basu [1983] shows that earnings-price ratios (E/P) help to explain the cross section of average returns on U.S stocks in tests that also include size and market  $\beta$ . Ball [1978] argues that E/P is a proxy for factors in expected returns. E/P is likely to be higher for stocks with higher risks and expected returns.

All the above variables can be regarded as different ways to scale stock prices, to extract information in prices about risk and expected returns. Moreover, since E/P, ME, leverage and BE/ME are all scaled versions of price, it is reasonable to expect that some of them are redundant for describing average returns. Initial goal of this paper is to evaluate the joint roles of market  $\beta$  size, E/P, and book-to-market equity in the cross section of average returns on the stocks of the Athens Stock Exchange.

Tests are conducted for a period of seven years (1997-2003), which is characterized by intense return volatility (covering historically high returns for the Greek Stock market as well as significant decrease in asset returns over the examined period). These market return characteristics make it possible to have an empirical investigation of the pricing model on differing financial conditions thus obtaining conclusions under varying stock return volatility.

Existing financial literature on the Athens stock exchange is rather scanty and it is the purpose of this study to widen the theoretical analysis of this market by using modern finance theory and to provide useful insights for future analysis of this market.

## **2. Empirical Appraisal of the model**

### ***2.1 Empirical Tests***

The theory itself has been criticized for more than 30 years and has created a great academic debate about its usefulness and validity. Tests of the CAPM are based on three implications of the relation between expected return and market beta implied by the model (Fama & French, [2003]). First, expected returns on all assets are linearly related to their betas, and no other variable has marginal explanatory power. Second, the beta premium is positive, meaning that the expected return on the market portfolio exceeds the expected return on assets whose returns are uncorrelated with the market return. Third, assets uncorrelated with the market have expected returns equal to the risk free interest rate, and the beta premium is the expected market

return minus the risk free rate. Most tests of these predictions use either cross-section or time-series regressions.

## 2.2 Tests on Risk Premiums

The early cross-section regression tests focus on the model's predictions about the intercept and slope in the relation between expected return and market beta. The approach is to regress a cross-section of average asset returns on estimates of asset betas. The model predicts that the intercept in these regressions is the risk free interest rate,  $R_f$ , and the coefficient on beta is the expected return on the market in excess of the risk free rate,  $E(R_M) - R_f$ .

Two problems in these tests quickly became apparent. First, estimates of beta for individual assets are imprecise, creating a measurement error problem when they are used to explain average returns. Second, the regression residuals have common sources of variation, such as industry effects in average returns. To improve the precision of estimated betas, researchers such as Blume [1970], Friend and Blume [1970], and Black, Jensen, and Scholes [1972] work with portfolios, rather than individual securities. Since expected returns and market betas combine in the same way in portfolios, if the CAPM explains security returns it also explains portfolio returns. Estimates of beta for diversified portfolios are more precise than estimates for individual securities. Thus, using portfolios in cross-section regressions of average returns on betas reduces the critical errors in variables problem. Grouping, however, shrinks the range of betas and reduces statistical power. To mitigate this problem, researchers sort securities on beta when forming portfolios; the first portfolio contains securities with the lowest betas, and so on, up to the last portfolio with the highest beta assets. This sorting procedure is now standard in empirical tests.

The model's relation between expected return and market beta also implies a time-series regression test. CAPM says that the average value of an asset's excess return (the asset's return minus the risk free interest rate,  $R_{it} - R_{ft}$ ) is completely explained by its average realized CAPM risk premium (its beta times the average value of  $(R_M - R_f)$ ).

Many tests reject the basic assumption of the CAPM model. There is a positive relation between beta and average return, but it is too "flat". The evidence that the relation between beta and average return is too flat is confirmed in time series tests, such as Friend and Blume [1970], Black, Jensen, and Scholes [1972], and Stambaugh [1982]. The returns on the low

beta portfolios are too high and the returns on the high beta portfolios are too low.

The model predicts that the intercept is the risk free rate and the coefficient on beta is the expected market return in excess of the risk free rate,  $(E(R_M) - R_f) - R_f$ . The regressions consistently find that the intercept is greater than the average risk free rate (typically proxied as the return on a one or three month Treasury bill), and the coefficient on beta is less than the average excess market return (proxied as the average return on a portfolio of stocks minus the Treasury bill rate). This is true in the early tests, such as Douglas [1968], Black, Jensen and Scholes [1972], Miller and Scholes [1972], Blume and Friend [1973], and Fama and MacBeth [1973], as well as in more recent cross-section regression tests, like Fama and French [1992].

### ***2.3 Testing Whether Market Betas Explain Expected Returns***

The model predicts that the market portfolio is mean-variance-efficient. This implies that differences in expected returns across securities and portfolios are entirely explained by differences in market beta; other variables should add nothing to the explanation of expected returns

This prediction plays a prominent role in tests of the CAPM. In the early work, the weapon of choice is cross-section regressions. One simply adds pre-determined explanatory variables to the cross-section regressions of returns on beta. If all differences in expected return are explained by beta, the average slopes on the additional variables should not be reliably different from zero. For example, in Fama and MacBeth [1973] the additional variables are squared market betas (to test the prediction that the relation between expected return and beta is linear), and residual variances from regressions of returns on the market return (to test the prediction that market beta is the only measure of risk needed to explain expected returns). These variables do not add to the explanation of average returns provided by beta.

### ***2.4 Recent Tests***

Starting in the late 1970s, empirical work appears to challenge CAPM. Specifically, evidence mounts that much of the variation in expected return is unrelated to market beta.

The first contradiction is Basu's [1977] evidence that when common stocks are sorted on earnings-price ratios, future returns on high E/P stocks are higher than predicted by the CAPM. Banz [1981] documents a size effect; when stocks are sorted on market capitalization (price times shares

outstanding), average returns on small stocks are higher than predicted by the CAPM. Bhandari [1988] finds that high debt-equity ratios (book value of debt over the market value of equity, a measure of leverage) are associated with returns that are too high relative to their market betas. Finally, Statman [1980] and Rosenberg, Reid, and Lanstein [1985] document that stocks with high book-to-market equity ratios (BE/ME, the ratio of the book value of a common stock to its market value) have high average returns that are not captured by their betas.

There is a theme in the contradictions of the CAPM summarized above. Ratios involving stock prices have information about expected returns missed by market betas. Fama and French [1992] update and synthesize the evidence on the empirical failures of the CAPM. Using the cross-section regression approach, they confirm that size, earnings-price, debt-equity, and book-to-market ratios add to the explanation of expected stock returns provided by market beta. Fama and French [1996] reach the same conclusion using the time-series regression approach applied to portfolios of stocks sorted on price ratios. They also find that different price ratios have much the same information about expected returns.

Kothari, Shanken, and Sloan [1995] try to save the CAPM by arguing that the weak relation between average return and beta is just a chance result. But the strong evidence that other variables capture variation in expected return missed by beta possibly makes this argument irrelevant.

### ***2.5 Explanations on the model's failures***

The evidence on the empirical problems of the CAPM provided by Fama and French [1992] serves as a catalyst, implying that the CAPM may have fatal problems. Research then turns to explanations.

One possibility is that the CAPM's problems are not authentic, meaning that researchers use data and discover contradictions that occur in specific samples as a result of chance. A standard response to this concern is to test for similar findings in other samples. Chan, Hamao, and Lakonishok [1991] find a strong relation between book-to-market equity (BE/ME) and average return for Japanese stocks. Capaul, Rowley, and Sharpe [1993] observe a similar BE/ME effect in four European stock markets and in Japan. Fama and French [1998] find that the price ratios that produce problems for the CAPM in U.S. data show up in the same way in the stock returns of twelve non-U.S. major markets, and they are present in emerging market returns. This evidence suggests that the contradictions of the CAPM associated with price ratios are not sample specific.

Among those who conclude that the empirical failures of the CAPM are fatal, two views emerge. The first view is based on evidence that stocks with high ratios of book value to price are typically firms that have fallen on bad times, while low BE/ME is associated with growth firms (Lakonishok, Shleifer and Vishny, [1994]; Fama and French, [1995]). They argue that sorting firms on book-to-market ratios exposes investor overreaction to good and bad times. Investors over-extrapolate past performance, resulting in stock prices that are too high for growth (low BE/ME) firms and too low for distressed (high BE/ME, so-called value) firms. When the overreaction is eventually corrected, the result is high returns for value stocks and low returns for growth stocks. Proponents of this view include DeBondt and Thaler [1987], Lakonishok, Shleifer, and Vishny [1994], and Haugen [1995].

The second view for the empirical contradictions of the CAPM is based on the need for a more complicated asset pricing model. The CAPM is based on many unrealistic assumptions. For example, the assumption that investors care only about the mean and variance of distributions of one-period portfolio returns is extreme. It is reasonable that investors also care about how their portfolio return covaries with labor income and future investment opportunities, so a portfolio's return variance misses important dimensions of risk. If so, market beta is not a complete description of an asset's risk, and we should not be surprised to find that differences in expected return are not completely explained by differences in beta. In this view, the search should turn to asset pricing models that do a better job explaining average return

### **3. Sample Selection and Data**

#### ***3.1 The sample securities***

The study covers the period from January 1997 to December 2003. This time period was chosen because it is characterized by intense return volatility with historically high and low returns for the Greek stock market incorporating changes in fundamental variables of the enterprises, giving us the opportunity to test the model on differing financial conditions thus obtaining conclusions under varying stock return volatility.

The selected sample consists of the majority of the stocks that were trading on the Athens Stock Exchange over the examination period. We excluded financial firms because the high leverage that is normal for these firms probably does not have the same meaning as for non financial firms, where high leverage more likely indicates distress. The sample companies

account for a major portion of market capitalization as well as average trading volume for the Greek stock market. Shares not included in the sample are either thinly traded or do not have accounting and financial information on a continuous basis.

The share data has been obtained from the Metastock and the Athens stock exchange, financial databases widely used in Greece by practitioners and researchers. The price data has been adjusted for capitalization changes such as bonus rights and stock splits. All the selected securities are traded on the ASE on a continuous basis throughout the full Athens stock exchange trading day, and are chosen according to prespecified liquidity criteria set by the ASE Advisory Committee.<sup>1</sup> The selection was made on the basis of the trading volume and excludes stocks that were traded irregularly or had small trading volumes.

All the selected stocks are included in the formation of the FTSE/ASE 20, FTSE/ASE Mid 40 and FTSE/ASE Small Cap index. These indices are designed to provide real-time measures of the Athens Stock Exchange (ASE).

The above indices are formed subject to the following criteria:

- (i) The FTSE/ASE 20 index is the large cap index, containing the 20 largest blue chip companies listed in the ASE.
- (ii) The FTSE/ASE Mid 40 index is the mid cap index and captures the performance of the next 40 companies in size.
- (iii) The FTSE/ASE Small Cap index is the small cap index and captures the performance of the next 80 companies.

### ***3.2 Data***

The study uses weekly stock returns for the selected companies listed on the Athens stock exchange for the period of January 1997 to December 2003. The data are obtained from MetaStock (Greek) Data Base.

Most firms in Greece have their fiscal year ends on December. So tests did not have to deal with matching the accounting data for all fiscal year ends in every calendar year. We use a firm's market equity at the end of December of each year to compute its book to market, leverage and earnings price ratios and we use its market equity of June of each year to compute its size. The accounting information combined with share price data has been used to construct measures of size and value employed in the study, as discussed in the next section.

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<sup>1</sup> [www.ase.gr](http://www.ase.gr)

Additionally annual profit information measured as Profit before Depreciation and Taxes (PBDT) has been collected for the sample companies from 1997 to 2003. The choice of profit figure has been guided by the fact that PBDT figures are seldom negative, making them appropriate for growth rate calculations.

In order to obtain better estimates of the value of the beta coefficient, the study utilizes weekly stock returns. Returns calculated using a longer time period (e.g. monthly) might result in changes of beta over the examined period introducing biases in beta estimates. On the other hand, high frequency data such as daily observations covering a relatively short and stable time span can result in the use of very noisy data and thus yield inefficient estimates.

All stock returns used in the study are adjusted for dividends as required by the CAPM. The ASE Composite Share index is used as a proxy for the market portfolio. This index is a market value weighted index, is comprised of the 60 most highly capitalized shares of the main market, and reflects general trends of the Greek stock market.

The 3-month Greek Treasury Bill is used as the proxy for the risk-free asset. The yields were obtained from the Treasury Bonds and Bill Department of the National Bank of Greece. The yield on the 3-month Treasury-bill is specifically chosen as the benchmark that better reflects the short-term changes in the Greek financial markets.

#### **4. Methodology**

The asset pricing model of Sharpe (1964), Lintner (1965), and Black (1972) is related to the way that academics and practitioners think about average returns and risk. The main argument of the model implies that the expected returns on securities are a positive linear function of their market betas (the slope in the regression of a security's return on the market's return), and the market's beta suffice to describe the cross-section of expected returns.

There are several empirical contradictions of the Sharpe-Lintner-Black (SLB) model as previously presented such as the size effect of Banz [1981], the positive relation between leverage and average return documented by Bhandari [1988], the positive relation of the ratio of a firm's book value of equity, BE, to its market value, ME and the E/P effect presented by Ball [1978].

The purpose in this part of the paper is to evaluate the joint roles of market's  $\beta$ , size, E/P and book to market equity in the cross section of average stock returns on the Athens stock exchange (ASE). The relations

between  $\beta$  and average return, the expanded relations between average return, size, E/P, and book-to-market equity will also be tested in order to investigate the sources of dimensions of risk in the SLB model. If assets are priced rationally, then stock risks should be multidimensional. One dimension of risk is proxied by size, ME. Another dimension of risk is proxied by BE/ME, the ratio of the book value of common equity to its market value. Ball [1978] argues that E/P is a proxy for the unnamed factors in the expected returns. This argument for E/P might also apply to size (ME), and book to market equity. All these variables can be regarded as different ways to scale stock prices, to extract information in prices about risk and returns.

In order to accomplish the above tests a significant number of stocks were selected from the ASE covering the period from January 1997 to December 2003. The number of stocks varies from year-to-year based on the criterion of their market capitalisation and their average trading volume. Most firms in Greece have their fiscal year ends on December. So tests did not have to deal with matching the accounting data for all fiscal year ends in every calendar year. We use a firm's market equity at the end of December of each year to compute its book to market, earnings price ratios and we use its market equity of June of each year to compute its size. Then, beta was estimated by regressing each stock's weekly return against the market index according to the following equation:

$$R_{it} - R_{ft} = \alpha + \beta_i(R_{mt} - R_{ft}) + e_t \quad (1)$$

where,  $R_{it}$  is the return on stock  $i$ ,  $R_{ft}$  is the rate of return on a risk-free asset,  $R_{mt}$  is the rate of return on the market index,  $\beta_i$  is the estimate of beta for the stock  $i$ , and  $e_{it}$  is the corresponding random disturbance term in the regression equation.

#### ***4.1 Decile Estimates-Two Dimension Sorting***

In June of each year stocks are sorted by size (ME). After estimating the size of stocks, data were allocated to three deciles according to their size, 30% low size, 40% medium and 30% high size deciles. We split the data on deciles based on the evidence of Chan and Chen [1998] that size produces a wide spread of average returns and betas. To allow for variation in beta that is unrelated to size we subdivide each of the three size deciles into portfolios comprised of eight stocks each, on the basis of their individual beta estimates from the highest to lowest. Thus, a two dimension sorting is conducted firstly

by the fundamental variable criterion, ME, and then by the beta estimate. Having created portfolios the average portfolio return is calculated from the individual stock returns.

The same methodology as described above is followed in constructing portfolios based on individual beta estimates where the criterion for forming deciles in this case, is not the size (ME) of stocks but their beta estimates.

The study continues by constructing portfolios using the criterion of book to market equity and earnings price ratio by allowing variation in beta. Three deciles are constructed 30% low, 40% medium and 30% high deciles using the initial sorting of stocks on the above two criterion. Moreover the data on deciles are categorized based on their individual beta estimates and portfolios of eight stocks in each one are created. In this way a two dimensional sort is also achieved and the intersection of these variables can be examined in scaling stock prices and extracting information about risk and returns.

#### ***4.2 Decile Estimates-One Dimension Sorting***

In order to examine the main prediction of the SLB model that average return is positively related to market beta, portfolios are formed on size and beta alone. Moreover, book to market equity and E/P is also used in order to examine if these variables are good proxies for beta.

The same methodology as previously described is followed by creating three deciles 30% low, 40% medium and 30% high according to the above criteria (size, beta, BE/ME and E/P) but in this case no further sorting is being made, as in the above case where a second pass sort based on beta estimates was conducted.

#### ***4.3 Cross-section examination***

The cross-sectional variation in average stocks returns associated with market  $\beta$ , size, book to market equity and earnings-price ratios is examined by using the time series regression. Tests are conducted on two dimension criterion sorting for each year separately from 1997 to 2003.

The importance of size and book to market equity in explaining the cross section in average stock returns is examined by using the following equation:

$$R_{pt} = \alpha + b_{2t} \cdot \ln(ME_{pt}) + b_{3t} \cdot \ln(BE_{pt} / ME_{pt}) + e_t \quad (2)$$

where  $R_{pt}$  , is the return of the portfolios,  $ME_t$  is the market equity of the constructed portfolios and finally  $BE_{pt}$  over  $ME_{pt}$  is the book equity to market equity of portfolios.

The inclusion of beta provides an interesting insight into the relation between size and book to market and average return. It is examined by the following equation.

$$R_{pt} = \alpha + b_{1t} \cdot \beta_{pt} + b_{2t} \cdot \ln(ME_{pt}) + b_{3t} \cdot \ln(BE_{pt} / ME_{pt}) + e_t \quad (3)$$

The final step is to examine all calculated variables by including in the regression analysis the estimated value of E/P of the portfolios. It is examined the earnings price ratio as a proxy for the omitted sources of risk that the previous variables may have not identified.

$$R_{pt} = \alpha + b_{1t} \cdot \beta_{pt} + b_{2t} \cdot \ln(ME_{pt}) + b_{3t} \cdot \ln(BE_{pt} / ME_{pt}) + b_{4t} \cdot (E_{pt} / P_{pt}) + e_t \quad (4)$$

## 5 Estimates

### 5.1 Beta estimation

Table 1a shows that forming portfolios on size alone, rather than on size and beta magnifies the range of beta for the examined period. In 1997 for instance in the first case (form portfolios on size alone) the lowest value of beta is -0.1979 and the highest is 0.4857 with estimated range between the two of them -1.0558. While in the second case (form portfolios on size and then sort them according to their beta estimates) the lowest value of beta is -0.2385 with highest value 0.4857 and range -0.6836. A different pattern of results are observed in years 2000, 2001 and 2002 where the Greek stock market suffered from a sharp decrease in stock prices returns. In these years the market was highly volatile, stock prices returns became rather unstable with severely fluctuating values of beta.

One important fact about  $\beta$ s is important. The beta sort is not a refined size sort. The deciles firstly are created by the size criterion and then within these deciles, stocks are sorted according to their individual beta estimates. Thus the beta sort achieves its goal to produce a variation in

beta that is unrelated to size. This is important in allowing our tests to distinguish between beta and size effects in returns and any other variable that will be used later in the study.

## *5.2 $\beta$ and Size*

Table 2 shows average returns from 1997 to 2003 for portfolios formed from one-dimensional sort of stocks on size or beta. The portfolios are formed at the end of each year and their returns are calculated from the average returns of stocks that are included in the formation of these portfolios. Portfolios created on December because all firms that have been used in the study have their fiscal year ends on December, so we did not have to deal with matching the accounting data.

The Table shows that when portfolios are formed on size alone, we observe no relation between size and average return and no relation between average return and beta. These contradictory results are met in every year of the study where low beta portfolios provide higher returns than high beta portfolios. Thus, a simple size sort seems not to support the SLB prediction of a positive relation between beta and average return. For the estimation of ME, the study uses natural logs because logs are a good functional form of capturing effects in averaging returns. Using logs also leads to a simple interpretation of the relation between the values of these factors in averaging returns.

When portfolios formed on the basis of the ranked market betas of stocks a wider range of beta is produced than from portfolios formed on size. In the year of 2003 for example when portfolios are formed on betas the lowest value in beta is -0.1065 and the highest value is 2.6445 while the same values when forming portfolios on size alone are 0.7254 and 1.8626 respectively. As in the previous case in the size portfolios the beta sorted portfolios do not support the SLB model.

There is big spread in average returns across the beta portfolios, and there is no obvious relation between beta and average returns. For example, in year 2000 the high beta portfolio produces negative returns while the lowest beta portfolios produces positive returns. The widespread in returns, from 0.0249 in the year 2000 for the low beta portfolio to -1.8336 for the highest beta portfolio is an additional point that comes in contrast to the SLB model prediction.

The portfolios formed on size and then on betas in Table 1b clarify the contradictory evidence to the SLB model on the relation between beta and average return produced by portfolios formed on size or beta alone. Specifically, the two-pass sort gives a clearer picture of the separate roles of size and beta in average returns. Contrary to the central prediction of the SLB model, the second-pass beta sort produces less variation in average returns rather than on sorting portfolios on beta alone. Although the ranking in betas in Table 1b-panel B increase strongly in each size decile, average returns are flat or show a tendency to decline. In Table 1b-panel C, within the columns of the average return and betas, average returns and betas in some cases decrease with increasing size although a clear pattern cannot be inferred.

The two-pass sort on size and beta in Table 1b says that there might be a variation in beta that is related to size and related to average return, but variation in beta unrelated to size is not compensated in the average returns. The proper inference seems to be that there is a slight relation between size and average return, but controlling for size, there is no relation between beta and average return.

One possibility for the poor results in beta is that other explanatory variables are correlated with beta, and this creates problems for the relation between average returns and measured betas. However, this point cannot explain why beta has no power even when is used alone to create portfolios to explain average returns. Another hypothesis is that, as the SLB model assumes there is a positive relation between beta and average return, but the relation might become problematic by noise in the beta estimates.

### ***5.3 Book-to-Market Equity and E/P***

Table 3 shows average returns from 1997 to 2003 for portfolios formed on ranked values of book-to-market equity (BE /ME) or earnings-price ratio (E/P). The BE/ME and E/P portfolios in Table 3 are formed in the same general way (one-dimensional yearly sorts) as the size and beta portfolios in Table 2.

When portfolios are formed on E/P alone there seems to be no evidence about any relation between E/P and average returns. There are cases where portfolios E/P's increase in line with average returns but especially in years from 2000 to 2002, a period of high volatility for the

market, no reliable relation between E/P and stock returns can be inferred.

Ball (1978) argues that the earnings-price ratio captures all omitted risk factors in expected returns. If current earnings are a proxy for expected future earnings then high-risk stocks with high expected returns will have low prices relative to their earnings. Thus, E/P should be related to the expected returns capturing the omitted sources of risk. However, this argument only makes sense, for firms with positive earnings. When current earnings are negative, like in our study for the period from 2000 to 2002-a period of recession for the Greek economy, they are not a proxy for the earnings forecasts embedded in the stock price, and E/P is not a proxy for expected returns.

In the next case when portfolios are formed on their estimated book-to market-equity no relation between average return and book-to-market equity can be derived. Average returns sometimes move in line with the increasing values of BE/ME portfolios but in most times returns do not behave in accordance to the BE/ME increase. It should be noted that the absence of any relation between average returns and betas, as previously presented, could be explained by the majority of firms with negative book equity.

We can report, however, that average returns for negative BE firms are high, like the average returns of high BE/ME firms. Different stock returns behavior, with a significant spread in values between negative BE firms and high BE/ME firms, is met in years from 2000 to 2002 , a period of extreme high volatility for the Greek stock market where most stocks lost much of their values. Negative book equity which results from persistently negative earnings is a signal of poor earnings prospects.

#### ***5.4 The interaction of Size, Beta, Book-to Market-Equity and Earnings Price Ratios in explaining average returns***

Table 4 shows time-series regressions of the portfolios created each year based on the criterion of two pass sort. The purpose is to evaluate the joint roles of market beta, size, E/P and book-to market-equity.

##### **5.4.1 Size Regressions**

In order to explain the role of size in explaining average returns a two dimensional variation has been used, by creating deciles based on their size

and then creating portfolios according to their beta estimates within these deciles, as previously described.

Like average returns in Table 1b, the results from the regressions about the intersection of returns between size and book-to-market equity indicate that there is no relation. The  $R^2$  values are low in all years of the model; their slopes are negative with negative values of t-statistics and standard errors close to zero. The inclusion of beta in explaining the intersection of these variables with average returns does not seem to give different results. Although the  $R^2$  values increase, the values of t-statistics persist to be negative with standard errors close to zero.

Adding E/P to the regression equation provides some useful thoughts. The slopes of the variables increase,  $R^2$  values become significant and standard errors move from zero. The results indicate that by the inclusion of E/P the model works better and all variables together explain average returns. There is a positive relation between E/P and average returns which is due to the positive relation between E/P and  $\ln(\text{BE/ME})$ . Firms with high E/P tend to have high book-to-market-equity ratios.

#### **5.4.2 Beta Regressions**

The study examines now the interaction of size, beta, book-to market-equity and earnings price ratios in explaining average returns when forming portfolios based on the beta estimates of individual stocks. The results support the idea that when beta, size and book-to-market equity are combined together the model explains the variation in average returns. There is a positive relation between beta and these variables.  $R^2$  values are high enough to support this idea with standard errors not close to zero and in addition acceptable values of t-statistics. The inclusion of all variables in the model does not provide supportive evidence in explaining average returns.

#### **5.4.3 BE/ME and E/P Regressions**

Creating portfolios according to their book-to-market equity and examining the cross-sectional variation in average stocks returns associated with market  $\beta$ , size, book to market equity and earnings-price ratios seems to give better results in explaining average returns than in the previous two cases. All statistical criteria have acceptable values to support the model and to provide adequate evidence in explaining the behaviour of stock returns. We should not, however, exaggerate with these results due to the fact that small ME stocks are more likely to have high book-to-market ratios, and high BE/ME stocks tend to be small (they tend to have low ME).

In the two dimensional sorting case based on E/P the model does not provide any positive relation in explaining average returns. The statistical criteria support the absence of relation and no conclusions can be extracted.

## **6 An extended variable model for explaining average returns**

### ***6.1 The multidimensional results***

The conclusions from creating portfolios either on one or two pass-sort are summarized:

- (1) When we form portfolios on the basis of beta values of stocks there is no reliable relation between betas and average returns.
- (2) There is no relation between size and average return and no relation between average return and beta when portfolios are formed on size alone.
- (3) Forming portfolios on size alone, rather than on size and beta magnifies the range of beta for the examined period.
- (4) Contrary to the central prediction of the SLB model, the second-pass beta sort produces less variation in average returns rather than on sorting portfolios on beta alone. Although the ranking in betas increase strongly in each size deciles, average returns are flat or show a tendency to decline.
- (5) The two-pass sort on size says that there might be a variation in beta that is related to size and average return, but variation in beta unrelated to size is not compensated in the average returns. There is a slight relation between size and average return, but controlling for size, there is no relation between beta and average return.
- (6) When portfolios are formed on E/P alone there seems to be no evidence about any relation between E/P and average returns.
- (7) When portfolios are formed on their estimated book-to-market-equity no relation between average return and book-to-market equity can be derived. Average returns sometimes move in line with the increasing values of BE/ME portfolios but in most times returns do not behave in accordance to the BE/ME increase.

## ***6.2 The intersection between Size, Beta, Book-to-Market Equity and E/P***

The evaluation of joint roles of market beta, size, E/P and book-to-market-equity in explaining stock returns in general do not give any supportive evidence. The combination of the above variables when portfolios are formed on size, indicate no power of interpreting average returns. The inclusion of E/P to the regression equation indicates that the model works better and that the intersection of all variables explains average returns. The explanation of the positive relation between E/P and average returns might be due to the positive relation between E/P and  $\ln(\text{BE/ME})$ . Firms with high E/P tend to have high book-to-market-equity ratios

The intersection of the variables with the beta sorting criterion for creating portfolios supports the idea that when beta, size and book-to-market equity are combined together the model explains the variation in average returns. The more reliable results are provided when portfolios are created on the basis of stocks book-to-market equity. But we should not exaggerate with these results due to the fact that small ME stocks are more likely to have high book-to-market ratios, and high BE/ME stocks tend to be small (they tend to have low ME). Finally, in the two dimensional sorting case based on E/P the model does not provide any positive relation in explaining average returns and conclusions can be extracted.

The purpose of the study is to examine the joint roles of market's  $\beta$ , size, E/P and book to market equity in the cross section of average stock returns on the Athens stock exchange covering the period from 1997 to 2003. We emphasize on different methods to approach the Sharpe-Lintner-Black model. In short, our tests do not support the central prediction of the SLB model, that average stock returns are positively related to market beta. One reason for these contradicting results is that some years of the examined period refer to an unstable and highly volatile period for the Greek stock market where stock prices increased significantly and suddenly lost most of their gains. So, is possible that the SLB model cannot incorporate these value fluctuations. Moreover, the tests here are restricted to stocks. It is possible that including other assets will change the inferences about the average premiums for beta, size, and book-to-market equity.

Variables like size, E/P and book-to-market equity are all scaled versions of a firm's stock price. They can be regarded as different ways of extracting information from stock prices about the cross-section of expected stock returns. Since all these variables are scaled versions of

price, it is reasonable to expect that some of them are redundant for explaining average returns.

The relations between returns and economic variables that measure variation in business conditions are affected from the general economic situation and might help expose the nature of the economic risks captured by firm's fundamental variables like size, book-to-market equity and E/P.

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# RANDOM AND NON-RANDOM WALKS IN THE ROMANIAN STOCK MARKET

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## **Abstract**

*Linear and nonlinear dependencies found in the Romanian stock market clearly reject the random walk hypothesis. Still, it is possible that these dependencies to be present just in certain periods of time, while in others the random walk null hypothesis could be accepted. In this situation, the rejection of the random walk hypothesis can be determined by some powerful dependencies in a few sub periods, thing that could provide a better starting point when it comes to debate about the forecasting power in the Romanian stock market. Using the Hinich & Patterson (1995) “windowed” methodology we discovered that, like on other markets, long periods of random walk alternates with short periods of linear/nonlinear correlation while the last ones are more frequent when compared with the Asian markets. Moreover, we developed a methodology for isolating maximum length period with significant linear/nonlinear dependencies and we reached the conclusion that returns are higher in random walk periods rather than in periods exhibiting linear/nonlinear dependencies.*

**Keywords:** *linear/nonlinear dependencies; random walk; windowed methodology.*

## 1. Introduction

Financial economics literature has been dominated in the last decades by the linear concept diffused especially through the linear modeling of financial data time series. The fact that linear dependencies are not found within a time series does not mean that the series observations are random as this series might exhibit other more complex forms of dependencies. As possible factors that might induce significant non-linearity in stock market, Antoniou et al. (1997) enumerates: difficulties in executing arbitrage transactions, market imperfections, irrational investors' behavior, diversity in agents' beliefs and heterogeneity in investors' objectives. Thus, the linear concept, insufficiently sophisticated to capture these complex patterns, is challenged in recent years as a significant number of studies suggest that non-linearity is a universal phenomenon, at least for time series data of stock prices.

The linear and nonlinear dependencies found in the Romanian financial market rejected clearly the random walk hypothesis. However, it is possible that these dependencies to be present just in some sub periods of time while in others we could accept the null hypothesis. In this case, rejecting the random walk hypothesis on the whole sample could be the effect of some strong dependencies existing in certain sub periods. In this context, the main goal of this study is the analysis of the episodic transient behavior of non-linear dependencies in the case of Bucharest Stock Exchange. Bearing this in mind, this study conclusion could lead to a more delicate debate about the degree of predictability in the Romanian stock market.

The first ones to emphasis on the existence of such behavior were Schahter et al. (1985) and Hood et al. (1985). Hinich and Patterson (1995) developed testing methodology of the linear and non-linear dependencies by dividing the whole sample in "windows" and using the portmanteau correlation and bicorrelation test. Using this methodology a great number of studies, such are the one of Brooks and Hinich (1998), Brooks et al. (2000), Ammermann and Patterson (2003) and Lim and Hinich (2005), emphasis the existence of a different stock price behavior on sub periods of time, respectively the existence of long random-walk sub periods alternated with short sub periods characterized by strong linear or nonlinear correlation. Using a different methodology, Ramsey and Zang (1997) discover similar results.

A study that we have in progress proved that the rejection of the random walk hypothesis in the Romanian stock market is due both to a linear correlation determined by the low trading frequency and especially to some additive and multiplicative non-linear dependencies. Developing profitable

forecasting linear and nonlinear models is possible only if these dependencies can be found during the whole sample period. Thus, it's becoming interesting to see how the return behavior of Romanian stocks has the same characteristics with the one from other markets, respectively the alternation of long periods of random-walk with short periods characterized by strong linear and nonlinear dependencies.

In this study we will use the “windowed” methodology developed by Hinich and Patterson (1995) which implies the division of the observations sample in sub samples or “windows” and running linear and nonlinear dependencies identification tests. More than that, the study will propose an improved version of the methodology for delimiting, as accurate as possible, the random walk periods from those exhibiting linear and nonlinear correlation.

## 2. Methodology

The methodology followed in this study is the “windowed” methodology developed by Hinich and Patterson in 1995. The following lines will expose a short description of this procedure. More details regarding the fundamentals and properties of tests in small samples can be found in Hinich and Patterson (1995) or Hinich (1996).

### 2.1 *Hinich & Patterson methodology*

Let the sequence  $\{R(t)\}$  be the realization of a stochastic process, respectively the return sample, where  $t$  is the time unit which is a whole number. The procedure implies the division of the sample in no overlapped sub samples of volume  $n$ , named “windows”. Thus, the  $k$  window is the following sequence  $\{R(t_k), R(t_k+1), \dots, R(t_k+n-1)\}$  while the  $k+1$  window is  $\{R(t_{k+1}), R(t_{k+1}+1), \dots, R(t_{k+1}+n-1)\}$  where  $t_{k+1} = t_k + n$ .

In each window, the null hypothesis is that  $R(t)$  are the realizations of a “white noise” process with null correlations and bi-correlations phenomenon described by the following formulas:  $C_{EE}(r) = E[R(t)R(t+r)]$  and  $C_{EEE}(r, s) = E[R(t)R(t+r)R(t+s)]$ , where  $r$  and  $s$  are whole numbers satisfying the relation  $0 < r < s < L$ ,  $L$  being the number of lags. The identification of linear correlation will be made using the portmanteau  $C$  test (similar to the Box-Pierce test) while in the case of the nonlinear correlations we will use the  $H$  portmanteau test.

We define  $Z(t)$  as the standardized observations series, that is a centered and reduced series:

$$Z(t) = \frac{R(t) - m_R}{\sigma_R} \quad (1)$$

where  $t$  takes values from 1 to  $n$  and  $m_k$ ,  $\sigma_k$  being the mean and the standard deviation within each window. The correlation between these standardized returns within each window will be:

$$C_{RR}(r) = (n-r)^{-1/2} \sum_{t=1}^{n-r} Z(t)Z(t+r) \quad (2)$$

While the bi-correlation is computed as follows:

$$(r, s) = (n-s)^{-1} \sum_{t=1}^{n-s} Z(t)Z(t+r)Z(t+s) \quad 0 \leq r \leq s \quad (3)$$

The C and H statistics, used to detect linear (C) and nonlinear (H) dependencies in each window are distributed according to a  $\chi^2$  law of probability with L respectively  $(L-1)(L/2)$  degrees of freedom and they have the following expressions:

$$C = \sum_{r=1}^L [C_{RR}(r)]^2 \quad (4)$$

$$H = \sum_{s=2}^L \sum_{r=1}^{s-1} G^2(r, s) \quad (5)$$

$$\text{Where } G(r, s) = (n-s)^{1/2} C_{RRR}(r, s) \quad (6)$$

The number of lags, L, is specified as  $L = n^b$ , with  $0 < b < 0.5$ . Using Monte-Carlo simulations, Hinich and Patterson (1995) recommends the usage of  $b=0.4$  in order to maximize the power of the test assuring in the

same time a good asymptotical approximation. Another parameter to be chosen, the window length, must be long enough to offer a robust statistical power and yet short enough for the test to be able to identify the arrival and disappearance of transient dependencies, as changes in the variables behavior. Brooks and Hinich recommended a window length of 35 observations corresponding to an approximate 7 weeks trading period, volume that we will also use in our study.

The rejection of the null hypothesis by the C and H tests is done with a determined risk level, for which we will consider two values 0.05 and 0.01 corresponding to probabilities of 95% and 99%. This means that at a 0.05 risk level, the possibility of a false rejection of the null hypothesis exists in 5 of 100 windows.

## ***2.2 Modified “windowed” methodology***

The procedure of dividing the studied sample in no overlapped windows, proposed by Hinich and Patterson (1995), does not allow a correct identification of the sub periods exhibiting linear and nonlinear dependencies because the test results depends on how the first day of the sample is determined. For example, in a window, the random walk hypothesis can be accepted just because the linear/nonlinear dependencies exist just in a small time fraction of the windowed sub period. Thus, choosing the first day from the whole sample will significantly influence the results of the test.

This disadvantage can be eliminated by running the Hinich and Patterson methodology (1995) in a successive way, considering the first day of the sample each of the first 34 day of the first window. We developed this particular methodology in order to identify all sub periods, of different length, exhibiting linear and nonlinear correlations, from the ones in which the random walk hypothesis is accepted.

The problem to be solved can be schematizing as following: We have a sequence of returns and we want to isolate maximum length sub periods exhibiting linear and/or nonlinear dependencies. To carry out this task we have built a two step algorithm, which firstly isolates the fix length windows exhibiting linear/nonlinear dependencies and secondly join consecutive, both no overlapped (but strictly consecutive) and overlapped windows which rejects the random walk hypothesis. With this methodology we can determine local maximum length sub periods rejecting the random walk null hypothesis.

### 2.3 Todea-Zoicaş algorithm for isolating maximum length sub periods exhibiting linear and/or nonlinear dependencies

Variables:

L=length of a window (integer);

N=total number of observations within the sample period (integer);

NW= number of delimited windows within the sample period (integer);

i,j,r,s= integer variables;

C, H, Lin\_dep, Non\_lin\_dep = matrix of integers.

C\*, H\*= table values for the  $\chi^2$  distribution (degrees of freedom, risk level)

We define a window as a function  $f: \{1, 2, \dots, NW\} \rightarrow N^* \times N^*$ , characterized by two interval extremities, the beginning and the end of the windowed period:  $W(j) := (t_1, t_2)$ .

- *Isolating fix length windows exhibiting linear/nonlinear dependencies*

For i: =1 to L-1 do

NW: = trunc ((N+1-i)/L);

For j: = 1 to NW do

$W(i, j) := ((j-1)*L+i, j*L+i-1)$

$C(i, j) := \sum_{r=1}^L [C_{RR}(r)]^2$  (for  $C_{EE}(r)$  see formula no. 2)

$H(i, j) := \sum_{s=2}^L \sum_{r=1}^{s-1} G^2(r, s)$  (for  $G(r, s)$  and  $C_{EE}(r, s)$ )

see formula 6 and 3)

For i: =1 to L-1 do

For j: = 1 to NW do

If  $C(i, j) > C^*$  then

Lin\_dep (i, j): = 1

Else

Lin\_dep (i, j): = 0

If  $H(i, j) > H^*$  then

Non\_lin\_dep (i, j): = 1

Else

Non\_lin\_dep (i, j): = 0

- *Joining consecutive both no overlapped (but strictly consecutive) and overlapped windows exhibiting linear/nonlinear dependencies*

The windows exhibiting linear and nonlinear dependencies are delimited from all windows within the *Lin\_dep* and *Non\_lin\_dep* matrixes. These matrixes contain all the possible windows that can be delimited from the sample period running the modified H&P methodology; a value of 1 is associated with the windows exhibiting dependencies and 0 for the random walk windows.

For example, suppose that the *Lin\_dep* matrix looks like the following one:

$$Lin\_dep = \begin{pmatrix} 1 & 0 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 & 0 \\ \dots & \dots & \dots & \dots & \dots \\ 0 & 0 & 1 & 0 & 1 \end{pmatrix} \quad (7)$$

First we isolate horizontally in case of all the matrix lines, maximum length arrays containing “1” and then we join vertically the overlapping and strictly consecutive arrays found above. Thus, we obtain maximum length windows exhibiting linear dependencies. In a similar way we proceed with the *Non\_lin\_dep* matrix. Finally, we join in the above described manner the maximum length windows exhibiting both linear and nonlinear dependencies obtaining maximum length windows rejecting the random walk hypothesis.

### 3. The data

The data consists of daily closing prices for the top traded stocks in Bucharest Stock exchange (BSE) and BSE main index, BET. All stocks prices and the index values are denominated in the local currency (RON), the period throughout we conducted the study is from 05.01.2000 to 19.12.2003, with a number of 980 observations. From these closing prices we obtained a series of logarithmic returns using the following formula:  $r_t = \ln(p_t/p_{t-1})$  where  $p_t$  and  $p_{t-1}$  are successive closing prices.

### 4. Empirical results

The main objective of the Hinich-Patterson methodology (1995) is to see in what way the stocks prices follow a random walk during the whole sample interval. Choosing a 35 day window, we delimited a number of 28 windows in which we run the C and H tests with 0.05 and 0.01 risk levels.

From table 1 we can observe the higher frequency of windows exhibiting nonlinear dependencies compared to the linear ones. A particular case is the one of ATB (Antibiotics Iasi) where the linear correlation found in previous autocorrelation studies can be met in the great number of C significant windows also.

**Table 1 Number of windows exhibiting linear/nonlinear dependencies**

Index/ Stock	Risk level: 0,05		Risk level: 0,01	
	No. of windows with C significant	No. of windows with H significant	No. of windows with C significant	No. of windows with H significant
<b>BET</b>	1 (3,57%)	2 (7,14%)	0 (0%)	1 (3,57%)
<b>ATB</b>	7 (25%)	3 (10,71%)	4 (14,29%)	3 (10,71%)
<b>AZO</b>	2 (7,14%)	5 (17,86%)	2 (7,14%)	3 (10,71%)
<b>CMP</b>	3 (10,71%)	0 (0%)	1 (3,57%)	0 (0%)
<b>IMP</b>	2 (7,14%)	7 (25%)	0 (0%)	2 (7,14%)
<b>SIF1</b>	3 (10,71%)	2 (7,14%)	1 (3,57%)	1 (3,57%)
<b>SIF2</b>	0 (0%)	6 (21,43%)	0 (0%)	4 (14,29%)
<b>SIF3</b>	3 (10,71%)	7 (25%)	0 (0%)	5 (17,86%)
<b>SIF4</b>	1 (3,57%)	2 (7,14%)	1 (3,57%)	2 (7,14%)
<b>SIF5</b>	2 (7,14%)	5 (17,86%)	0 (0%)	2 (7,14%)
<b>TLV</b>	3 (10,71%)	5 (17,86%)	3 (10,71%)	3 (10,71%)

The results obtained are similar to those found by Lim and Hinich (2005) on 13 stock markets from Asia, namely that long periods of random walk alternates with short periods of linear and nonlinear correlation. However, the percentage of C and H significant windows is higher in the Romanian stock market compared with the Asian markets where the percentage is below the 7% level. As a conclusion, we can say that the Romanian market has a higher forecasting potential, respectively a lower degree of market efficiency in the weak form.

Modeling returns becomes difficult when the variables of the return's stochastic process change their behavior in time. Lim and Hinich (2005) consider this alternate random walk – linear/nonlinear dependencies the main cause of the relative low performance of nonlinear forecast models. A first

step in improving these models should be the exact delimitation of the sub periods rejecting the random walk hypothesis. Once these sup periods are being identified, the next step is a comparative analysis of the returns probabilities distributions.

In the case of the Bucharest Stock Exchange index (BET), running the Hinich & Patterson (1995) methodology led to the delimitation of just three windows in which the random walk hypothesis is rejected with a guarantying probability of 95%. Running our proposed methodology (i.e. applying in a successive way the H&P methodology) changes substantially the results. As we can see in table no.2, in this case there are a number of 6 windows exhibiting linear correlation and 7 windows exhibiting nonlinear correlation, the risk level being 0.05. More than that, these windows have different length, obtaining by summing them a total period of 291 trading days (30%) in the case of linear correlation and 404 days (40%) for the nonlinear correlation.

**Table 2 Windows exhibiting linear and nonlinear correlation - the modified methodology (BET index)**

	Significant C	Insignificant C	Significant H	Insignificant H
<i>No. of windows</i>	6	7	7	8
<i>Windows</i>	06/06/00 07/08/00  14/08/00 11/10/00  20/03/02 14/05/02  13/09/02 13/12/02  08/04/03 08/07/03  11/09/03 10/11/03    11/11/03 19/12/03	06/01/00 05//06/00  08/08/00 13/08/00  12/10/00 19/03/02  15/05/02 12/09/02  14/12//02 07/04/03  09/07/03 10/09/03    11/11/03 19/12/03	06/06/00 11/10/00  26/10/00 19/12//00  15/02/01 02/07/01  01/03/02 29/04/02  15/10/02 04/12/02  06/02/03 07/04/03    15/04/03 11/09/03	06/01/00 05/06/00  12/10/00 25/10/00  20/12/00 14/12/01  03/07/01 28/02/02  30/04/02 14/10/02  05/12//02 05/02/03    08/04/03 14/04/03  12/09/03 19/12/03
<b>No. of days from the sample (percentage)</b>	291 from 985 (29.54%)	694 from 985 (75.46%)	404 from 985 (41.01%)	581 from 985 (58.99%)

In order to completely identify the sub periods exhibiting linear and nonlinear correlations from the random walks ones, we will join the consecutives windows belonging to the same of these two categories in order to obtain the complete sub period in which the null hypothesis is rejected with a probability of 95%. More than that, in order to check if our methodology allows a better delimitation of the two categories sub periods we will determinate both C and H statistic on the longer now, homogenous sub periods.

**Table 3 Acceptance/rejection of the random walk hypothesis - the modified methodology**

<b>Significant C and H windows – rejection of the random walk hypothesis</b>		
Windows	C - statistic (Prob.)	H -statistic (Prob.)
06/06/00 11/10/00	9,59 (0,14)	62,61 (0,000)
15/02/01 02/07/01	4 (0,67)	53,37 (0,000)
01/03/02 14/05/02	14,2 (0,039)	6,75 (0,34)
13/09/02 13/12/02	17,55 (0,002)	19,98 (0,029)
06/02/03 10/11/03	11,89 (0,156)	98,89 (0,000)
<b>Insignificant C and H windows – acceptance of random walk hypothesis</b>		
06/01/00 05/06/00	9,94 (0,127)	12,55 (0,727)
20/12/00 14/02/01	0,36 (0,986)	1,79 (0,938)
03/0701 01/03/02	6,08 (0,64)	4,006 (0,005)
15/05/02 12/09/02	3,89 (0,67)	17,91 (0,06)
16/12/02 05/02/03	1,09 (0,835)	2,48 (0,857)
11/11/03 19/12/03	4,45 (0,41)	2,48 (0,608)

The C and H statistics with the probabilities associated to the acceptance of the random walk null hypothesis, presented in table no.3 prove that the new methodology allows a correct identification of the random walk periods. Another important result is that the long random walk periods are followed by long periods exhibiting linear and nonlinear dependencies. More exactly, from the whole sample the number of trading days in which the random walk hypothesis is rejected is 493 representing approximately 50% from the whole sample.

**Table 4 Statistics of BET index return distribution**

<b>Statistics</b>	<b>Whole sample</b>	<b>Sub periods rejecting the random walk hypothesis</b>	<b>Sub periods accepting the random walk hypothesis</b>
<b>Average</b>	0,00157	0,00135	0,00198
<b>Standard deviation</b>	0,0162	0,0183	0,0153
<b>Skewness</b>	0,223	-0,045	0,634
<b>Kurtosis</b>	10,14	10,76	6,29
<b>Jarque-Bera</b>	2102,07	1120,08	232,22

The statistics from the above table shows that the daily average return in periods accepting the random walk hypothesis is superior to those in which is rejected. On the other hand, the volatility is more powerful in the sub periods rejecting the random walk hypothesis, signaling the existence of a greater number of extreme variations. The presence of these extreme variations in sub periods rejecting the random walk hypothesis can be noticed also from skewness and kurtosis coefficients values. The returns distribution in these sub periods is more distanced from the Gaussian probability law compared to the distribution of random walk returns.

## **5. Conclusions**

The results obtained in this study are similar to those found by Lim and Hinich (2005) on 13 stock markets from Asia, namely that long periods of random walk alternates with short periods of linear and nonlinear correlation. However, the percentage of C and H significant windows is higher in the Romanian stock market compared with the Asian markets where the percentage is below the 7% level. As a conclusion, we can say that

the Romanian market has a higher forecasting potential, respectively a lower degree of market efficiency in the weak form.

The findings throw some interesting light on the ongoing debate of stock market predictability. Though the BET index returns series follow a random walk pattern for long periods of time, there were time when it does not, suggesting the potential for profitability for technical trading rules. In particular, during those periods when the market moves in a significantly non-random and dependent pattern, it is possible for investors to use a certain trading rule to exploit those detected linear and nonlinear dependencies in order to earn abnormal rates of returns.

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# THE AUSTRALIAN DOLLAR'S LONG TERM FLUCTUATIONS AND TREND: THE COMMODITY PRICES CUM ECONOMIC CYCLES HYPOTHESIS

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## **Abstract**

*The Australian dollar's exchange rate (mainly in relation to the American dollar) has received a considerable attention in research and several models have been proposed to explain its trend and fluctuations. Thus, as a conclusion of this research we can say that this commodity currency very much depends on the terms of trade which in turn depend on commodity prices. The present paper is based on this conclusion and hence proposes the possibility that the Australian dollar's behavior is overwhelmingly explained by a handful of cycles of mainly harmonic frequencies. Using the principles of Fourier analysis, a simple regression provides considerable evidence about the existence of these cycles. In addition, and as important, a search into the commodity realm demonstrates that these cycles are for example related to various cycles of mining and producing minerals. If the proposition of the present paper is true, we have a very simple yet substantial explanation of the long term trend and fluctuations of the Australian dollar exchange rate and probably of exchange rates of many other commodity currencies.*

**Key words:** *Australian dollar, Fourier, cycles, minerals.*

## 1. Background

There are many factors as mentioned by many researchers that affect or could affect exchange rates in general. De Grauwe and Grimaldi [10] have pertinently summarized some of the main issues and explained why the fundamentals of exchange rates do not seem to work properly. Overall, there is some sort of puzzle in the determination of these rates. For example there is the puzzle of excess volatility according to which the volatility of the exchange rate by far exceeds the volatility of the underlying economic variables. Also, although the purchasing power parity (PPP) hypothesis was strongly suggested as explaining the behavior of exchange rates, recent research dismisses this hypothesis as being true at least for the Australian dollar [14]; or at least it qualifies it: “our estimate of the longrun elasticity of the exchange rate with respect to commodity prices is 0.939 and statistically not different from unity, which strongly supports the commodity-currency hypothesis” [13 p. 83].

However, these latter authors also remark: “although we fail to reject PPP and UIP1, so long as commodity prices are included in the cointegrating relations, note that the PPP relation is inherently difficult to capture in a study of this type, for domestic price developments will not be uninfluenced by substantial shifts in domestic monetary and fiscal policies, and these are not explicitly accounted for in our model” [13, p. 96]. Masih and Masih [20] have produced some interesting results that probably support our own results indirectly. They showed that the PPP hypothesis is still valid for the Australian dollar because they used fractional cointegration<sup>2</sup>, and hence low frequency dynamics.

Thus, the Australian dollar is one of these commodity currencies (see for example [8]) that are heavily influenced by commodity prices. Usually these currencies are those of small economically defined countries (hence not being able to influence the world economy and to a considerable extent commodity prices). Consequently “the A\$ appreciates (depreciates) in both nominal and real terms when the prices of certain commodities exported by Australia, e.g. coal, metals, and other primary industrial materials, rise (fall) in international markets’ [13, p. 82].

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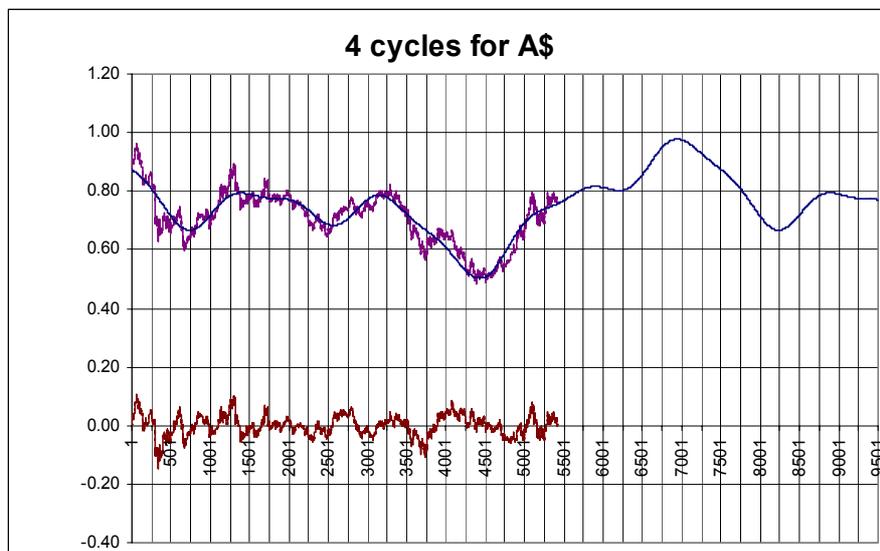
1 UIP stands for uncovered interest parity.

2 However, as these authors admit, cointegration is only a necessary condition for long-run PPP but not a sufficient one.

## 2. Commodity prices cycle and economic cycles

Following this brief background, it is logical to further investigate the relationship between the exchange rate fluctuations and the commodity prices fluctuations<sup>3</sup>. In this paper we will take an indirect approach: we must first see what sort of fluctuations and trends exist in determining commodity prices. Then we must investigate some of the reasons for these fluctuations and trends. Perhaps there are some hidden cycles inside the fluctuations term of commodity prices. If our suspicions are correct then we can examine the Australian dollar series to see whether these cycles constitute a very important component of its long term fluctuations. The quantitative method to be used for this examination is the Fourier analysis of time series.

**Figure 1** Upper diagram: raw data and fitted line; lower diagram: residuals of the fitted model.



Source: graph constructed by the author, based on data of RBA official internet site [25]. The A\$ is expressed in terms of US\$. Note: for the fitted line and residuals see text further below.

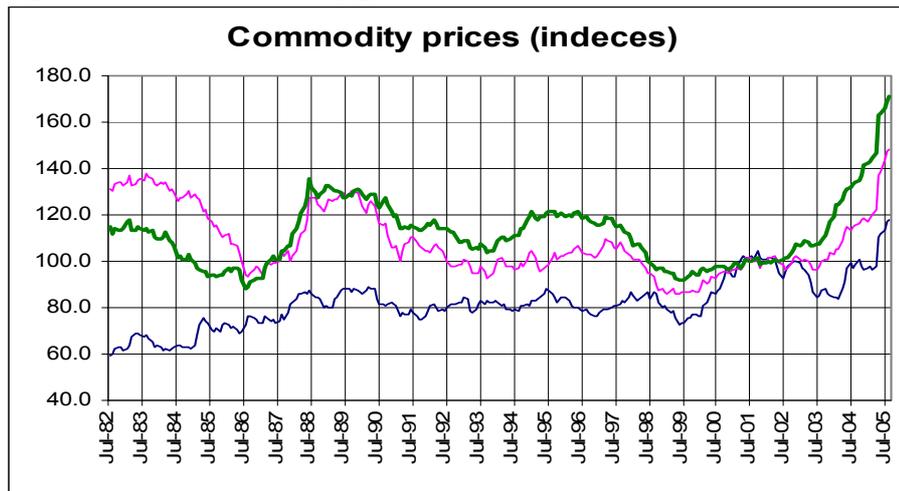
A visual examination of the commodity price and exchange rate series<sup>4</sup> (see Figures 1 and 2) show that there seem to be some noticeable

<sup>3</sup> When we refer to commodity prices we mean rural and mineral commodities primarily. However, industrial commodity prices should not and cannot be absent in a more comprehensive analysis. This is even more pertinent if we remark that recently in the last 40 years or so the peaks (in 1955, 1965, 1973, 1979, 1988, and 1995) and troughs of industrial commodity prices seem to coincide with the prices of all other commodity prices [5].

<sup>4</sup> The Australian dollar started floating in December 12, 1983. Before that from November 1976 to December 1983 it was set in terms of the trade weighted index (TWI) under a

peaks and troughs approximately during the same years for both series. Cashin *et al* [4] have shown that the Australian currency (as well as 18 other currencies) is clearly cointegrated with commodity prices and that the PPP model is subsequently a weak model for countries like Australia<sup>5</sup>. Karfakis and Phipps [16, p. 272] have similarly concluded that “movements in the terms of trade account for much of the long-run variation in the exchange rate” of the Australian dollar (thus having already considered changes in relative price levels and interest rate differentials).

**Figure 2 Commodity prices**



Source of data: RBA internet site [25]. Note: the upper graph is in terms of US dollars, the middle graph in terms of SDRs and the lower graph in terms of Australian dollars.

If our hypothesis of some predetermined cycles is correct then we must search for the reasons of this predetermination. Here in this paper we suggest that these reasons are related to the mining and production cycles of minerals and perhaps other commodities that Australia exports (such as sugar and wool). An indication of how important is the Australian component of minerals in the world production we can cite Humphreys [15, p. 5]: “Australia has managed to increase its share of world iron ore production to 20% from 13%, its share of nickel mine production to 17% from 8%, its share of copper mine production to 7% from 4%, and its share of zinc mine production to 17% from 13%”. Overall, exports of rural and non-rural commodities as a percentage of total exports has been about 60% (RBA site). The main commodities having the largest percentage in the construction of

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crawling peg system. Up to November 1971 it was fixed to sterling, then to the US dollar up to September 1974, and then to the TWI (see [23]).

<sup>5</sup> These authors examine the two series in real terms.

the commodity price index in Australia are: gold (16.3%), coking coal (13.8%), beef and veal (9.4%), steaming coal (9.3%), iron ore (9.3%), wool (8.6%), aluminium (8.6%), and so on [24].

A report by Western Mining Corporation (WMC) [26, p.31] finds that the average delay between discovery and time startup for Australian (also for Canadian and American) gold firms is 5.4 years, whereas it is 8.3 years for other countries. For copper, Graedel *et al* [12, p. 17] report all the principal uses of copper as percentage of total and the corresponding residence time in each use. Hence the weighted average of this time is about 35 years (author's calculations). Cortazar and Casassus [9] have shown that the optimal timing of a mine expansion is intrinsically related to changes in copper prices via the investment process. Achireko and Ansong [1] have demonstrated that gold prices are required in mine valuations. The relationship between supply and demand as well as inventories in mineral production has been well evidenced (e.g. [17]).

Following the above discussion we can hypothesize that the cycles we need to consider are those of commodity prices *per se* (average period length about 7-8 years) and those of economic business cycles: an average period length of about 3-4, 15-16 and 30-32 years. Cashin *et al* [6, pp. 282-3] have found that most commodities have cycles of an average duration of between 6 and 8 years. In addition, it is important to stress that most commodities are cointegrated thus generating a common cycle for themselves [21, 22]. The so-called business cycle of duration 3-4 years is primarily related to production, inventories, and employment. The "Kuznets" cycles of about 15-16 years and 29-30 years are more linked with the investment process (cf. for example a good paper on all these cycles by Forrester, [11]). In our context these three economic cycles are intrinsically related with the commodity prices cycle of about 7-8 years, since also these prices are a consequence of or a reason for the existence of these economic cycles<sup>6</sup>. All four cycles are generating each other through the "mysterious" properties of harmonics<sup>7</sup>.

As we can see in figure 3 the 4 harmonics (see below for these results) produce consecutive waves with varying height (amplitude) and phase. The sequence from 1988 to 2013 of these waves is as follows (in

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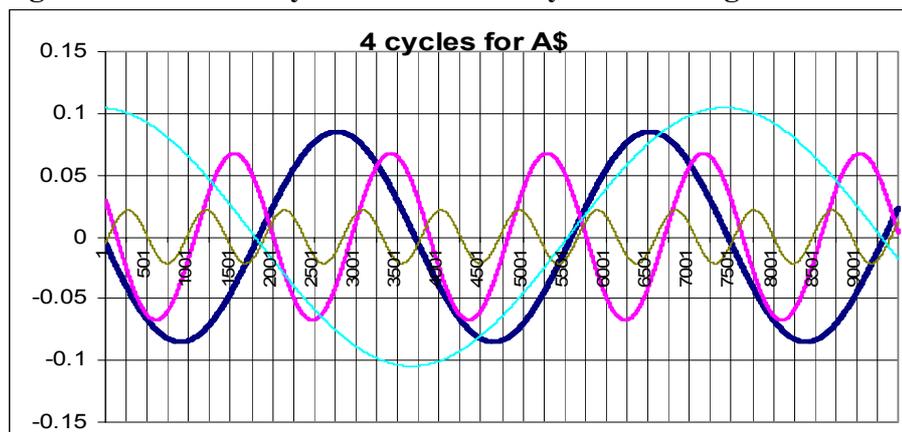
<sup>6</sup> However, as Cashin *et al* [6, p. 292] have remarked, "cycles in economic activity alone do not drive the evolution of commodity prices, and that other factors, particularly supply conditions in individual commodity markets, are likely to be a key determinant of cycles in commodity prices".

<sup>7</sup> A detailed analysis of all these issues is of course out of the scope of this paper which primarily sets the basis via some propositions for more research.

parenthesis is the corresponding period of the cycle): 9/88 (3.75); 1/90 (7.5); 6/92 (3.75); 11/94 (15); 2/96 (3.75); 6/97 (7.5); 10/99 (3.75); 7/03 (3.75); 11/04 (7.5); 5/07 (3.75); 11/09 (15); 2/11 (3.75); 5/12 (7.5); 6/13 (30). This succession of waves of various strength and length is the reason for 85% of fluctuations in the floating exchange rate of Australian dollar (as quantitatively determined below). It is also interesting to note that in 2001 all cycles were found to be at their respective troughs and hence we had a substantial depreciation of the currency.

In addition it is important to stress that our model predicts quite accurately the peaks of economic cycles as analyzed by other scholars. For example, Bajada [2] suggested that significant peaks took place in 1989/90 and 1994/95; these dates coincide with our peaks of the 7.5 year and 15 year waves (see above). Finally, it might be possible to construct a new theory as the mechanics of the links between all four harmonic cycles: thus, 2 consecutive peaks of the 3.75 year business cycle in 11/84 and 9/88 generated the commodity prices cycle (of 7.5 years period) peak of 1/90; the latter in conjunction with another business cycle peak in 6/92 generated the longer investment-caused cycle (of 15 years period) peak in 11/94, and so on.

**Figure 3 The 4 cycles determined by the OLS regression**



Notes: the higher the amplitude the higher the period of the cycle. Thus, the first peak of the 15 year cycle occurs on the 1510<sup>th</sup> day approximately or 1/1990. Every 250 days constitute on year on the x-axis. Thus the 5000<sup>th</sup> datum is in July 2003.

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8 Layton [18] supports this date of 1989/90 with his analysis.

### 3. Econometric evidence

Fourier analysis is useful in many ways. In this paper this analysis will be used for 2 purposes. First, it will indicate econometrically how good is the assumption that the A\$ can be overwhelmingly approximated by 4 cycles harmonic to each other. And second, it will indicate whether the cycles suggested in the discussion above can be confirmed through the calculation of spectra.

A few important points can summarize the Fourier analysis (see [7]; [3]) as used here. A time series  $f(t)$  can be fully represented by the sum of sinusoidal functions for all harmonic frequencies. Thus it becomes significant for our paper that if we can isolate only a few such sinusoidal functions that mostly explain the initial series  $f(t)$  (for example a high  $R^2$  will indicate how important these cycles are) then we can provide evidence that our preliminary theoretical discussion contains some grains of truth. More precisely mathematically we can summarize the salient points of Fourier functions as follows:

$$f(t) = A + C \cos(\omega_0 t + \theta) = A + B_1 \cos(\omega_0 t) + B_2 \sin(\omega_0 t) \quad (1)$$

where  $C$  is the amplitude,  $\omega_0$  is the angular frequency (related to frequency  $f$  as in cycles per time by  $\omega_0 = 2\pi f$ ; and  $f = 1/T$ , where  $T$  is the period of the cycle); and  $\theta$  is the phase shift. When equation (1) is expressed as a function of both cosine and sine, and estimated in an ordinary least squares (OLS) regression the amplitude and phase shift, if needed, can be indirectly calculated as a function of  $B_1$  and  $B_2$ . If we want to include more than one angular frequency, as in harmonics we can have multiples of  $\omega_0$  as in  $2\omega_0$  or  $3\omega_0$ , etc. and run a multiple regression with as many independent variables as the number of harmonics plus the fundamental frequency  $\omega_0$ .

The suggested best fit (see below the criteria of choosing the “best” fit) Fourier approximation of the Australian dollar by 4 harmonics is the one that uses as fundamental frequency 3.75 years (or 250 active days per year), hence the harmonics being 7.5 years, 15 years and 30 years. Figure 1 shows the raw data, the fitted 4-cycle sinusoidal fitted curve and predictions for the next 16 years<sup>9</sup>.

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<sup>9</sup> It is well known that what we can do on the frequency domain we can also do on the time domain. Using the 140 quarters of real exchange rate from 1970 to 2005, similar results are obtained; the best fit is the regression that has as independent lagged variables those with 16, 31, 32, 64, and 128 quarters as significant lags (thus corresponding to 4, 8, 16, and 32 years of periods). To correct such a model for serial correlation, it was re-run by using the

The criteria for choosing the above fitted curve are the following:

A] The *a priori* justification on economic and econometric grounds (the commodity prices cycle; the commodity production cycles; the general economic cycles; the “mysterious” connections of harmonics).

B] The  $R^2$  of Fourier regressions as shown in equation (1). See Table 1 below.

**Table 1 Comparative data for 4 similar periods to 16 years**

Period of cycle	14	15	16	17	18
$R^2$	0.78	0.86	0.88	0.83	0.80
Constant	0.725	0.751	0.790	0.862	0.966
When the 4 cycles cancel each other	0.83	0.74	0.67	0.51	0.34
Predictions (June, July, August, September 2005)	Under-estimating	Minimal error (almost 0% to 1% on average each month)	Over-estimating	Over-estimating even more	Over-estimating even more
Maximum peak at about 2010-2013	0.9 (in 2010)	0.98	1.1	1.3	1.6 (in 2013)

Note: the average of the whole sample from December 12, 1983 to May 26, 2005 is 0.707.

C] The out of sample performance of the model, both short run and long run. The short run is also a comparison of actual data with predicted data during the period June to September 2005. The results of this comparison are shown in Table 1. In the long run, it is expected that the Australian dollar will only approach the absolute equality of 1A\$ to 1US\$ but will not surpass it<sup>10</sup>.

D] The value of the constant in the regression, again shown in Table 1. It is expected that this constant should not be too far away from the average over the whole set of data which is 0.707.

E] The significance of the phase between the 4 harmonic cycles (a hint on the differences of phase and some interpretation was given above).

F] The behavior of the residuals of regressions. The standard diagnostic tests of serial correlation, functional form, normality, and heteroscedasticity for the ordinary least squares (OLS) regression are as expected not good because the used model of the four sinusoidal independent variables of long cycles has ignored the very short influence of daily and weekly cycles. This

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Cochrane-Orcutt method (as autoregressive of order 1); the coefficients remained approximately the same with no serial correlation and the  $R^2$  remained high at about 0.90.

<sup>10</sup> This is of course a “gut feeling”.

can easily be fixed with the re-estimation of the model according to the Cochrane-Orcutt procedure. Effectively lags up to 3-6 days<sup>11</sup> completely eliminated the serial correlation and other related problems. In addition, some of the errors (when the daily and weekly cycles are not included in the original OLS model this becomes even more apparent) seem to well coincide with some ad hoc situations and events, and policy measures. For example, according to Makin [19, p. 336], “intervention was highest in July 1986 to prevent further depreciation by buying Australian dollars, but was also high in February 1989 to stem appreciation”. These two interventions agree with the magnitude and sign of the residuals of our model (negative during 1986 and positive during 1989). A detailed analysis of the residuals is nonetheless out of the scope of this paper.

G] The suggestion of cycles according to spectra. As already mentioned spectral analysis (based on Fourier analysis) can also be used to detect cycles of a time series. In order to have a longer span of time than the 22 years of daily floating Australian dollar, its real exchange rate<sup>12</sup> is used instead for which data are available on a quarterly basis from June 1970 to June 2005 (N=140). The results are quite clear: significant peaks of the spectrum of this series are found for periods of about 30 and 15 quarters allowing for a reasonable window and according to all three approximations (“Bartlett”, “Tukey”, and “Parzen”). Peaks of periods of 60 and 120 quarters are also detected but these periods are only found if a larger window of the spectrum is used and hence their significance is less strong given the limited number of observations.

#### 4. Conclusions

The review of the relevant literature has shown that most standard theories of the determination of exchange rates have failed to explain most issues concerning these rates. It seems that there is now a relative consensus that some sort of non-linear inherent tendency could be the main force of driving trends and fluctuation of exchange rates. In particular the currencies

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<sup>11</sup> The original daily data were recalculated as 2-day averages thus reducing the original number of data from 5422 to 2711. The ensuing regressions with 2711 data produced as expected similar results and the lags in the autoregressive Cochrane-Orcutt scheme needed lags up to three 2-day data to eliminate serial correlation and related problems.

<sup>12</sup> Thus the use of real exchange rates provides similar results to those found for nominal exchange rates. This is not a surprising outcome for a commodity currency like the Australian dollar which depends on world trade for its determination (the real exchange rate is based on a real trade weighted index). It is also worth noting that since the real exchange rate goes further back from December 1983 (the date of floating the A\$)-thus we have the period June 1970 to June 2005- and since the same cycles exist for this more extended period of time, it is possible to assert that the PPP hypothesis might be to some extent valid.

that are now called commodity currencies, such as the Australian and Canadian dollars are heavily influenced by commodity prices. All this has led the author to investigate the possibility that the Australian dollar is primarily determined by a handful of harmonic cycles which in turn are based on the commodity prices cycles, commodity production cycles and in general on economic cycles that are suspected to be influenced by the commodity world.

Hence the proper econometric approach to this investigation was judged to be the well-known Fourier analysis according to which any time series can be represented by the sum of sinusoidal functions. The application of such analysis to the trend and fluctuations of this currency has produced some very interesting results. The four harmonic cycles used in this respect (3.75, 7.5, 15, and 30 years) explain 85% of the everyday changes of this commodity currency, the remaining being attributed to *ad hoc* situations, policy measures, and so on. These conclusions if true (many people would be very skeptical of such amazing results) have far reaching implications at least for commodity currencies.

First, more investigations should concentrate on the underlying cycles of commodity prices, commodity production cycles (e.g. mining ones) in order to shed more light on the alleged relationship between all aspects of commodities and national currencies. In addition, economic cycles in general which have been neglected in the last 30 years or so should be further reconsidered. Second, we have to reassess what we mean by trend and stationarity in time series; for in our case the remaining 15% of unexplained variance seems to fluctuate around the 4-cycle “trend” as determined in this paper. Third, and as a consequence of the second implication, economic policy is rather powerless in strongly influencing the exchange rate in its floating state.

Fourth, theories such as the PPP version does not hold true at least in its traditional way of integer cointegration. Both this paper and [20] seem to support the idea that once we include low frequency dynamics and hence long period cycles the Australian dollar reverts back to its “mean”. Fifth and probably most important for many speculators, it is possible to predict quite accurately the long run behavior of the Australian dollar. Thus, it is recommended that for the time being let us hold our Australian dollars until about 2012 (the highest peak of the A\$ appreciation); in that year we must start buying American dollars again.

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# **CAN DAY OF THE WEEK EFFECT BE EXPLAINED BY INTERBANK RATES: AN EVIDENCE FROM AN EMERGING MARKET**

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## **Abstract**

*This paper reports the results of various tests of the day of the week effects using daily observations on the National 30 Index for Turkish stock exchange and interbank rates for the period January 3, 1997 and July 23, 2001. It is also searched whether day of the week effect be explained by interbank rates or not. While significant evidence of day of the week effect is reported and tried to explain its reasons in literature, there is no significant explanation about it. The paper reports a significant day of the week effects for both market and investors can beat the markets and earn excess returns by using an active trading strategy than a simple buy and hold strategy. It's also could be said day of the week effect can be explained by interbank rates for an emerging market, namely Turkey.*

**Keywords:** *Day of the Week Effects, Market Anomalies, Turkish Stock Market, Interbank Market, Kruskal Wallis.*

# 1. Introduction

Efficient Market Hypothesis (EMH) says that in an efficient market no one can beat the market systematically because security prices fully reflect all available information<sup>1</sup>. This means, in inefficient market investors can use a strategy to beat the market. Hence, Day of the Week Effect anomaly has an important implication in finance. According to day of the week researchers, holding period returns are lower on Monday than on other days of the week<sup>2,3</sup>.

Vast number of studies provides evidence for day of the week effect and seasonal anomalies in the literature. Defusco<sup>4</sup> have examined returns for U.S. firms in the five-day interval surrounding a board meeting date and found that a firm's Monday return in that interval is more likely to be negative than other Monday returns. Cornell<sup>5</sup> has investigated whether cash and futures markets have some seasonal pattern or not for S&P500 Index. He has reported that weekly pattern of returns was observed in the cash market but no similar pattern for the S&P500 futures. Ayadi<sup>6</sup> has reported that there is no seasonality in the distribution of monthly stock returns in Nigeria, Zimbabwe and Ghanaian market. Kato<sup>7</sup> has reported low Tuesday and high Wednesday returns for the Japanese stock returns. Gibbons and Hess<sup>8</sup> have reported strong and persistent negative mean returns on Mondays for the S&P500 and the value-and-equal weighted portfolios. Athanassakos and

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7 Kato, Kiyoshi, *Weekly Patterns in Japanese Stock Returns*, Management Science, 1990, 36, pp. 1031-1043.

8 Gibbons, R.G. and Hess P. *Day of the Week Effect and Asset Returns*, Journal of Busines, 1981, Vol:54, pp.579-596.

Robinson<sup>9</sup> have tested day of the week effect for Toronto Stock Exchange and they have reported that they found evidence for a strong and statistically significant negative Tuesday effect. Balaban<sup>10</sup> has investigated daily anomalies for Turkish Stock Market and reported that significant day of the week effect for the Turkish market. Metin and et al.<sup>11</sup> have examined the weak form efficiency of Istanbul Stock Exchange (ISE) by using random walk test and the day of the week effect. They have used data January 4, 1988 to December 27, 1996. They have reported Friday and Monday effect but Monday effect was not statistically significant. Bildik<sup>12</sup> has investigated the day of the week effect in overnight interest rates in interbank market, overnight interest rates in interest rates of the Istanbul Stock Exchange (ISE) and daily closing values of the Istanbul Stock Exchange's Composite Index. The researcher has reported that there is no significant difference between the repo rates occurred in the ISE repo Market and interest rates in Interbank Market. He also reported overnight interest rates decrease on Wednesdays and increase on Mondays relative to previous days. In stock market, he has found pattern of low or negative returns over the first part of the week (Monday through Tuesday) and high and positive returns over the second part of the week (Wednesday through Friday).

This study's main aim is to provide further international evidence for the presence of the day of the week effect in Turkish stock exchange and interbank rates market. Second, we try to find whether the day of the week effect be explained by interbank rates or not.

The remainder of the paper is structured as follows: Section I introduces some evidence for day of the effect anomaly. Section II explains data structure and methodology which is followed. In section III we gave the empirical results where Section IV concludes.

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9 Athanassakos, G. and Robinson M. J. *The Day of the Week Anomaly: The Toronto Stock Exchange Experience*, Journal of Business Finance & Accounting, 1994, Vol:21(6), pp. 833-856.

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11 Metin, Kivilcim, Muradoglu G. and Yazıcı B., *İstanbul Menkul Kıymetler Borsası'nda Gün Etkilerinin İncelenmesi*, IMKB Dergisi, 1997, Vol:4, pp.15-25.

12 Bildik, Recep, *Day of the Week Effect in Turkish Stock and Money Markets*, Annual Meeting of European Financial Management Association, Paris, 1999, pp. 1-49.

## 2. Data and methodology

This study is conducted using data from the Central Bank of Turkey database. The first one of these data sets includes daily average values of the overnight interest rates, which are determined in the Interbank Money Market of the Central Bank of Turkey. The second data set consists of daily closing values of the Istanbul Stock Exchange's National 30 Index.

Daily observations of the ISE National 30 Index are employed to investigate the day of the week effect. ISE National 30 Index includes Turkish blue-chip shares. ISE National 30 Index is composed of National Market companies except investment trusts and will also be used for trading in the Derivatives Market that will start trading soon. The constituent 30 companies are selected on the basis of pre-determined criteria directed for the companies to be included in the indices. The data includes daily closing prices and ranges between January 3, 1997 and July 23, 2001. Daily returns on the ISE National 30 Index that amount to 1113 observations are used. We have excluded extreme four daily interest rate returns (similar to Bildik's paper) and observations for 20-23 February 2001, which have been effected by a severe economic crisis where daily interest rates return jumped to 4018.58.

We have used overnight interest rates instead of ISE repo market variables which have no significant differences between them<sup>13</sup>. Data set consists of the daily return of the overnight interest rates which are determined in the Interbank Market of the Central Bank of Turkey (IMM) for the period January 3, 1997 to July 23, 2001. Data has provided from the Central Bank of Turkey database. Daily returns of the overnight interest rates that amount to 1.138 observations are calculated as follows:

$$R_{t1} = V_t / 365 \quad (1)$$

Where  $V_t$ , and  $R_{t1}$  denote the overnight interest rate on  $t$  and overnight interest rate return, respectively.

ISE National 30 Index return observations are calculated as follows:

$$R_{t1} = (V_t - V_{t-1}) / V_{t-1} \quad (2)$$

Where  $V_t$ ,  $V_{t-1}$  and  $R_{t1}$  denote the daily closed ISE National 30 Index variables on  $t$  and  $t-1$ , and daily return on  $t1$ , respectively.

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<sup>13</sup> Bildik, 1999.

If we have reason to believe that the returns are not normally distributed, we can use a non-parametric test to evaluate the result. To avoid the strong assumption of a normal distribution, we have used Kruskal-Wallis Test (KW)<sup>14</sup> which is a non-parametric test. The Kruskal-Wallis Test is a rank-sum test that serves to test the assumption that  $k$  independent random samples come from identical populations and in particular that the null hypothesis  $\mu_1 = \mu_2 = \dots = \mu_k$ , against the alternative that these means are not all equal, Kruskal Wallis Test has the following assumptions: (1) The variable of interest is continuous (not discrete). The measurement scale is at least ordinal, (2) The probability distributions of the populations are identical, except for location. Hence, we still require that the population variances are equal, (3) The groups are independent, (4) All groups are simple random samples from their respective populations. Each individual in the population has an equal probability of being selected in the sample.

### 3. Empirical Results

If we consider Table 1 we can clearly see the existence of day of the week effect anomaly in ISE National 30 Index. In full period, Monday has the lowest mean (-0.0019) and the highest mean is observed on Friday (0.0072). The daily average return for the whole period is 0.003118. In a normal distribution the average mean and the average median are not very far apart each other and the average skewness of the distribution is close to zero<sup>15</sup>.

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<sup>14</sup> Freund J., and Simon G.A. *Modern Elementary Statistics*, Prentice-Hall International Inc. 1997, 9. Edition, pp.570.

<sup>15</sup> Kritzman, M.P. *About Higher Moments*, Financial Analysts Journal, Sep.-Oct. 1994, pp.10-17.

**Table 1. Descriptive Statistics for ISE National 30 Index**

	Average Return	MONDAY Return	TUESDAY Return	WEDNESDAY Return	THURSDAY Return	FRIDAY Return
Number of observations	1113	223	225	222	223	220
Mean (Return)	.003118	-.0019	.0018	.0029	.0056	.0072
Median	.0011	-.0044	-.0005	.0018	.0048	.0037
Std. Deviation	.039	.0435	.0373	.0393	.0392	.0364
Skewness	.262*	.417	.919	-.0194	-.318	.0756
Kurtosis	2.687	1.564	3.911	4.447	1.239	3.585
Jargua-Bera	341.87* 0.00					

Notes: \* Sinificiant at  $\alpha= 1\%, 5\%, 10\%$

Sources: *Central Bank of Turkey database.*

The normal distribution is symetric around the mean; hence the median and the mode are both equal to the mean. The median (because of observing more than one mode, it is not being given mode value) value is 0.0011 and not equal to the mean (0.003118) in full period and all days of the week. Therefore we observe significant skewness. Standard deviation as a measure of risk is 0.039 for whole period. The lowest standard deviation value is on Friday (0.0364) while the highest value on Monday (0.0435). Kurtosis value is less than 3 in most periods and distribution is kurtic. Series is also skewed for all periods which the values are different from 0. If we consider Jargua-Bera test statistics (341.87 and p: 0.00) we can say that return series have a non-normal distribution for full period and days of the week.

**Table 2. T Test Results for ISE 30 Index**

INTEREST	N	Mean	Std. Deviation
MONDAY	$\geq .00$	96	.0352
	$< .00$	127	-.0299
TUESDAY	$\geq .00$	109	.0297
	$< .00$	116	-.0244
WEDNESDAY	$\geq .00$	114	.0308
	$< .00$	108	-.0266
THURSDAY	$\geq .00$	126	.0313
	$< .00$	97	-.0277
FRIDAY	$\geq .00$	126	0.029
	$< .00$	94	-.0218

Sources: *Central Bank of Turkey database.*

If we compare positive and negative returns (mean) of the days, we observed Mondays and Tuesdays number of negative returns are larger than theirs positive returns where other days number of positive returns larger than theirs number of negative returns. However, absolute values of negative and positive returns of Mondays are larger than absolute values of negative and positive returns of other days. This result also supports Table 1 results that returns and standard deviations of Mondays are larger than other days.

**Table 3. Kruskal-Wallis Test for ISE 30 Index**

Group	N	Ave. Rank	Chi-Square	Asymp. Sig.
1	223	501.31	12.380	.015
2	225	538.89		
3	222	564.09		
4	223	591.33		
5	220	590.01		
Overall	1113	501.31		

Sources: Central Bank of Turkey database.

As illustrated in Table 3. KW test statistic value is (12.380) and has p value (0.015). We have failed to accept the null hypothesis so, those five days returns are all equal. Kruskal Wallis Test conforms to the descriptive statistics that there is a significant day of the week effect.

After we determined that there are differences between days of the week returns, we applied Mann-Whitney U test to determine which day returns have differences.

**Table 4. Mann Whitney U Test for ISE 30 Index**

Groups	N	Mean Rank	Mann-Whitney U	Z	P*
Monday-Wednesday	223	210.63	21995.00	-2.033	.042
	222	235.42			
Monday-Thursday	223	206.37	21044.00	-2.807	.005
	223	240.63			
Monday-Friday	223	204.04	20526.00	-2.972	.003
	220	240.20			

Source: Central Bank of Turkey database.

\*:  $p \leq 0.05$ , There is significant difference.

$p \leq 0.01$ , There is important significant difference

As could be seen in Table 4, we found significant differences between Monday and Wednesday and Thursday returns. There are no significant differences between other days of the week.

The descriptive statistics results are given in Table 5 and Table 6 and results indicate that series is not a normal distribution and leptokurtic.

**Table 5. Descriptives Statistics for Interbank Rates**

	Average Return	MONDAY Return	TUESDAY Return	WEDNESDAY Return	THURSDAY Return	FRIDAY Return
<b>Number of observations</b>	1138	229	228	227	227	227
<b>Mean (Return)</b>	.1855492	.1890	.1842	.1827	.1824	.1893
<b>Mode</b>	.172	.1726	.172	.172	.172	.172
<b>Median</b>	.196	.1968	.1963	.1968	.1949	.1962
<b>Std. deviation</b>	.1378	.1378	.3678	.054	.0668	.1539
<b>Skewness</b>	12.573	12.573	14.265	.685	4.488	13.028
<b>Kurtosis</b>	179.275	179.275	210.718	6.492	47.745	187.298
<b>Jargua-Bera</b>	3644014* 0.00					

Notes: \* Significant at  $\alpha=1\%$ ,  $5\%$ ,  $10\%$

Source: Central Bank of Turkey database.

In full period, as could be seen in Table 5 all days of the returns (mean) are almost equal. So, there could be no significant difference between them. The daily average return (mean) of the whole period is 0.1855. The median and the mode values are 0.196 and 0.172, respectively and not equal to the mean (0.1855) in full period and all days of the week. Standard deviation as a measure of risk is 0.1378 for whole period. The lowest standard deviation value is in Wednesday (0.054) while the highest value in Tuesday (0.3678).

The average skewness of the distribution is not equal to zero (12.573) and kurtosis value is larger than 3 (179.275) and distribution is leptokurtic for most days of the week. We can say that series has not a normal distribution as indicated by the J-B test statistics (3644014,  $p=0$ ).

**Table 7. T Test Results for Interbank Rates**

INTEREST		N	Mean	Std. Deviation
RETURN	>=,18554929	710	.2187	.1184
	<,18554929	428	.1305	.0376
MONDAY	>=,18554929	146	.2229	.1609
	<,18554929	83	.1294	.037
TUESDAY	>=,18554929	142	.2164	.072
	<,18554929	86	.1311	.037
WEDNESDAY	>=,18554929	144	.2134	.035
	<,18554929	83	.1293	.038
THURSDAY	>=,18554929	139	.2151	.059
	<,18554929	88	.1308	.039
FRIDAY	>=,18554929	139	.2258	.185
	<,18554929	88	.1318	.037

Sources: Central Bank of Turkey database.

As it could be seen in Table 7, when for the research period as whole returns which are larger than average are more frequent than returns which are lower than average.

**Table 8. Kruskal-Wallis Test for Interbank Rates**

Group	N	Mean. Rank	Chi-Square	p
1	229	576.39	.532	.970
2	228	561.11		
3	227	573.34		
4	227	559.89		
5	227	571.80		
Overall	1138	576.39		

Sources: Central Bank of Turkey database.

KW test statistic is (0.532) and has p value (0.970) so; we accepted the null hypothesis, which says returns are equal for all days.

**Table 9. Returns for ISE 30 and Interbank Returns**

	Monday	Tuesday	Wednesday	Thursday	Friday
ISE 30 Index Returns	-.0019	.0018	.0029	.0056	.0072
Interbank Returns	.1890	.1842	.1827	.1824	.1893

As could be seen in Table 9, Friday has the highest return for both ISE National 30 Index and Interbank rates. So, investors should be indifference between interest and stock exchange. Because of this we could not explain the day of the week effect of the ISE National 30 Index with using interest rates but we can implement an investment strategy with using this anomaly.

We would sell ISE National 30 Index on Fridays. Because of T+2 pay system we get money on Mondays. Then we invest our money to repo (Interbank) for two days and also give a buy order ISE National 30 Index. Wednesday mornings we get our money from repo and pay to ISE National 30 Index. Then wait till Friday and sell ISE National 30 Index again.

**Table 10. Some Trading Strategies**

Strategy 1 (%)	Strategy 2 (%)	Strategy 3 (%)
0.042	2.04	6.12

Strategy 1: Buy and hold for ISE National 30 Index

Strategy 2: Buy on Monday and sell on Friday satrategy for ISE National 30 Index

Strategy 3: Sell ISE National 30 Index on Fridays. On Mondays get money from ISE National 30 Index and invest in repo during Monday and Tuesdays where give a buy order at the same time (Monday) to ISE National 30 Index. On Wednesdays get money from repo and pay to ISE National 30 Index. Then wait till Friday and sell ISE National 30 Index again.

#### **4. Conclusion**

This paper presents evidence for the existince of the day of the week effect for Turkish stock returns namely ISE National 30 Index. A daily pattern in stock market returns is observed for ISE National 30 Index.

Our results support to the previous literature<sup>16;17</sup> Mondays have the lowest return for ISE National 30 Index and Fridays has the highest return. Low and negative returns are observed on Mondays and getting increase through Friday. Our study also supports to Bildik's (1999) results who stresses low or negative returns over the first part of the week (Monday

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<sup>16</sup> Muradoglu and Humayun, 2002.

<sup>17</sup> Bildik, 1999.

through Tuesday) and high and positive returns over the second part of the week (Wednesday through Friday). In our results the lowest standard deviation value is on Friday (0.0364) while the highest value on Monday (0.0435) which is also support Bildik's results.

In our paper, in interbank market there is no significant differences between days return where Bildik reports Wednesdays and Mondays, respectively. So we can not claim that there is a pattern in interbank market. The lowest standard deviation value is in Wednesday (0.054) while the highest value in Tuesday (0.3678) where in Bildik's (1999) results are Wednesday and, Friday respectively.

So, the weak form of the efficient market hypothesis does not hold for ISE National 30 Index. Because of the existence of the day of the week effect for ISE National 30 Index, investors could implement an active trading strategy which is based on this anomaly, and they could earn 6.12% return. This strategy is more good than satrategy 1 and 2.

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# ALTERNATIVE MODELS FOR MEASURING SERVICE QUALITY, AND RELATING SERVICE QUALITY TO BEHAVIORAL INTENTIONS: MODERATING INFLUENCES

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## Abstract

*This paper studies the service quality and relating service quality to satisfaction and subsequent behavior after purchase. There are three stages of model testing in this paper. The first stage was to test the service quality models for its relationship with satisfaction. The second stage was to examine the relationship between satisfaction and word-of-mouth referrals and also re-purchase intentions. The third stage was to look at the moderating effect of warrantee on satisfaction and word-of-mouth referrals and also re-purchase intentions. This research lingers on the perceptions of Malaysians toward the banking institutions in Malaysia using a data sample collected from all the 15 states of Malaysia. Building on a synthesis of the extant literature on service quality measurement, this article identifies the underlying reason why dissatisfied customers would still patronage an organization.*

**Keywords:** *Service quality, satisfaction, word-of-mouth referrals, re-purchases intentions, and warrantee*

## **1. Introduction**

Service quality measurement has been discussed over the past few decades but there is no conclusion among researchers and academicians as to which measurement is the best to measure service quality. Every measurement scales seem to have their own strengths and weaknesses. In this paper, I will re-visit the SERVQUAL model that has been developed by Parasuraman et al. (1988) and the SERVPERF model that was developed by Cronin et al. (1992) to see its applicability in a developing country, such as Malaysia. All the models (SERVQUAL, weighted SERVQUAL, SERVPERF and weighted SERVPERF) will be compared by looking at the perceptions of Malaysians toward the service quality rendered by the banking institutions. It will also look at the moderating effect such as warrantee that might be the main contributor towards the unresolved issue why dissatisfied customers still remain with their current banks.

## **2. Quality Standard**

Many academicians give different definition to quality. Kotler et al. (1969) note that customer satisfaction can be related to value and prices whereas service quality generally does not depend on prices (Anderson et al., 1994). Quality should be accordance to the needs and expectations of the customers. Customers' expectations are the true standard for judging service quality and not the policy of the bank or the management of the bank (Berry et al., 1991). Parasuraman et al. (1994) point out that customers expect service companies to do what they are supposed to do (fundamentals), not fanciness; performance and not empty promises. Defining customer needs in the service industries is more complex compared to the manufacturing because the customers are involved in the production process. The same concept applies to some other researchers.

Quality is how the offer of the bank gains uniqueness and value in the eyes of the customers and it is both the act of making the offer different and its evaluation by customers (Christopher et al., 1994). According to Berry et al. (1988), only the customers know that competing organizations that provide the same types of services do not provide the same quality of service. Quality can be used to operationalise utility, that is satisfaction (Brady & Cronin, 2001; Perreault et al., 1976). According to Dabholkar, Shepherd & Thorpe (2000), quality leads to satisfaction which in turn influences purchasing behavior (Johnson & Gustafsson, 2000). Satisfaction also has a direct influence on customer loyalty (Mittal & Lassar, 1998) and repurchases intentions/behaviors (Kumar, 2002, Mittal & Kamakura, 2001).

One of the most dominant model is service quality is the SERVQUAL model which has been developed by Parasuraman et al. (1988). This model served as the best measurement for service quality till 1992 where Cronin et al. (1992) developed the performance measurement scale (SERVPERF) which becomes great threat to SERVQUAL. There are many followers to both the models and till today, there are no consensus as to which model serves as the best model to measure service quality.

This research will consider what Joseph et al. (1992) has argued. Hence SERVQUAL will be examined as well as SERVPERF since SERVPERF uses the importance measurement to look at the attributes to see how it differs in Malaysia. It will also consider whether the SERVQUAL and the SERVPERF model is only a theory of the west or can be applied throughout the whole world since most of the researches on SERVQUAL and SERVPERF are done in the European countries or America.

### **3. Word-of-mouth Referrals**

Word-of-mouth marketing tends to work very slowly and it is limited by geographical area but it is a very effective marketing mean. The value in word-of-mouth marketing is immense because of its impartiality and its credibility.

Word-of-mouth referrals are important in determining the success of a bank. Word-of-mouth marketing is the cheapest method for a bank to market itself. It needs no additional costs for advertising in local newspapers or in any media. This would lead to higher profit to the bank concerned because they can save a lot of money in attracting customers in this way.

In many situations, customers seek the opinions of others before selecting a service firm. When customers depends on someone else for information (company advertisement or literature), as opposed to customer's experiences, the beliefs they hold about what the product will do (expectations) may be important in forming satisfaction (Goode et al., 1996). Customers' referrals are better prospects since there is the screening process that has taken place in the recommender's mind compared to the advertisement.

Happy and satisfied customers are said to be willing to tell their friends or acquaintances (Zeithaml, 2000, Anderson & Mittal 2000, Johnson, Barksdale & Boles, 2003, Kennedy, Ferrell, & LeChair, 2001) about the particular bank and word-of-mouth marketing is more effective compared to advertisement because of its first hand experiences. Terry (1996) acknowledges that American research indicates that a contented customer will talk about his or her banker to five more individuals while a discontented customer will talk to fifteen other individuals expressing his or her

dissatisfaction. Therefore, how a banker deals with its customers is important because it will have great impact on the perceptions on how potential customers perceive the bank. The effect will be seen in geometrical order whether it is a positive impact or negative impact. Should it be seen as negative impact, it will have great bearings on the amount of potential customers' loss to the bank.

In the study by Tan et al. (1986) in Singapore, they found that friends' advice, neighbors and family members have great impact on the decision to patronage a certain financial institution. These findings are consistent with the Eastern culture that emphasis on the social and family ties (Sudin Haron et al., 1994).

#### **4. Warrantee**

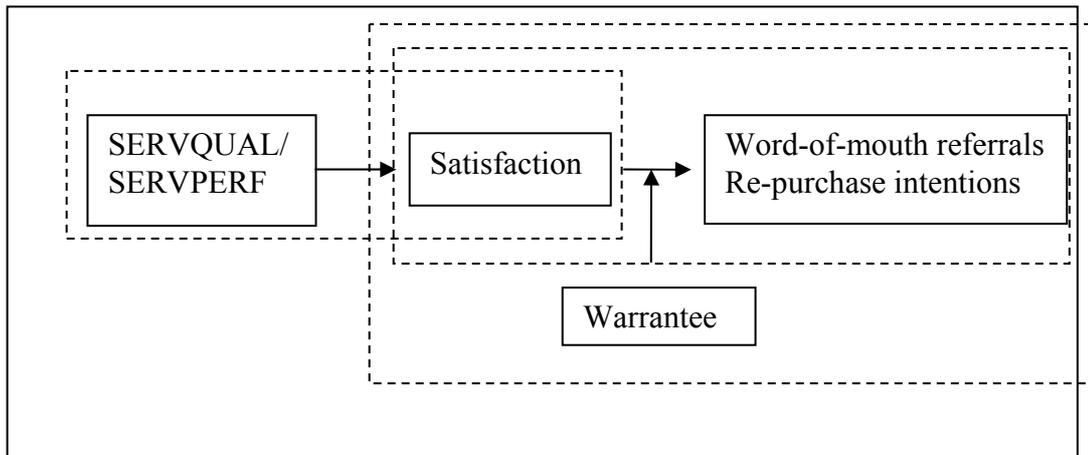
In a long-term relationship, Ravald et al. (1996) states that safety, credibility, security, continuity and etc. together will increase the trust for the supplier and these will thereby support and encourage customer loyalty. This measurement is also supported by Zeithaml et al. (1990) where they suggested a few dimensions for service quality and one of the dimensions is security, that is free from risks and doubts. While according to Avkiran (1994), the credibility factors include the ability of staff to solve problems, security and informing customers. Whereas according to Christopher et al. (1994), the most important element in the banking sectors is the security issues.

In this study, I will use the warrantee by the Malaysian government as the moderator. This is because the government warrants not all banks in Malaysia but only few selected banks. In case of anything happened, those customers at the warranted banks are guaranteed their fund from the government.

#### **5. Testing the Framework**

Figure 1 below shows the relationship used in this study. There are three parts to this study. The first is the relationship between service quality (SERVQUAL/SERVPERF) model and satisfaction, the second part is the relationship between satisfaction and word-of-mouth referrals/re-purchase intentions, and the third part is how word-of-mouth referrals or re-purchase intentions are being moderated by warrantee.

**Figure 1: Relationship of the Variables under Study**



### **5.1 Research Models and Hypothesis**

There are still no concluding statements on whether SERVQUAL or SERVPERF model is a better measurement for satisfaction. Hence, in this paper, I will look into the applicability of SERVQUAL and SERVPERF in Malaysia, a developing country since most of the studies are done in developed countries.

These first two hypotheses provide the basis for this investigation:

Hypothesis 1: SERVQUAL, weighted SERVQUAL, SERVPERF and weighted

SERVPERF do not have generic dimensions

Hypothesis 2: Service quality dimensions are positively related to satisfaction

As for the main objectives of this study, another three hypotheses would identify the questions addressed in this part of the study.

Hypothesis 3: Satisfaction is positively related to word-of-mouth referrals

Hypothesis 4: Satisfaction is positively related to re-purchase intentions

Hypothesis 5: Warrantee would moderate the relationship between the perceptions of

satisfaction and the re-purchase intentions

Hypothesis 6: Warrantee would moderates the relationship between the perceptions of

satisfaction and the word-of-mouth referrals.

With these six hypotheses, the analyses are done so that these research questions could be answered.

## **6. Sample**

The data for this study were gathered from questionnaires sent to all the 15 states in Malaysia. A total of 1025 usable questionnaires were received. Respondents were from all walks of lives ranging from age 18 years old to 60 years old. This age range has been chosen because this category falls into the most frequent users of the banking facilities. From the normality tests using the Kolmogorov-Smirnov Test for normality, all the respondents were distributed normally at  $p < .05$  level.

### **6.1 Measurements**

The measurements needed for the study are expectations and perceptions of service quality to measure customer satisfaction and the consequence behaviors after services are being rendered. The 22 expectations and performance items were taken directly from the SERVQUAL scale (Parasuraman, Zeithaml and Berry, 1988). The direct measure of service quality was based on a 7-point likert scale. As for the satisfaction item, the question is being adapted directly from Cronin et al. (1992), “overall, my satisfaction level towards XYZ is...” The measurements for warrantee re-purchase intentions and word-of-mouth referrals were constructed by the researcher after taking into consideration previous researches (refer to appendix).

Brown et al. (1993) and Carman (1990) argue that the use of disconfirmation approach as in SERVQUAL (Parasuraman et al., 1988) is not an appropriate measurement and stress that it should be changed from “strongly disagree” and “strongly agree” to “Worse than I expected” and “Better than I expected” to measure performance. Brown et al. (1993) acknowledge that this approach is a better measurement since it gives a better psychometric value and is more efficient compared to the disconfirmation paradigm.

## 7. General Model of Study

The following equation gives the general model of the study<sup>1</sup>.

Model 1

$$Y_1 = \beta_1 + \beta_i X_i + \varepsilon$$

where:

$Y_1$  = satisfaction

$\beta_i$  = parameters

$X_i$  = service quality dimensions

$\varepsilon$  = error term

## 8. Results

Using the Varimax Rotation Method, two dimensions were extracted (with eigenvalue greater than 1) as can be seen from table 1. Cross-loadings were also checked to see whether there are any items that have high correlation with other factors. As according to Hair, Anderson, Tatham and Black (1998) and Kline (1991), if an item has loadings of greater than 0.5 in one dimension and more than 0.35 in another dimension, then that particular item must be dropped from further analysis (since there exist the cross-loadings problem). Those values in italic show the existence of cross-loadings, hence, they were dropped from further analysis.

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<sup>1</sup> Note: Service quality can be either SERVQUAL, weighted SERVQUAL, SERVPERF or weighted SERVPERF

**Table 1: Dimensions Extracted from the Service Quality Measurements**

	SERVQUAL		Weighted SERVQUAL		SERVPERF		Weighted SERVPERF	
	Service Quality	Tangibles	Service Quality	Tangibles	Service Quality	Tangibles	Service Quality	Tangibles
V1	0.308	<b>0.716</b>	0.319	<b>0.717</b>	0.318	<b>0.756</b>	0.101	<b>0.777</b>
V2	0.180	<b>0.832</b>	0.189	<b>0.816</b>	0.229	<b>0.823</b>	0.216	<b>0.725</b>
V3	0.367	<b>0.709</b>	0.342	<b>0.719</b>	0.291	<b>0.775</b>	0.142	<b>0.757</b>
V4	0.273	<b>0.687</b>	0.257	<b>0.696</b>	0.292	<b>0.717</b>	0.326	<b>0.621</b>
V5	<b>0.613</b>	0.258	<b>0.607</b>	0.224	<i>0.529</i>	<i>0.536</i>	<i>0.522</i>	<i>0.419</i>
V6	<b>0.723</b>	0.233	<b>0.712</b>	0.217	<i>0.645</i>	<i>0.446</i>	<i>0.586</i>	<i>0.403</i>
V7	<b>0.574</b>	0.208	<b>0.577</b>	0.22	<i>0.462</i>	<i>0.501</i>	<i>0.429</i>	<i>0.463</i>
V8	<b>0.720</b>	0.246	<b>0.707</b>	0.256	<i>0.633</i>	<i>0.518</i>	<i>0.619</i>	<i>0.417</i>
V9	<b>0.642</b>	0.269	<b>0.606</b>	0.308	<i>0.458</i>	<i>0.569</i>	<i>0.389</i>	<i>0.519</i>
V10	<b>0.713</b>	0.188	<b>0.701</b>	0.206	<i>0.673</i>	<i>0.404</i>	<i>0.559</i>	<i>0.375</i>
V11	<b>0.749</b>	0.174	<b>0.725</b>	0.178	<i>0.751</i>	<i>0.36</i>	0.68	0.301
V12	<b>0.769</b>	0.221	<b>0.748</b>	0.202	<i>0.754</i>	<i>0.389</i>	<b>0.717</b>	0.216
V13	<b>0.546</b>	0.265	<b>0.541</b>	0.248	<b>0.702</b>	0.326	<b>0.624</b>	0.327
V14	<b>0.679</b>	0.230	<b>0.676</b>	0.231	<b>0.636</b>	0.278	<b>0.662</b>	0.252
V15	<b>0.639</b>	0.235	<b>0.628</b>	0.251	<i>0.602</i>	<i>0.472</i>	<b>0.607</b>	0.34
V16	<b>0.718</b>	0.159	<b>0.702</b>	0.158	<b>0.754</b>	0.343	<b>0.762</b>	0.141
V17	<b>0.675</b>	0.198	<b>0.655</b>	0.213	<i>0.703</i>	<i>0.386</i>	<b>0.694</b>	0.242
V18	<b>0.596</b>	0.150	<b>0.590</b>	0.133	<b>0.767</b>	0.287	<b>0.666</b>	0.239
V19	<b>0.557</b>	0.212	<b>0.546</b>	0.211	<i>0.723</i>	<i>0.352</i>	<b>0.673</b>	0.205
V20	<b>0.616</b>	0.130	<b>0.615</b>	0.109	<b>0.827</b>	0.247	<b>0.727</b>	0.168
V21	<b>0.615</b>	0.148	<b>0.578</b>	0.081	<b>0.784</b>	0.263	<b>0.693</b>	0.141
V22	<b>0.576</b>	0.156	<b>0.562</b>	0.142	<b>0.758</b>	0.261	<b>0.677</b>	0.193
Cronbach Alpha	0.935	0.826	0.93	0.823	0.925	0.866	0.925	0.823
R <sup>2</sup>		0.267		0.258		0.246		0.243

\* those in italics have been omitted due to cross loadings

The factor analysis results as extracted only showed two dimensions for service quality. This result is not surprising since as mentioned by Carman

(1990), though SERVQUAL establishes stability, but its five dimensions are not always generic. Hence, the second hypothesis is being supported. The Cronbach Alpha ( $> 0.8$ ) demonstrates that all the measures are reliable. From the analysis between the Perceptions minus Expectations ( $P - E$ ), the result also shows that most of the respondents asked were not satisfied with the services rendered by the banking institution.

From the factor analysis, there are two dimensions extracted. Hence model 1 will be utilized to test the relationship between service quality and satisfaction. The following model was done for the SERVQUAL model. The  $R^2$  for other alternative models are reported in table 1. Since the  $R^2$  is highest for SERVQUAL model, only SERVQUAL model would be used as a base to answer hypothesis 2.

**Table 2: Regression results between service quality and satisfaction**

	B	$R^2$	Adjusted $R^2$
Service Quality	0.678**		
Tangibles	0.568**	0.267	0.266

\*\* is significant at  $p < 0.01$

From table 2, the findings show that there is a positive relationship between dimensions of service quality and satisfaction. Hence, hypothesis 2 is being supported.

### **8.1 Moderating Models**

The second model is to test the second, that is there is a positive relationship between satisfaction and word-of-mouth referrals or re-purchase intentions. On top of that, the moderating variable was also included in the model.

Model 2

$$Y_1 = \beta_1 + \beta_2 X_1 + \beta_3 Z_1 + \varepsilon$$

where:

- $Y_1$  = Word-of-mouth referrals/Re-purchase Intentions
- $\beta_i$  = Parameters
- $X_1$  = Satisfaction
- $Z_1$  = Warrantee Program
- $\varepsilon$  = Error term

In order to capture the moderating effects, model 3 is built. The model incorporates the warranty as the moderator.

Model 3

$$Y_1 = \beta_1 + \beta_2 X_1 + \beta_3 Z_1 + \beta_4 X_1 Z_1 + \varepsilon$$

where:

- $Y_1$  = Word-of-mouth referrals/Re-purchase Intentions
- $\beta_i$  = Parameters
- $X_1$  = Satisfaction
- $Z_1$  = Warranty
- $\varepsilon$  = Error term

In order to proceed with the analysis, factor analysis is run again on the moderators and subsequent behavior after purchase. Table 3 shows the results of the extraction.

**Table 3: Factor Analysis for Moderator and Subsequent Behavior after Purchase**

Items	Warrantee	Word-of-Mouth Referrals	Re-purchase Intentions
I1	<b>0.766</b>	0.325	0.234
I2	<b>0.717</b>	0.216	0.234
W1	0.250	<b>0.750</b>	0.345
W2	0.341	<b>0.777</b>	0.317
W3	0.223	<b>0.767</b>	0.298
L1	0.312	0.253	<b>0.758</b>
L2	0.130	0.294	<b>0.790</b>
L3	0.234	0.189	<b>0.870</b>
Cronbach Alpha	0.927	0.876	0.825

For table 3, out of eight items on moderators and subsequent behavior

after purchase, there are three dimensions extracted. All the dimensions show internal consistency (from the cronbach alpha reading). Thus, further analyses were run using model 2 and model 3 and the subsequent tables provide the output of the analyses.

**Table 4: Warrantee as Moderator for Satisfaction and Word-of-mouth referrals**

	Standard B Step 1	Standard B Step 2	Standard B Step 3
<b>Dependent Variable</b>			
Word-of-mouth referrals			
<b>Independent variable</b>			
Satisfaction	0.761**	0.289**	0.310**
<b>Moderating Variable</b>			
Warrantee		0.617**	0.342**
<b>Interaction Effect</b>			
Satisfaction* Warrantee			0.094**
R <sup>2</sup>	0.278	0.384	0.459
Adjusted R <sup>2</sup>	0.277	0.382	0.458
R <sup>2</sup> Change	0.277	0.106	0.075
Significant F change	0.000	0.000	0.001

Note: The value in the bracket is the t-statistics

\* is significant at  $\rho < 0.05$

\*\* is significant at  $\rho < 0.01$

**Table 5: Warrantee as Moderator for Satisfaction and Re-Purchase Intentions**

	Standard B Step 1	Standard B Step 2	Standard B Step 3
<b>Dependent Variable</b>			
Re-purchase Intentions			
<b>Independent variable</b>			
Satisfaction	0.333*	0.255**	0.468*
<b>Moderating Variable</b>			
Warrantee		0.405**	0.533**
<b>Interaction Effect</b>			
Satisfaction* Warrantee			0.045*
R <sup>2</sup>	0.281	0.324	0.446
Adjusted R <sup>2</sup>	0.280	0.323	0.445
R <sup>2</sup> Change	0.281	0.043	0.122
Significant F change	0.000	0.000	0.000

Note: The value in the bracket is the t-statistics

\* is significant at  $\rho < 0.05$

\*\* is significant at  $\rho < 0.01$

From table 4 and 5, the results show there are positive relationships between satisfaction and word-of-mouth referrals and re-purchase intentions. Therefore, hypotheses 4 and 5 are being supported. The analyses also show that there is moderating effect (warrantee) between satisfaction and word-of-mouth referrals and re-purchase intentions, hence, hypotheses 5 and 6 also being supported.

## **9. Limitations**

In this study, the limitations lie on the sampling methods. From the random samples gathered, the respondents were not screened for whether they have been using the banking services lately or not. This is because there are some customers who have not been using the banking facilities for sometime, yet they might be one of the respondents.

## **10. Discussions and Managerial Implications**

From the findings, there are few points that can be pondered upon. The first is the impact of service quality on satisfaction level. In general, service quality would definitely lead to satisfaction. But how service quality level is being justified is very vague. It depends on individuals and past experiences. In other words, individuals from different background would perceive service quality differently. Therefore, though the service quality level is good, but still there are customers who are dissatisfied and vice versa. Hence, there must be another form or ties that are able to bind the customers to the banking institutions. One of them is through warrantee.

Managers and researchers should put more emphasis on the moderating effect that will moderate the relationship between the service quality, the re-purchase intentions and word-of-mouth referrals. While there are still many customers who are dissatisfied with the current level of services, but due to these moderating effects, they will still remain with the bank and be their ambassador through the word-of-mouth referrals to others.

This is because while there are warrantees, it binds the customers strongly to that particular bank. The customers would feel safe in their transaction with the bank and would not worry in case of any mishaps that might befall. Hence, customers who put great weighs on the security will certainly patronize the same bank.

Therefore, it is suggested that bank institutions should try to seek ways to implement warrantee into their banking environment. What can be done is creating a sense of security in the eyes of customers in terms of strong financial assets if the banks are not warranted by the government. Hence, those banks that have yet to merge should seek alternatives to create strong financial assets in order to create an attractive environment for customers.

## 11. Direction for Future Research

Future research should look at other possible moderators that might moderate the relationship and bind the customers to a particular bank. Emphasis should also be made on the customers' demography to see how these different demographic categories differ in their perception towards warrantee.

## 12. Conclusion

As can be seen from the analysis, though there are customers who are not satisfied with their current bank, there still exist ties that bind them to their current bank. These ties are in the form of warrantee. From this research, it can be concluded that service quality alone does not play a very important role in determining the patronization of customers. In other words, there are other aspects that should be taken into consideration other than service quality in the process of attracting customers to certain banks.

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*Central banking and  
monetary policy*

# **BANK PERFORMANCES AND THE LENDING CHANNEL TRANSMISSION OF MONETARY POLICY IN THE EMU – PORTUGAL AS A CASE STUDY<sup>1</sup>**

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## **Abstract**

*This paper confirms the importance of bank performance to the credit-lending channel of monetary policy in the countries of the EMU and particularly in Portugal during recent years. It uses macro and microeconomic statistical data and introduces three calculated bank-performance indicators – financing of financial assets and financial margins - into an adaptation of the Bernanke and Binder model (1988) using panel data estimations not only to demonstrate the importance of the bank lending channel, but also to analyse the effects of the calculated indicators in bank-lending growth.*

**Keywords:** *bank lending; monetary policy transmission; panel estimates; Portuguese economy.*

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## 1. Introduction

This paper makes a contribution to the analysis of the role of the financial systems and the bank lending channel transmission of monetary policy in Portugal during the past decade.

This was a period of rapid growth in bank lending, with Portuguese banks undergoing radical transformations as they moved from a completely protected political environment to a situation of integration in the Single European Market's financial services and then to European Monetary Union.

The structural change arising from the adoption of the single currency and a common monetary policy has had a profound impact, not only in Portugal, but also throughout the Euro area, where the finance sector has been intensifying competition for banking services. It is exerting a profound impact on the Euro area finance sector and intensifying competition for banking services.

More efficient banking sectors are a necessary condition for the transmission of monetary policy, and the way that banks adapt lending in response to monetary policy decisions varies according to their specific characteristics.

Most of the empirical papers testing the existence of a bank lending channel for the transmission of monetary policies make use of three characteristics – size, capitalisation and liquidity – to capture bank-specific sources of heterogeneity. The results obtained for Portugal (Farinha and Marques, 2001) clearly show that only capitalisation provides the expected results, while size and liquidity do not have any special effect on bank lending.

Here we consider two macroeconomic indicators: real GDP and nominal short time interest rate and we also introduce two calculated bank performance indicators - financing of financial assets and financial margins - into an adaptation of the Bernanke and Binder's model (1988).

We use panel static fixed and random effects and Arellano-Bond dynamic panel estimations to analyse the importance of these indicators to bank lending growth. We conclude that there is evidence of the importance not only of the macroeconomic conditions but also of the considered bank performance indicators.

In the next pages of this paper, we start by presenting, in section 2, some recent contributions to the analysis of the transmission channels of monetary policy.

In section 3 we remind the radical transformations that the banking sector has undergone in Portugal during the last decade and we describe the evolution of the two calculated bank performance indicators.

Section 4 describe the simplified model that is use to explain bank lending evolution and then present and discuss obtained with some fixed effects, random effects and Arellano-Bond dynamic panel estimations.

Concluding remarks are presented in section 5.

## **2. The Bank Lending Channel Transmission of Monetary Policy**

The theory and empirical researches that study the monetary transmission process try to explain how monetary impulses affect the whole economy. They also share the view that monetary authorities (central banks) can control money market interest rates because they have the ability to control money supply.

Currently, using open market operations, central banks affect the liquidity of the whole banking system and the interest rates and prices that affect households and firms behaviour. This is described not only by the classical interest rate but also by the other transmission channels of the monetary policy.

The "credit view" of the monetary policy transmission includes five channels: the bank lending channel, the balance sheet channel, the cash flow channel, the unanticipated price level channel and the household liquidity effects (Mishkin, 2001).

The bank lending channel affects investment and residential housing through bank deposits and loans. The balance sheet, cash flow and unanticipated price level channels affect moral hazard and adverse selection and though the lending activity and the investment. Finally, the households liquidity effects concerns the financial wealth of the households and the probability of their financial distress that affects residential housing and expenditures in consumer durable goods.

So, well-developed financial systems are an important and necessary basis for ensuring that credit sectors are able to play their own particular role in economic development processes.

More efficient credit sectors are not only a necessary and important condition for the transmission of monetary policy in the Euro zone, but they are also indispensable for guaranteeing the economic benefits of the other sectors and agents that make use of financial services.

Financial institutions are also a very important channel for the transmission of monetary policy. Seen from the viewpoint of credit and lending, the level of effectiveness of monetary policy is basically determined by the imperfections of capital markets - asymmetric information and the difficulties faced by some economic agents in obtaining finance for their consumption and investment plans. Central banks control the quantity of money, but banking institutions also play an important role in the money-creation process, as well as in the mobilisation and allocation of financial resources.

The introduction of the European Monetary Union may have reduced some of the competitive advantages of local and national banks (advantages that were based on factors such as currency risk, a lack of price transparency and a better knowledge of national monetary policy), but it has also increased competition in all segments of the financial product market.

The structural changes arising from the adoption of a single currency and a common monetary policy have had a profound impact on the Euro area finance sector and are intensifying competition for banking services.

Some common trends may be identified in the context of the pressures exerted by globalisation, which affect the Euro area with particular intensity, namely a process of disintermediation, new technologies and increased competition (Belaisch et al. 2001). The adoption of a common monetary policy and a single currency has provoked a structural change: money markets have been integrated, the deregulation of financial services has considerably increased competition in the banking sector, whilst there has been an increasing integration of Euro area inter-bank markets.

Nowadays, in spite of the structural changes and the necessary concomitant adaptations to the new market and policy conditions, it is still clear that the Euro area's financial and credit systems continue to be bank-dominated and that the ECB (more precisely the European System of Central Banks and its Banking Supervision Committee) has devoted special attention to supervising banking activity and structural developments in the EU banking sector.

Despite all the changes and disintermediation, the asset structure of EU banks reflects the rapid increase in lending that has occurred since the advent of the EMU. It is a process that started before the implementation of the single currency and reflects the growing demand for credit provoked by the downward path of interest rates (especially in countries such as Portugal, where interest rates were rather high at the beginning of the 1990s and were forced to converge to the levels of other EU countries).

Recent studies for several European countries (Angeloni et al. 1995 and 2002, Baumel and Sevestre, 2000, Erhmann and Worms, 2001, Erhmann et al.

2001, Clements, et al. 2001, Farinha and Marques, 2001, Topi and Vilmunen, 2001, Gambacorta, 2001, Van Els et al., 2001, Gardener et al., 2002.) have studied the importance of European bank characteristics during these years of profound transformations.

And although the EU banking sector has been considered as one of the sectors least affected by the Single Market Programme, nowadays financial institutions and particularly the banking institutions play a very important role, namely in the process of monetary policy transmission in the Euro area.

### **3. Bank Performances in Portugal**

Portugal joined the European Economic Community (EEC) in 1986, twelve years after the Revolution that implemented the democracy in the country. During those twelve years there was first, a massive wave of nationalisations, only three small foreign-owned banks were not nationalised, new entries into the market were banned, while banking activities were entirely subordinated to the objectives of economic policy.

By the late 70-ties only three special credit institutions had the monopoly of mortgage lending and only one bank had the monopoly of all institutional and government accounts. All interest rates were administratively fixed by the political authorities and even the opening of new branches depended upon the permission of the central bank. In the early 80-ties the consequences of the political and economical instability became problematic and there was an agreement between the Portuguese government and the International Monetary Fund.

After that agreement, and just before the joining to the EEC the main instrument of the Portuguese monetary policy became the legal establishment of credit ceilings, which were imposed to the whole economy in accordance with the expected growth rate of GDP, but were in fact mainly used to finance government spending. Capital movements were also controlled by the central bank and consumer lending was completely restricted.

These restrictions began to change when Portugal became a member of the EEC and had to adapt to the new institutional and market conditions.

In 1987, the banking sector was opened up to private enterprise and new foreign banks were progressively authorised although they remained small in size. Interest rate regulation continued until 1990 with the administrative imposition of a minimum rate for deposits and a maximum rate for loans.

Under these conditions, not surprisingly, the approval by the EEC of the Single Market Programme (1986-1992) had a special impact in Portugal, and it accelerated the process of deregulation, privatisation and new (national and foreign) entries to the market, as well as adaptation to the competitive environment.

In 1990 a new accounting system was approved for the banking sector and a Cooke solvency ratio was adopted, forcing the Portuguese government to inject large amounts of capital into the banks even during the process of privatisation. Prudential rules were also introduced for loan losses and general credit risks. By the beginning of 1993, with the implementation of the EU Second Banking Directive and the all banks in Portugal had to prove their ability to adapt to the new market and legal conditions.

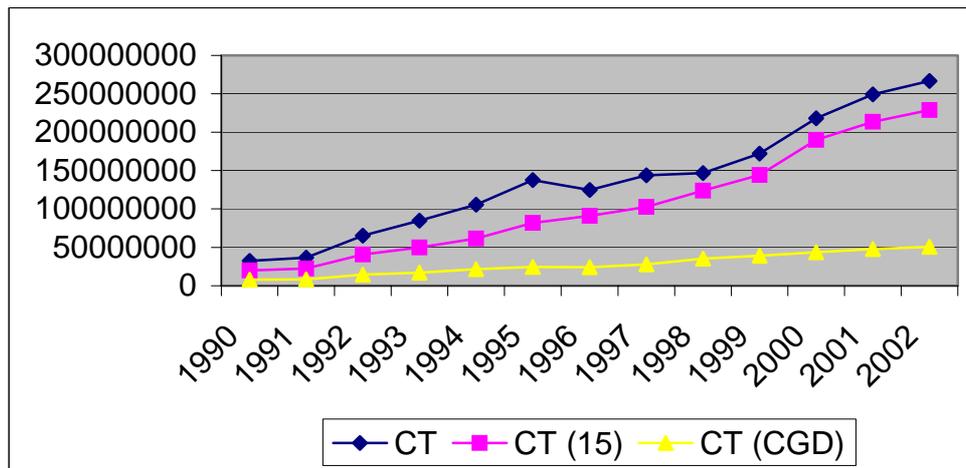
At the same time, the banking sector had to face the enormous challenges introduced by the Maastricht criteria and the preparation to the transformations introduced by European Monetary Union as Portugal was one of the countries which respected the defined criteria and adopted the single currency.

So, the Portuguese banking system has undergone radical changes and has moved from having a completely protected political environment to integration into the Single European Market's financial services and then into the EMU. In order to respect the Maastricht criteria and prepare for the single currency, there was a continuous fall in interest rate levels (as described in the previous section of this paper).

Under these conditions, the monetary policy transmission mechanisms in Portugal during this last decade (before and after the implementation of the single currency) would be expected to show a strong traditional interest-rate channel applied not only to productive investments, but also to housing investments and even to expenditure on consumer durables.

After so many legal and economic restrictions, the data made available in the Bulletins of the Portuguese Association of Banks (Associação Portuguesa de Bancos - APB) show that, since the early 1990s, there has been a very sharp increase in the credit granted by banks (**Graph 1**).

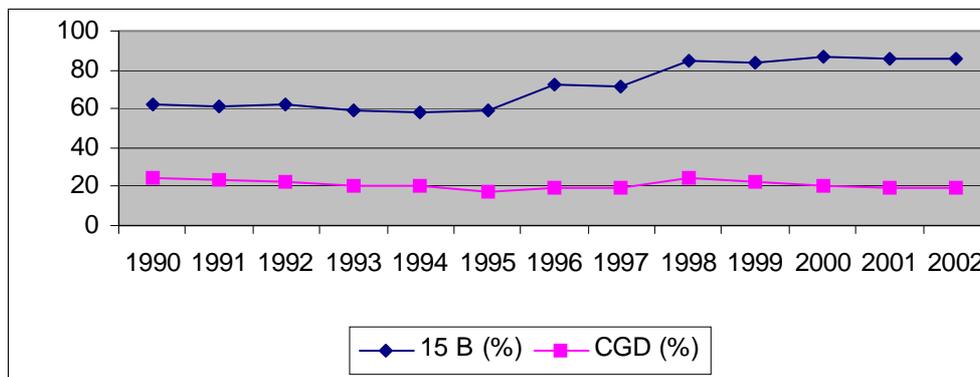
**Graph 1 – Total Credit Granted**



This enormous growth in credit was essentially due to the continued fall in the interest rate, resulting from the new conditions that were established for joining the single currency, but it also derived from the alterations occurring in the operating conditions of the banking sector.

In December 1990, there were 33 banking institutions in Portugal, but by December 2002 there were already 52. Fifteen<sup>2</sup> of these, however, have always remained in operation and have even managed to increase their share of the credit granted to clients. The biggest one, Caixa Geral de Depósitos (CGD) also managed to maintain its dominant position and until recently has been responsible for around 20% of the total credit granted by the sector (**Graph 2**).

**Graph 2 – Share of total credit granted by the 15 main banks and by CGD**



<sup>2</sup> More precisely: Banif, Barclays, BB, BBVA, BCA, BCP, BES, BIC, BNP Paribas, BPI, BTA, CGD, CPP, Deutsche Bank and MG.

In order to better express the performance of the banking institutions operating in Portugal during this period, we continued to make use of the Bulletins of the Portuguese Association of Banks and used two indicators that we calculated from them: the financing of financial assets and the financial margins.

The **financing of financial assets** corresponds to the ratio (in %) between financial liabilities and financial assets. Naturally, it would be better for the security of the banking institutions if this ratio was always not to close to 100. When this ratio is above 100, it is a sign that banks are have increased their responsibilities without correspondence in the growth of their financial assets and this may contribute to more risky situations in the future.

Generally speaking and according to data presented in Table 1, we see that this ratio was always very close to 100 and in the last years it exceeded always the 100. And although the differences in the ratios of the total banking sector, the main 15 banks and the biggest one (CGD) are not very big, it is quite clear that CGD has recorded values above 100, indicating that this institution was not so careful with the financing of its financial assets. This is consistent with the decrease in the last years of the CGD's lending share, although its share is still quite high: around 20% of the total bank lending. It must also be a consequence of the government management decisions, as CGD continues to be the public bank, implementing most of the government's policies, particularly at the level of public finance and changing quite often its administration staff.

**Table 1– Financing of financial assets = financial liabilities /financial assets**

	<b>TOTAL</b>	<b>15 Banks</b>	<b>CGD</b>
<b>1990</b>	98.06	95.86	93.77
<b>1991</b>	102.25	95.86	95.52
<b>1992</b>	97.10	97.05	94.77
<b>1993</b>	96.48	96.29	95.11
<b>1994</b>	97.41	97.87	96.36
<b>1995</b>	98.74	98.85	97.54
<b>1996</b>	99.65	99.41	97.76
<b>1997</b>	99.71	100.09	96.97
<b>1998</b>	99.50	99.76	100.01
<b>1999</b>	99.22	99.60	100.54
<b>2000</b>	101.10	101.71	104.11
<b>2001</b>	101.68	102.30	103.47
<b>2002</b>	100.09	100.80	101.68
average	<b>99.31</b>	<b>98.88</b>	<b>98.28</b>

The **financial margins** are clearly the indicator that show the results obtained by the banking institutions in regard to their main activity – financial intermediation. Basically they correspond to the difference between the received (from applications) and paid (from deposits) interest rates. More precisely, here the financial margins are calculated as the ratio of the difference between interest and equivalent income (basically from credit applications) and interest and equivalent costs (from funds raised, especially from clients' deposits) to the financial assets.

In Portugal, whilst interest rates were established either administratively or under a situation of limited competition, it was possible to maintain relatively high financial margins, especially when compared with those recorded by most of our European partners.

However, in few years, the conditions completely changed with membership of the EEC, the liberalisation of the financial markets and, in particular, the decisions inherent in the enforcement of the single currency policy.

So, not surprisingly, in Table 2, the financial margins show a decrease throughout the decade, due not only to the choices made by the financial institutions and their lending activity, but mainly to the monetary policy imposed during the period of transition to the Euro zone and the subsequent fall in interest rates. But the largest banking institutions (and amongst these CGD in particular) were able to keep their margins somewhat higher than the less powerful banking institutions.

**Table 2 – Financial margins = (interest and equivalent income-interest and equivalent costs)/ financial assets.**

	<b>TOTAL</b>	<b>15 Banks</b>	<b>CGD</b>
<b>1990</b>	5.55	5.53	5.52
<b>1991</b>	5.21	5.37	5.98
<b>1992</b>	3.68	3.80	3.49
<b>1993</b>	3.80	3.82	4.14
<b>1994</b>	3.41	3.52	3.67
<b>1995</b>	2.81	2.81	3.32
<b>1996</b>	2.67	2.68	3.12
<b>1997</b>	2.88	2.89	3.17
<b>1998</b>	2.76	2.78	3.18
<b>1999</b>	2.44	2.46	2.72
<b>2000</b>	2.26	2.23	2.46
<b>2001</b>	2.26	2.29	2.59
<b>2002</b>	2.24	2.23	2.37
average	<b>3.23</b>	<b>3.26</b>	<b>3.52</b>

## 4. Panel Data Estimations

The enormous growth noted in credit lending in Portugal during the last decade were surely influenced by macroeconomic conditions, and the reflects of the challenges that the country had to face, and particularly the levels of the interest rates.

However, the banking institutions must not be considered as completely "neutral" intermediaries between borrowers and creditors, and their performances may also be crucial for the explanation of bank lending growth.

In the following panel estimates we used data published by the Portuguese Central Bank (Banco de Portugal) and the International Monetary Fund: the Gross Domestic Income series (at 1995 prices) and the short term interest rates.

Total bank lending and the performance indicators - the financing of financial assets and the financial margins - of Portuguese banks were calculated using data from the Portuguese Association of Banks (Associação Portuguesa de Bancos), which provides only annual data for the last decade.

We therefore used the following series<sup>3</sup>:

**Lend** = Log of bank lending

**GDP** = Log of real GDP

**int. rate** = nominal short term interest rate

**FF** = **financing of financial** assets = financial liabilities /financial assets

**FM** = **financial margins** = (interest and equivalent income-interest and equivalent costs)/ financial assets.

**Table 3 – Summary statistics**

Variable	Mean	Std. Dev.	Min	Max
<b>Observations</b>				
-----+-----+-----				
<b>Total Credit</b>				
overall	15.07484	1.811932	10.85	19.4
N = 221				
between		1.645238	12.88769	18.56154
n = 17				
within		.8508412	12.61561	16.73561
T = 13				

<sup>3</sup> The summary statistics of the series are presented in Table 3 and the and their correlation matrix in Tables 4.

<b>Fin. Financial Assets</b>						
(FF)	overall	98.30584	6.594677	67.13	140	
N =	221					
n =	between		2.459644	92.39308	102.0262	
n =	17					
T =	within		6.145723	72.05968	144.9297	
T =	13					
<b>Fin. Margins</b>						
(FM)	overall	3.116833	1.41438	.19	7.78	
N =	221					
n =	between		.7564963	1.199231	4.776923	
n =	17					
T =	within		1.208056	.0699095	6.463756	
T =	13					
<b>GDP</b>						
N =	overall	30.46231	.1154305	30.31	30.63	
N =	221					
n =	between		0	30.46231	30.46231	
n =	17					
T =	within		.1154305	30.31	30.63	
T =	13					
<b>Int. rate</b>						
N =	overall	7.976923	4.453186	2.61	15.12	
N =	221					
n =	between		0	7.976923	7.976923	
n =	17					
T =	within		4.453186	2.61	15.12	
T =	13					
<b>FF*GDP</b>						
N =	overall	2994.709	202.8298	2049.479	4268.6	
N =	221					
n =	between		75.15091	2813.637	3108.357	
n =	17					
T =	within		189.2097	2200.053	4419.175	
T =	13					

<b>FF*Int.rate</b>						
overall		780.2672	430.1918	193.5054	1702.512	
N =	221					
between			15.68665	753.7726	803.2039	
n =	17					
within			429.9213	209.6799	1682.168	
T =	13					
<b>FM*GDP</b>						
overall		94.8388	42.78588	5.8178	235.9674	
N =	221					
between			23.03056	36.42732	145.3124	
n =	17					
within			36.45759	2.516278	196.0709	
T =	13					
<b>FM*Int.rate</b>						
overall		29.1297	26.7247	.7047	117.6336	
N =	221					
between			6.664507	14.05049	46.45306	
n =	17					
within			25.92714	-11.45866	100.3102	
T =	13					

**Table 4 – Correlation matrix**

		Lend	FF	MF	GDP	Int.r.	FF*GDP	FF*Int.r.
-----+								
Lend		1.0000						
FF		0.1847	1.0000					
M		-0.2074	-0.0651	1.0000				
GDP		0.3428	0.1135	-0.6591	1.0000			
Int.rate		-0.3361	-0.1338	0.6805	-0.9094	1.0000		
FF*GDP		0.2022	0.9985	-0.1009	0.1681	-0.1830	1.0000	
FF*Int.r.		-0.3180	-0.0439	0.6743	-0.9054	0.9941	-0.0938	1.0000
FM*GDP		-0.2055	-0.0641	1.0000	-0.6552	0.6768	-0.0997	0.6707
FF*Int.r		-0.3076	-0.1324	0.9002	-0.8003	0.8950	-0.1755	0.8854
-----+								
		FM*GDP	FF*Int.r					
FM*GDP		1.0000						
FF*Int.r		0.8980	1.0000					

#### 4.1 The estimated model

Our panel estimates follow a simplified version of the Bernanke and Binder model (1988).

First, in the **money market**, we will assume that money equals deposits held at banks by the non-monetary sectors.

So for the demand function, we assume that the nominal deposits held at banks by the private sector will depend on GDP and the interest rate on bonds:

$$\text{Dep}^d = a_0 + a_1 \text{GDP} + a_2 i_{\text{bonds}} \quad [1]$$

(+)            (-)

Money supply will not only depend on the interest rate on bonds, but also on the influence of monetary policy (represented here by the relevant monetary policy interest rate, which is controlled by the Central Bank):

$$\text{Dep}^s = b_0 + b_1 i_{\text{bonds}} + b_2 i_{\text{mon.pol.}} \quad [2]$$

(+)                            (-)

Second, in the **credit market**, the demand for lending depends on GDP, the interest rate on bonds and the interest rate on lending:

Assuming the relevance of  $x$  bank performance characteristics ( $\text{Char}_x$ ) on

$$\text{Lend}^d = c_0 + c_1 \text{GDP} + c_2 i_{\text{lend}} + c_3 i_{\text{bonds}} \quad [3]$$

(+)            (-)            (+)

lending, which a priori may have a positive (or negative) effect on lending, we may define the supply in the money market as depending on the deposits of the private sectors at banks and the product of these deposits, as well as on bank characteristics, the interest rate on lending and the interest rate on bonds:

$$\text{Lend}^s = d_0 + d_1 \text{Dep} + d_2 \text{Dep} \text{Char}_x + d_3 i_{\text{lend}} + d_4 i_{\text{bonds}} \quad [4]$$

(+)            (?)            (+)            (-)

Clearing the money and credit markets (see Appendix I for more details) leads to the reduced form of the model which will be the basic equation for our panel estimations:

$$L = \alpha_0 + \alpha_1 \text{Car}_x + \alpha_2 \text{GDP} + \alpha_3 i_{\text{mon.pol}} + \alpha_4 \text{Car}_x \text{GDP} + \alpha_5 \text{Car}_x i_{\text{mon.pol}} \quad [5]$$

(?) (+)?      (?)      (?)      (-)?      (+)?

Thus, there is no certitude about the magnitude or even the sign of the influence of the macroeconomic conditions (more precisely, here only the GDP growth and the monetary policy interest rate) and the considered bank performance indicators (in our case the two presented ratios: the financing of the financial assets and the financial margins).

## 4.2 Panel estimate results

With the presented data we construct a panel of 221 observations (data for 13 years and a sample of 17 representative banks) and using the STATA program we compare the results of some fixed effects, random effects and Arellano-Bond dynamic panel estimates .

### 4.2.1 Fixed and random effects panel estimates:

Panel data estimates allow to control for unobserved individual heterogeneity that is constant over time. The fixed effects estimator is obtained by OLS on the deviations from the means of each unit (in our case, each bank) or time period. This estimation may be relevant if we expect that the averages of the dependent variable will be different for each bank, but the variance of the errors will not.

**Table 5 – Fixed effects estimates**

**. xi: xtreg Lend FF FM GDP intrate FFGDP FFintrate FMGDP FMintrate i.year,fe**

Fixed-effects (within) regression	Number of obs = 221
Group variable (i): id	Number of groups = 17
R-sq: within = 0.6410	Obs per group: min = 13
between = 0.0623	avg = 13.0
overall = 0.1554	max = 13
corr(u_i, Xb) = 0.0191	F(18,186) = 18.45
	Prob > F = 0.0000

<b>Lend</b>	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
<b>FF</b>	-10.26567	4.037631	-2.54	0.012	-18.23111	-2.300236
<b>FM</b>	-9.25713	28.66053	-0.32	0.747	-65.79862	47.28436
<b>GDP</b>	-.5759693	.2165216	-2.66	0.008	-1.003123	-.1488155
<b>Intrate</b>	-1.033278	.3611528	-2.86	0.005	-1.74576	-.3207956
<b>FFGDP</b>	.3353602	.1316817	2.55	0.012	.0755785	.5951419
<b>FFintrate</b>	.0073015	.0036225	2.02	0.045	.000155	.0144479
<b>FMGDP</b>	.3012259	.9360363	0.32	0.748	-1.545387	2.147838
<b>FMintrate</b>	.0132183	.0215766	0.61	0.541	-.0293479	.0557845
_Iyear_1991	.4641555	.2759888	1.68	0.094	-.0803153	1.008626
_Iyear_1992	1.083516	.3147049	3.44	0.001	.4626664	1.704366
_Iyear_1993	.4007486	.1714172	2.34	0.020	.0625768	.7389204
_Iyear_1994	(dropped)					
_Iyear_1995	.1174722	.1719534	0.68	0.495	-.2217575	.4567018
_Iyear_1996	-.5144967	.197166	-2.61	0.010	-.9034659	-.1255276
_Iyear_1997	-.7766557	.2272402	-3.42	0.001	-1.224955	-.3283562
_Iyear_1998	-.8577495	.2364996	-3.63	0.000	-1.324316	-.391183
_Iyear_1999	-.9690709	.2557685	-3.79	0.000	-1.473651	-.4644907
_Iyear_2000	-.2218119	.1872102	-1.18	0.238	-.5911402	.1475164
_Iyear_2001	(dropped)					
_Iyear_2002	-.2041562	.1990036	-1.03	0.306	-.5967505	.1884382
_cons	556.9831	203.5262	2.74	0.007	155.4666	958.4997
sigma_u	1.6306634					
sigma_e	.55445221					
rho	.8963697 (fraction of variance due to u_i)					

F test that all u\_i=0: F(16, 186) = 106.87 Prob > F = 0.0000

The obtained results with fixed effects estimates are presented in Table 5 and confirm the importance of the bank lending channel as there is a clear negative influence of nominal short term interest rates on bank lending. As expected, the financing of financial assets (more precisely, the ratio financial liabilities/financial assets) has also a rather strong influence on bank lending.

With random effects estimates (Table 6) there is an increase of the importance of GDP while the financing of financial assets remains a relevant indicator for the evolution of the bank lending.

**Table 6 – Random effects estimates**

**. xi: xtreg Lend FF FM GDP intrate FFGDP FFintrate FMGDP FMintrate i.year, re**  
i.year            \_Year\_1990-2002 (naturally coded; \_Year\_1990 omitted)

Random-effects GLS regression            Number of obs   =   221  
Group variable (i): id                    Number of groups =   17

R-sq: within = 0.6410                    Obs per group: min =   13  
          between = 0.0684                    avg =   13.0  
          overall = 0.1567                   max =   13

Random effects u\_i ~ Gaussian            Wald chi2(18)   =   332.71  
corr(u\_i, X)   = 0 (assumed)            Prob > chi2     =   0.0000

<b>Lend</b>	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
<b>FF</b>	-10.42699	4.032938	-2.59	0.010	-18.33141	-2.522578
<b>FM</b>	-10.1131	28.64071	-0.35	0.724	-66.24785	46.02165
<b>GDP</b>	.0164827	.0013387	12.31	0.000	.0138589	.0191065
<b>Intrate</b>	-.1356041	.1586732	-0.85	0.393	-.4465979	.1753896
<b>FFGDP</b>	.3406158	.1315287	2.59	0.010	.0828242	.5984073
<b>FFintrate</b>	.0074985	.0036173	2.07	0.038	.0004088	.0145882
<b>FMGDP</b>	.3295856	.935389	0.35	0.725	-1.503743	2.162914
<b>FMintrate</b>	.0130637	.0215497	0.61	0.544	-.029173	.0553004
_Year_1991	-1.240518	.6230214	-1.99	0.046	-2.461618	-.0194188
_Year_1992	-1.268209	.8406406	-1.51	0.131	-2.915834	.3794163
_Year_1993	1.54925	.3909071	3.96	0.000	.7830861	2.315414
_Year_1994	2.663251	.8309379	3.21	0.001	1.034643	4.291859
_Year_1995	1.127044	.2752741	4.09	0.000	.5875163	1.666571
_Year_1996	1.202136	.4309135	2.79	0.005	.3575607	2.046711
_Year_1997	.9640797	.4135825	2.33	0.020	.1534729	1.774686
_Year_1998	.4419012	.2372135	1.86	0.062	-.0230287	.9068312
_Year_1999	(dropped)					
_Year_2000	-2.282548	1.028353	-2.22	0.026	-4.298082	-.2670133
_Year_2001	-2.53009	1.197795	-2.11	0.035	-4.877725	-.1824548
_Year_2002	-2.156963	1.028415	-2.10	0.036	-4.17262	-.1413055
_cons	(dropped)					
sigma_u	1.6334885					
sigma_e	.5445221					
rho	.89669085 (fraction of variance due to u_i)					

The Hausman test is used to compare the results obtained with fixed effects with those obtained with random effects estimates. Given a model in which fixed effects are appropriate, the Hausman test will  $H_0$ : that random effects would also be consistent and efficient, versus  $H_1$ : that random effects would

be inconsistent. The result of the test is a vector of dimension  $b$  ( $b =$  number of instruments) which will be distributed  $\chi^2(b)$ . So if the Hausman test statistic is large, we should use fixed effects estimates. If the statistic is small, we may consider that random effects are also consistent.

**Table 7 – Hausman specification test**

	---- Coefficients ----		
	Fixed Effects	Random Effects	Difference
<b>FF</b>	-10.26567	-10.42699	.1613172
<b>FM</b>	-9.25713	-10.1131	.8559684
<b>GDP</b>	-.5759693	.0164827	-.592452
<b>Intrate</b>	-1.033278	-.1356041	-.8976738
<b>FFGDP</b>	.3353602	.3406158	-.0052556
<b>FFintrate</b>	.0073015	.0074985	-.000197
<b>FMGDP</b>	.3012259	.3295856	-.0283597
<b>FMintraate</b>	.0132183	.0130637	.0001546
_Iyear_1991	.4641555	-1.240518	1.704674
_Iyear_1992	1.083516	-1.268209	2.351725
_Iyear_1993	.4007486	1.54925	-1.148501
_Iyear_1995	.1174722	1.127044	-1.009571
_Iyear_1996	-.5144967	1.202136	-1.716632
_Iyear_1997	-.7766557	.9640797	-1.740735
_Iyear_1998	-.8577495	.4419012	-1.299651
_Iyear_1999	-.9690709	0	-.9690709
_Iyear_2000	-.2218119	-2.282548	2.060736
_Iyear_2002	-.2041562	-2.156963	1.952806

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \chi^2(18) &= (b-B)'[S^{-1}](b-B), S = (S_{fe} - S_{re}) \\ &= 2.70 \\ \text{Prob} > \chi^2 &= 1.0000 \end{aligned}$$

Here the Hausman test (Table7) does not clearly reject the null hypothesis that the observed heterogeneity is uncorrelated with the regressors. So we may suspect that random effects are more appropriate in this case, assuming that the relative small panel that we are using is drawn from a larger population of values (in our case, we should consider that the included banks during this time period are representing a larger set of banks during a longer period of time).

Nevertheless, as we are using a relative small panel ( $N=221$ ) and the main 15 banks were chosen by their dominance in the shares of the bank lending, fixed effects can be considered more adequate. This is consistent

also with the results of the Rsq and the comparison of the within, between and overall values which indicate a better explanation of changes by year than by the group differences.

#### 4.2.2 Arellano-Bond dynamic panel estimates:

Dynamic panel estimates with relative short panels require the introduction of instrumental variables as the time-invariant group specific (here bank specific) effects are correlated with the lagged dependent variable (the total bank lending growth). But if we try to avoid the bank specific effects through first-differencing the equation we will introduce serial correlation in the error term and regressor error correlation. To solve these problems and the potential endogeneity of the explanatory variables, we introduce GMM estimations.

Following Bundel and Bond (1998) we use the GMM system estimator in levels, which introduces the lagged differences of the explanatory variables as instruments. But these instruments have to satisfy two conditions: they should not be correlated with the error term in the estimated equation and they should be correlated with the endogenous explanatory variables.

To test whether the instruments are correlated with the error term we use a Sargan test which is a test of the overidentifying restrictions. The hypothesis being tested is that the instrumental variables are uncorrelated to some set of residuals, and therefore they may be considered as acceptable, healthy, instruments. If the null hypothesis is not rejected it is concluded the instruments pass the test and are valid for the estimation.

The validity of the instruments is also tested by the Arrelano-Bond test of serial correlations of the error term. The  $H_0$  hypothesis of this test is that the error terms in the first-difference regression exhibit no serial correlations.

**Table 8 – Dynamic system estimates (levels)**

```
. xi: xtabond2 Lend FF MF GDP intrate FFGDP FFintrate FMGDP FMintrate
i,year, gmm(LCT, lag(2 4)) iv(i.year, eq(level))
```

Arellano-Bond dynamic panel-data estimation, one-step system GMM results

```
-----
Group variable: id          Number of obs   =   221
Time variable : year       Number of groups =    17
Number of instruments = 54   Obs per group: min =    13
F(18, 202) = 2.24          avg = 13.00
Prob > F = 0.004          max = 13
-----
```

Lend	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
FF	-31.63232	20.4472	-1.55	0.122	-71.70809	8.443452
FM	-491.305	188.9762	-2.60	0.009	-861.6916	-120.9184
GDP	-2.455236	1.11817	-2.20	0.028	-4.646808	-.2636644
Intrate	-1.674908	2.002396	-0.84	0.403	-5.599533	2.249716
FFGDP	1.036351	.6671303	1.55	0.120	-.2712007	2.343902
FFintrate	.0022622	.0212085	0.11	0.915	-.0393056	.0438301
FMGDP	16.04346	6.161073	2.60	0.009	3.96798	28.11894
FMintrate	.3507442	.2015767	1.74	0.082	-.0443389	.7458273
_Iyear_1991	-.146547	1.246854	-0.12	0.906	-2.590335	2.297241
_Iyear_1992	.5557932	1.889033	0.29	0.769	-3.146644	4.258231
_Iyear_1993	.625795	.8674445	0.72	0.471	-1.074365	2.325955
_Iyear_1995	-.4308556	.6563161	-0.66	0.512	-1.717211	.8555003
_Iyear_1996	-1.484055	.84329	-1.76	0.078	-3.136873	.1687635
_Iyear_1997	-1.805157	1.193644	-1.51	0.130	-4.144655	.5343423
_Iyear_1998	-2.184387	1.414615	-1.54	0.123	-4.956981	.5882077
_Iyear_1999	-2.379369	1.794294	-1.33	0.185	-5.89612	1.137382
_Iyear_2000	-.3832472	.6627997	-0.58	0.563	-1.682311	.9158164
_Iyear_2002	-.4129912	.8510369	-0.49	0.627	-2.080993	1.255011
_cons	2311.293	1049.738	2.20	0.028	253.8443	4368.742

Sargan test of overid. restrictions:  $\chi^2(35) = 20.63$  Prob >  $\chi^2 = 0.974$

Arellano-Bond test for AR(1) in first differences:  $z = -0.82$  Pr >  $z = 0.409$

Arellano-Bond test for AR(2) in first differences:  $z = -1.00$  Pr >  $z = 0.320$

The one step GMM results are presented in Table 8. The Sargan test does not reject the null that the instruments are valid in that they are not correlated with the errors. The autocorrelation Arrelano-Bond tests also confirm the validity of the instruments.

Comparing the results of the dynamic estimation with those obtained with fixed effects estimates (Table 5) we see that the main differences are detected in the results for the short term interest rate and the financial margins. Now financial margins are more relevant to the explanation of bank lending growth, both directly and indirectly through GDP and the interest rates.

## 5. Concluding Remarks

In keeping with studies that had already confirmed the need to complement the whole Euro zone evidence with research undertaken at a national level, this paper centred the attention on the conditions and transmission mechanisms of monetary policy.

It presents two bank performance indicators: the financing of financial assets (more precisely the ration between the financial liabilities and the financial assets) and the financial margins and through panel data estimates, and analyses their joint importance with two macroeconomic indicators (real GDP and nominal short time interest rate) for bank lending in Portugal during the past decade.

The obtained results with fixed and random effect estimates were compared through a Hausmann test which does not clearly reject the null that the observed heterogeneity is uncorrelated with the regressors. So we could accept that random estimates are appropriate but, as we are dealing with a relatively small panel, fixed effects will always be more appropriate.

And as fixed effects (or within) estimates assume common slopes but that each cross section unit, more precisely here , each bank, has its own intercept we may also conclude that the initial conditions may be different for each bank but afterwards their reactions to the considered instruments are similar because they are all competing in the same market and have to face the same macroeconomic conditions.

Further, the fixed effects estimates confirm the importance of real GDP and interest rates on bank lending. At the same time, the chosen bank performance indicators also contribute to the explanation of the bank credit during this period, specially the financing of financial assets which showed its relevance for the credit not only directly but also indirectly, through GDP and interest rates.

These conclusions are consistent with the results obtained with the other dynamic panel estimates. We use a GMM system estimator in levels and confirm the validity of the instruments through Sargan and Arellano-Bond tests of serial correlations.

So, clearly the total bank credit depends on macroeconomic conditions, including monetary policy decisions. At the same time, bank lending is an essential transmission channel of monetary policy decisions, but it still depends on the performance and strategy of the different banking institutions.

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## APPENDIX I

Remembering the model presented in section 4.1. of this paper, demand in the money market depends on real GDP and the interest rate on bonds, while supply depends on the interest rate on bonds and also on the interest rate established by monetary policy:

$$\text{Dep}^d = a_0 + a_1 \text{GDP} + a_2 i_{\text{bonds}} \quad [1]$$

(+)            (-)

$$\text{Dep}^s = b_0 + b_1 i_{\text{bonds}} + b_2 i_{\text{mon.pol.}} \quad [2]$$

(+)            (-)

Demand in the credit market depends on real GDP, the interest rate on lending and also on the interest rate on bonds.

Including another variable, which will capture the bank-specific performance indicator, the credit supply will depend on the deposits of the private sectors at banks, the combined influence of these deposits and the bank performance indicator on the interest rate on lending and the interest rate on bonds.

$$\text{Lend}^d = c_0 + c_1 \text{GDP} + c_2 i_{\text{lend}} + c_3 i_{\text{bonds}} \quad [3]$$

(+)            (-)            (+)

$$\text{Lend}^s = d_0 + d_1 \text{Dep} + d_2 \text{Dep Car}_x + d_3 i_{\text{lend}} + d_4 i_{\text{bonds}} \quad [4]$$

(+)            (?)                    (+)            (-)

Clearing the money market - equations [1] and [2] - we obtain:

$$i_{\text{bonds}} = \frac{b_0 - a_0}{a_2 - b_1} - \frac{a_1}{a_2 - b_1} \text{GDP} + \frac{b_2}{a_2 - b_1} i_{\text{mon.pol}}$$

or

$$i_{\text{bonds}} = e_0 + e_1 \text{GDP} + e_2 i_{\text{mon.pol}} \quad [5]$$

(?)            (+)            (+)

and also

$$\text{Dep}^d = \text{Dep}^s = \frac{a_2 b_0 - a_0 b_1}{a_2 - b_1} - \frac{a_1 b_1}{a_2 - b_1} \text{GDP} + \frac{a_2 b_2}{a_2 - b_1} i_{\text{mon.pol}}$$

or

$$\text{Dep} = f_0 + f_1 \text{GDP} + f_2 i_{\text{mon.pol}} \quad [6]$$

(?)            (+)            (+)

Clearing the credit market - equations [3] and [4] - we first obtain the expression of the interest rate of lending:

$$i_{\text{lend}} = \frac{d_0 - c_0}{c_3 - d_3} + \frac{d_1}{c_3 - d_3} \text{Dep} + \frac{d_2}{c_3 - d_3} \text{Dep Car}_x - \frac{c_1}{c_3 - d_3} \text{GDP} + \frac{d_4 - c_4}{c_3 - d_3} i_{\text{bond}}$$

or

$$i_{\text{lend}} = g_0 + g_1 \text{Dep} + g_2 \text{Dep Car}_x + g_3 \text{GDP} + g_4 i_{\text{bond}} \quad [7]$$

(?)
(-)
(+)?
(+)
(+)

Using this expression, we then obtain for the credit market equilibrium:

$$\text{Lend}^d = \text{Lend}^s = \frac{c_3 d_0 - c_0 d_3}{c_3 - d_1} + \frac{c_3 d_1}{c_3 - d_1} \text{Dep} + \frac{c_3 d_2}{c_3 - d_1} \text{Dep Car}_x + \frac{c_1 d_3}{c_3 - d_1} \text{GDP} + \frac{c_3 d_4 - c_4 d_3}{c_3 - d_1} i_{\text{bond}}$$

or

$$\text{Lend} = h_0 + h_1 \text{Dep} + h_2 \text{Dep Car}_x + h_3 \text{GDP} + h_4 i_{\text{bond}} \quad [8]$$

(?)
(+)
(-)?
(+)
(?)

Remembering the definitions obtained for the interest rate on bonds and deposits - equations [5] and [6]

$$i_{\text{bonds}} = e_0 + e_1 \text{GDP} + e_2 i_{\text{mon.pol}} \quad [5]$$

$$\text{Dep} = f_0 + f_1 \text{GDP} + f_2 i_{\text{mon.pol}} \quad [6]$$

and introducing these expressions into equation [8], we may obtain the reduced form of the expression for lending, which is the basis of our estimations

$$L = \alpha_0 + \alpha_1 \text{Car}_x + \alpha_2 \text{GDP} + \alpha_3 i_{\text{mon.pol}} + \alpha_4 \text{Car}_x \text{GDP} + \alpha_5 \text{Car}_x i_{\text{mon.pol}}$$

(?)   (?)        (?)        (?)        (-)?        (+)?

where

$$\alpha_0 = h_0 + h_1 f_0 + h_4 e_0$$

(?)       (-)(?)       (?) (?)

$$\alpha_1 = h_2 f_0$$

(-)(?)

$$\alpha_2 = h_0 f_0 + h_3 + h_4 e_1$$

(+)(+)       (+)       (?) (+)

$$\alpha_3 = h_1 f_0 + h_4 e_2$$

(+)(+)       (?) (+)

$$\alpha_4 = h_2 f_1$$

(-)? (+)

$$\alpha_5 = h_2 f_2$$

(-)? (-)

# MONETARISTIC THEORY OF INFLATION AND ITS IMPLICATION FOR THE MONETARY POLICY OF THE CENTRAL BANK – STARTING POINT, EXPERIENCE AND PERSPECTIVES

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## **Abstract**

*The problem of inflation is at the present time in the centre of attention in the Slovak Republic and also in other new member states of the European Union in connection with the necessity of fulfilment of the Maastricht criteria which is required for the country's qualifying for the Eurozone. The theoretical approach of monetarism, which gained ground in the 70's of the last century, represents a significant contribution to the study of reasons and mechanism of inflation expansion as well as to the necessity of an antiinflationary monetary policy implementation. The aim of this paper is to present Friedman's monetaristic theory of inflation inclusive of implications for the monetary policy of the central bank, moreover to critically generalize the experience of implemented monetaristic reference of economic policy in practice. Finally, against this background, the paper also outlines the perspectives of the abovementioned theoretical doctrine.*

**Keywords:** *monetarism, inflation, M. Friedman, transmission mechanism, monetaristic experiment*

## 1. Introduction

The problem of inflation is at the present time in the centre of attention in the Slovak Republic and also in other new member states of the European Union in connection with the necessity of fulfilment of the Maastricht criteria which is required for the country's qualifying for the Eurozone. The theoretical approach of monetarism represents a significant contribution to the study of reasons and mechanism of inflation expansion, monetary dynamics, relations of money demand formation, velocity of money, effect of monetary factors on economic behavior of subjects, the necessity of an antiinflationary monetary policy implementation etc. The aim of this paper is to present Friedman's monetaristic theory of inflation inclusive of implications for the monetary policy of the central bank, moreover to critically generalize the experience of implemented monetaristic reference of economic policy in practice. Finally, against this background, the paper also outlines the perspectives of the abovementioned theoretical doctrine.

## 2. Monetaristic theory of inflation

Monetarism originated as a reaction to a long period of disregarding money and money factors by macroeconomics<sup>1</sup> on the one hand, and overestimating of state intervention by Keynesian economists on the other hand. Keynes' concept of state regulation of the economy was directed to achieve full employment, while inflation was in the background. It has a logical justification: J. M. Keynes elaborated his theory under the Great Depression, when the uppermost problem was the huge unemployment and not the rise in price (prices rather fall in this term)<sup>2</sup>. In a postwar period there was not paid any high attention to inflation, because the inflation was low. Money and credit (lending) policy played a secondary role – their task was to sustain interest rates on a level, which could promote (assist) to achieve economic growth and to solve budgetary problems.

The world-wide rise in prices at the beginning of the 70's of the last century stimulated economist's interest in inflation. Exactly the issue of inflation represented a key point of a critical reinterpretation of the

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<sup>1</sup> In literature we can find an argument, that J. M. Keynes had ignored the role of Money and money stock. We have to agree with the author of *Live thoughts of dead economists*, that such an accusation is not correct ([1], p.203). A great value that Keynes accredited to money is indirectly supported by proofs (verified) in his most important works such as – *Tractate about Money Reform* (1923), *Discourse about Money* (1930), *General Theory of Employment, Interest Rates and Money* (1936).

<sup>2</sup> Theory of J. M. Keynes is based on presumption of rigid prices.

Keynesian doctrine by the monetarists, which finally led to the revival of the reflections of the quantitative money theory of classic economics.

Theory of inflation and analysis of money demand represent important building stones of Friedman's money theory. It has also significantly effected the monetary policy of central banks as well as the stabilization policy in transitive economies.

In Friedman's study of inflation we can distinguish 2 phases: in the first phase (until the end of 60's of the last century) he analyzed the mechanism of inflation formation, in the second phase (beginning of the 70's) he examined the relation between inflation and unemployment.

Friedman's interpretation of inflation can be integrated into monetary conception of inflation.

M. Friedman linked to the learning of quantitative money theory. In the work *The Counter-Revolution in Monetary Theory* he entitled the inflation „purely monetary phenomenon in terms of faster money stock growth in comparison with product growth“ ([3], p. 16). According to him inflation is a result of excess money in circulation.

M. Friedman analyzed the mechanism by means of which money affect prices. He postulated, that if the money market equilibrium was violated, general price level would be changed in consequence of an adjustment process.

Till the end of the 60's of the last century Friedman's monetaristic version of inflation developed as a theory of partial equilibrium in the money sector. Fluctuation of money level was interpreted exclusively as a result of „jumps“ of money stock (money shocks) against the static money demand. Later on, in the 70's M. Friedman expanded his theory of inflation with correlation of inflation and unemployment on the basis of critical analysis of the (keynesian) Phillips curve. The natural unemployment rate and the (adaptive) inflation expectation represent in his concept the pivot elements by examination of relative linkage between inflation process and situation on labour market.

M. Friedman does differentiate between short-term and long-term Phillips curve. According to him the original (initial) Phillips curve is valid only in a short-term period when inflationary expectations decline from the existing higher inflation rate and the adoption occurs additionally. It represents temporal, transition state – divergence of actual unemployment from natural rate of unemployment evocated by economic policy and its

effect on inflation. In a long-term period the Phillips curve has a vertical line shape and is identical with the line on the level of the natural rate of unemployment, that has substantial consequence of the long-term economic policy.

The motive force of the examined features in Friedman's monetaristic conception is the rise in money stock. M. Friedman is susceptible of the fact, that in a short-term period monetary impulses could have some impact on real variables (employment, production, investments), but this impact is only temporary. In a long-term period these parameters return to their initial level, so that means, that only a rise in price occurs. According to him, money are neutral in a long-term perspective.

Friedman's conception of a vertical Phillips curve and the hypothesis of natural rate of unemployment offer new arguments against the Keynesian forms of economic policy. M. Friedman denied compromise – dilemmatic choice between inflation and unemployment – as illusion and refused the Neokeynesian recipes (formulary) that are supposed to ensure high economic growth by proportioning of inflation. In compliance with his analysis, the tendency to increase employment above the „iron“ limit of natural rate of unemployment leads to intensive inflationary pressure, to inflation acceleration without any noticeable long-term effect on the labour market. Therefore he requests to put an end to the meaningless policy of aggregate demand stimulation and to the supporting of full employment.

Forasmuch as Friedman does consider inflation as a pure monetary phenomenon, he comes to the conclusion that we can fight inflation only by means of arrangements in the monetary sphere. The only way to heal inflation is to constrain the growth of money supply. At the same time he emphasises the fact, that it is not possible to avoid the uncomfortable incidental effects of inflation in form of slowdown of economic growth and higher unemployment<sup>3</sup>.

### **3. Implication for monetary policy of central banks**

Specialties of monetaristic approach to economic regulation in comparison with Keynesian approach could be summarized as follows. Whereas the goal of the Keynesian economic policy is full employment and high rate of economic growth, the monetarists prefer price stability. The

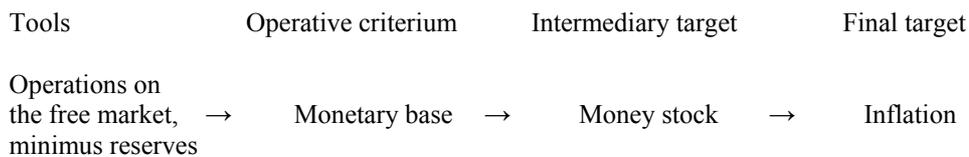
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<sup>3</sup> In this connection is Friedman's analogy between inflation and alcoholism very interesting and eloquent, which refers to inflation formation as well as to its treatment ([2], s. 266 - 267).

Keynesians emphasize the role of interest rate in macroregulation (it is assumed, that interest rate affects volume and dynamics of investments), on the other hand, Monetarists emphasise the role of money stock. Friedman considers its regulation as main instrument (tool) to compete against inflation<sup>4</sup>.

The monetaristic transmission mechanism is based on monetary base regulation by the money aggregate (M1 or M2) as an intermediary target. The following diagram shows the monetaristic transmission mechanism:

**Diagram 1: Monetaristic transmission mechanism**



The monetaristic transmission mechanism is able to operate ideal under fulfilling some conditions:

1. the central bank is able to fully control the monetary base (that means measure, monitor and change if necessary),
2. money multiplier represents a fixed (stationary) parameter or its changes can be anticipated (foreseen),
3. income velocity of money is a fixed (stationary) parameter.

Provided that the abovementioned conditions are fulfilled the central bank can effectively influence the money mass in circulation and control the aggregate demand. One question has to be answered yet, how big the annual growth of monetary base should be in order to ensure an optimal economic growth and at the same time to eliminate inflationary (or deflationary) pressure.

M. Friedman in this connection does not consider the flexible money and credit policy to be suitable for market economy stabilization. On the contrary, he considers it as a destabilizing factor. According to him the most suitable antiinflationary strategy is a non-activist monetary policy, because this could ensure stable growth rate of money mass, which would be

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<sup>4</sup> The main paradox of monetarism as a monetary theory consists in the fact, that it is professed to principle of laissez-faire, but at the same time it considers money stock as an exogenous parameter, that should be determined by state power (central bank).

a stable rule (so called Money rule). In the case of the USA he recommended 3-5 % annual growth rate of the money mass.

According to R. Holman ([9], s. 670 – 672) the advantages of such a monetary policy consist in following facts:

- monetary policy of the central bank is neutral (no expansionary, no restrictive),
- it is isolated from political pressure and pressure of interest groups,
- inflationary expectations are stabilized and on a low level.

Expectation of stable prices in combination with elastic wages have to, according to M. Friedman, facilitate to take economically justified and effective decisions.

#### **4. Experience of implemented monetaristic reference of economic policy in practice**

Money mass targeting as an intermediary target was applied by almost every central bank<sup>5</sup>, even though monetary targeting (rule of stable growth rate of money stock) was not carried out consistently. The central bank personnel did realize in the 80's of the last century, that the central bank does not hold full control over the money mass growth (because of the fact, that commercial banks can decide to change reserve holding, and it occurs changes in money multiplier and money mass as well) and did not restrict management of monetary policy to only monetaristic recipes.

As reference standard of monetary targeting is considered the policy applied by the German Bundesbank, that succeed in combination of uninflated development and economic growth. The Bundesbank began to implement it 1975 after the decay of the Bretton Woods Monetary System. Until 1988 it targeted the regulation of the monetary base and later of M3<sup>6</sup>. Bundesbank stopped publicly proclaiming target values of M3 growth from 1999, because from that time the ECB was liable for monetary policy implementation.

The American FED began to apply the policy of monetary targeting in 1979. This policy is in literature called as „monetaristic experiment“. During

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<sup>5</sup> Among economically developed countries e.g. USA, Canada, Japan, Great Britain, Germany, France, Italy etc.

<sup>6</sup> Bundesbank did not monitor only the development of money aggregates, but also other parameters such as expected inflation rate ([5],s.525).

its exercitation it came to an increase in interest rate variability and to loss of stable money velocity. This policy was rejected in 1982. As reason of failure are considered financial innovation and market deregulation, which occurred at the beginning of the 80's of the last century and which led to an increase in money velocity. Thereby the stable linkage between money mass and GDP was violated and it began to change in an unpredictable way.

Practice showed (USA), that outwards logical and because of their simplicity attractive references of money mass regulation by means of monetary base are actually very difficult to carry out. Experts from the FED in St. Louis postulated, that the monetary base consists of 2 parts: the first part – monetary – is controllable, the second part – autonomous – is difficult to influence, practically it is beside of control.

We can present some reasons, why the central bank is not able to fully control all the items in its balance:

- credit volume extended to commercial banks depends on their demand and readiness to drawdown,
- turnover of net foreign assets depend on the applied exchange rate system. In a system of fixed exchange rate, when the central bank has to intervene according to the development of balance of payments, the turnover of net foreign assets is determined by the current and capital balance of the country,
- net credit development fully depend on the development in the management of the state budget, which the central bank can not influence ([15], s. 453).

1. The monetaristic assumption of stable money multiplier has not approved. The money multiplier tends to behave pro-cyclic during the economic cycle – during recession does the demand for cash (money) rise. A subsequent increase in the amount of money in circulation and reserves evokes a fall in value of the money multiplier.
2. Money velocity has become very unstable. Therefore the FED switched from M1 to M2. When in 1992 also money velocity of M2 began to deviate from its historical trend, the FED stopped using M2 as key-indicator of the monetary policy ([16], s. 655).

As we can see the practice of monetary policy did not confirm the stability of links between monetary aggregates and inflation. Some not fulfilled premises of monetaristic transmission mechanism in the 80's of the

last century with regard of the income velocity of money and money multipliers led central banks to create new schemes of management of monetary policy. Especially small economies prefer the implication of fixed exchange rate regime – they have fixed the exchange rate against a stable single currency (or against a currency basket). Because of the increasing globalization of financial markets and capital mobility it become more and more difficult to sustain fixed exchange rates. Central banks were with time forced to switch to the regime of managed float. Standard type of monetary policy did gradually loose its nominal bonding.

This was the case also in the SR, that from its formation in 1993 has applied some of the monetary policy regimes. At first the Slovak National Bank operated a „monetaristic“ transmission mechanism, which it inherited from the State Bank of the Czechoslovakian Federation: growth of M2 was monitored as a monetary intermediary target by the means of its effect on the monetary base. At the same time the National Bank tried to fix the exchange rate through foreign exchange intervention (from autumn 1996 with a fluctuation band of +/- 5%, from the beginning 1997 with an expanded fluctuation band of +/- 7%). From 1<sup>st</sup> October 1998 it came to an expressive (striking) turnover (change) in currency area, because the National Bank was constrained to replace the regime it used until that time with the regime of managed float.

In the 90's of last century central banks of many countries announced a switch to a new strategy of monetary policy – inflation targeting. It is necessary to remark, that the monetary policy target was not concerned – price stability have got left -, but the strategy of its achieving has changed. Under inflation targeting it came to an orientation on those macroeconomic parameters, which, as assumed, could significantly determine the price stability (first of all money aggregates and exchange rate).

**Diagram 2: Scheme of transmission mechanism with inflation targeting**



System of inflation targeting was implemented from 2000 also by the Slovak National Bank, even though it was not officially scheduled in the monetary program. But it was indicated by the transition from quantitative management of liquidity to the qualitative management on the basis of own key interest rates and shifting money aggregates from the position of an

intermediary target into the position of (only) indicators of monetary development<sup>7</sup>.

## **5. Assessment and perspectives of monetarism**

Monetarism enjoyed the most popularity in the 70's and 80's of the last century. Monetarists uncovered some new relations in economics – dependability of GDP from money mass, inflationary expectations, dependability of inflation from the level of money supply. Waiver of fiscalism had relatively good results (thatcherism, reaganomics). The suggested methods by Friedman to fight inflation were accepted practically in the whole world.

Monetarism was relatively successful in many countries of the world, although we can hardly talk about its absolute dominance in any country. It has merit in overcharging of depression, structural changes in developing countries (especially in Latin America), monetary sanitation of Israel, modernization of countries in Southeast Asia. The monetaristic doctrine adopted also some international organizations such as the International Monetary Fund, the World Bank, OECD, the European Bank for Reconstruction and Development etc. Monetaristic postulates became a keystone of the recommendation that financial institutions gave to countries, which apply for help by forming their economy policy (inclusive of countries in Middle-East Europe).

Within the frame of monetaristic streams we can differentiate some schools – Friedman's monetarism, theory of rational expectations (monetarism II), global monetarism, reagonomics, thatcherism, school of polish „ shock therapy“ etc. Among the economists, who really supported practical implementation of monetaristic theory by economy policy formation, we can mention M. Freidman, K. Brunner, A. H. Meltzer, A. J. Schwartz, J. Jordan, H. G. Johnson (USA), L. Balcerowicz (Poland), J. Gajdara (Russia), V. Klaus (Czech Republic) and others.

Mainly under pressure and force of top financial institutions (IMF, World Bank), the monetaristic restriction and stabilization policy has become a basis and resource point of the transformation policy in transitive

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<sup>7</sup> The National Bank of Slovakia has defined the inflation targeting for the first time in the Monetary program until 2008, which was approved 21. december 2004 by the Bank Board. The framework of the monetary policy was clearly defined in a medium-term look-out in the form of binding target. Hereby the NBS has also defined the administration of the monetary policy as inflation targeting under the conditions of ERM II ([14], s.2).

economies first of all in the last decade of last century in the countries of Middle and East Europe<sup>8</sup>. However, the attained results fall behind the expectations, which is reflected also by the fact, that the scissors (lag) between the anticipated and real economic overfall are (is) surprisingly big.

In this connection series of questions arise, for example: Were the conditions in these countries sufficient for the implementation of monetarism? Was it really an implementation of an academic monetaristic doctrine? etc.

Even if we leave the controversial questions of monetaristic theory (e.g. stability of money demand function, definition of money stock, basically refusal of the impact of interest rates on money demand, reduction of reasons of inflation only on an excess amount of money in circulation, supposed stability of an income velocity of money and money multiplier, overestimating of the central banks ability to control monetary base etc), we have to state, that the practical results of this policy are much behind the anticipated results. Where to look for reasons?

We believe, that in the Slovak republic (and other countries of Middle and East Europe), where it came to the implementation of the monetaritic shocking therapy, because it was recommended by the IMF, the conditions were not entirely adequate. In transitive economies existed non-standard environment: no established infrastructure, no real market subjects, the reactions of existing subjects on economic and political steps was difficult to anticipate, persisting of monopoly position, no free pricing (as a result of the impact of monopoly and price regulation by the state).

A huge decrease in production and increase in unemployment led to an expressive decrease in real incomes of population, which considerable lowerd (weakened) Friedman's basic theoretical presumption about stable money demand<sup>9</sup>, which has a key importance by determining other macroeconomic parameters.

Substance of monetarism consists in interpretation of factors, which determine the money demand. In spirit of the monetaristic conception the main roads of macroeconomic stabilization do not consist only in limitation

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<sup>8</sup> As Z. Komínková states, these institutions remain „industrial manufacturers“ of orthodox transformation policy, in which there is no much operating room for „national economic and political solutions“ ([12], s. 672).

<sup>9</sup> Let me remind you, that M. Friedman understands income as an important determinant of money demand.

of money supply, but mainly in way finding of market stabilization of money supply. This calls for ensuring e.g. free option between the various forms of wealth – this is contingent on a functioning and developed capital market -, competitive environment (for bigger price and wage elasticity) etc.

It is also necessary to remark, that the implemented economic policy in the SR in the 90's of the last century was not pure monetaristic – this suggests strict maintenance of money rule and no intervention into the economy by the government (it allows only monetary regulation)<sup>10</sup>, the expansionary fiscal policy of government was Keynesian and at the same time it was combined with price regulation (e.g. energy, water, partly wages). The in the economic policy applied pragmatism represented rather an eclectic mixture of monetarism, keynesianism and residual elements of socialistic management.

## 6. Conclusion

Even though there are various opinions concerning monetarism, we can state, that the monetaristic theory presented without dispute a gain for economic theory by emphasizing the importance of money and necessity of anticyclic monetary policy implementation. Hereby it is also necessary to mention, that at present time monetarism is not any more the most popular theory in the world<sup>11</sup>. In economic literature were identified 2 basic reasons of failure of monetaristic experiment: (1) loss of stability of the money demand function (because of the changed conditions of global financial markets, large capital flows and structural changes in economy), and (2) decreasing reliability of money aggregates.

In developed market economies as well as in transitive economies it was to observe in the 90's of the last century the gradual regression from monetarism<sup>12</sup>. This was first of all caused by general retraction of the western economic thoughts from the monetaristic-supply paradigm of the 80's and in transitive economies also by disappointment of the results of transformation.

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<sup>10</sup> According to O. Sobek, the NBS implemented from 1993 a moderate monetaristic policy. That means, that it focused exclusively on inflation fighting and maintaining of stable exchange rate and did not want to actively influence the economic development, as is it in case of Keynesian economic policy ([17], s. 174).

<sup>11</sup> It was the most popular theory at the end of 70's and beginning of 80's of 20th century.

<sup>12</sup> In monetary policy it was for example expressed by the fact, that central banks acceded to inflation targeting as to a new monetary policy strategy instead of managing money supply through money aggregates (e.g. in the Czech Republic in 1998).

Even though we have to admit, that M. Friedman as an architect of monetarism fixed the professional and laic public's attention to the importance of inflation and he also contributed to the further development of economic (particularly money) theory – also due to the fact, that many of his theses were subject of critical polemics among economists.

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# ADOPTION OF THE EURO AND INFLATION IN THE CZECH REPUBLIC

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## **Abstract**

*The admission of the Czech Republic into the European Union means that the Czech Republic has been obliged to make an effort for the admission into the European Monetary Union and so for the adoption of single currency. Adoption of euro is for the Czech Republic the next irreversible step in the process of European integration. Inflation is very often adverted as a cost of single currency's adoption. This paper discusses the problem of inflation in the EMU's countries after the adoption of euro and makes an attempt to clarify the next trends in prices in the Czech Republic.*

**Keywords:** *euro; inflation; European Monetary Union; Czech Republic*

## **1. Introduction**

The admission of the Czech Republic (CR) into the European Union (EU) means that CR has been obliged to make an effort for the admission into the Eurosystem and so for the adoption of the single currency.

The Czech National Bank (CNB), as a central bank of CR, has been the part of the European System of Central Banks (ESCB) since the admission of CR into EU, but it still conducts its independent monetary policy. The admission into the Eurosystem will be mean that CR will relinquish its monetary sovereignty and CNB will be only participate on the single monetary policy.

The European Central Bank (ECB), as the core of ESCB is responsible for the monetary policy in the euro area.

The ECB's primary objective is the same like the objective of CNB (in 2005) – the maintaining of price stability. Price stability is defined by ECB as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below but close to 2 % over the medium term. This objective is defined for the euro area as a whole, not for every country. So, this definition allows the differences between countries in the euro area. In this sense, price stability in the euro area need not to mean price stability in single countries.

This paper does not discuss price stability in all countries in the euro area, but it focuses on inflation as a problem which has been discussed as a cost of the single currency's adoption. The next goal of this paper is to make an attempt to clarify the next trends in prices in CR after the adoption of the euro.

First chapter is a short summary of CR's integration. The second one discusses the potential reasons of inflation differentials among euro area countries and inflation development in some countries. The last chapter makes an attempt to clarify the next trends in price development in CR after the admission into the Eurosystem.

## **2. The Czech Republic's Integration into the Euro Area**

Integration of CR into EU officialy started in 1995, when the Europe Agreement came into force. One year later CR asked for EU membership and in May 2004 it has become the member of EU.

The membership of CR in EU can be divided into three stages: 1) the EU membership and starting of convergence criteria fulfilment, 2) participation in the ERM II exchange rate mechanism and 3) the Eurosystem membership and adoption of the single currency euro.

Theoretically, the year 2007 could be the first year of the euro adoption in CR. Practically, it will be later, because the joint document of the Czech Government and CNB<sup>1</sup> recommends the Eurosystem membership as soon as economic conditions allow for doing so. It depends on the speed of real and nominal convergence process.

Especially, on the basis of document called “Assessment of the Fulfilment of the Maastricht Convergence Criteria and the Degree of Alignment of the Czech Economy with the Euro Area<sup>2</sup>”, where the government budget deficit was identified as the main problem, the The Government and CNB in September 2005 agreed accession of CR into EMU in 2010<sup>3</sup>.

### **3. Inflation and Potential Causes of its Differentials**

This ECB’s primary objective is defined for the euro area as a whole, not for single countries. So, this definition allows the differencies between countries in the euro area.

Next figure shows the different average annual inflation rates in the euro area.

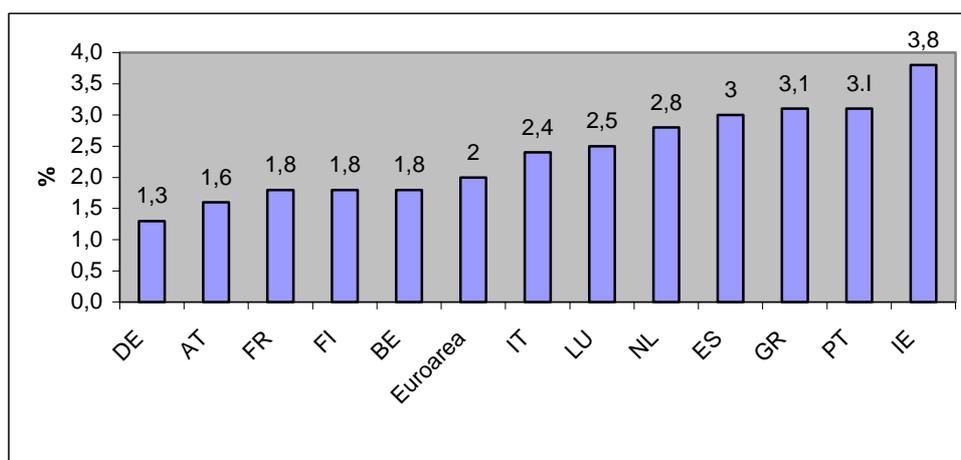
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<sup>1</sup> The Czech Republic’s Euro-area Accession Strategy, 2003.

<sup>2</sup> Annual document prepared by the Ministry of Finance, the Ministry of Industry and Trade and CNB.

<sup>3</sup> <http://www.mfcr.cz>

**Figure 1 Average annual inflation rates in the euro area since the start of EMU**



Source: HOFMANN. B..REMSPERGER. H.(2005)

As we can see, inflation in single countries differs. The lowest one has been in Germany (1.3 %) and the highest one in Ireland (3.8 %). Both values are quite far from the ECB's goal (2 %).

The potential causes of inflation differentials in the euro area can be divided into two groups<sup>4</sup>: 1) price level convergence and 2) persistent effects of temporary shocks.

In the first case, inflation differentials may be a structural phenomenon arising from convergence of price levels. It may occur due to convergence of tradable goods prices as a result of increased trade integration, as well as because of convergence of non-tradable goods prices in the wake of real income convergence.

Countries differ in consumption pattern and economic structure. That is the reason why temporary shocks may impact differently on all countries. Persistent inflation differentials may also be caused by temporary supply and demand shocks. Asymmetric shocks (e.g. a change in indirect taxes or in fiscal stance) may give rise to persistent inflation differentials if there is a significant degree of persistence in inflation. But also temporary shocks which hit all member countries alike (e.g. changes in the euro change rate) may occur inflation differentials across countries.

We can see (Table 1) that Ireland, as a faster-growing country, was a country with high inflation rate during the period 2000 – 2003. The highest

<sup>4</sup> HOFMANN B..REMSPERGER H.(2005)

inflation rate in Ireland was in 2000 (5.3 %), one year after the single currency euro came into existence. It was about 3.2% points more than in previous year and more than 3% points than was inflation rate in period 1996 – 1999 (exclude inflation rate in 1997, inflation rate in that period was close to 2 %) . The same situation was evident in other countries (in Germany too).

**Table 1 Annual HICP's rates of Change**

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Euro Area	2.2*	1.6*	1.1*	1.1	2.1	2.3	2.3	2.1	2.1
BE	1.8	1.5	0.9	1.0	2.7	2.4	1.6	1.5	1.9
CZ						4.5	1.4	-0.1	2.6
DK	2.1	1.9	1.3	1.3	2.7	2.3	2.4	2.0	0.9
DE	1.2	1.5	0.6	0.6	1.4	1.9	1.3	1.0	1.8
EE						5.6	3.6	1.4	3.0
GR	7.9	5.4	4.5	4.5	2.9	3.7	3.9	3.4	3.0
ES	3.6	1.9	1.8	1.7	3.5	2.8	3.6	3.1	3.1
FR	2.1	1.3	0.7	0.6	1.8	1.8	1.9	2.2	2.3
IE	2.2	1.2	2.1	2.2	5.3	4.0	4.7	4.0	2.3
IT	4.0	1.9	2.0	1.9	2.8	2.3	2.6	2.8	2.3
CY						2.0	2.8	4.0	1.9
LV						2.5	2.0	2.9	6.2
LT						1.3	0.4	-1.1	1.1
LU	1.2	1.4	1.0	0.7	3.8	2.4	2.1	2.5	3.2
HU						9.11	5.2	4.7	6.8
MT							2.6	1.9	2.7
NL	1.4	1.9	1.8	1.8	2.3	5.1	3.9	2.2	1.4
AT	1.8	1.2	0.8	0.7	2.0	2.3	1.7	1.3	2.0
PL						5.3	1.9	0.7	3.6
PT	2.9	1.9	2.2	2.3	2.8	4.4	3.7	3.3	2.5
SI						8.6	7.5	5.7	3.6
SK						7.0	3.5	6.5	7.4
FI	1.1	1.2	1.4	1.2	3.0	2.7	2.0	1.3	0.1
SE	0.8	1.8	1.0	0.8		2.7	2.0	2.3	1.0
UK	2.5	1.8	1.5	1.5		1.2	1.3	1.4	1.3

\*without Greece

Source: Eurostat

But we would like to focus on inflation after the cash euro was launched. At the end of 2001 there were only 3 countries, where inflation rate was higher than in previous year (Germany from 1.4 up to 1.9 %, Portugal 2.8 up to 4.4 % and the highest change of inflation rate was in Netherland - from 2,3 up to 5.1 %). But these changes were only temporary, because in

2002 the inflation rates in these countries were lower again (in Germany lower than in 2000).

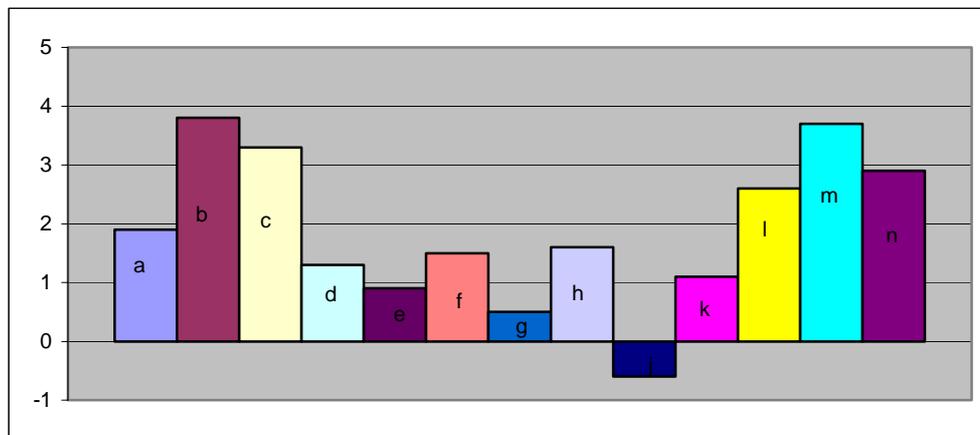
In all other countries, the inflation rates in 2001 were lower than in previous year. On the base of this table, it seems the introduction of the euro had not any significant impact on inflation rates.

But this is the same situation as the average inflation rate in the euro area (2.1 % in 2004) and inflation rates in the single countries, where the highest inflation rate is in Luxemburg (3.2 %) in contrast to the lowest one in Finland (0.1 %). We can not say about inflation rates in these countries, that they are below (not in Finland) and close 2 % like the ECB's objective is.

Now, we can explain the term „teuro“ used in Germany. As we can see, the inflation rate in Germany was below 2 %. In some period, the inflation rate in Germany was really close to 0 % (this level of inflation rate is quite dangerous for economy, which is in recession<sup>5</sup>).

„Teuro“ and low inflation in Germany seem they are not compactible. Next table discusses an annual rates of change of main categories of HICP in Germany. There we can see, that after the euro was launched, especially the prices of food and hotels and restaurant were gong up. There is the main reason, why German people apprehend the euro currency as „teuro“. Generally, we can confirm, that situation in all other countries was similar.

**Figure 2 Main Categories of HICP in Germany – Annual Rates of Change 3/2002 (%)**



- a HICP (all-items index)
- b food and non-alcoholic beverages

<sup>5</sup> In this paper, we do not discuss any other economic indicators.

- c alcoholic beverages and tobacco
- d clothing and footwear
- e housing, water, electricity, gas and other fuels
- f furnishings, household equipment and routine maintenance of the house
- g health
- h transport
- j communications
- k recreation and culture
- l education
- m restaurants and hotels
- n miscellaneous goods and services

*Source: Eurostat*

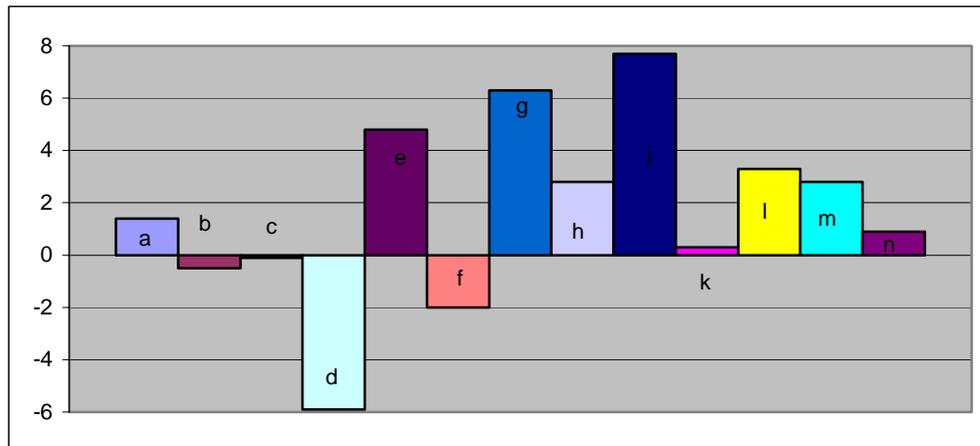
#### **4. Inflation and the Euro Currency in the Czech Republic**

As we said above, CR will not accept the euro currency in 2007, when is the first possible term of the euro adoption for new EU member countries. The first term of the euro adoption for CR (according to the Government and CNB's Agreement in September 2005) will be in 2010. Of course, the real term will be able to come later. It depends on many factors for example on the results of next Parliament election. Because the present-day Government is left-wing and opposite right-wing is quite eurosceptic. There is no chance to not accept the euro, but if the right-wing wins the election, the CR's membership in the Eurosystem will may be later than in 2010.

During last years, the inflation rate in CR has been quite low in compare with other new EU member countries and with the former EU member countries too (Table 1).

In 2004, when CR became the EU member, the inflation rate was higher than in previous years (2.6 % - it was about 2.7% points more than in 2003). Next figure shows the main significant changes.

**Figure 3 Main Categories of HICP in CR – Annual Rates of Change 8/2005 (%)**



- a HICP (all-items index)
- b food and non-alcoholic beverages
- c alcoholic beverages and tobacco
- d clothing and footwear
- e housing, water, electricity, gas and other fuels
- f furnishings, household equipment and routine maintenance of the house
- g health
- h transport
- j communications
- k recreation and culture
- l education
- m restaurants and hotels
- n miscellaneous goods and services

Source: Eurostat

As we can see, the structure of changes in compare with Germany is quite different. In case of CR we can confirm diverse development of the single categories. For example, the biggest differential of changes is between “communications” and “clothing and footwear” (13.6 % points). The result of this view is that there are some categories in CR those have been going up (this fact is understandable – e.g. price deregulation). An of course, it can be expected the growth of the others, because at least price level in CR is at (approximately) one half price level in EMU. So, there is necessary (as we said above) nominal convergence process, as well as the real one.

We can expect inflation pressures. Nowadays, the monetary policy in CR is conducted by CNB and CNB has got other tools to eliminate inflation

pressures. As well the conservative government expenditures (because of fiscal Maastricht criteria) should be expected too.

The timing of CR's joining to the Eurosystem is quite important. It is necessary to be prepared to adopt the euro at the moment when CR's economy will be restored to health and real and nominal convergence will be adequate. These assumptions should eliminate the growth of prices.

On the other side – after the adoption of the euro, the monetary policy in CR will be conducted by the ECB. Because the ECB's objective (inflation 2 %) is quite criticised – it is low for countries, those are characterized by deflation and recession, it can be expected the change of the present HICP's level. On the base of this, the inflation rate in CR could be higher.

## 5. Conclusion

The combination of monetary and fiscal policy is quite important for next CR's development. Nowadays, CR can use the possibility to form its own monetary policy and so it can eliminate inflation pressures.

It is necessary to fulfill all Maastricht criteria, but especially to restore to health the public finance. The timing of the adoption of the euro should be time really quite responsibly and so CR should adopt the euro really at the moment when CR will be prepared.

The price growth can be expected before the adoption of the euro as well as after that. The price and real level of convergence will be quite important for next price development after adoption of the euro.

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# THE INDEPENDENCE OF CENTRAL BANK

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## **Abstract**

*The independence of a central bank from the government contributes to its credibility and allows it to focus on price stability. Recent research studies demonstrate that there is a correlation between the degree of independence of a central bank and the inflation rate: countries whose central bank have enjoyed a high degree of independence from the political factor have managed to keep the inflation rate under control. Our paper raises the questions of how to ensure the independence of a central bank and how to measure the independence of a central bank. The study also makes reference to the current situation of the Central Bank of Romania in the context of our preoccupation with the EU integration.*

**Keywords:** *the credibility of central bank, the correlation between the independence of central bank and economic variables, the measurement of the independence of central bank*

## **1. Introduction**

Central banks involved in the combating inflation are in need of credibility, which can be earned through their independence. The farther a central bank is free from political influence, the more independent and credible it becomes, being thus able to focus on the maintenance of price stability.

The central bank's authority and scope of action depends on government. But governments often pass laws and follow customs that grant their central bank authority and autonomy to pursue price stability, even when it conflicts with other government objectives. Making the central bank an agency with the mandate and reputation for maintaining price stability benefits the economy and the government itself in various ways. Central bank independence is one of the means by which a government can choose the strength of its commitment to price stability.

A single, clearly defined price stability objective is very important and desirable for central bank's monetary policy to be independent. Multiple objectives are likely to be conflicting objectives. Multiple or unclear objectives are not likely to be consistent with the desire to promote the credibility of monetary policy because this credibility arises from the fact that the policymakers have a propensity to shift between different objectives. When central banks are granted more independence to achieve their objective, they must be subject to strong accountability and monitoring mechanism. In order for the central banks to be monitored and judged, their objectives and policies must be clearly stated and their actions must be transparent to the public.

The central bank's independence from the government has been a controversial issue in the last years. One of the preconditions for joining EMU is, according to the Maastricht Treaty, a sufficiently high level of independence of central bank. This formal precondition have induced the Central and Eastern European countries on the track to join the monetary union to grant more independence to their central banks.

## **2. The independence of central bank: A current issue**

### ***2.1. Definitions of the central bank independence***

The independence of a central bank has several senses. Some of them are presented below<sup>6</sup>:

A basic distinction has been made between “political” and “economic” independence by Grilli (1991). On the one hand, political independence is defined as the ability of the central bank to determine its policy objectives free from the government’s influence. Economic independence, on the other hand, represents the ability of the central bank to determine and implement its policies towards the achievement of its objectives.

According to Issing (1993), there are also personal elements of independence. Criteria in measuring the personal independence are likely to incorporate the appointment of the members of the central bank’s governing body, the duration of their respective contracts, the possibility of dismissing the central bank’s governor and other members of the governing body. It seems difficult to determine personal independence.

Baka (1994-1995) states that the central bank independence is analysed taking into account three aspects: 1) institutional independence, which is primarily defined in terms of the bank’s position within the system of governmental institutions and procedures applied in appointing and recalling the bank’s authorities; 2) functional independence expressed in the powers and capacity of the bank as regards determining and applying monetary policy and in its autonomy in taking decisions on the performance of the other functions specified in its statute; 3) financial independence, i.e. a permanent definition of the procedures for accumulating and distributing the bank’s resources that exclude any possibility of financial pressure being exerted.

Fraser<sup>7</sup> considers that the independence of central bank means to give to central bank a charter that includes a strong commitment to price stability and the freedom to pursue it.

Thus, many theoreticians and practitioners are concerned with the independence of central banks and, as a result, there are more definitions of

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<sup>6</sup> Gokbudak N., *Central bank independence, the Bundesbank experience and the central bank of the Republic of Turkey*”, Discussion Paper No.9610, March 1996, pp.5-8

<sup>7</sup> Fraser B. W., “Central bank independence: what does it mean?”, Reserve Bank of Australia Bulletin, December 1994, p.3

this concept, each of them focusing on certain aspects of this important matter.

## ***2.2. Arguments for and against the independence of central bank***

Central bank independence obstructs the influence of politician on the authority in charge of the elaboration and implementation of monetary policy. Practical experience has demonstrated that in many cases the political power has given up the long-term objective of price stability in favour of their electoral interests. In order to impress the public and therefore win the elections political power attempts to obtain short-term economic growth through an expansionist monetary policy that generated inflation<sup>8</sup>. It follows that a government has more reasons to ‘trick’ with the aim of stimulating the economy before the elections or reduce real public deficit (financing through monetary issuance of the budgetary deficit). A central bank that is independent from the government does not take such political considerations into account, being rather interested in securing price stability.

So, there are two particular threats which bear upon the issue of central bank independence<sup>9</sup>:

- the tendency for policy makers and politicians to push the economy to run faster and further than its capacity limits allow;
- the temptation that governments have to incur budget deficit and fund this by borrowings from the central bank.

To avoid such situations central banks need to be independent. Central banks are more concerned about price stability than the political authorities. Because the actual policy is normally the outcome of a compromise between the central bank and the executive branch, a more independent central bank will have a stronger impact on actual policy and, therefore, average inflation will be lower.

Besides the arguments in favour of central bank independence there are severe criticisms against this solution:

- independence can be only “apparent”, with a strong political dependence hidden behind it, i.e. the political power exerts real but discreet influence on the central bank;

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<sup>8</sup> Brociner A., *Monetary Europe*, Ed. Institutul European, Iași, 1999, p. 57

<sup>9</sup> Fraser B. W., “Central bank independence: what does it mean?”, *Reserve Bank of Australia Bulletin*, December 1994, p.2

- central bank independence involves a bureaucratic administration of monetary supply, carried out by the banks management and personnel; this is not necessarily better than political administration;
- central bank independence can affect the coherence of economic policy which includes monetary policy in the sense that the objectives of monetary policy can clash with those of the other components of economic policy.

### **2. 3. *The credibility of central bank***

Credibility is helpful to central bank in implementing monetary policy and a pre-condition for this is that the central bank be perceived to be independent and free from political interference. It is well known that at present the main objective of most central banks is the assurance of price stability. Since the 1980s the efforts to fight inflation have been oriented in these two complementary directions:

- adoption of monetary rules (e.g. Friedman's famous "golden rule");
- assurance of central bank independence.

What connects these orientations is the necessity for the central bank to be credible in its fight against inflation. A central bank enjoys credibility when the rate of inflation corresponding to its monetary policy is used by individuals as a starting point in their expectations. The credibility of a central bank reflects its capacity to announce a certain monetary policy and consequently a certain inflation rate, which is taken for granted by individuals and which, for this reason, serves as a point of reference in their estimations. To outplay the expectations of the public the central bank applies two methods<sup>10</sup>:

- influences the process of understanding by the public of the decisions regarding monetary policy

If the central bank opts for ambiguous information, the public will have difficulty in understanding the coordinates of the recommended policy. This possibility is appropriate for a central bank whose main concern is economic stimulation rather than price stability through the creation of monetary surprises. Instead, if the primary objective is price stability, then it is not recommended to withhold information, as the central bank is interested in the rapid gain of its credibility. During the time the central bank is preoccupied with the reduction of inflation, there should be a rigorous control over the monetary mass and a rapid process of social understanding.

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<sup>10</sup> Cerna S., Central bank: credibility and independence, Ed. Sedona, Timișoara, 2002, pag.27-38,

- provides partial disclosures

Provision of partial information is usual practice among central banks in many developed countries, such as the United States, England, France, Germany, Canada, Switzerland, Australia, etc. This practice consists in the elaboration by the central bank of certain procedures that are intended to allow it to disclose only incomplete information regarding its monetary policy.

Although, as a rule, the information on the monetary policy of central banks is rather vague, the degree of imprecision differs from one country to another. A central bank that aims at stimulating the economy will provide imprecise information on its monetary policy, while a central bank that is interested in achieving price stability will provide accurate information.

Central bank credibility increases as the ambiguity of the announcements decreases. As a result, complete transparency of a monetary policy can increase the ability of the monetary authority to meet its objectives. But the risk of opaque practices depends on the influence that the political power has on the central bank. Hence the solution is to ensure central bank independence.

Central bank independence will confer credibility to it. This credibility is dependent on whether the central bank was committed to its promises in the past. If its reputation is poor, monetary policy will incur considerable costs, which will be covered by the entire society and not by the central bank. No matter what monetary policy the central bank implements, reduced credibility will translate into an inflationist factor and the society will bear the consequences. It follows that central bank credibility is of utmost importance, as one of the factors that sustain fight against inflation.

## ***2.4. Correlations between central bank independence and economic variables***

### **2.4.1. Relationship between central bank independence and inflation**

Many recent studies (e.g. Alesina, 1988; Bade and Parker, 1987) have shown that there is a significant correlation between the degree of central bank independence and the inflation rate. For example, Germany and Switzerland, whose central banks enjoy extensive independence, had an inflation rate of approximately 3.5% between 1974 and 1990, while Italy, whose central bank is under governmental control, posted an annual inflation rate of about 12.4% during the same period. These studies lead to the conclusion that economic performance is better (at least in terms of price

stability) in countries where the central bank is granted independence from political and governmental pressure.

Nevertheless, there exist some exceptions, such as Japan, which has one of the lowest rates of inflation and which cooperates closely with the Ministry of Finance. In addition, the Ministry of Finance controls the minimum compulsory reserves of the banks and is entitled to alter the regulations and order the resolution of political problems by the central bank. All the seven members of the Council for monetary policy of the Bank of Japan are appointed by the government. The Bank of Japan is not allowed to buy long-term government bonds on the market, but it can grant short-term advance money to the government<sup>11</sup>.

The conclusion is that the legal independence of the central bank is neither a necessary nor a sufficient condition for low inflation, although, other things being equal, less legal independence contributes to higher inflation. This is because monetary policies, on their own, can not guarantee to deliver lower inflation without other politicians' support.

Empirical research has indicated that the hypothesis of a strong connection between the degree of central bank independence and inflation rate is not fully confirmed. The relation exists, no doubt, but other elements have to be taken into account, such as<sup>12</sup>:

- attitude of the public towards inflation (in situations with the same degree of independence, inflation is lower in those countries where the public is adverse to inflation);
- ideological orientation of government (in situations with the same degree of independence, inflation is higher where governments are oriented towards centralisation and lower where governments have a liberal orientation. )

Since in situations with a similar degree of central bank independence the decisive factor seems to be the ideology of the governing party, it follows that between the political power and the central bank there exist certain means of communication beyond the official relations.

#### **2.4.2. Relationship between central bank independence and economic growth**

Empirical studies have demonstrated the existence of a close relationship between the degree of central bank independence and inflation, but the conclusions were not very convincing regarding the relationship

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<sup>11</sup> Rose P., Money and capital markets, McGraw – Hill, Boston, 2000, pp. 509-510

<sup>12</sup> Cerna S., Central bank: credibility and independence, Ed. Sedona, Timișoara, 2002, p. 54

between central bank independence and economic growth. This can be inferred if we consider the countries whose central banks have a high level of independence but which have not necessarily had good economic results.

For example, in the 1980s, Italy and Spain, whose central banks have a reduced level of independence, registered the same average annual growth as Germany and the United States, where central banks enjoy a high degree of independence. In this case, an explanation could be that the level of development reached by Germany and the US is high enough for a slow pace to represent an acceptable level of economic growth in absolute terms<sup>13</sup>.

Independent central banks are more likely to achieve lower growth because politicians have less opportunity to manipulate interest rates for short-term political gain. However, low inflation is good for long-term growth.

#### **2.4.3. Relationship between central bank independence and budgetary deficit**

The third type of relationship that has been demonstrated empirically refers to the connection between central bank independence and budgetary deficit. It goes without saying that an independent central bank is able to resist the government's attempts to monetise budgetary deficits by imposing real austerity in most of the cases.

Data indicate that countries like Switzerland and Germany, where central banks are truly independent, have the lowest budgetary deficits. Other countries like Norway, Denmark, England, and France, where central banks have a lower degree of independence than the Federal Reserve System of the US, have incurred lower budgetary deficits than the US.

The various conditions in each country lead to different results even if the central banks are granted the same level of independence. This is the case of Norway, Sweden and Belgium, countries with comparable central bank independence, which incurred budgetary deficits of 2%, 3% and, respectively, 8% of GDP in the 1980s.

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<sup>13</sup> Brociner A., *Monetary Europe*, Ed. Institutul European, Iași, 1999., p.59

### **3. Achievement of central bank independence**

Central bank independence raises another question: How can it be achieved? Among the measures that can increase it we mention the following:

- central bank can enjoy independence from the government in outlining its monetary policy;
- central bank's governor is not to be appointed by the government and his term in office will be long and irrevocable;
- price stability will be stipulated in the statute of the central bank as a primary objective and possibly as the single objective;
- central bank will not accept automatic financing of budgetary deficit through monetary issuance.

All these measures lead to the conclusion that the more a central bank avoids political interference, the more independent it becomes. For example, if the mandate of the central bank's governor is longer than the government's mandate, the central bank can concentrate on long-term objectives. Conversely, if the governor is constrained by the governing political party, the monetary policy will be influenced by governmental directives and thus it will lose sight of the long-term objectives connected with price stability. If the central bank has set a single objective, namely price stability, then there will be no dilemma as to which of the contradictory objectives to opt for.

### **4. Measurement of central bank independence**

Central bank independence from governments varies from country to country and from one period to another. Measurement of central bank independence is difficult to carry out, as it depends on a series of qualitative factors. Most of the researchers in the field (K Banaian, L. Laney and T. Willet, V. Grilli, D. Masciandaro and G. Tabellini, A. Cukierman, etc.) resort to procedures based on diverse criteria that define legal independence<sup>14</sup>. These procedures have two shortcomings:

- organisational and functioning laws of central banks in various countries are rather vague and thus the legal aspects quantified through these procedures are relative;

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<sup>14</sup> Cerna S., The independence of central bank, Ed. Mirton, Timișoara, 1999, p.17

- the law regarding central bank's organisation and functioning is as significant as the manner in which it is applied and respected.

In 1992, Cukierman, Webb and Neyapty<sup>15</sup> conceived one of the most famous classifications of central banks using an index that measures their legal independence and taking into account various stipulations in the law regarding the organisation and functioning of central banks. This index was based on a coding of sixteen different legal characteristics of central bank as stated in charter which are grouped in four clusters of issues:

- formulation of procedures for the appointment and dismissal of the governor of the central bank (term of office, who appoints, who dismisses);
- formulation of the policy concerning the resolution of conflicts between the government and the central bank over monetary policy and the participation of the central bank in budget process;
- objectives of monetary policy (the relative importance of price stability among the central bank's objectives as stated in the law);
- establishment of limits on lending by the central bank to the public sector (such restrictions refer to the volume, maturity, interest rate, conditions for direct advances and from the central bank to the public sector, potential borrowers from central bank and the prohibition for central bank to buy or sell government securities on the primary market)

Each variable was coded on a scale between 0 (lowest level of independence) to 1 (highest level of independence). Without going into technical details about how the aggregate that measures the legal independence of the central bank is constructed, we list below the situations in which the highest ratings are obtained:

- legal term of governor is longer than 8 years and the government has little autonomy in appointing or dismissing the governor;
- central bank has a wider authority to formulate monetary policy and to resist government in cases of conflicts;
- price stability is stipulated in law as the only or the main objective of monetary policy;
- central bank sets tighter limits on its lending to the public sector.

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<sup>15</sup> Cuckierman A., Webb S., Neyapty B., *Measuring the independence of central bank and its effect on policy outcomes*, World Bank Economic Review No.6, September 1992. pp. 356-359

These authors presented a weighted index of those sixteen characteristics that measured the legal independence of the central bank for four decades (1950-1989) in 72 countries (21 industrial countries and 51 developing countries). Their investigation shows that legal independence is inversely related to inflation in industrial countries, but not in developing countries. By contrast, in developing countries the governors' turnover is strongly and positively associated with inflation. The divergence between the letter of the law and actual practice seems to be substantially higher in developing than in industrial countries.

Meanwhile, the situation has changed, as reforms of central banks have taken place in many countries that go through the transition process. A recent paper, coordinated by Cukierman<sup>16</sup>, develops extensive new data on the legal independence of the new central bank in 26 former socialist economies. This data are constructed using the same codification system for measuring legal independence developed in 1992 by Cuckierman, Webb and Neyapti. This makes it possible to analyse comparatively the legal independence of the central banks in various countries. This classification is shown in the table below.

These data show that the legal independence of the central bank in former socialist countries is higher than that of the central bank in developed countries during the eighties. In particular, at least eight of the central banks in transition countries have levels of aggregate legal independence that exceed that of the highly independent Bundesbank during the 1980s.

This indicates that the central bank reform in the former socialist economies during the nineties was quite ambitious. The reformers in these countries chose to create central banks with levels of legal independence that are substantially higher, on average, than those in developed countries. But since it is likely that the average level of compliance with the law in the transition countries is lower than the compliance with it in Western countries, the discrepancy in actual independence may not be as large as it appears to be from this comparison.

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<sup>16</sup> Cukierman A., Geoffrey P. M., Bilin N., Central bank reform, liberalization and inflation in transition economies. An international perspective, Center for Economic Research, No. 106, October, 2000, p.11

**Table 1 Comparison of the new legal independence in transition economies and in developed countries during the 1980s**

<i>No</i>	<i>Country</i>	<i>Index of legal independence</i>	<i>No</i>	<i>Country</i>	<i>Index of legal independence</i>
1.	Poland	0.89	25.	Croatia	0.44
2.	Armenia	0.85	26.	Ireland	0.44
3.	Estonia	0.78	27.	Kazakhstan	0.44
4.	Lithuania	0.78	28.	Holland	0.42
5.	Georgia	0.73	29.	Ukraine	0.42
6.	Moldova	0.73	30.	Macedonia	0.41
7.	Belarus	0.73	31.	Australia	0.36
8.	Czech Rep.	0.73	32.	Tajikistan	0.36
9.	Germany	0.69	33.	Island	0.34
10.	Hungary	0.67	34.	Romania	0.34
11.	Switzerland	0.64	35.	Luxembourg	0.33
12.	Slovenia	0.63	36.	Sweden	0.29
13.	Slovakia	0.62	37.	Finland	0.28
14.	Austria	0.61	38.	England	0.27
15.	Uzbekistan	0.56	39.	Turkmenistan	0.26
16.	Mongolia	0.55	40.	Azerbaijan	0.25
17.	Bulgaria	0.55	41.	Italy	0.25
18.	Kirgizskaya Rep.	0.52	42.	France	0.24
19.	Albania	0.51	43.	New Zealand	0.24
20.	Denmark	0.50	44.	Spain	0.23
21.	Latvia	0.49	45.	Japan	0.18
22.	Russia	0.49	46.	Belgium	0.17
23.	USA	0.48	47.	Norway	0.17
24.	Canada	0.45			

*Source: Cukierman A., Geoffrey P. M., Bilin N., Central bank reform, liberalization and inflation in transition economies. An international perspective, Center for Economic Research, No. 106, October, 2000, p.11*

The fact that the average level of legal independence of the central bank of economies in transition is substantially higher than that of developed economies during the eighties at least partially reflects the shift in professional consensus among economists and policymakers in favour of the independence of central bank between those two decades. We believe that if the central bank reforms in the transition economies had taken place during the eighties rather than during the nineties, the level of independence of the central bank embodied in the new laws would have been significantly lower.

The main finding of Cuckierman is that in the case of developed economies the familiar negative relation between inflation and legal independence appears also in the transition economies but only at sufficiently high levels of sustained liberalization. In transition countries the legal independence of central bank is unrelated to inflation during the early phases of liberalization because the process of decontrol of domestic prices had a powerful impact on inflation.

The legal statute of a central bank is only one of the several elements that determinate its actual independence. Many central bank laws are highly incomplete and leave a lot of room for interpretation. As a result, factors such as tradition or the personality of the governor and other high officials of the central bank at least partially shape the actual level of central bank independence. Even when the law is very explicit, reality may be very different.

In 1992, Cukierman, Webb and Neyapti<sup>17</sup> developed an indicator of actual central bank independence from the actual frequency of the change of the governor. This indicator is based on the presumption that, at least above some threshold, a more rapid turnover of the governor reflects a lower level of central bank independence. If the political authorities frequently have the possibility to choose a new governor, they will at least have the opportunity to pick those who will do their will.

A high turnover rate indicates that the tenure of the central bank governor is shorter than that of an executive branch. This makes the central bank governor susceptible of being influenced by the executive branch and discourages the governor from trying to implement longer-term policies, especially those that would extend beyond the election cycle. If the governor stays on for several years and perhaps outlasts several heads of government, thus presiding over price stability, the governor's reputation can become strong enough to resist considerable pressure.

A low turnover does not necessarily imply a high level of central bank independence, because a relatively subservient governor may stay in office a long time. A governor's legal term of office does not seem to have much effect on the actual turnover. In most countries actual average terms in office of governor are shorter than the legal term.

Cukierman, Webb and Neyapti calculated the average annual turnover rates in the industrial and developing countries between 1950 and 1989 and

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<sup>17</sup> Cuckierman A., Webb S., Neyapti B., *Measuring the independence of central bank and its effect on policy outcomes*, World Bank Economic Review No.6, September 1992, pp. 363-367

for each decade within that period. They found that the turnover rates in developing countries are considerably higher than those in industrial country. The turnover rate is not significant in explaining the variation of inflation within industrial countries. But, in developing countries, there is a positive relation between the governors' turnover and inflation. In other words, the lower the actual term in office of the governor is, the lower the actual independence of central bank and the higher the inflation rate are.

Another solution for the measurement of central bank independence is the use of some complementary evaluation criteria<sup>18</sup>:

- quality of the research department of the central bank: in the decision-making process the Board of Directors of the central bank relies on the reports, studies and publications elaborated by this department;
- level of development of capital market: the higher it is, the stronger the authority of the central bank, as this is the only representative of the state in some of these markets;
- method of remuneration of Board members: if the legislative or the executive cannot interfere in establishing the salary of the governor and Board members, and if the length of the mandate is considerable, a central bank is considered to enjoy a high level of independence;
- government's strategy concerning public debt: Some authors (T. Person and L. Svenson, A. Alesina and G. Tabellini, etc.) argue that the bigger the public debt is, the more tempted the government is to limit the independence of the central bank so that it will use monetary issuance as a means of reimbursing its debt to the state.

## **5. Central bank independence in Romania**

After 1989, three laws were passed on the statute of the National Bank of Romania (1991, 1998 and 2004), and each of them amended considerably the previous one with regard to the independence of the central bank. Law 312/2004 confers a high degree of independence to the central bank.

The law stipulates clearly that the National Bank of Romania (NBR) lays down and applies the monetary policy and the exchange rate policy and that "the primary objective of NBR is to secure and maintain price stability.

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<sup>18</sup> Cerna S., Central bank: credibility and independence, Ed. Sedona, Timișoara, 2002, p.52

NBR can support the overall economic policy of Romania without impeding the achievement of its main goal, namely price stability” (Article 2).

It further specifies that “ in the accomplishment of its responsibilities, NBR and the leadership members will not demand or receive instructions from public authorities or from any other institution or authority” (Article 3).

Following the proposals forwarded by the permanent specialised commissions of the two chambers, Members of the Board are appointed by the Parliament for a five-year term (government is appointed for a four-year term), which can be renewed. The Parliament is entitled to dismiss a Board member on the basis of a common proposal by the aforementioned commissions of the two chambers of the Parliament if the official in question does not meet the requirements for exercising certain prerogatives or if he/she is guilty of misconduct (Article 33).

The Board of directors is made up of nine members (who cannot sit in Parliament, be politically affiliated or be part of a judicial authority or public administration), five of are personalities from outside the bank (Article 34).

A step forward towards the independence of NBR is the express provision according to which the central bank cannot acquire government securities from the primary market (Article 29), which is in fact one of the basic provisions of the Maastricht Treaty. The law also “bans the NBR from granting overdraft or any other type of credit to the state, central and local authorities, public limited companies, national companies and other enterprises in which the state has a stake (Article 7).

As we can notice, the Romanian legislation comprises many elements that confer independence to the central bank. Nevertheless, for the accomplishment of its fundamental objective, the real independence of the central bank is much more important than its legal independence. We contend that at present NBR enjoys not only legal independence but also real independence in the implementation of its monetary policy, a fact that can be proved by the positive results in reducing inflation in the last years.

## **6. Conclusion**

The importance of central bank independence as a signal of financial respectability and gaining access to international credit markets, rose through the nineties with the further abolition of restrictions on capital flows and further widening of international capital markets. Yet in the midst of theoretical and political disputes, this issue tends to turn into a problem in itself. That is why we should take into account the following:

- there are just different degrees of independence of the central bank for a certain economy, in a certain period, or for different economies in the same period;
- appreciation of the independence of central bank often has a formal character, with focus on its the relationship with the government, as it is formulated in the charter.

But behind the legal independence of central bank there may hide some political complicity or a trade off of politico-bureaucratic privileges. For this reason, we can argue that the decoding of the communication channels between the central bank and the political world is far from being completed. Moreover, legal independence of a state's central bank can be a mere formality for the achievement of certain requirements for EU accession or for the general impression on a country's economy. The real issue is the manner in which legal independence contributes or not to the creation of a favourable environment for the effective implementation of the policy of price stability.

In spite of the fact that legal independence does not always fully translate into actual independence, it is nonetheless associated with significantly lower inflation. Examination of the relation between the inflation and legal independence in the transition and developed countries strengthens the conclusion that legal independence and inflation are negatively related. A higher level of legal independence of central bank is generally associated with a lower inflation. But, for a given level of independence from the political authorities a more focused legal mandate to pursue price stability is expected to result in a lower rate of inflation

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# EUROPEAN CENTRAL BANK IN LIGHT OF SOME INSTITUTIONAL CHANGES<sup>1</sup>

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## **Abstract**

*On 1 May 2004 ten new Member States joined the European Union. The new members will adopt the euro only when they fulfil convergence criteria. The governors of the central banks of the new EU countries are now members of the General Council of the ECB but they will not join the main decision-making body – the Governing Council – until they adopt the euro. Out of a great number of open questions in this article the specific attention is paid to the ERM II. Participation in the Exchange Rate Mechanism II is one of the core requirements when entering the European Monetary Union. In 2005, there are 7 countries only, which are the members of this system. Six of them are using the broad bands for the exchange rate movements and one (Danish krone) is using +/-2,25 % fluctuation bands. For the moment, each country out of these 7, has met the criterion of a stable exchange rate. V4 countries are also preparing for the accession to the ERM II. The Slovak Republic would like to participate in the ERM II as soon as possible..*

**Keywords:** *European Union; European Central bank; Exchange Rate Mechanism II*

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## **1. Introduction**

In the system of a society's government a key role is played by central banking. Since the 17<sup>th</sup> century, which can be considered the period when central banking emerged, we have been witness to the creation of a variety of institutional arrangements. In this article we want to take attention to the changes in the central banking in Europe, especially in European Union after the enlargement in 2004.

## **2. Institutional arrangements in central banking in general**

By a variety of institutional arrangements we mean the differential coverage of monetary policy by entities – in history we can find examples formed for central banks created at the national and regional level; we can likewise find various central banking systems – from simple homogenous systems (one institution forming the central bank, e.g. the NBS) through to structured systems (for example the Federal Reserve System in the USA).

Besides the different institutional arrangement, we can see also a differentiated approach among central banks in carrying out their individual functions. Monetary authorities began to be considered as central banks only following the incorporation of an issuing function into their activities. This was not always however the primary function these institutions oversaw. From the historical aspect, the first “future” central banks at first performed the function of a bank to the state, only later becoming issuing banks, to which were progressively added a series of further functions.

Besides institutional and functional characteristics, central banks also differed in terms of their operating framework, meaning that there were differences in the use of direct and indirect monetary policy instruments. The latter, of course, resulted from the characteristics of the monetary circulation and from the need to solve, at a given moment, a problem in monetary development. In this regard therefore neither were the constructions of monetary objectives always identical, even if in the broader sense it is possible to find certain common elements.

As regards the legal standing and subsequently financial aspects of central banks, we can in this case speak of public institutions, companies formed from share capital (shareholder structure is differentiated), as well as of specific subjects, where in certain activities the central bank has the status of a body of general government, and in other activities (for example in the acquisition and administration of own assets) has the status of a business.

Despite these differences, it may be claimed that monetary authorities always featured as sophisticated institutions, recognised by the public. From both the aspect of aims fulfilled, as well as functions entrusted to them, central banks were, alongside governments, the most important entities in any country.

Enlarging European Union with 10 new member countries has led to important changes in central banking too:

- changes in the structure of the ESCB,
- changes in the volume, the number of stake holders and even in the structure of the participation of the EU member countries in the ECB capital,
- changes in the system of voting in the decisive body of the ECB,
- changes in the monetary tools of the single monetary policy,
- the newly accepted member countries are preparing the transition of some competences of the national central bank to the ECB,
- some changes take place in the ERM II, too.

### **3. Current state of central banking in EMU**

Since May <sup>1st</sup>, 2004 the ESCB contains 25 national central banks of the EU led by the European Central Bank. The monetary policy is managed by the Eurosystem represented by the ECB and the central banks of the countries which accepted the euro currency.

The ESCB has three organs – the Governing Council, the Executive Board and the General Council. In the Governing Council and the Executive Board the member countries of the Eurozone are represented, whereas the General Council contains the president and vicepresident of the ECB as well as the governors of the EU national central banks. As the countries which have not accepted the euro don't participate in the single monetary policy, this institution mainly supports the ECB, however it has the possibility to participate in some objections as to statistics, rules for rational banking business etc.

The capital of ECB, too, was modified after the EU enlargement. Since 1. 5. 2004 it means 5 564 669 247,19 EUR. Up to this date the central banks of the Eurozone had to pay the full amount of their part and the central banks not in the Eurozone 7 % (before the enlargement 5 %). So the total paid amount of the ECB capital is 4 089 277 550,12 EUR. The main stake holders are the central banks of Germany, France, Italy and Great Britain. The participation of the new member countries is no more than 10,1474 % (there of belongs to the central bank of Poland 5,1380 %). The participation

in the capital is connected with the limitation for foreign currency reserves managed by the ECB (ten times as much).

The new voting system in the ECB Governing Council presupposes already the future membership of 27 countries in EMU. The members of the ECB Executive Board will have 6 stable votes and 15 votes will be flexible according to the group to which the given central bank will belong according to the proportion of the GDP of the member countries without derogation in market prices and the proportion in the aggregate balance sheet of the monetary financial institutions of the member countries without derogation. Since 1. 6. 2004 the number of voting persons must not exceed 15.

The single monetary policy of the Eurosystem continues to be based on two principal pillars. The main aim of monetary policy in the eurozone in this context is to ensure price stability, which in quantitative terms is set as the upper limit for growth of the harmonised index of consumer prices – HICP<sup>2</sup> on an annual basis, and this of up to 2%, where the ECB takes this parameter to be a medium-term target. The monetary policy strategy of the ECB is a certain mix of the theoretically defined monetaristic transmission mechanism and inflation targeting. The first, basic pillar of the Eurosystem's monetary policy strategy is the analysis of the development of a broad set of economic and financial indicators, the second pillar is the analysis of the development of the M3 money aggregate. The combination of the two pillars of the Eurosystem ensures that monetary, financial and economic development is carefully and thoroughly monitored. This thorough analysis enables the ECB to set interest rates at a level best serving to maintain price stability.

Beginning from March 10<sup>th</sup> 2004 however the maturity of main refinancing operations is reduced from two weeks to one week and the maintenance period for the Eurosystem's required reserve system is redefined to start on the settlement day of the main refinancing operation following the Governing Council meeting at which the monthly assessment of the monetary policy stance is pre-scheduled, rather than on the 24<sup>th</sup> day of month. From 14. 1. 2005 the Governing Council of ECB decided to increase the allotment amount for each of the longer-term refinancing operations from 25 mld. EUR do 30 mld. EUR and the operation day is defined as the last Wednesday in

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<sup>2</sup> Note: HICP – the basic components of this index are prices of goods – in the division into processed and non-processed, further industrial goods and energy, and the second component of this index are prices of services. For example in 2001 the prices of goods represented 61.9% of the index, whereas prices of services only 38.1%.

the month and not the first Wednesday in the maintenance period for minimum reserve.

After the foundation of the EMU the central banks of the member countries fulfill eurosystem and non-eurosystem functions. The eurosystem functions mean the fulfillment of the obligations given by the participation in the Eurozone and the single monetary policy of the Eurosystem, whereas the non-eurosystem functions mean all other functions which can be fulfilled by the national central banks on their own choice but not contrary to the Eurosystem aims. Non-eurosystem functions are first of all banking supervision and in some countries financial market supervision, the management of foreign currency reserves exceeding the ECB, state agency on the emission of state bonds or in the operating of state operations accounts, the emission of eurocoins (if agreed by the ECB), the direction of interbank payment system connected with TARGET, economic research, collection of statistical data, representation of the country versus international monetary institutions.

As regards changes in the system of exchange rates applicable in EMU – with the fact that the EU has expanded to 25 states, the first step on the road to EMU is to enter the ERM II exchange rate system, which in essence means the fixing of the national currency's exchange rate to EUR and maintaining its fluctuation band within  $\pm 15\%$  without currency devaluation for a period of two years. Of the old non-EMU member states only Denmark is presently participating, using the narrower band of  $\pm 2.25\%$ ; of the new EU member states Estonia, Slovenia and Lithuania joined the ERM II system in June 2004, in the broader band and since May 2005 Cyprus, Malta and Latvia also with a broader defined band.

**Table 1 Fixed exchange rates of participants in ERM II**

<b>Country</b>	<b>Min limit</b>	<b>Central parity</b>	<b>Max limit</b>
Danish krone (DKK)	7,62824	7,46038	7,29252
Estonian kroon (EEK)	17,9936	15,6466	13,2996
Lithuanian litas (LTL)	3,97072	3,45280	2,93488
Slovenian tolar (SIT)	275,586	239,640	203,694
Maltese lira (MTL)	0,493695	0,429300	0,364905
Cyprus pound (CYP)	0,673065	0,585274	0,497483
Latvian lats (LVL)	0,808225	0,702804	0,597383

*Source:* ECB Monthly Bulletin May 2005. s. 52

#### 4. The future development in the ERM II

The Resolution of the Committee on the Exchange Rate Mechanism II (ERM II) establishment (97/C 236/03 dated June 16, 1997) and the Agreement between the European Central Bank (ECB) and national central banks of the member states excluded from the euro zone dated September 1, 1998, supplemented by the Agreement dated April 29, 2004 regulate the ERM II entrance as well as domestic currency exchange rate (ER) in relation to EUR procedurally. The Procedural steps to allow participation in ERM II document comprises the individual steps, which allow the countries to participate in the ERM II. This document was prepared by the European Commission (EC) on the summit meeting, that took place in Athens on 28 May, 2003.

V4 countries are also preparing for the accession to the ERM II. The first step that allows the participation in the ERM II is the request of the Minister of Finance as well as the head/president of the central bank submitted to the ECOFIN board Minister, who comes from the country, which chairs the European Union (EU). Submitted request is thereafter discussed in the Economic and Financial Committee (EFC), whose members are the member states representatives, as well as the representatives from the EC and ECB. ERM II Committee reviews the macroeconomic consistency of the candidate country with the Principal direction of the economic policies and the Stability and Growth Pact. Hereby, it discusses the future central parity and the fluctuation band.

**Table 2 Entry to the ERM II a adoption of single currency**

Country	Entry to the ERM II	Adoption of single currency - plan
Estonia	June 2004 (R)	June 2006
Lithuania	June 2004 (R)	1 January 2007
Slovenia	June 2004 (R)	2007
Latvia	April 2005 (R)	2008
Malta	April 2005 (R)	2008
Cyprus	April 2005 (R)	Non specified
Czech Republic	2007 (P)	2009 – 2010
Slovak Republic	2006 (P)	1. 1. 2009
Hungary	6/2004 – 6/2005 (P)	1. 1. 2008
Poland	As soon as possible (P)	2007

*Note.:* (R) reality (P) plan

*Source:* internet pages of national central banks

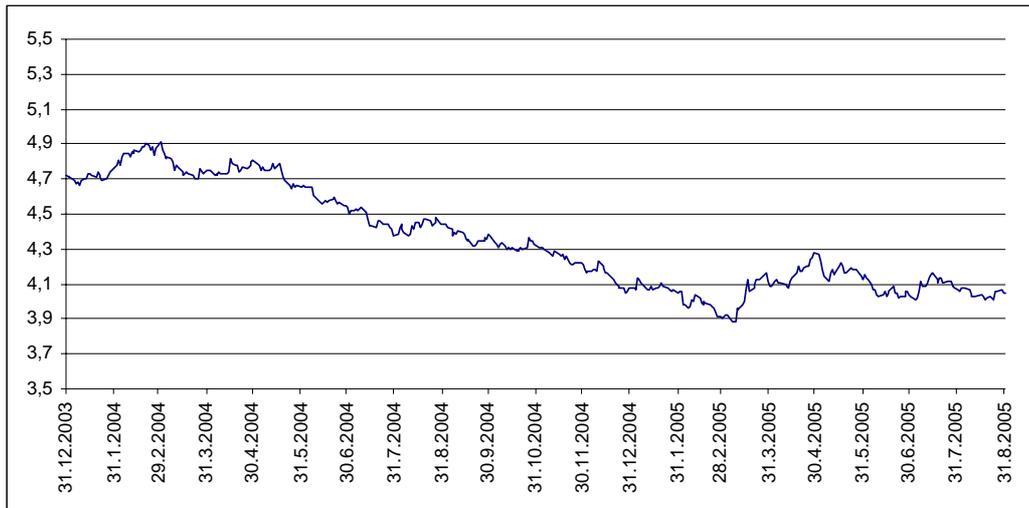
Underestimation of the central parity can lead to economy overheating and consequently to higher inflation. This could endanger and slow the process of reaching the inflation convergence criterion. On the contrary, overestimated central parity could weaken/lower economy competitiveness. Besides this it could support the speculative attacks against the currency indirectly.

The decisions related to the central parity changes as well as the fluctuation band are made based on the Agreement reached by the following parties: Ministers of individual euro zone countries, the president of ECB, ministers and the governors of the EU member states central banks excluded from the euro zone, engaged in the Mechanism, European Commission representative and the president and the secretary of EFC. The General Board is responsible for monitoring of the ERM II operations. It serves as an international cooperation forum and the cooperation in the field of exchange rates.

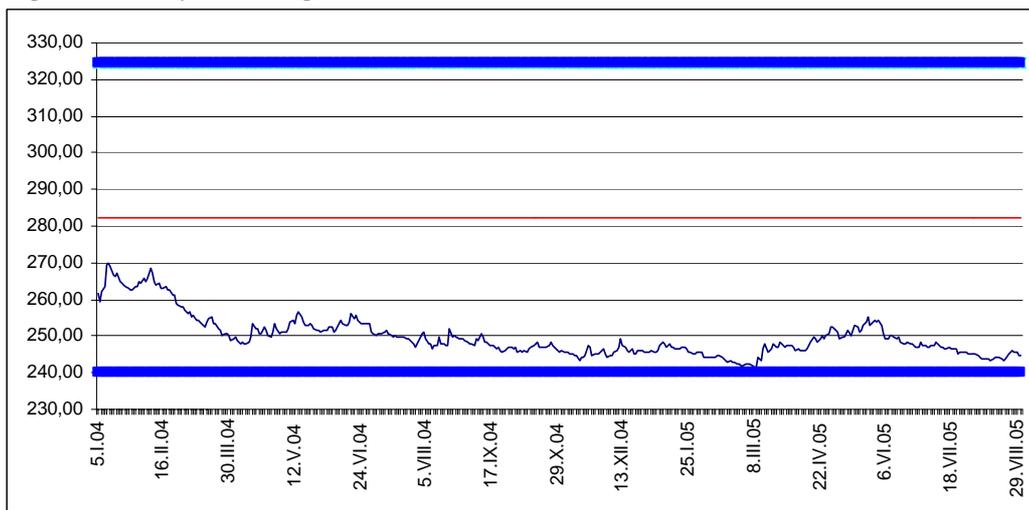
## **5. Conclusion**

In 2005, the Danish crone and the Slovenian toliar have found their selves near their central parity to EUR. Estonian koruna ER and the Lithuanian litas have stayed unaffected. When speaking about other countries of EU, in April 2005, euro has depreciated in relation to British Pound. During the period starting March till May, EUR has appreciated in relation to Polish Zloty (in amount of 3, 6%) and less significantly to Hungarian Forint, Slovak and Czech koruna, too (in the following amounts: 1, 8%, 1, 5% and 1, 2%). The main reason of mentioned depreciation in the currencies lies in the reduced willingness to undergo the risk on the financial market. Simultaneously, EUR has appreciated in relation to Swedish koruna by approximately 1%.

**Figure 1 Daily exchange rate of PLZ/EUR**



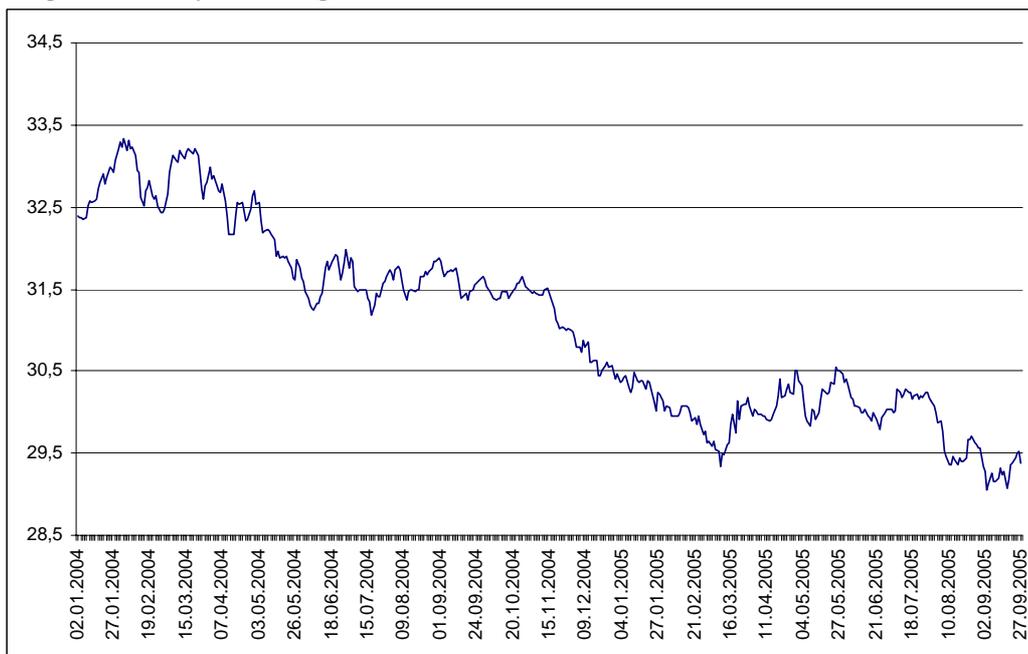
**Figure 2 Daily exchange rate of HUF/EUR**



**Figure 3 Daily exchange rate of SKK/EUR**



**Figure 4 Daily exchange rate of CZK/EUR**



The macroeconomic views of the ECB specialists/experts on the euro zone deal with the fact, that in the near future the ER of EUR in relation to USD and JPY would not be changed significantly. Their view on economic

growth for the euro zone is promising, i.e. 1- 1, 6% in the year 2005 and 1, 3-2, 3% in the year 2006. However some changes can occur with respect to the increasing oil price at the world market.

The Slovak Republic too is preparing to join the Eurozone. It is supposed to join the ERM II in 2006 and after having fulfilled the Maastricht criteria to join the Eurozone in 2009.

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# MONETARY POLICY IN ROMANIA: TOWARDS EU INTEGRATION

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## **Abstract**

*The monetary policy in Romania is implemented by The National Bank of Romania, whose main objective is to ensure price stability. At the first stage of the transition to the market economy, the monetary policy, had a secondary role, due to its slow evolution from a direct control of monetary expansion towards indirect instruments and from multiple and contradictory objectives (imposed by the state policy) towards what should represent the sole objective of monetary policy namely price stability. Consequently the results obtained in controlling inflation are much more modest as compared to those of other candidate countries to European integration. For many years, the strategy of monetary policy had consisted in the control of monetary aggregates. Using monetary aggregates as an intermediate objective of the monetary policy proved to be effective during the time when inflation was diminished to the current level. Recently, the central bank has reshaped its monetary policy by the adoption of a new strategy - inflation targeting. The reduction of the inflation rate to the European level constitutes a major concern for The National Bank of Romania in following years. The article also refers to the stage of fulfillment of the other convergence criteria required for Romania's accession to the EU.*

**Keywords:** *inflation targeting, stage of fulfillment of convergence criteria.*

## **1. Introduction**

At present, the main responsibility of the central bank, almost everywhere in the world, is to establish and implement the monetary policy, which is the most important task for the National Bank of Romania, our central bank, as well.

Monetary policy has the same final objectives as economic policy, such as: sustained economic growth, full employment of resources, a stable balance of payments for the nation vis-à-vis the rest of the world and price stability. But, frequently these objectives are contradictory, because the achievement of one of them may cause the failure of the others. This is the reason why the monetary policy has its own fundamental objective, which is to ensure the price stability. The price stability may create a favourable economic framework that can allow sustained economic development

## **2. A critical analysis of Romania`s monetary policy between 1990 and 2004**

As in the case of the Romania's economic reform, the monetary policy has made slow progress from the direct control of monetary expansion to the indirect instruments and from multiple and contradictory objectives to what should represent the only concern of monetary policy, namely price stability.

In the first years of the transition period the monetary policy was oriented towards the achievement of some objectives that were not compatible with maintenance of price stability (e.g. the stimulation of production or full employment of labor resources). This tendency was favoured by the ambiguous formulation of Law no.34/1991, whose article 1 stipulated that “ The National Bank of Romania (abbreviated as NBR) establishes and implements the monetary policy within the economic and financial policy of the state”. As a results, the monetary policy was constrained to pursue multiple objectives, such as:

- preferential crediting of unprofitable sectors;
- sustaining the exchange rate artificially, as an anti-inflationist anchor;
- administration of public debt and financing budgetary deficit;
- maintenance of current account deficit within the established limits;
- the central bank's acting as a lender of last resort due to problems derived from the unsatisfactory state of the banking system.

Consequently, inflation was maintained at high levels, during the first years, being measured by three figures annually (see table 1), with most disastrous effects, both socially and economically. Only towards the end of 1993, by promoting a restrictive policy based on strict control of liquidity and rapid escalation of interest rates, NBR managed to limit the size of inflationist process. Nevertheless, against the slow rhythm of restructuring of the real sector and the stop-and-go character of authorities' policies, inflation returned in 1997 to the level of three-digit figure.

**Table 1 Inflation rate (%)**

<i>Year</i>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
<i>Annual average</i>	5.1	170.2	210.4	256.1	136.7	32.3	38.8	154.8
<i>End of year</i>	37.7	222.8	199.2	295.5	61.7	27.8	56.9	151.4

*Source: National Bank of Romania*

The new laws regarding the Statute of NBR (Law no. 101/1998 and Law no. 312/2004, respectively) have made a significant amendment by specifying that "the main objective of NBR is to ensure of price stability". This allowed the central bank to gradually disburden its monetary policy of multiple objectives and thus consolidate its independence. These changes created a favourable framework that made it possible for the central bank to focus on price stability.

Indeed, in the last years, there has been a clear tendency to orient the monetary policy towards the mechanism of market economy. Nevertheless, the results obtained in controlling inflation are much more modest compared to those of other Central and Eastern European countries (see table 2).

**Table 2 Inflation rate (%)**

<i>Year</i>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>Annual average</i>	59.1	45.8	45.7	34.5	22.5	15.3	11.9
<i>End of year</i>	40.6	54.8	40.7	30.3	17.8	14.1	9.3

*Source: National Bank of Romania*

The strategy of monetary policy had consisted in the control of monetary aggregates. The main instruments used in recent years by the central bank for controlling monetary supply were: minimum reserve requirements, open market operations and collection deposits from commercial banks. Among these, the main role was conferred to minimum reserve requirements, whose current rate is 18% for deposits in the national currency and 30% for deposits in foreign currency.

Using monetary aggregates as an intermediate objective provide to be effective during the time when inflation was diminished to the current level.

But, starting with August 2005, NBR has reshaped its monetary policy by adoption of a new strategy – inflation targeting – which represent a superior stage in maintaining inflation under control and a component of the process of economic convergence with the EU countries..

### **3. Inflation targeting – the new monetary policy strategy**

#### ***3.1. The concept of inflation targeting***

In the last decades, as the factors that effect price stability in an economy have become more and more familiar, and with the development of a relatively sophisticated system of analysis, the central banks have adopted a new objective that is directly connected with the assurance of price stability.

The first country to adopt this strategy was New Zealand (in 1989). Until now almost 20 countries have opted for the inflation targeting, among which we mention Canada, Great Britain, Finland, Spain, Brazil, Chile, Israel, the Czech Republic, Poland, Hungary. In all these countries, inflation rate decrease after the adoption of this new strategy.

Inflation targeting represent a framework of monetary policy characterized by the public announcement of the quantitative targets of the inflation rate for one or more time horizons and by explicit recognition of the fact that a low level of inflation constitutes the primary long-term objective of the monetary policy.

The main characteristic of this strategy consists in the primacy of the inflation target over any other objective of the monetary policy . All the other monetary variables, i.e. monetary supply, interest rate, exchange rate etc., become of secondary importance, being taken into account only if they can be subordinated to the inflation objective.

#### ***3.2. Condition for inflation targeting***

The adoption of any mix of economic policies has to consider the existing conditions in the respective country, the effects of the policy implemented in the preceding period and, obviously, the established targets. The transition to the inflation targeting requires the fulfillment of certain conditions<sup>3</sup>. These are presented bellow:

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<sup>3</sup> Isărescu M., Towards a new strategy of monetary policy: inflation targeting, Craiova, October 2003, pp. 19-29

➤ **The cultural component**

This is the most important qualitative element because the monetary policy cannot achieve very ambitious objectives without the support of the civil society. It follows that the success of inflation targeting depends, to a large extent, on the acceptance by the whole society of the importance of the price stability.

➤ **Credibility of the central bank**

This condition is closely related to the cultural component and has an essential role in the success of the inflation targeting. If people trust the forecasts of the central bank, they will integrate them in their business plans and ultimately contribute to the realization of the predictions formulated by the central bank.

➤ **The central bank's capacity of intervention**

Firstly, the central bank has to be autonomous in order to set its objectives and decide on the adequate measures for their attainment. The primacy of the central bank's anti-inflationist objective has to be explicitly stipulated by the law. Secondly, the central bank needs at least one effective instrument in order to control the inflationist process and anchor the inflationist expectations of the public.

➤ **Full harmonization between the monetary policy and the general policy of the government**

This requirement has a significant part in the successful implementation of the inflation targeting, given that the government's decisions for realization of the economic objectives can affect price stability. Consequently, close cooperation is required between the government and the central bank, not only in the form of public declarations, but also in practice. The government is supposed to support the attainment of the inflation target through its fiscal policy.

➤ **Technical requirements**

First of all, it is required that the price index for the quantification of inflation should be adequately selected. Next, the public should become familiar with the transmission mechanism of the monetary policy. Last, but not least, the quantitative targets and the calendar for their attainment should be established.

### ***3.3. Analysis of the conditions of inflation targeting in Romania***

The adoption of the inflation targeting is not only a matter of the choice, but also a matter of meeting some significant requirements. Most of the conditions for successful implementation of inflation targeting have been fulfilled in our country. In what follows, we refer to principal aspects that have created the favourable conditions for the introduction of this new strategy<sup>4</sup>.

1. At the end of 2004, the inflation rate reached a one-digit value (9.3%) for the first time after 1990, as a result of a productive cooperation between the government and the central bank.

2. Since the summer of 2004, NBR has been benefiting from a complete operational independence, a condition stipulated in Law no.312/2004 regarding the State of NBR.

3. The successful des-inflationist process recorded through the last years has increased the credibility of the central bank.

4. After 5 years of continuous development and appropriate supervision, we can speak about a solid and stable financial system.

5. Fiscal dominance has ceased to be a problem given the above-mentioned legal independence of the central bank, the relatively low public deficit and the more and more consistent mix of financial policies.

6. The decision to implement inflation targeting for the following years was taken by the NBR in cooperation with the government.

7. A more flexible exchange rate in the context of maintaining the regime of controlled flotation is compatible with inflation targeting.

8. For many years, the central bank has informed the public about the economic development and the monetary and exchange rate policy through the publication of periodical reports and the press release; in addition, since 2003 the BNR has published a report on inflation every semester.

9. The quantitative targets, including those regarding the inflation rate, and the calendar for their attainment, have already been established as there exists the decision to join the EU and the euro zone, and to meet the convergence criteria agreed upon in the Maastricht Treaty by the end of 2009.

10. Since the latter half of 2004, the central bank has been testing an econometrical model for forecasting purposes, which has been adjusted by BNR` specialists to the specific conditions existing in our country.

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<sup>4</sup> Isarescu M., Inflation targeting, NBR`s governor press release, Bucharest, July 2005, p. 6

## **4. Towards Romania`s European monetary integration**

### ***4.1. Convergence criteria for the adopting of the euro***

#### **4.1.1. Nominal convergence**

The Maastricht Treaty specified that for EMU participations, a EU member state will have to meet just the following criteria for nominal convergence<sup>5</sup>:

- inflation rate criterion: the increase of inflation rate measured through consumer prices should be no more than 1.5% higher than the average inflation rate of the three best-performing EU member states in terms of price stability;
- long-term interest rate criterion: long term interest rate should not exceed the average rate of the three best-performing EU countries in terms of price stability;
- budgetary deficit criterion: budgetary deficit should not exceed 3% of GDP;
- government debt criterion: government debt should not exceed 60% of GDP;
- exchange rate criterion: exchange rate should remain within the normal fluctuation margins of the ERM II<sup>6</sup> without severe tensions for at least two years.

After the new EU candidate states become EU members, they will participate in ERM II, and then, on the basis of the fulfillment of the nominal convergence criteria, they will adopt the common European currency.

#### **4.1.2 Real convergence**

The Maastricht Treaty does not make reference to the real convergence criteria to ensure a high degree of similarity among the economic structures of the EU member states, given the fact that before the early 90s the European Union comprised only countries with similar economic systems. Real convergence became an important issue only when

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<sup>5</sup> Brociner A., Monetary Europe, Ed. Institutul European, Iași, 1999, pp. 22-24

<sup>6</sup> ERM is the abbreviation for Exchange Rate Mechanism. ERM II is a bilateral mechanism in which the currency of each participant has a central parity against euro with a fluctuation margins of the market exchange rate of +/-15%

the accession of the Central and Eastern European countries was considered. The main convergence criteria are<sup>7</sup>:

- degree of economic openness (expressed by the proportion of a country's exports and imports in the GDP);
- proportion of bilateral trade with the EU member states in the whole volume of international trade;
- economic structure (expressed in the contribution of the principal sectors (agriculture, industry and services to the creation of GDP);
- level of GDP/inhabitant (evaluated either at the nominal value or through the parity of the purchasing power).

Real convergence is as important as nominal convergence, as according to the Optimal Currency Area Theory the states in a group cannot mutually gain from a common currency unless their economic structures are similar and when there is no risk of asymmetric shocks only in some of these countries<sup>8</sup>. As a result, the unitary monetary policy concerns a group of supposedly homogeneous economies and not the peculiarities of each economy. In these circumstances, the Central and Eastern European countries cannot give up their own monetary policy as long as the risk of some asymmetric shocks (caused by differences in economic structure) is considerable. This is explained by the fact that the final objective is not just the adoption of the common European currency but also the generation of profits.

#### ***4.2 An analysis of the fulfillment of the convergence criteria in Romania***

There is a strong consensus in Romania concerning the necessity of our integration in the European structures, both by the public at large and at the political level/by the politicians. But integration requires the realization of those convergence criteria stipulated for the superior stage of integration, i.e. the monetary union. These criteria are related not just to the aspects under the control of the authorities (e.g. budgetary deficit) but also to the indicators through which the market carries out its own evaluations (e.g. long-term interest). Ultimately, the Maastricht criteria represent absolutely normal

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<sup>7</sup> Isărescu M., Romania's transition to the Euro, "Babeş-Bolyai" University, Cluj-Napoca, 2004, pp. 5-6

<sup>8</sup> Isărescu M., Romania's Transition to the Euro, presentation at the Conference organized by the Academic College of Babeş-Bolyai University, Cluj-Napoca, March 2004, p. 3

objectives for any country that aspires to long-term sustainable development within or outside the European Union.

Of all the nominal convergence criteria Romania meets those concerning the budgetary deficit and public debt (see table 3). Thus, Romania differs from the majority of the countries in Central and Eastern Europe which encounter difficulties exactly in these domains, being obliged to make substantial adjustments.

**Table 3 The state of public finance** (%)

<i>Years</i>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>Budgetary deficit/GDP</i>	3.2	2.5	2.3	1.1
<i>Public debt/GDP</i>	23.1	22.7	23.7	21.5

*Source: National Bank of Romania (author's calculation)*

As far as the budgetary deficit is concerned the performance is good as in the last years it has been beneath 3%, the level established by the Maastricht Treaty. Romania's results are better than the performance of others countries that jointed the EU on May 1<sup>st</sup> 2004. The situation of the public debt is also favourable and superior to all the Central and East Europe countries<sup>9</sup>.

By contrast, Romania's position in terms of the inflation rate is much weaker than that of other Central and East Europe countries. Although, the results obtain in recent years (14.1% in 2003, and 9.3% in 2004) are remarkable, Romania is ranked outside the optimal level stated in the Maastricht Treaty, being exceed even by the weaker countries in this sense, namely Slovakia, Slovenia and Hungry, whose inflation rate is two or three times lower than Romania.

This situation can be explain by the slow process of price liberalization, on the one hand, and by the conscious adoption of strategy for gradual reduction of inflation, on the other hand. In Romania, the last substantial price liberalization took place only in 1997, while in other more advanced countries this process occurred between 1992 and 1994. Moreover, we preferred the gradual reduction of inflation by approximately a quarter of its value in the preceding year to a radical solution of the Currency Board type.

The criterion of log-term interest rate on government securities in the national currency is closely linked with the failure to meet the inflation criterion. As for the long-term interest rate, Maastricht Treaty criterion is difficult to apply to Romania, as the instruments for long-term borrowing are

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<sup>9</sup> the comparative analysis is based on the information made available by NBR

not yet developed and the banks do not offer interest rate for longer than one year. In spite of the fact that in 2002 government bonds in euro with 10-year maturity were issued on the foreign exchange markets, Romania issued government bonds with the maximum maturity of 5 years on the domestic capital market. This can be accounted for by the still high and volatile inflation. The issuance of government bonds with a longer maturity will only be possible as disinflation advances.

The criterion of exchange rate stability is closely related to the inflation rate criterion. The real depreciation of our currency against euro in 2002 and 2003 followed the trend of inflation, in order not to effect the competitiveness of Romania's exports. Since November 2004, NBR applied a new operational strategy of exchange rate policy by reducing the frequency of its interventions on the foreign exchange market. As a result, the national currency entered a process of gradual real appreciation against euro.

In spite of this, we will be able to speak about the stability of the exchange rate only when the inflation is sufficiently low. As a rule, the exchange rate and inflation mutually influence each other positively. A more stable exchange rate is not only the outcome of lower inflation rate. It can also lead to a reduction in the rate of inflation through a smaller nominal depreciation (on through a higher real appreciation, which in essence means the same).

The situation is also unfavourable in what the criteria of real convergence are concerned. The openness of Romania's economy (see table 4), although on the increase, is much lower than that of the Czech Republic, Slovakia and Hungary. Nevertheless, our economy is more open than economy of Poland, which is justified by the reverse correlation between economic openness and the size of the domestic market.

Romania's favourable evolution in terms of the weight of its trade with EU in entire foreign trade has placed it close to the Czech Republic, Poland and Hungary. Yet, the structure of our foreign trade is unsatisfactory, as it is based on low-processed products (clothes, furniture, iron-and-steel products) as compared with Hungary, for example, which exports automobile, household appliances and computers. This deficiency can be remedied through the attraction of foreign investments in areas for business with high added value.

**Table 4 Foreign trade** (%)

<i>Years</i>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>Degree of economic openness</i>	74.5	76.4	79.8	83.5
<i>Weight of trade with EU</i>	67.8 for exp. 57.4 for imp.	67.2 for exp. 58.4 for imp.	67.7 for exp. 57.7 for imp.	67.8 for exp. 57.9 for imp.

*Source: Popa C., NBR policy & regulations and investment in Romania, Bucharest, April 2005*

The level of fulfillment of the other criteria for real convergence is not as advanced as our economic openness. In terms of the sectorial structure of GDP, the agriculture still has too much weight (approximately 12-13%), similar to Bulgaria, but three or four times as big as the Central - European Countries (see table 5). The same is valid for population working in the agriculture sector (25%).

**Table 5 The structure of GDP by sectors** (%)

<i>Years</i>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>Industry</i>	28.2	29.1	27.3	27.0
<i>Agriculture</i>	13.3.	11.7	11.7	13.0
<i>Constructions</i>	4.9	5.0	6.0	6.1
<i>Others</i> <sup>10</sup>	53.6	54.2	55.0	53.9

*Source: National Bank of Romania*

Services are relatively underdeveloped accounting for less than 50% of GDP (see table 6), a result which is inferior to the other countries in Central and Eastern Europe.

**Table 6 The weight of services in GDP** (%)

<i>Years</i>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>Weight of services</i>	44.0	44.7	43.7	44.1

*Source: National Bank of Romania*

The level of the GDP per capita is the most synthetic criterion of real convergence. Expressed at the nominal exchange rate (see table 7), its value of 2,300 Euro in 2003 and of 2,700 Euro in 2004 ranks Romania on the same place as Bulgaria and 10% lower than the average of the European Union. The indicator GDP per capita is more relevant if expressed through the parity of the purchasing power. Its value of 7,000 Euro situates Romania 30% behind the European average level in the last years and rather lower than

<sup>10</sup> "Others" refers to: transport and storage; postal services and telecommunications; commerce, tourism, hotels and restaurants; real estate transactions and other services; financial, banking and insurance services; public administration

other countries that became EU members in 2004. Consequently, the task of surpassing this handicap represents a real challenge for the following period.

**Table 7 GDP per capita**

<i>Years</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
<i>Thousand ROL<sup>11</sup>/inhabitat</i>	52,109.4	69,500.6	87,576.7	110,179.2
<i>Annual average exchange rate ROL/Euro</i>	26,027	31,225	37,556	40,532
<i>Euro/inhabitat</i>	2,002	2,224	2,332	2,718

*Source: National Bank of Romania (author`s calculation)*

In a scenario with a 4% difference in the long-term GDP growth (i.e. 1.5% average annual growth of European GDP and 5.5% growth of Romania's GDP) it would take 60 years to recover the gap without taking into account the appreciation of our currency against the Euro. Imposing economic growth by 7-8% per year is not recommended because this measure cannot be sustained for a long time, as it can cause economic superheating and periods of recession, stimulating thus the stop-and-go model of the macroeconomic policies. In addition, it would generate either inflation or current account deficit, or a combination of these two effects.

The annual growth of GDP in the last years is presented below:

<b>Table 8 GDP`s evolution</b>	<b>(%)</b>			
<i>Years</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
<i>Annual growth</i>	5.7	5.1	5.2	8.3

*Source: National Bank of Romania*

The solution would be a reduction in the time horizon by adding a level of about 3-4% annual real appreciation to the difference in GDP growth until stage ERM II is reached. This solution should be applied provided the golden rule of the correlation with productivity is observed. More concretely, growth in productivity should be bigger than or at least equal to the sum of the real appreciation of the national currency and the real growth in the average salary. Even after the adoption of the Euro, Romania will be able to post an appreciation in real terms of GDP per capita through a marginally bigger inflation than that of the other EMU member countries in order to diminish the difference between the GDP expressed in current prices and the GDP expressed in the parity of purchasing power. In this scenario, Romania

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<sup>11</sup> ROL is the abbreviation for Romanian leu

would reach the average level estimated for that moment of GDP per capita in the European Union around 2044<sup>7</sup>.

### ***4.3. The prospects of our national currency***

#### **4.3.1. The denomination of ROL**

After 1989, our Romanian currency went through a process of continuous depreciation and as a result prices were expressed in too long figures. The denomination of ROL was much talking about, but it came into effect only in July 2005.

The main argument in favour of denomination was the necessity to express prices in Romania at the European levels. A parity of 3.5:1 of RON<sup>12</sup> against euro is more logical than one of 35,000:1, the exchange rate in the period that preceded denomination.

“Why denomination and not direct transition to euro?” Because the adoption of European currency is estimated to take place around 2013 – 2014 and operating with long figures had become more and more difficult for everyone, especially in IT applications and in financial documents, where some constraints exist. In addition, we will be able to take advantage of the experience of denomination in the more complex process involved in adopting the euro.

Our new currency is the “new leu” (1 RON = 10,000 ROL), divided into 100 “bani”. NBR has decided on RON as the new international code of the Romanian currency.

The denomination of our national currency involved more stages<sup>13</sup>:

- 1 March 2005 – 30 June 2006: parallel expression of prices in both currency;
- 1 July 2005: introduction of new currency;
- 1 July 2005 – 31 December 2007: parallel circulation of both ROL and RON;
- 1 July 2007: expiry of ROL;

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<sup>7</sup> Isarescu M., Romania’s Transition to euro, presentation delivered at the Conference organized by the Academic College of Babeş-Bolyai University, Cluj-Napoca, March 2004, pp. 6-7

<sup>12</sup> RON is the abbreviation for Romanian new leu

<sup>13</sup> Isarescu M. The new leu: everything will become simpler, Press conference by the Governor of NBR, February, 2005, pp.4-5

- 1 July 2005 onwards: exchange of ROL against RON at NBR branches and other credit institutions.

In order to help the public get used to the new monetary insignia, the central bank decided to keep the dominant colours and the design of the new banknotes as well as the portraits of the personalities. The new banknotes have smaller dimensions, which make it easier to keep and handle them. As new banknotes have the same size as the euro it will not be necessary for the banks to adapt their ATMs when the European currency is adopted. Below is the presentation of the new banknotes in comparison the old ones:

1 RON = 10.000 ROL

5 RON = 50.000 ROL

10 RON = 100.000 ROL

50 RON = 500.000 ROL

100 RON = 1.000.000 ROL

500 RON

As for the new coins, their dimensions are close to the euro coins, and their values are as follows:

1 new ban = 100 ROL

5 new bani = 500 ROL

10 new bani = 1.000 ROL

50 new bani = 5.000 ROL

The denomination of our currency is a matter of objective necessity from the economic and monetary perspective. Through it the Romanian authorities aimed to create the framework required for the transition to euro in the following years.

#### **4.3.2. The transition to the common European currency**

The transition to the common European currency constitutes a great challenge for the Romanian economy and society. Most likely the adoption of euro will become a fact between 2012 and 2014. This will involve these three important moments:

- prior joining the EU, the monetary policy remains Romania's responsibility;

- once Romania becomes a EU member, our monetary policy will be a common concern of EU and our country; the new EU member benefit from at least 2-year period preceding the adoption of ERM II;
- after the fulfillment of the convergence criteria according to the Maastricht Treaty, Romania is to actually adopt euro.

The transition to euro is not an option or an alternative, but an obligation to participate in EMU. ERM II represents a stage towards the adoption of euro as a national currency. The transition to ERM II is conditioned by the achievement of the nominal convergence criteria and by the progress made in connection with the reduction in differences between our economy and that of the EU members.

Romania should not hasten the process of joining the Eurozone since it has to make much more considerable efforts than the countries that joined the EU in May 2004. A realistic deadline for Romania to reach stage ERM II is 2010 – 2012. This will create the conditions for the adoption of the common currency between 2012 and 2014 (6-8 years after the accession to EU), provided that our real economy improves. In the three/four-year period between our joining the EU and reaching ERM II, Romania will have to restructure its economy radically and implement investment programmes that will bring Romania closer to the EU standards in this respect.

The nominal convergence criteria as well as those of real convergence can be met only on the basis of long-term consistent efforts. Our joining the EU in 2007 will facilitate the acceleration of real convergence, a process stimulated by both private investors and European special funds.

Even if the nominal convergence criteria are reached in a shorter time, its sustainability is guaranteed by the existence of real convergence. In addition, the adoption of monetary restrictions to accelerate the realization of the nominal convergence criteria in a very short time may have a negative impact on the pace of economic growth, which will in turn cause a delay in the fulfillment of the real convergence criteria.

To conclude, the transition to Euro should be carried out cautiously, given that the forceful of the convergence criteria could generate substantial costs in our real economy. A sustainable convergence with the European common currency depends on constant and permanent progress in the structural reforms, fiscal consolidation, the promotion of a responsible salary policy, and the establishment of clear and realistic objectives in order to support the accelerated development of our economy even after the transition to Euro is accomplished.

## 5. Orientations on monetary policy

Of all the convergence criteria stipulated by the Maastricht Treaty, Romania meets just those regarding fiscal policy. The fulfillment of the other criteria demands sustained efforts, through a set of consistent policies connected with:

- continuation of a controlled flotation of the exchange rate in order to maintain its real stability and external competitiveness;
- increase in domestic savings and attraction of external capital in order to ensure a high rate of investment that will stimulate a stable and long-term growth of the economy;
- orientation to exports of foreign trade, so that the pace of its growth should exceed growth in GDP;
- implementation of radical structural reforms for viable and solid economic development, as it is in real economy rather than in monetary economy that the fundamental causes of inflation in Romania are found;
- reduction in inflation rate toward average European level.

The reduction in inflation remains a top priority in the future: as long as the inflation is high we cannot have low interest rate or a completely stable exchange rate. The one-digit inflation rate in 2004 allowed NBR to adopt the inflation targeting strategy in August 2005. The experience of other countries that have also implemented this strategy shows that it is especially effective when the objective is to diminish inflation from 10 – 15% to 4 – 5%. The transition to inflation targeting was facilitated by the adoption of the new Statute on NBR in 2004.

The defining characteristics of NBR's current monetary policy are<sup>14</sup>:

- the main objective of monetary policy : achievement and maintenance of price stability;
- use of all monetary policy instruments for the attainment of inflation target;
- future-oriented proactive attitude of monetary policy, i.e. present responses to anticipated future phenomena;

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<sup>14</sup> Isarescu M., Inflation targeting, NBR's governor press release, Bucharest, July 2005, pp. 3-4

- independence of central bank and its responsibility for the realization of inflation target;
- transparency of monetary policy through informing the public on objectives, decisions and arguments behind them, as well as the risks involved

NBR's monetary policy strategy for the present and future has the following coordinates:

- inflation rate is expressed by consumer price index;
- inflation rate is established as a point of reference situated in a variation interval of +/-1%;
- annual inflation targets for the near future are: 7% for 2005, 5% for 2006 and 2 – 3% for 2007 – 2008;
- inflation targeting strategy is applied in a flexible manner along with the controlled floating exchange rate;
- main instrument of communication with the public in order to anchor inflationist expectations is the report on inflation, published by NBR every other three months.

The inflation targets set for the following years are quite challenging, but they can be attained through a consistent anti-inflationist monetary policy, supported by the other component of the mix of macroeconomic policies. Nevertheless, the des-inflationist process will have to continue after 2007, with the aim of meeting the convergence criteria of price stability prior to adoption euro.

## **6. Priorities of real convergence**

Both disinflation and the acceleration of economic growth for the attainment of real convergence depend to a large extent on the overall coherence of the economic programmes of Romania's authorities. The macroeconomic policies and decisions with a significant impact on the nominal and real convergence objectives should consider at least three important problems<sup>15</sup>.

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<sup>15</sup>Isarescu M., Romania's Transition to euro, presentation delivered at the Conference organized by the Academic College of Babeş-Bolyai University, Cluj-Napoca, March 2004, pp. 13

Firstly, they should deal with outstanding debts and quasifiscal deficit. Outstanding debts are first-rank inflationist factors and are a means of survival for inefficient industries, which leads causes a waste of resources.

Some of the outstanding debts represent quasifiscal deficit, i.e. amounts of money owed by public authorities and losses accumulated by public enterprises, and the official recognition of those debts would increase the budgetary deficit and, consequently, worsen the state of nominal convergence criterion for fiscal situation.

Another issue is the pension system, which needs to be radically changed through the transition to a system based on the accumulation of funds so that each person's pension should depend directly on their own contribution. Accurate and competent administration of such a pension system can generate significant resources for investments, which will lead to a more solid internal accumulation and a faster pace of development. Those countries that have adopted rigorously administered private pension systems (e.g. Chile) have experienced substantial economic growth partly on the basis of the resources provided by these funds.

The third major priority is the allocation of significant financial resources to projects for the infrastructure that will take Romania closer to the European standards. Since these funds cannot be allocated entirely from budgetary funds, the need arises for partnerships between the public and the private sectors and for coherent strategies that will stimulate private investments in domains of public interest. Such projects are meant to accelerate economic growth and consequently contribute to real convergence. Nevertheless, we should take into account the fact that these programmes can exert pressure on public expenditure and therefore make it difficult for us to maintain the budgetary deficit and public debt within the recommended parameters for the current stage.

## **7. Conclusion**

European integration requires the simultaneous achievement of both nominal convergence (the attainment of the Maastricht criteria) and real convergence (improvement of living standards, sustainable economic growth, decrease in the discrepancy between Romania and the EU countries). These objectives call for sustained efforts in radical economic restructuring and the realization of investment programmes for the reduction of the gap between our country and the EU standards.

The transition to the Euro should be carried out cautiously given the fact that a forceful accomplishment of the convergence criteria could

generate considerable costs in the real economy. The sustainability of the transition to the common European currency is dependent on constant progress in the structural reforms, fiscal consolidation, promotion of a responsible salary policy, and adoption of clear and realistic objectives that will ensure the accelerated development of our economy even after the transition to the Euro.

Monetary policy cannot solve by itself all the problems involved by European integration. That is why it has to be correlated with solid and coherent macroeconomic policies. Yet monetary policy can accelerate the integration process and attenuate the difficulties involved. The success of the monetary policy as well as that of the whole mix of macroeconomic policies will depend to a great extent on their credibility. It follows that the objectives will have to be both ambitious and realistic and that the authorities should not resort to administrative measures in order to adjust some developments imposed by the market.

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# *Public Finance*

# BUDGET REFORM IN FRANCE: TOWARDS A NEW MANAGERIAL APPROACH

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## **Abstract**

*As part of the new budgetary reform, the Constitutional bylaw of August 1st, 2001 on budget acts introduced new rules and methods for preparing and implementing the state budget. The main purpose is to move from a resource-based to a results-based logic. Indeed, debate will focus on the objectives and the effectiveness of public expenditures. The paper aims to highlight the main aspects of the new managerial approach adopted by French administration within the framework of budgetary reform and the expected difficulties that would be encountered in its implementation. In the new budgetary system, appropriations may be freely apportioned among the so-called Programmes. Programme managers have to be fully dedicated to their goals and be accountable for their management acts via results indicators and target values so as to make public spending more efficient. Therefore, under such framework, the budgetary reform poses a number of questions about the manner of implementing the performance-related aspects of the Constitutional bylaw on public policies. This reform, effectively operational in 2006, calls for a different administrative organisation based on clearer relations between both players engaged in forwarding policies and those managing activities. Another issue raised by the reform is the need to alleviate regulations.*

**Keywords :** *Budget reform ; mission ; programme budget ; globalisation ; performance goals.*

## 1. Introduction

At a time when the government's call for reforms has differently been understood by the French people, and when the financial and budgetary situation requires a strict control of expenditure, it seems more urgent to provide a meaning to the reform and explain the constraints, and the management model which is the best suitable.

Like any other complex entity, the state always needs to evolve. Indeed, it doesn't risk, for lack of adaptation, to disappear, but a failure to achieve its objectives will give rise to a society crisis. Therefore, the political crisis and the question of optimizing public finance management call for a better transparency.

This requires a real revolution in behaviour ; it supposes a change from a resource-based logic, also called a logic of control, to a results-based approach, called now a logic of evaluation.

As part of the new budgetary reform, the Constitutional bylaw of August 1st, 2001 on budget acts (*Loi organique relative aux lois de finances, LOLF*) introduced new rules and methods for preparing and implementing the state budget. Under the new rules, the parliament provides ministers with overall budgets for setting objectives and defining indicators for measuring results.

The purpose of defining performance goals and measuring results is to make public spending more efficient at two levels :

- in the budget decision making process at governmental and parliamentary level ;
- in the management of internal units themselves.

The speed of this reform, and the consensus around which it was agreed constitute a political event; it will allow the emergence of a cultural change, which consists of many other advances in the state's management method.

We need to know how the constitutional bylaw complies with different transformations of the organisational and regulatory model. In other words, will the new constitutional bylaw enable the government to move from a resource-based budget to a budget designed to reflect the results of government action? The answer to this question depends on the implementation procedures, most of which still need to be worked out.

## **2. A new budgetary architecture for greater transparency**

The aim of budget reform is to move public management from resource-based to a results-based approach. At present, state budget appropriations to ministers are divided into about 850 chapters organised by category of expenditure.

In 2006, the state budget will be drawn on the basis of a results-based approach. It will be decided by end purpose in the form of overall budgets, the amount of which will generally be larger than that of current budget chapters. The information joined to the budget act will provide an account of the results expected and obtained.

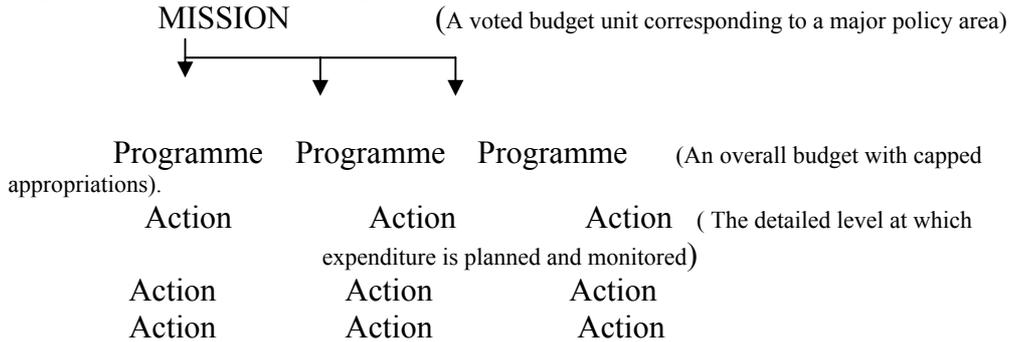
### ***2.1 A Programme Budget based on political objectives***

Under such reform, the Programme budget is organised around the purpose of expenditure. It has three levels (*Fig. 1*) :

- Forty missions correspond to the state's major public policy : the parliament approves the budget act at mission level. The emphasis can be placed on the aim of public policy. Each mission contains a set of programmes which need to be appropriated. Different ministries can be in charge of the programmes. The parliament may modify the allocation of expenditures between programmes within a mission proposed by the government.
- 150 programmes describing the responsibility for policy implementation. Each programme is subdivided into sub-programmes (actions), and is confided to a programme coordinator appointed by the minister concerned. Programme coordinators receive a fungible overall budget which enables them to choose the best-suited resources to achieve the objectives defined. A programme is a single-purpose appropriation unit .
- About 500 actions describe the programmes more detailed. The actions give the managers the information about the use of the budget resources. At this level, an expenditure is planned as it is incurred, specially for guidance purposes. By describing the budget at the objective's level, the state's missions and public service goals become fully transparent.

For each programme a strategy, objectives, performance indicators, and targets are defined. The programme coordinator uses the managerial flexibility, within the framework of the allocated resources, to steer public management according to objectives defined.

**Fig. 1. A Programme budget based on a three-tier structure.**



*Source : Un nouveau cadre budgétaire pour réformer l'Etat, Ministry of the Economy, Finance and Industry, Department of Budgetary Reform, 2004.*

**2.2. Globalisation and greater autonomy for a more reactive administration**

In the new budgetary system, appropriations may be freely apportioned among the programmes. Their breakdown according to the type of expenditure is purely indicative. This globalisation will make management more flexible because programme managers will be able to reallocate appropriations between types of expenditure. Personnel expenditure is the only exception to such globalisation. Because of its long term effect on public finance, it cannot be topped by other appropriations. The system will operate on a commitment accounting basis, which will make much more clearer the multiyear programme management.

In exchange of the high degree of autonomy they have, managers have to be committed to their goals and be accountable for their acts via results indicators. In order to measure the management performance, three criteria are used : social and economic effectiveness, the quality of service, and efficiency (*Fig. 2*)

Through an Annual Performance Plan (APP) appended to the budget act, ministers and programmes managers have to make a commitment to reach specific results. The APP will state programme appropriations, the performance indicators, the expected results and related tax expenditure. Financial data and performance measurements are included. They give more information and better assessment on the efficiency of the public policy.

Once the budget has been executed, performance results of management and expenditure acts are included in an Annual Performance Report (APR) appended to the Budget Review Act. The APR is built on the same model as the APP to make it easier to compare authorisations with execution.

**Fig. 2. The three lines of performance analysis**

	<b>Goal</b>	<b>Sample goal</b>	<b>Sample indicator</b>
Citizen	<b>Social and economic effectiveness</b>	Health : cut breast cancer screening time	Average time elapsing before breast cancers are detected
User	<b>Quality of services provided</b>	Police : cut police intervention time	Average time between police being alerted and their arrival on the scene
Taxpayer	<b>Efficiency</b>	Roads : reduce maintenance costs	Average maintenance cost per kilometre

*Source : Un nouveau cadre budgétaire pour réformer l'Etat, Ministry of the Economy, Finance and Industry, Department of Budgetary Reform, 2004.*

### **3. Budget Reform and the challenges of the reform of the public management model**

As any other reform which aims at changing the reality of behaviours, and not only the rules of law, the public finance reform of 1<sup>st</sup> August is particularly based on the challenges of the transformation of budgetary, organisational and regulatory models.

At the budgetary level, in order to judge the results and derive the consequences from the choice of actions, it is necessary for us to clarify the relationship between the objectives defined and the resources used to achieve them. The budgetary architecture based on the programme is a compromise between two requirements : identifying the policies and defining the activities that they include.

Hence, the Constitutional- by law shows clearly an intention to keep performance plans within a rigorous framework. However, the confirmation of this intention depends on two factors : the quality and as well

as the accuracy of the norms that will be defined in order to frame the content of the information associated with the programmes; in addition, the quality of controls that will be carried out.

The Constitutional- by law doesn't say anything about the processes of information control in relation to the performance of the programmes. This field is entrusted to finance commissions as well as to regulation authorities.

The budget reform success depends tightly on an evolution of management style within the administration. With regard to this question, it is normal that the Constitutional- by law doesn't say anything, but, it is placed in the procedures of its implementation. This evolution is based on a reform of the organisational model as well as the regulatory framework.

### ***3.1. Budget reform and the organisational model change***

The French model of administration is fundamentally based on one particular organisation, which ensures that all the authorities and initiatives result from a unique center: within a unique actor which is the state, the prerogatives take a hierarchical direction from the summit of state to those in charge of their implementation. This administrative model is no more suited to the new management system introduced which calls for a participative approach between the different actors involved in the decision – making process. Also, the actual administrative model prevents the autonomy of management, especially for those who are charged with the implementation of public policies.

The budget reform reveals that this organisation is outdated. It distinguishes two major roles of the state. The first one consists of supervising policies, defining programmes and setting up objectives, while the second role is related to programmes implementation and resources management. As for the managers, they have a large spectrum of freedom of action and initiatives.

The overall budget puts in concrete form this sphere of autonomous responsibility, which is necessary to provide to public managers.

However, many features of state organisation impede this evolution. On the one hand, within the central administrations, the functions of supervising policies and those of managing activities are mixed. Under such conditions, the confusion between roles make it hard to define the concept of command. On the other hand, and at the decentralized level, every service

will find it difficult to gather the necessary competences for an autonomous management. The management unit is rather a service network.

### ***3.2. Budget reform and the transformation of the regulatory model***

The functioning of administrations is based on the application and control of detailed and universal legal rules. All fields of state's action take place within a regulatory provision (laws, decrees, etc). So, is this compatible with the intention to implement a management model based on results ?

Confronted with many regulations, and a great number of controls, the public manager, will merely respect and implement the provisions of these regulations and forget the indications of programme.

The main challenge is to emphasize a concrete and measurable definition of performance goals, beside a reduced regulation adapted to the actual context. The major effort consists, thus, in realizing the transition from a resource- based to result-based approach.

## **4. Conclusion**

The new Constitutional bylaw constitutes the basis of a concrete public finance reform. Therefore, it is considered only as a foundation: many rules should still be specified without which the new framework will remain formal.

Indeed, the budget reform, effectively operational in 2006, calls for a different administrative organisation based on much more clearer relations between those engaged in designing policies and those in charge of their implementation and follow up actions. Another issue, raised by the reform, is the need to alleviate the current regulations, which are still reflecting a resource-based logic.

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# INTRODUCTION OF MEDIUM TERM EXPENDITURE FRAMEWORK (MTEF) IN TURKISH BUDGETARY SYSTEM<sup>1</sup>

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## **Abstract**

*Turkish financial management system has undergone a long lasting reform process for years. Finally a new organic law (Public Financial Management and Control Law) was passed in late 2003 and its full implementation will start in 2006. The new law requires introduction of MTEF for next three years in all general government agencies. Although the new law captures necessary provisions for MTEF, implementation of the new system rises some questions and causes some concerns for the agencies in terms of well working implementation of the new system since it is a system newly introduced. So, 2006 budget will be the first one to start for MTEF. This paper first covers the disadvantages and advantages of the former and new Turkish financial management system. It also analyses MTEF, more importantly policy formulation process within the context of international best practices. It then lays out new Turkish MTEF system and also deals with some potential problems that Turkish authorities will be challenged with. The paper ends with recommendations on how best to implement the new MTEF system in Turkey.*

**Keywords:** *Medium Term Expenditure Framework, Turkish Budgetary System, policy formulation.*

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## 1. Introduction

The economic and financial problems experienced in the today's economies have created pressure towards an increase in budget expenditures; increasing pressures undoubtedly caused the governments to increase taxes and resort to borrowing. These developments brought along with the questioning of the public financial management systems of countries and therefore the reform efforts. In order to bring a solution to their problems, the countries tended to change their public financial management systems that constitute the focal point of the problem; within this scope, they have undertaken significant structural changes towards ensuring effective, efficient and economic use of public resources.

Also in Turkey, the economic structure has rapidly deteriorated starting from the beginning of 1970s, several interventions made to capture stability has proved fruitless when combined with fluctuations in the political structure. Turkey constantly struggled with high inflation, public deficit, instable growth, high interest and deterioration of income distribution, could not bring radical solutions to its problems other than short term recoveries and could not capture the stability it seeks. Meanwhile, the lifespan of the economic stability packages that were not supported with structural reforms were short termed. Although improvements in economic and financial situation have been recorded, the system has not lost its feature of being easily distorted.

Therefore, the problems arising from the public financial management system and following thought that the public resources have not used in an effective, efficient and economic way have accelerated the reform efforts. As a matter of fact, the reform efforts in Turkey have usually arisen in the aftermath of economic and financial crises. Right after the economic crisis experienced in April 1994, it was concluded that it was necessary to undertake some changes in the public financial management system and to this end, working commissions were set up composing of representatives from key economic agencies. The commissions made their studies, prepared their reports and submitted to then the government. However, with lack of sufficient political will supporting the reform efforts, these efforts were inconclusive. The second step in the public financial management reform, consequent to the significant economic problems experienced in the economy, started with the new economic program introduced in the year 2000 and has accelerated following the economic and financial crisis undergone in 2001. Within this scope, the quasi-fiscal transactions of the state have been set in order, the budgetary and extra-budgetary funds as well

as special accounts outside the budget, which were great problems for long years, were eliminated leaving out some exceptions, the provisions allowing agencies to add appropriation within the year without the authorization of the parliament have been abolished, state borrowing and the procurement system have been brought under discipline through framework laws. The most radical and comprehensive change in the public financial management system has been realized with the adoption of the Public Financial Management and Control Law numbered 5018 at the end of the year 2003. By abolishing the Public Accounting Law numbered 1050 which was in implementation for approximately eighty years but unable to meet the requirements of the best international practices in today's world, the new public financial management approach has been introduced with Law numbered 5018. This new law brings important changes to the fundamental principles of public finance and utilization of public resources.

The significant changes brought by the new public financial management concept can be listed as; strengthening of the generality and unity principles of budget in execution, highlighting financial transparency, accountability in the utilization of public resources as well as performance based budgeting and MTEF, introduction of the mechanisms necessary for the effective, economic and efficient utilization of public resources and one of the principles of modern public financial management, giving freedom to the managers in the line agencies beforehand and strengthening the ex post audit by increasing its efficiency.

In this paper, firstly the content of the changes undergone in the public financial management systems in the world and the problems experienced in Turkey during the period of implementation of the Law numbered 1050 and in the following period and new practices that are brought will be explained. Afterwards, the introduction of MTEF in Turkey which is one of the important practices brought by the Law numbered 5018 in terms of efficient, effective and economic use of public resources will be discussed. The paper will end with a short conclusion part.

## 2. Recent Developments in Public Financial Management System

### 2.1 The World

Significant arrangements are being undertaken in several countries in the area of public financial management in recent years. The established economic, social and cultural structure of every country may set different forms to the public management and public financial management systems. However, in the world, the public financial management reforms have some common characteristics; public financial management reforms are realized to affect three fundamental elements. These are; overall financial discipline, distribution and utilization of resources according to strategic priorities and ensuring effectiveness and efficiency in the provision of public services. The budget reforms continuing for centuries to realize these focused on reformulating three basic functions of the public. These are; control of public resources, medium term resource allocation and management of resources<sup>2</sup>.

Realization of the institutional arrangements necessary for fiscal discipline is important in terms of the outcome of budget implementation. In this context, allocation of public resources should be in line with the expenditure ceilings and the agencies have no any authorization to exceed the appropriations set by the budget except for the supplementary budget approved by the Parliament. The most fundamental element of the fiscal discipline concept is that the budgets are formed by taking into account the available resources. Actually, together with the budgetary restrictions introduced in the public financial management system and the flexibilities given to the public agencies in the realization of public services will play an important role in the realization of the goals mentioned above, and at the same time they will pave the way for change in public financial management. The second aim of the reforms made in the public financial management system are the arrangements made towards taking into account the program efficiency and strategic priorities of the government and hence the agency in the allocation of public resources. In allocation of resources, taking into account the national priorities determined by the government is a requirement

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<sup>2</sup> THE WORLD BANK. *Public Expenditure Management Handbook*, Washington D.C.: The World Bank, 1999, pp. 17; ZEVENBERGEN, J. *Budgetary Reforms in Transition Countries: The Role of Capacity Building-Summary and Main Conclusions. (Special Report Prepared for OECD Budget Officials Meeting)*. Rooterdam, 2004. pp. 1.

of accountability. Because, resource allocation is basically a political issue. In this regard, in the policy formulation process which is the first stage of the budgeting process, the areas which will be allocated public resources among the priorities of the government are identified by also using the efficiency analyses. The third element is increasing the performance of public sector, in other words, the efficiency. Provision of public services with the most possible cost is an issue that occupies the agenda of many countries in the world including developed countries. On this issue, particularly developed countries have made significant progress and they have changed their public financial management systems towards this direction.

On the other hand, OECD has reached the conclusion that the performance about the fiscal discipline is closely related and the countries which generally have budgetary surplus are those that reform their budgeting process and implement modern budgetary systems<sup>3</sup>. In this framework, five basic institutional arrangements are recommended in the budgetary system in order to control the public expenditure efficiently. These are; MTEF, prudent economic assumptions, top-down allocation of public resources, departure from input oriented resource allocation towards output oriented resource allocation, highlighting financial transparency and accountability.

MTEF is basically the most important tool of establishing policy, plan and budget link. Determination of policies independent from available resources and budgets is the result of a decision-making mechanism away from efficiency. This also shows that policies are not identified according to available resources or strategic priorities<sup>4</sup>. An efficient budgeting requires efficient balancing between needs and resources. MTEF contributes to increasing predictability and reliability of budgets by establishing the link between policy and budget.

On the other hand, over-optimistic economic assumptions and unnecessary increase of public expenditures bring together resource allocation to inefficient budget practices. The old practice that used to be applied in resource allocation to public agencies was to receive appropriation requests from the agencies, examine these requests one by one, make negotiations with the relevant agency and to identify the appropriation to be allocated in term expenditure areas. Among many drawbacks of this system, the most important drawbacks that it does not reflect the priorities of the government. However, this practice is now abandoned in many countries.

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<sup>3</sup> BLÖNDAL, J. R. Budget Reform in OECD Member Countries: Common Trends. *OECD Journal on Budgeting*. 2003, vol. 2, no. 4, pp. 7 – 14.

<sup>4</sup> THE WORLD BANK. *Ibid.* pp. 32.

Instead, the top down appropriation allocation is implemented, where the government predetermines the total appropriation to be allocated in the relevant year and also puts a ceiling for the appropriations to be allocated to public agencies, the resource distribution for the activities and projects to be carried out within the predetermined ceilings is made by the public agencies without the intervention of the Ministry of Finance.

However, it is possible to encounter views opposing to this approach; it is underlined that the ministries of finance should somehow be involved in the distribution or redistribution process of public resources in the budgets of relevant public administrations in terms of the financial objectives and political priorities of the government<sup>5</sup>.

On the other hand, there is a common understanding that departure from input oriented resource allocation to output oriented resource allocation, in other words caring about what is done in the public sector rather than how the public activities are performed, will increase efficiency in the utilization of resources. Besides, transparency and accountability are regarded as significant tools for the governments to give assurance to the parliaments and the people that they have efficiently used the public funds entrusted them.

As can be observed, generally the same methods and tools are being used in the reformation of public financial management systems in the world. The arrangements focus on financial discipline and highlighting efficiency and effectiveness in the allocation and utilization of public resources. To this end, innovations are made in the national budget systems, international best practices emerge. Now, through the budget reforms, the governments take the necessary steps not to have the public budgets, which have a significant position in the economy in terms of magnitude and quality, to be the sole cause of economic and financial crises.

## ***2.2 In Turkey***

### **2.2.1 Period before the Law numbered 5018**

In Turkey, the Parliament's right to approve the national budget has been recognized with the 1924 Constitution and the first arrangement related

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<sup>5</sup> SCHICK, A. Does Budgeting Have a Future?. *OECD Journal on Budgeting*. 2002, vol. 2, no. 2, pp. 28.

to public financial management system in the Republic period has been realized with the Law numbered 1050 adopted in the year 1927. The Law numbered 1050 which is the constitution of the public financial management system has been implemented in Turkey for almost eighty years since 1927 with a few amendments. During this term, significant changes have been undergone in the public financial management and control systems in the world and international best practices have emerged. In Turkey, in the same period of time, the number of public administrations has gradually increased and significant changes have occurred in terms of their quality and organizational forms as well as in terms of quality and quantity in the production of public goods. Besides these, the changes in the world have brought by the appearance of great changes in the approaches in the area of public financial management system in Turkey.

The criticisms concerning the period when the Law numbered 1050 was implemented can be summarized as follows; rather than a single budget, emergence of different budgets (extra budgetary funds, revolving funds, etc.); failure of the budget system to establish the policy-plan-budget relationship; not making strategic plans for agencies; failure to perform functional analysis of the state and therefore lack of clear duty definition of the public agencies; performance of audit in the Turkish budget system basically in terms of compliance audit; neglecting the efficient economic and effective use of resources; taking into account only the expenditures incurred in the previous year for the allocation of appropriations; lack of defining managerial responsibilities in a clear way; magnitude of the appropriations recorded throughout the year, although not included in the budgeted appropriations, without parliament's approval, on the grounds of powers vested by some laws, the Law No 1050 being the dominant; failure of the registry and control system of state's assets to reach a sufficient efficiency level and that fact that the state does not have the full set of information on its commitments; not budgeting the tax exceptions, discounts and exemption created by the state through incentive policies<sup>6</sup>

These drawbacks that are mentioned have accelerated the restructuring of public financial management system especially in recent years. Consequent to these studies, the Law No 5018 has been adopted to

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<sup>6</sup> DPT. *Sekizinci Beş Yıllık Kalkınma Planı Kamu Mali Yönetiminin Yeniden Yapılandırılması ve Mali Saydamlık Özel İhtisas Komisyonu Raporu*, Ankara: DPT, 2000, pp. 28-82. ARCAGÖK, M. S., YÖRÜK, B., ORAL, E., KORKMAZ, U. Kamu Mali Yönetimi ve Kontrol Kanununda Öngörülen Düzenlemeler. *Bütçe Dünyası Dergisi*. 2004, İlkbahar, no. 18, pp. 3-4.

replace the Law No 1050 and it has been foreseen that the 2006 budget will be prepared in accordance with this approach.

### **2.2.2 Changes to the Public Financial Management System with Law No 5018**

The Law No 5018 that constitutes the financial pillar of the public management reform has been adopted by the Parliament on 10 December 2003. Law No 5018 takes a new approach on the structure and functioning of our financial management and control system and regulates the fundamental principles of these issues, and determines how the transactions for the preparation, implementation and control transactions of public budgets will be carried out as well as accounting and reporting of financial transactions.

The changes brought and the issues aimed with this Law that has the objective of the establishment of a new public financial management system can be stated as follows:

- ◆ It is ensured that all revenues and expenditures of public agencies are included in the budgets and it is aimed to prevent obtaining revenues and incurring expenditures from outside the budget.
- ◆ A close connection has been established for policy-plan-budget<sup>7</sup>. Strategic planning and performance based budgeting have been fundamental pillars of the new system. Besides, special provisions for the purpose of ensuring efficiency in budget preparation and implementation process and MTEF is introduced.
- ◆ The duties, powers and responsibilities of public administrations in the budget process are rearranged. Within this scope, the power-responsibility balance in public financial management is re-established and the problem of responsibility without powers and irresponsibility with powers is overcome. The duties of performing ex ante control and ex post internal audit have been transferred to the relevant public administrations and it has been stipulated that they will undertake a new structuring in this regard.
- ◆ The duty of giving visa to commitments and contract drafts still performed ex ante by the Ministry of Finance is abolished. Within his

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<sup>7</sup> ARCAGÖK, M. S., YÖRÜK, B., ORAL, E., KORKMAZ, U. Ibid. pp. 6.

scope, transaction of giving visa on utilization of appropriation and transaction of registering contracts performed by the Court of Accounts has been ended as of 2005. Therefore, through reducing ex ante controls, the necessary environment for swift provision of public services is prepared.

- ◆ Through paving the way for specialising in audit, establishment of an internal audit system that has certain rules and standards, constantly functioning and that will take place within the relevant public administration is targeted. Appointment of internal auditors is provided for in order to ensure the performance of auditing activity operating within a determined system and to perform ex post internal audit. As a requirement of the newly adopted system, strengthening of ex post auditing activity is required.
- ◆ In the public sector, the obligation to use the same accounting system has been introduced. In all public agencies within the scope of general government, common accounting and reporting standards as well as chart of accounts shall be implemented. Furthermore, the Ministry of Finance has been delegated to prepare and announce publicly the financial statistics<sup>8</sup>. Implementation of a new budget classification in accordance with the International Monetary Fund Government Finance Statistics (GFS) is introduced.
- ◆ Tax expenditures chart renounced due to tax exemption, exception and reductions as well as similar implementations shall be added to budget laws.

To summarize all that have been explained above, this Law; ensures budget unity, highlights effective, economic and efficient utilization of public resources as well as financial transparency and accountability and allows for wide initiative power to the public agencies for decision making and implementation.

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<sup>8</sup> MALİYE BAKANLIĞI MUHASEBAT GENEL MÜDÜRLÜĞÜ. *Devlet Muhasebesinde Reform Çalışmaları: Nakit Esasından Tahakkuk Esasına*. Ankara: Maliye Bakanlığı Muhasebat Genel Müdürlüğü, 2002, pp. 32.

### **3. New Approach in the Utilization of Public Resources: Medium Term Expenditure Framework (MTEF)**

The main objective of fiscal policy is to increase economic welfare. Fiscal policy employs three elements in order to realize this. These are; the allocation of public resources, redistribution of welfare and income and regulation of economic activities. Budget, which is an important instrument for the implementation of fiscal policy, has its own effect on the other elements, mainly on the allocation of public resources, directly and/or indirectly. It is possible to see how budgeting process affects the aforementioned instruments. The first in this process is policy formulation (making). Afterwards, a budget that is suitable for the outcoming policy is prepared and implemented, and the process ends with the evaluation and auditing of the implementation. The rationale of the budgeting process is exercising the authority granted by citizens to the government, and the government should be able to give account of what it does and what it produces as it exercises this authority.

As regards the historical development process, whereas budgets used to be prepared based on input sources such as money, human and accounting; a new budgeting approach became prominent in budgeting in OECD countries especially in the last twenty years and public budgeting and administration started to develop in an output-outcome oriented rather than input oriented manner.

In the traditional public management approach, accountability takes place in the form of conforming to legislation; consequently managers do not encounter any problems as long as they comply with the rules. In the new public management approach, what the managers do is more important than how they do it<sup>9</sup>. Thus, being outcome-oriented in rendering public services and evaluating the success of the managers based on the output and outcome generated by public activity, find wide implementation today.

On the other hand, the main problem encountered in the budgeting process in many countries is downplaying the importance of strategic decisions, namely absence of certain strategic rules while the budget implementation is strict and centralist. In other words, the loose policy making process is endeavoured to be balanced by means of over-strict budget implementation rules. The reason why the strategic decision-making process

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<sup>9</sup> BLÖNDAL, J. R. Ibid. pp. 18.

is weak is because the policy making process is distributed among different public agencies. Therefore, an efficient coordination mechanism is needed within the government for an efficient strategic management. In fact a centralist and strict policy making process and decentralist and flexible implementation processes are desirable for an efficient MTEF process<sup>10</sup>.

MTEF is implemented in order to provide information on the medium terms strategies to be implemented by the governments in terms of public financing. Therefore, MTEF is an instrument that provides information on the areas where the public expenditure will be directed to in the medium term. MTEF sets expenditure ceilings for central government and agency level to accomplish fiscal discipline and to allocate public resources in line with the strategic priorities of the governments within these ceilings. However, agency level ceilings might be shifted from one agency to the another if necessary, provided that overall ceiling for the budget will not be exceeded. Strategic priorities are determined for two steps, first on national level and next on agency level. The agencies' priorities should be more detailed compared to the national one. Strategic priorities should also cover macroeconomic framework (inflation, growth, export, import, budget deficit, public debt stock), otherwise setting priorities itself will not make sense for well working MTEF. The agencies should be careful that their priorities are to comply with the national priorities. Consequently, MTEF finds wide implementation around the world in recent years, for overcoming challenges encountered in the budget systems.

### ***3.1 Definition of MTEF***

MTEF is defined as a budget approach where the annual budget process is evaluated with a multi year approach, especially such as multi year forecasting of expenditures or a multi year fiscal strategy, and where the policy-plan-budget link is realized<sup>11</sup>. Disconnection between policy-plan-budget causes budgets to give negative economic outcomes especially in developing countries. In many countries, these three elements operate independently from each other. Therefore, budgeting is seen as an instrument for the central agencies to meet the appropriation requests of agencies in the pertaining year. However, budgeting should be seen as an activity that is based on policy. An efficient decision making process should ensure that the

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<sup>10</sup> THE WORLD BANK. Ibid. pp. 24.

<sup>11</sup> KIZILTAŞ, E. Çok Yıllı Bütçeleme Sistemi, *Bütçe Dünyası Dergisi*, 2003, Sonbahar, no. 16, pp. 13. ARSLAN, M. Orta Vadeli Harcama Sistemi (Çok Yıllı Bütçeleme) ve Türkiye'ye Uygulanabilirliği. *Sayıştay Dergisi*. 2004, no. 54, pp. 11.

link of policy making and planning with budgeting is established and it should also require them to be limited by the available resource level and priorities. Otherwise, budgeting process turns into an activity which is no more than a challenge to save the day. Consequently, predictability in budgeting process will enable public agencies to plan and manage their resources in the medium term. In consequence, MTEF also brings about the control of public expenditures and efficient utilization of resources and thus the resource allocation process is eliminated from uncertainty.

MTEF process generally covers the budget year to be prepared for the coming year and sent to the parliament for approval and the following two years. In terms of time, the same approach has been followed in the Law No 5018. This process basically has been founded over three structures. The first one of these is the top-down estimation of total resources that can be allocated for public expenditures in coherence with the macroeconomic structure; the second one is bottom-up estimation of the costs of the activities and projects that are underway and that are to be put into practice shortly; and the third one is a process that compares total resources with these costs<sup>12</sup>. The most important innovation brought by such a practice is drawing up of the framework of the size of the service to be rendered as per the available resources, in other words existence of a very close link between decision making mechanism and the available resource package and as a natural outcome of this, distribution of resources according to determined strategic priorities.

Thanks to MTEF, budget resources are mobilized in a way to cover a period longer than one year for realizing the strategic priorities which cover more than a year, which are determined by politicians and which reflect the choice of the electorates so to speak; therefore, medium term policies are formulated and these policies are integrated into the budget process. Thereby, a transition has been foreseen from the budgeting system based on traditional cash management to a budgeting system based on expenditure management<sup>13</sup>. As a natural outcome of the given information, planning and handling the expenditure areas in the budget with a medium term approach is required. For instance, welfare payment to those older than 65 or agricultural subsidies to farmers are not policies that differ from year to year. Lately, the agriculture strategy to be implemented in the coming five years has been declared by the Ministry of Agriculture and Rural Affairs in Turkey. Therefore, the best way

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<sup>12</sup> YILMAZ, H. H. Kamu Mali Yönetiminin Yeniden Yapılandırılması: Dünya Bankası Orta Vadeli Harcama Sistemi. Ankara: DPT, 1999, pp. 16.

<sup>13</sup> YILMAZ, H. H. Ibid. pp. 19.

to formulate this declared agricultural strategy within the budget is to take up the issue with a medium term approach.

### 3.2 *The Objectives of MTEF*

There are many reasons MTEF has been given place in budgeting process in recent years. It is possible to enumerate these as follows:

- ◆ It makes it obligatory for the governments to determine their medium term goals and objectives clearly. Thus, it is ensured that the public resources to be raised in the medium term are allocated between and across the sectors. So it improves predictability of funding for line agencies and is sort of budget planning given policy choices<sup>14</sup>,
- ◆ It sets out major policy directions, fiscal aggregates and the sectoral resource allocation<sup>15</sup>,
- ◆ It enables the redistribution of resources among the budgets of public agencies and/or within the budgets of public agencies so that the changes which took place in the government's priorities are included into the next year budgets<sup>16</sup>. So efficiency in the allocation and utilization of public resources is encouraged<sup>17</sup>. However, minimizing the redistribution of resources in the budget execution is also important because the frequent repetition of such a practice might cause budgets not to reflect the real priorities or might cause a deviation from fiscal/political discipline<sup>18</sup>,
- ◆ By way of establishing a consistent resource-expenditure balance, it ensures fiscal discipline and contributes to the enhancement of the macroeconomic balance<sup>19</sup>,

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<sup>14</sup> SWAROOP, V. *Medium Term Expenditure Framework: What is it?*. Washington, D.C.: PREM Week Thematic Session, 21 November 2000, pp. 4.

<sup>15</sup> KOWN, O. B., YOUNGSUN K. *Introducing a Medium-Term Expenditure Framework: The Korean Experience*, Ankara: Symposium on Strengthening Budget Preparation Process, 5 May 2005, pp. 4.

<sup>16</sup> SCHICK, A. Opportunity, Strategy and Tactics in Reforming Public Management. *OECD Journal on Budgeting*. 2002, vol. 2, no. 3, pp. 27.

<sup>17</sup> KIZILTAŞ, E. *Ibid.* pp. 18.

<sup>18</sup> THE WORLD BANK. *Ibid.* pp. 22.

<sup>19</sup> WILDAVSKY, A. Controlling Public Expenditure: The Theory of Expenditure Limitation. *OECD Journal on Budgeting*, 2003, vol. 2, no. 4, pp. 40.

- ◆ It provides necessary information to the political decision makers on the possible costs of the political priorities of the government and of new programs and projects that are put into implementation<sup>20</sup>.
- ◆ It ensures the continuity of programs that are being implemented as a result of the increased predictability in the allocation of public resources for certain policies. Furthermore it assists the establishment of the necessary incentive mechanisms for the effective and efficient utilization of the public resources as a result of the budget constraints introduced and the flexibilities provided to public agencies<sup>21</sup>.

MTEF approach has certain disadvantages although it ensures, by way of realistic analyses, the allocation of the limited public resources to the areas where they can be effective and efficient. It is possible to enumerate these disadvantages as follows:

- ◆ Future oriented estimations in MTEF practice might appear as earned rights by the agencies, and this might prevent the top down revision of the expenditures in case a need arises for the correction of the estimates made beforehand,
- ◆ Over optimistic multi year estimations might lead to continuation of unnecessary public services and might form an upward pressure over the budget expenditures,
- ◆ If multi year estimations are made in a way to include real increases, expenditures might automatically increase in the inflationist periods, these increases taking place independently from the developments in the budget revenues might make it difficult to ensure fiscal discipline<sup>22</sup>. There are also claims that this situation might inhibit rendering public services at a required level, furthermore, that the position of the public and private sectors in the economy might change against the favor of public sector<sup>23</sup>.

However, it is within the bounds of possibility to eliminate the enumerated disadvantages of MTEF using multi year budget estimations

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<sup>20</sup> BLÖNDAL, J. R. Ibid. pp. 11.

<sup>21</sup> YILMAZ, H. H. Ibid. pp. 22.

<sup>22</sup> BLÖNDAL, J. R. Ibid. pp. 12.

<sup>23</sup> WILDAVSKY, A. Ibid. pp. 40.

which are prepared on the basis of economic presumptions determined realistically as well as nominally and which are not responsive to inflationist increases.

We should bear in mind that MTEF may fail due to the some circumstances encountered such as macroeconomic instability, weak financial management system, lack of enough administrative capacity and fiscal discipline and introducing new programs with no resources available<sup>24</sup>. If successfully applied, it would improve macroeconomic balance by developing a multi year resource framework.

Therefore, budgets are the most important instruments used by governments to realize the services committed by them to citizens. This also indicates that budgets are important texts which reflect political choices. However, it is not possible to limit the commitments of the governments to a year, besides they have a nature of covering many years. Therefore the budget systems should take account of the economic activities and commitments that exceed a year and that are related to budget. For this reason, budgeting should be thought together with the planning process and establishment of the plan-budget link becomes inevitable for an efficient budget process. Consequently it will be possible for this kind of a budget, which is not disconnected from other periods, to generate policies.

### ***3.3 Policy Making, Planning and Budget Relationship***

Medium term approach facilitates the allocation and realization of public resources in compliance with the resource-expenditure balance and considering the determined priorities. Therefore we can state that from the two most important objectives of the medium term approach, the first one is setting the fiscal objectives and the second one is distributing the resources as per strategic priorities within the framework of the said objectives.

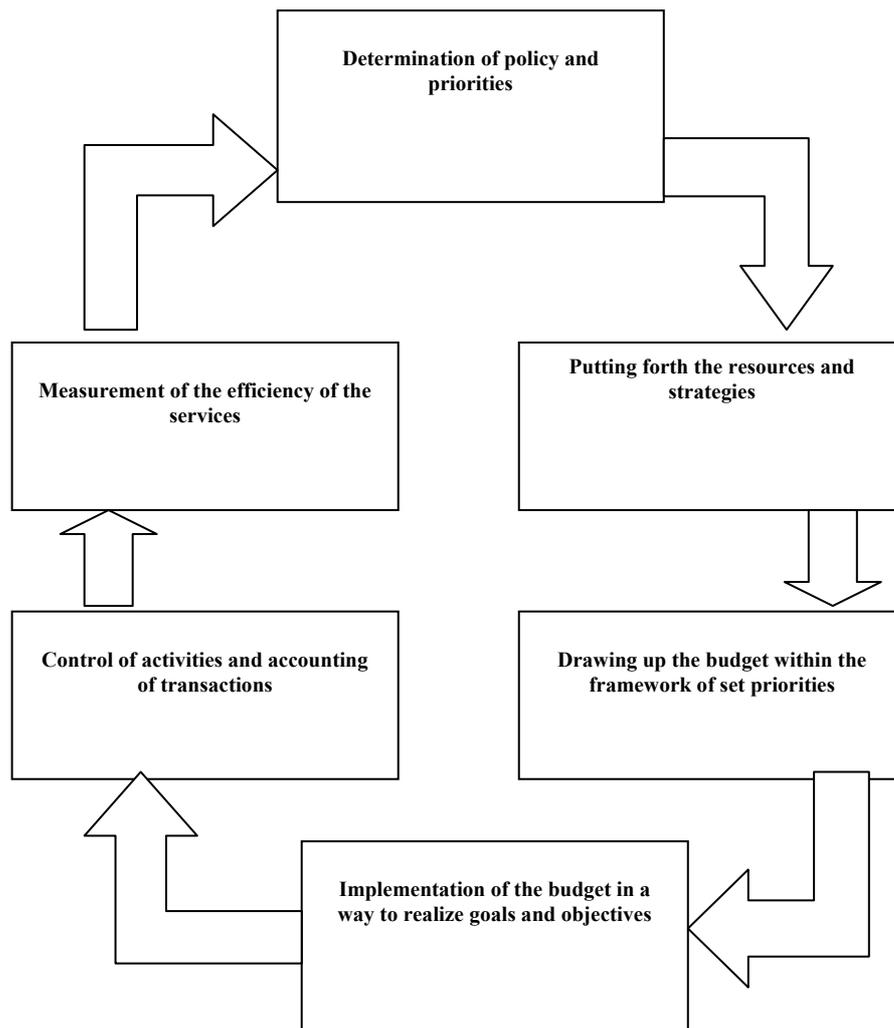
Figure 1 indicates the process that is necessary for the establishment of the link between efficient policy making, planning and budgeting. First and foremost, the process starts with the government determining on its policies and priorities as per sectors. In the following stage, goals and strategies as well as available resources oriented towards realizing these policies and priorities will be put forth. As the third stage, preparing a budget as per certain sectors in conformity with the determined policies, goals and available resources will be required. In this stage, what amount of resources

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<sup>24</sup> PEARSON, M. *Medium Term Expenditure Frameworks. (Briefing Paper)*. UK: DFID Health Systems Resource Centre, 2002, pp. 4.

will be distributed to which expenditure areas will be determined. Budget implementation, which includes the collection of revenues for the realization of determined public activities and the mobilization of the necessary personnel and resources, comes up as the next stage. Monitoring of the activities and keeping of the necessary accounting records are required in the fifth stage. The process will have been completed with the evaluation of the efficiency of the activities and auditing of the implementation and at the same time with the acquisition of the necessary experience for the policies to be implemented in the future.

**Figure 1-Policy Making, Planning and Budget Relationship**



*Source: THE WORLD BANK. Public Expenditure Management Handbook, Washington D.C.: The World Bank, 1999, pp. 32.*

Resource allocation process in the developing countries faces important problems due to uncertainties experienced and it prevents proper planning oriented towards future. For example, over-optimistic estimation of budget revenues might lead to an uncertainty in terms of resource levels and might inhibit efficient planning oriented towards future.

The budget process does not take into account the possible problems to be encountered in the coming years and the multi year budgets are not binding or the set objectives are not taken seriously, the government operates in order to carry out the given duties only, as in the case of classical budget approach, rather than to use public resources for the realization of certain goals and objectives. For this reason, especially in the developing countries the policy-plan-budget link is required to be strengthened<sup>25</sup>.

### ***3.4 Introduction of MTEF in Turkey***

MTEF is a newly introduced approach in Turkish financial management system. One of the deficiencies Turkish budgetary system had in the past is the lack of prudent macroeconomic framework and assumptions in estimating revenues and expenditures for coming years. More importantly, revenue and expenditure estimations were not compatible with the existing macroeconomic framework. So MTEF for Turkey shall be prepared in a rolling structure, capture some more flexibilities in case of changing priorities and circumstances within the year. MTEF should also be in detail and comprehensive enough to link with national priorities set forth in medium term program and fiscal plan as required by the new Law, No 5018.

MTEF should be handled as a process and roles and responsibilities of key central agencies (Ministry of Finance and Undersecretary of State Planning Organization) as well as public agencies should be defined within this process. In reference to the Law No 5018, we see that no clear and simple process relating to MTEF has been set forth. As for the MTEF practices across the world, the most important element of MTEF is that the priorities of the government are determined by the council of ministers and the priorities at the level of administrations are determined by the ministries together with the agencies strategic plans. First stage in MTEF is the determination of the macroeconomic framework. Macroeconomic framework will at the same time facilitate the estimation of expenditures pertaining to

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<sup>25</sup> IŞIK, H. Kamu Harcamalarında Performansa Dayalı Bütçe Yönetimi ve Denetimi ile Türkiye’de Uygulanabilirliği, Ankara: Devlet Bütçe Uzmanlığı Araştırma Raporu, 2003, pp. 73-74.

the next three years. Therefore it is required to ensure mutual harmony by means of combining economic estimates and financial objectives; and consequently to estimate the macroeconomic framework for the next three years employing different methods of analysis. Furthermore, it is required that the costs of current and new policies are identified and effects of these policies on economic balances are estimated. For example, economic forecast office operating independently in the Netherlands is obliged to assist the ruling government and the opposition especially in the calculation of the costs of new policies as well as in the estimation of the effects of these policies on economic balances.

Medium Term Program to be prepared pursuant to Article 16 of the law No 5018 could be functional in this respect. Thus this program could be taken as the starting point of MTEF. The Council of ministers that will convene by the end of May will adopt the medium term program prepared by State Planning Organization in a way to cover macro economic policies, principles, targets and main economic magnitudes as indicators (sectoral priorities, growth, inflation, exchange rate, payment balance, interest, etc.) in line with requirements of the development plans, strategic plans and general economic conditions and the Program will be published on the Official Gazette within the same time period.

The second stage in MTEF is the revision of sectors. In this stage goals and activities of a sector/ministry should be revised and the costs of these goals and activities should be calculated and information on their outputs and outcomes should be obtained. As a result, the programs and subprograms that will ensure the realization of these goals and activities should be prioritized taking account of the available resources. As regards Article 16 of the Law No 5018, this stage has not been given any place. However in Article 9 of the Law, strategic plans are mentioned and this stage will be realized by the strategic plans of the administrations. Nevertheless, as mentioned just a while ago, the fact that multi year budgeting process is not given in a certain order in the Law has the potential to cause complications in practice. What is more, the fact that MTEF will be introduced with 2006 budget while only certain administrations are piloted in terms strategic planning, indicates that this stage will not be given place in the budgeting process at least for a while.

The third stage should entail negotiations of the Ministry of Finance and State Planning Organization with the sectoral ministries. In this stage negotiations take place on the outputs of the sectoral study conducted in the

previous stage. Similarly, law No 5018 provides no certain calendar for these negotiations.

The fourth stage is the determination of expenditure ceilings of the sectors/ministries for the coming three years. Expenditure ceilings are set bearing in mind the priorities determined in the previous stages and the macroeconomic structure. In other words, a detailed framework on the sectoral and institutional distribution of the expenditures is formed. Furthermore, targets relating to the total revenues of the coming three years are determined. However, the final decision about the expenditure ceilings of sectors/ministries and total revenues will be taken the Council of Ministers.

In stage five, expenditure ceilings of sectors/ministries will be approved by the Council of Ministers. The most important stage in MTEF is this stage where the expenditure areas for which the public resources will be allocated in the medium term are transformed into a government declaration by the council of ministers by staying within the boundaries of available resources. This stage is not a simple stage where budget ceilings are determined only. It is a stage where the medium term priorities of the government and thus its policies as well as the economic role of the state are reflected to the budgeting process.

According to the Law No 5018, medium term fiscal strategy, which includes total revenue and expenditure estimates relating to the coming three years, the target balance, the borrowing status if any and appropriation ceilings of the public administration, shall be prepared by the Ministry of Finance in compliance with the medium term program and shall be approved by the High Planning Council in the first half of June. However, the Law No 5018 has brought a structure that does not comply with this general rule mentioned above. This is because the medium term fiscal strategy will be adopted by the High Planning Council instead of the Council of Ministers. Therefore a policy declaration which many ministers are not involved in, in other words, a resource allocation process which might not be agreed upon by the members of the cabinet will be brought about.

In the final stage, public agencies are required to prepare their budgets for the coming three years taking account of the sectoral/institutional priorities and ceilings. However, in the budget preparation stage the Ministry of Finance and State Planning Organization is required to check how much the budget proposals sent by the institutions comply with the sectoral/institutional ceilings and priorities set forth by the medium term program and fiscal strategy. It would provide an important contribution for

the realization of policy and budget link if they talked with the representatives of the sectors/institutions on ruling out the inconsistencies if any, thereby ensuring consistency.

There is no doubt that a successful and sustainable public financial management reform reveals the need for strengthening of the institutions involved in the budget process and the realization of the institutional arrangements other than the budget. Because realizing the transformation does not depend on setting the necessary rules only. It also depends on a public financial management system whose authorities and responsibilities are well defined, an internal control mechanism that operates efficiently together with the necessary mentality change in the public institutions and the public sector personnel with sufficient capacity. On the other hand, presentation of information on time and in a reliable manner and monitoring and evaluation capacity of the administrations thereof will play an important role. Furthermore, external audit is an important element. For this reason, administrative capacity building in public agencies and creating necessary infrastructure to this end is essential. Transfer of the public financial management system, which has been the duty of the ministry for many years in our country, to the public agencies from now on, as a requirement of the Law No 5018, should be seen as a very important and fundamental mentality change.

#### **4. Conclusion**

A transformation need in public financial management system has become prominent in a rapidly changing world, based on the methodology approach brought by globalization and information society. Reconstruction need appeared not only in the public financial management systems but also in the public administration approach and the transition from an industrial society to an information society revealed the difficulty of adaptation of public administrations to the changing conditions within the existing patterns. As a consequence of this, the new public administration approach came out and public administrations in many countries initiated a change in their approach and implementation.

Public administration systems have undergone change in parallel with the new public administration approach and activities carried out towards reconstruction hastened in recent years. A need for transformation especially appeared in developing countries rather than in developed countries;

however, transformation activities carried out in public financial management systems became prominent more in developed countries. As a consequence of this, with the efforts of international organizations too, international examples of the best practices were opened up and the developing countries have been affected by the wind of transformation too.

The need for transformation appeared especially after the economic crises in our country and the problems encountered by the Public financial management system have been among the issues which have always been a matter of discussion. And the idea became prominent that a budgeting system, which is founded over an audit system that is fragmented, that operates on strict principles and procedures and that is not intense or efficient; and which adopts an input oriented budgeting approach that does not include fiscal transparency and accountability in itself, that does not provide initiatives to administrations, can no longer be continued<sup>26</sup>.

One of the important approaches brought by the new financial management approach has become MTEF. Reflecting the governmental policies to the planning and budget process is the most important tool for providing resource-expenditure balance in the public sector. A decision making process prepared without taking account of the available resources might cause deviation from fiscal discipline and accumulation of economic problems. For this reason, MTEF is seen as an important element for ensuring discipline in the utilization of resources. Therefore, efficiency and effectiveness in the allocation and utilization of public resources have been highlighted and policy, plan and budget link has been endeavoured to be strengthened, through the Law No 5018, and necessary legal infrastructure for performance based budgeting and MTEF has been created within this context.

So MTEF may pave the way to evaluate the outcome of the policies adopted and to finance the provision of public and semi-public goods. MTEF should not be as detail as the budget but should capture certain sectors and sub-sectors in terms of resource allocation and output-outcome of the programs. However, we should not expect beyond the capability of MTEF such as solving all service delivery problems because there are other crucial factors that the public service delivery is affected. In conclusion, MTEF is important approach to provide the expenditure areas that the government is diverting to and ensure predictability and reliability of government policies.

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<sup>26</sup> BAŞBAKANLIK. Kamuda Yeniden Yapılanma:1:Değişimin Yönetimi İçin Yönetimde Değişim, Ankara: Başbakanlık, 2003, pp. 131.

It is believed that the predictability and reliability of the budgetary system is necessary for every one of us in a contemporary society.

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# TAX HAVENS VERSUS TAX HELLS<sup>1</sup>

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## **Abstract**

*This paper analyzes some aspects concerning tax havens and their existence in the context of globalization. The tax havens are a consequence of the existence of the tax hells. Also, the paper presents development of tax havens by comparing with a few developed countries and reveals the impact of expansion of tax havens and how they influence the economic activity in the other countries – non-haven countries. The ability to avoid taxes by using tax havens seems to be favorable for economic activity, especially for the countries in the same region. A few types of firms which are establish tax haven operations are presented, and what purposes do these operations serve. In conclusion, many of developed countries fight against the tax havens, but other are in competition with tax haven adopting the flat tax rate on corporate income.*

**Keywords:** *tax havens, tax competition, offshore companies*

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<sup>1</sup> I would like to thank Lawyer Titi Mureşan (Alba-Iulia) for his important contribution on realization of this paper.

## 1. Introduction

Tax havens are one of the most important subjects for an international entrepreneur or investor, yet few understand and use them properly. One group discounts them as hiding holes for dirty money, which is not a legitimate use for tax havens. Others think they are only for banking money after you have made it. Not true either. Money grows much faster if a tax haven is part of your business planning, and almost any international business has an opportunity to use tax havens.

Called a “*paradis fiscal*” by the French, a “*rifugio fiscal*” by the Italians, and a “*Steuereroase*” by the Germans, it obviously means a place where the “fiscal grass is greener than in your own particular backyard”. But an effective tax haven is not determined simply by geography; it all depends on what particular asset or transaction you are trying to defend from the tax collector. Simply stated, a tax haven is any country whose laws, regulations, traditions, and, in some cases, treaty arrangements make it possible for one to reduce his overall tax burden.

This paper presents some aspect regarding the tax haven concept and his proliferation directly linked by tax hells. Tax hells can be defined as the country with a very high level of taxation and an increasing tax burden. There is no tax haven without tax hell, thus the tax haven is a consequence of the increasing tax burden for companies and individuals. In this context the tax haven is a proper way to escape from the tax burden of tax hells, it is a way of international tax avoidance.

Also, the paper presents development of tax havens by comparing with a few developed countries and reveals the impact of expansion of tax havens and how they influence the economic activity in the other countries – non-haven countries. The ability to avoid taxes by using tax havens seems to be favorable for economic activity, especially for the countries in the same region. A few types of firms which are establish tax haven operations are presented, and what purposes do these operations serve. In conclusion, many of developed countries fight against the tax havens, but other are in competition with tax haven adopting the flat tax rate on corporate income.

## 2. Tax hells – the effect of social-economical development

The growth of social-economic role of the state supposes, in the first place, financial resources at his disposal, resources that are coming from taxes paid by citizens. In this context the level of taxation is increasing,

especially after the Big Crisis from 1929-1933, moment that represents a big turn of point for the idea of state interventionism promoted by Keynes.

The state interventionism in economy has positive effects through social-economical development, but also negative effects when it affects the individual liberty –the situation of centralized economies in the communist countries. If in the 1702, Vauban appreciates the level of taxation at 10% in the now days there are countries where the rate of taxation it is about 50% from GDP.<sup>2</sup> In these countries the level of burden of taxation it is justified through the welfare and social protection programs for population, reason for that are known as tax hells.

Hansen and Kessler (1999) analysis a few states concerning the geographical area and the tax rate on income and concluded that is double connection between the level of development, geographical area and tax rate. The countries with a high level of development and with a large area are characterized by high tax rates comparative with the countries more and less developed but very small like we can see from the Table 1 (the analysis take in consideration only the tax rate on income).

Hansen and Kessler (1999) reveal another regularity, in the tax policies. Despite many cultural and historical differences between the nations in the sample, one observes not only those taxes are high in large and modest sized countries, but also that rates are surprisingly similar within the two groups. Given the displayed figures, one immediately wonders whether the geography of a country is related to its pattern of taxation.<sup>3</sup>

Central point of argumentation is oriented to an international integration. Diminishing transportation costs and the removal of political barriers to mobility have increased trade and exchange of productive factors in the last decades. For example, in the European Union the process has advanced to the point where all formal constraints to mobility have been abandoned. This development has also greatly improved the mobility of households across states or national borders.

Decision of migration is based on local fiscal policy, but the migration of households determines fiscal policies through the interplay of two basic effects:

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<sup>2</sup> Tulai, C., 2003, *Finanțele publice și fiscalitatea*, Printing House Casa Cărții de Știință, Cluj-Napoca, 2003, p. 292

<sup>3</sup> Hansen, N. A., Kessler, A. S., 1999, *Financial Management Analysis of Tax H(e)avens and Tax Hells: Focus on Residence Pprinciple of Taxation*, Journal of Financial Management & Analysis; Jul-Dec 1999; 12, 2; ABI\INFORM Global, p. 54

1. residential choices determine tax rates through a process in which a jurisdiction's inhabitants select their local policies, and

2. tax and welfare policies in each country influence residential decisions.<sup>4</sup>

More precisely households with different incomes differ in their policy preferences: as a natural implication of their earning characteristics, high income households prefer to live in countries with low taxation and low income households are rather interested in generous public spending than in low income tax rates because they prefer to live in countries with large welfare programs financed by substantial taxation – tax hells. Thus individual preferences imply a self-selection process which leads to the segregation of households across countries according to income classes.<sup>5</sup>

In 1956 Tiebout reveals a segregation of populations by political preferences, point that the main and determinant factor for migration is the preference for the public goods.

There is a mechanism which stops the extensive migration to the tax haven – the limited land which determines a very high price for property, thus only the wealthiest households can buy it.

In the specialized literature there are similar results – low taxes in small countries and high taxes in large countries based on tax competition for attracting more capital, especially for increasing base of taxation, what is known as “tax base effect”. The differentiation of tax policy based on segregation of populations by level of income is called “politico-geographical effect”.<sup>6</sup>

But in the present, many countries with tax hells reputation, because tax competition had permitted to establish a real “fiscal oasis” on their territories, for example in SUA: Delaware, Wyoming, New York, Nevada, Utah.

### **3. The concept of tax haven**

Despite the fact that tax haven phenomenon is by no means a recent occurrence and multilateral struggle against it spans more than 70 years, there is, as yet, no clear understanding of the nature of the phenomenon.

The term “tax haven” has been loosely defined to include *any country having a low or zero rate of tax on all or certain categories of income, and*

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<sup>4</sup> Hansen, N. A., Kessler, A.S., 1999, Ibid.

<sup>5</sup> Hansen, N. A., Kessler, A.S., 1999, Ibid.

<sup>6</sup> Hansen, N. A., Kessler, A.S., 1999, Ibid.

*offering a certain level of banking or commercial secrecy.*<sup>7</sup> Applied literally, however, this definition would sweep in many industrialized countries not generally considered tax havens including the United States (the U.S. does not tax interest on bank deposits of foreigners).

The Modern Dictionary for the Legal Professions states the following: *tax haven is a tax shelter in a foreign country that is preferable to other countries because of that country's educated labor force, modern commerce system, advanced equipment and technology, good transportation, and good climate.*<sup>8</sup>

Black's Law Dictionary makes a different emphasis when defining the tax havens as: "*A country that imposes little or no tax on the profits from transactions carried on in that country*"<sup>9</sup>. Sometimes, within the same definition several criteria interfere with each other and even the common division of tax haven on the basis of, for example, their policies towards income taxation turns out to be by no means universal. Thus, some of the researches identify the following groupings:<sup>10</sup>

- The so-called "classical" tax havens or "no-income tax havens";
- Tax havens with no tax on income from foreign sources;
- Tax havens with special (privileged) tax regime;
- Treaty tax havens

The term "tax haven" suggests that a jurisdiction allows foreigners tax saving. This saving can take place in three ways. Activity can take place in the haven; activity can be assigned to the haven for fiscal purposes, regardless of reality; or the haven can mask reality through secrecy. Tax havens may therefore *produce* goods and services, they may *shift* claims among jurisdictions, or they may *hide* claims; frequently they do a bit of two or all three.

Therefore, the term tax havens is used to indicate any tax practice of a state or a jurisdiction related to the establishment, for any purpose, of a more privileged tax regime in comparison with other states or jurisdictions. The first uses of this term date back at least to 1950s. Back then it had a positive

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<sup>7</sup> Gordon, Richard, 1981, *The Gordon Report – Tax Havens and Their Use by United States Tax Payers – An Overview*, A Report to the Commissioner of Internal Revenue

<sup>8</sup> Gerry W. Beyer, *Modern Dictionary for the Legal Profession*, 2<sup>nd</sup> ed. William S. Hein & Co., Inc., Buffalo, New York, 1996), p. 751.

<sup>9</sup> Bryan A. Garner, *Black's Law Dictionary*, 7<sup>th</sup> ed. (West Group, 2001), p. 1474

<sup>10</sup> Mykola Orlov, 2004, *The Concept of Tax Haven: A Legal Analysis*, *International Tax Review*, INTERTAX, Volume 32, Issue 2 Kluwer Law International

meaning of escape from the otherwise drastic tax regimes of the developed countries. However, gradually, the term acquired a marked negative connotation of the erosion of tax bases of countries and unfair tax competition. Of late this has been aggravated by the added implications of money laundering and assistance to international terrorism.<sup>11</sup>

There are three main ways for the escape of the burdensome taxation imposed by welfare state through the movement of the income and property:

**Temporally:** that is, from one *time period* to another; for example, from one year into another, in anticipation of either an increase (or decrease) in tax rates and burdens.

**Geographically:** that is, from one *location* (or tax jurisdiction) within a country to another, or between countries, or from one corporate form to another.

**Subterraneously:** that is, from the above-ground (taxable) economy to the underground (untaxed) economy usually when it is become difficult or impossible to move temporally or geographically.

Tax havens represent a *geographic* form of escape from tax burdens.<sup>12</sup>

When viewing tax havens in a political context it becomes natural to differentiate between tax privileges within otherwise “normal” tax systems and tax havens as tax systems. Tax haven is not synonymous with an absence of neither taxes nor a tax system. Tax havens describe a *type or family of states*<sup>13</sup>. Without a political criterion it is not possible to differentiate between tax incentives and tax systems.

Examples of Tax Havens:

- The United Kingdom is a tax haven for people of foreign domicile, even if they are UK resident (*residence* and *domicile* being separate legal concepts in the UK), in that they pay no tax on foreign income not remitted to the UK. Similar arrangements are to be found in a few other countries including Ireland.

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<sup>11</sup> Mykola Orlov, 2004, Ibid.

<sup>12</sup> Salsman, Richard, M., 2002, *Capital on Strike: The Tax Haven Controversy*, Part One, The Capitalist Advisor,

<sup>13</sup> Haslerud, Gjermund, 2004, *The Growth of Tax Havens – A Theoretical Perspective and an Empirical Analysis*, <http://www.sgir.org/conference2004/papers/Haslerud>

- Switzerland is a tax haven for foreigners who become resident after negotiating the amount of their income subject to taxation with the canton in which they intend to live.
- Monaco does not levy a personal income tax and nor does Andorra. The Bahamas levies neither personal income nor capital gains tax, nor are there inheritance taxes.
- In the various Channel Islands, and in the Isle of Man, no tax is paid by corporations or individuals on foreign income and gains. Non-residents are not taxed on local income.

In Table 1 it is presented the tax havens list according Diamonds (2001), OECD (2000) and Hines & Rice (1994).

**Table 1 Lists of tax havens**

<i>Tax havens</i>	<b>Diamonds (2001)</b>	<b>OECD Tax Haven List (2000) *</b>	<b>Hines &amp; Rice Tax Haven List (1994)</b>
<i>Andorra</i>	x	P	x
<i>Anguilla</i>	x	P	x
<i>Antigua &amp; Barbuda</i>	x	P	x
<i>Aruba</i>	x	P	
<i>Austria</i>	x		
<i>Bahamas</i>	x	P	x
<i>Bahrain</i>	x	P	x
<i>Barbados</i>	x	P	x
<i>Belize</i>	x	P	x
<i>Bermuda</i>	x	C	x
<i>British Virgin Islands</i>	x	P	x
<i>Brunei</i>	x		
<i>Campione</i>	x		
<i>Cayman Islands</i>	x	C	x
<i>Cook Islands</i>	x	P	x
<i>Costa Rica</i>	x		
<i>Cyprus</i>	x	C	x
<i>Djibouti</i>	x		
<i>Dominica</i>	x	P	x
<i>Gibraltar</i>		P	x
<i>Grand Britain</i>	x		
<i>Greece</i>	x		
<i>Grenada</i>	x	P	x
<i>Guernsey (Chan. Is.)</i>	x	P	x
<i>Hong Kong</i>	x		x
<i>Hungary</i>	x		
<i>Iceland</i>	x		
<i>Ireland</i>	x		x
<i>Isle of Man</i>	x	P	x
<i>Jamaica</i>	x		
<i>Jersey (Channel Is.)</i>	x	P	x

<i>Jordan</i>	x		x
<i>Labuan</i>	x		
<i>Lebanon</i>	x		x
<i>Liberia</i>	x	P	x
<i>Liechtenstein</i>	x	P	x
<i>Luxembourg</i>	x		x
<i>Macau</i>	x		x
<i>Madeira (Portugal)</i>	x		
<i>Maldives</i>		P	x
<i>Malta</i>	x	C	x
<i>Marshall Islands</i>	x	P	x
<i>Mauritius</i>	x	C	
<i>Monaco</i>	x	P	x
<i>Montserrat</i>	x	P	x
<i>Nauru</i>	x	P	
<i>Netherlands</i>	x		
<i>Netherlands Antilles</i>	x	P	x
<i>Nevis</i>			
<i>Niue</i>	x	P	
<i>Oman</i>	x		
<i>Philippine</i>	x		
<i>Panama</i>	x	P	x
<i>Samoa</i>	x	P	
<i>San Marino</i>	x	C	
<i>Seychelles</i>	x	P	
<i>St. Kitts &amp; Nevis</i>	x	P	x
<i>St. Lucia</i>	x	P	x
<i>St. Martin</i>			x
<i>St. Vincent &amp; Grenad.</i>	x	P	x
<i>Singapore</i>	x		
<i>Switzerland</i>	x		x
<i>Thailand</i>	x		
<i>Tonga</i>		P	
<i>Turks &amp; Caicos</i>	x	P	x
<i>Uruguay</i>	x		
<i>US Virgin Islands</i>		P	
<i>Vanuatu</i>	x	P	x
<i>Venezuela</i>	x		
<b>Total</b>	<b>63</b>	<b>41</b>	<b>40</b>

Note: \*P = potentially harmful, C = cooperative

Source: Diamond, W.H., Diamond, D.B., 2001, *Tax Havens of the World*, Vol. 1, 2 and 3, Overseas Press and Consultants.

OECD, 2000, *Towards Global Tax Co-operation: Progress Identifying and Eliminating Harmful Tax Practices*.

James R. Hines & Eric M. Rice, 1994, *Fiscal Paradise: Foreign Tax Havens and American Business*, 109.1 Q. J. OF ECON 149 (Feb. 1994)

## 4. History of Tax Haven

To understand the logic behind the development of tax havens and their proliferation, it is necessary to trace the history of the respective policies and the rationale for the respective practices. Tax havens are not a modern invention. The use of tax haven policies were often used by states to further their goals, even, as it happens in world politics, to the detriment of their neighbors.

To put tax havens in proper perspective we have to go back 3500 years to the Book of Joshua, even to the Books of Moses, where the Lord ordered the Children of Israel to set aside cities of refuge where a person could gain asylum from the punitive laws of Moses. Recently, Hawaiian kings on the big island of Hawaii, set aside a city of refuge.<sup>14</sup>

A tax haven is somewhat similar. It is a kind of economic sanctuary, a modern city of refuge for those oppressed with the fiscal laws of their homeland. People can bring their wealth to a tax haven and avoid government confiscations by tax or exchange controls, or just plain confiscations like Castro and other totalitarian rulers have done. These oppressive acts by their governments are as much an evil to them, as those oppressed politically.<sup>15</sup>

Tax havens, or something like them, have been used for centuries. While some tax havens have evolved through a history of laissez-faire economic policies, others, particularly those specializing in attracting corporations, have been created as a matter of deliberate government policy. People have been looking for ways to avoid taxes for many years. Likewise, governments have been using tax incentives to attract or maintain business for many years.

For example, the ancient city of Athens imposed a tax on merchants of two percent of the value of exports and imports. Merchants would detour twenty miles to avoid these duties. The small neighboring islands became safe havens in which to hide merchandise to be smuggled into the country at a later date. In the middle ages, the City of London (as well as other jurisdictions) exempted Hanseatic traders resident in London from all taxes.<sup>16</sup>

In the fifteenth century, Flanders (now Belgium) was a thriving international commercial center. Its government imposed few restrictions on

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<sup>14</sup> Adams, C., 2003, *A Historian Looks at Tax Haven*,

<http://www.freedomandprosperity.org/>

<sup>15</sup> Adams, C., 2003, *Ibid*.

<sup>16</sup> Gordon, Richard, 1981, *The Gordon Report – Tax Havens and Their Use by United States Tax Payers – An Overview*, A Report to the Commissioner of Internal Revenue

domestic or foreign exchange and freed much trade from duties. English merchants supplied the needed raw materials, preferring to sell wool to Belgium rather than to England where they would incur numerous duties.<sup>17</sup>

Today, most major havens are also offshore financial centers (centers for international borrowing and lending in non-local currency). But tax haven is not the same thing with offshore financial center, even if some of the tax havens in fact, are offshore centers. The offshore financial centers suppose the high financial techniques which are developing progressively on some types of structures and products giving a comparative advantage on world market level.

Historically, the type of tax haven practices adopted by the states and jurisdictions at different periods of time depended on the features of the tax systems in the respective period of time. Thus, until the beginning of the twentieth century with the mass introduction of income taxation, the majority of tax havens focused mainly on granting relief from import and excise duties.

Admittedly, tax haven practices were used not only in the competition between states. Since the Middle Ages, tax privileges have been actively used for achieving certain developmental objectives.

## **5. Determinants factors for tax havens proliferation**

The political and economic catalysts that influenced the growth of the tax havens industry in the last decades are:

- *political and economic instability;*
- *market globalization and deregulation;*
- *the internationalization of business;*
- *the lifting of trade barriers;*
- *a trend towards steady global economic growth;*
- *a global relaxation of foreign exchange controls.*

In addition to political and economic catalysts there are also global tax related catalysts that continue to influence the growth of the offshore industry. These include:

- ❖ high tax regime with an increasing tax burden for companies and individuals;

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<sup>17</sup> Gordon, R. 1981, Ibid.

- ❖ tax competition and migration;
- ❖ fiscal harmonization;
- ❖ opportunities of utilizing double taxation treaties.

By simply stating that tax haven proliferation was as a consequence of rising taxation in the industrialized world. The same factors that explain an increasing private sector demand for less regulated and taxed jurisdictions are used to explain tax haven developments. They do not separate between the growing the use of tax havens, and the growing number of tax havens. As a consequence the theories cannot differentiate and explain why certain states become tax havens. Haslerud (2004) through a statistical test of the neoclassical perspective laid the ground for further analyses. Tax haven developments were explored in light of size, colonial heritage and rule of law. Logistic regression was used and all factors were significant at the 1973 model. The analysis showed that tax haven developments can be understood by historical, structural and institutional factors.<sup>18</sup>

In contrast to other states, tax havens have distinguished themselves by enacting legislation that provides corporations and individuals with anonymity and shelter from their home governments. Lacking adequate mechanisms of "internal profit generation," these so-called paper financial centers have learned to take advantage of what *The Economist* scornfully describes as their main asset: the right to write the laws. But in so doing, tax havens are like the sovereign equivalent of parking lot proprietors: they could not care less about the business of their customers only that they pay for parking their vehicles there. Likewise, tax havens are unconcerned with the true nature of the companies residing within their borders. Those using tax havens rarely relocate to them; instead they pay for the privilege of "renting" a residence there. That is, they take advantage of the juridical facilities offered to them for what is euphemistically called "effective international tax strategy," which is another way of saying avoiding or evading taxes.<sup>19</sup> But with increasing numbers of tax havens and those who use them, the principles of supply and demand appear to regulate the cost of license fees and the character of the legal protection that tax havens offer. In other words, tax havens are introducing choice and marginal utility into issues of residency and sovereignty.

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<sup>18</sup> Haslerud, Gjermund, 2004, *The Growth of Tax Havens – A Theoretical Perspective and an Empirical Analysis*, available at <http://www.sgir.org/conference2004/papers/> Haslerud

<sup>19</sup> Palan Ronen, 2002, *Tax Havens and the Commercialization of State Sovereignty*, International Organization 56.1, pag. 151-176,

## **6. The main features of the tax havens**

Tax havens are generally characterized by the low or zero tax on income, high standards of financial, including banking, and commercial secrecy; no or liberal currency controls; developed infrastructure; available professional help of, first of all, lawyers, auditors, accountants and financial analysts; and lower standards for the regulation of financial institutions, in particular banks and insurance companies, stable government, equitable treatment of foreigners, existence of free trade zones, local consumer and labour markets, investment incentives or self-promotion

### ***Low Tax***

Many of the jurisdictions that are considered tax havens do impose taxes. All, however, either impose no income tax on all or certain categories of income, or impose a tax which is low when compared to the tax imposed by the countries whose resident taxpayers use them.

Some jurisdictions do not impose income taxes, or impose very low rates of tax. In the Caribbean, the Bahamas, Bermuda, the Cayman Islands, and the Turks and Caicos do not impose any income or wealth taxes. In some cases the tax situation may be part of a policy to attract banking, trust or corporation business. In other cases it may exist because they country never found the need to impose tax.

Often low tax rates are considered an evil. However, many tax havens are small less-developed countries whose residents are generally poor. In many cases, the small population of the country makes an income tax system impractical. Instead, the country will establish a license or fee system for generating revenue. Instead of imposing an income tax, fees can be charged for bank licenses, commercial charters, and the like. Administration costs of collecting those revenues are kept to a minimum.

Often jurisdictions, while imposing significant domestic taxes, impose low rates on certain income from foreign sources, a tax system used by a number of developed high tax countries (such as France) as well as by some tax havens. Panama is an example. Accordingly, a local corporation can be formed and managed in the tax haven with no tax being paid to the tax haven on its income from other jurisdictions.

Some tax havens impose low rates of tax on income from specific types of business. Some jurisdictions, for example, offer special tax regimes to holding companies, making them especially useful as financial centers or suits for holding companies.

### ***Secrecy***

By definition, all of the jurisdictions with which we are concerned, afford some level of secrecy or confidentiality, afford some level of secrecy or confidentiality to persons transacting business, particularly with banks. This secrecy has its origin in either the common law or in statutory law.

Common law secrecy is found in those jurisdictions which were or still are British Colonies. It derives from the finding of an implied contract between a banker and his customer that the banker will treat all of his customer's affairs as confidential. If violated, an action for damages for breach of contract lies against the banker.

Some level of secrecy is a characteristic common to both tax havens and non-tax havens. Most countries do impose some level of protection for banking or commercial information.

### ***Relative Importance of Banking***

Banking tends to be more important to the economy of a tax haven than it is to the economy of a non-tax haven. Most tax havens follow a policy of encouraging offshore banking business. This is done by distinguishing between resident and nonresident banking activity. Generally, nonresident activity will not have reserve requirements, will be taxed differently (if at all), and will not be subject to foreign exchange or other controls.

The banking industry has a significant effect on the economy of the tax haven. Financial business yields revenues in the form of fees and modest taxes on financial institutions. The tax haven also benefits from employment of personnel and rental of facilities.

***Availability of Modern Communications:*** many of the countries considered tax havens have excellent communications facilities.

### ***Lack of Currency Controls***

Many tax havens have a dual currency control system, which distinguishes between residents and non-residents, and between local currency and foreign currency. As a general rule, residents are subject to the currency controls; non-residents are not. However, non-residents will normally be subject to controls with respect to local currency. A company, formed in the tax haven, which is beneficially owned by non-residents and which conducts most of its business outside the tax haven, is generally treated as non-resident for exchange control purposes. Accordingly, a foreign person can form a tax haven company to do business in other jurisdictions. It will not be subject to the tax havens' exchange controls as long as it is

dealing in currency of other jurisdictions and is not doing business in the tax haven.

These rules are adapted to facilitate the use of the tax haven by a person wishing to establish a tax haven corporation to do business in other jurisdictions.

**Tax Treaties:** it is important for a tax haven to have an extensive network of tax treaties to be attractive for potential users.

## 7. Types of tax havens

Kudrle and Eden (2003) classified tax havens from the substantial activity which these are developed:<sup>20</sup>

- **“Production” haven:** where a jurisdiction’s tax attraction induces a significant change in real haven value added, Ireland, until it recently changed its laws, was cited as the prime example. Although some complain that jurisdictions with generally low taxation should be called “havens” because they attract real foreign activity, most observers look only at discrimination: are foreigners treated differently from otherwise similar domestic persons and businesses? If they are not, then one is simply looking at a low tax state.
- **“Headquarters” havens:** lower corporate taxes by providing tax advantages to firms that incorporate in that jurisdiction, wherever their shareholders are located. Examples usually offered are Belgium and Singapore.
- **“Sham” havens:** host low corporate-tax financial intermediaries that may be little more than an address for investment activity directed from elsewhere. Nearly all of the Caribbean and Pacific tax havens fall into this category. Some sham havens have also emerged as headquarters havens. The low value-added activity may not be a subsidiary of a foreign firm but independent and legally based in the haven despite negligible local ownership. Some Liberian and Panamanian

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<sup>20</sup> Robert T. Kudrle, Lorraine Eden, 2003, The Campaign Against Tax Havens: Will It Last? Will it Work? Stanford Journal of Law, Business, and Finance

shipping firms and some Bermudan insurance companies serve as examples. In addition, there is the rapidly rising phenomenon of “corporate inversions,” in which corporations based in high-income countries simply shift their declared nationality to a sham haven.

### *Types of tax havens by aims*

In terms of the targeted types of taxation, tax havens can be divided into:

1. income tax havens offering complete or partial shelter from income taxation: individual income tax, corporate income tax or capital gains tax;
2. import duties (excise) tax havens;
3. estate tax havens;

4. tax havens with privileged regimes for the taxation of certain forms of activities, for example ‘flags of convenience’, tax haven for captive insurance companies or IBC regimes.<sup>21</sup> It should be noted that one state or jurisdiction, in its tax haven practices, may target several types of taxation, for example Panama is known as a ‘flag of convenience’ state .

At the same time, tax havens may also be limited to a particular type of tax relief, e.g. the US is generally considered to be a tax haven for income earned on the deposits of non-residents in US banks.

Approached from a different angle, tax havens can be further categorized in terms of the taxpayers that use them:

- *havens for individuals* (Cayman Islands is one of the most favored);
- *corporate havens* for companies like captive insurance companies, banks, holding companies etc.

A **corporate haven** is a jurisdiction with laws friendly to corporations thereby encouraging them to choose that jurisdiction as a legal domicile. Within the United States, Delaware is considered the pre-eminent corporate haven. However it is facing competition from Nevada and Wyoming. While Delaware through its developed legal system and laws protecting shareholder rights is geared toward the large complex public corporation, Nevada and

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<sup>21</sup> Mykola Orlov, 2004, The Concept of Tax Haven: A Legal Analysis, International Tax Review, INTERTAX, Volume 32, Issue 2 Kluwer Law International

Wyoming are more attractive to the small privately-held corporation. Delaware law tends to protect the rights of shareholders, and Nevada and Wyoming tend to favor management.

Corporate havens include British crown colonies such as Bermuda, Cayman Islands. Increasingly, U.S. corporations are using these havens, either by incorporating subsidiary corporations in these locations or by moving their corporate domicile there.

- havens for trusts (Luxembourg, Liechtenstein;)
- offshore financial centers;
- free economic zones;
- ‘flags of convenience’, etc.

## 8. Offshore companies

An **offshore company** is one which does not conduct substantial business in its country of incorporation. They are sometimes known as non-resident companies.

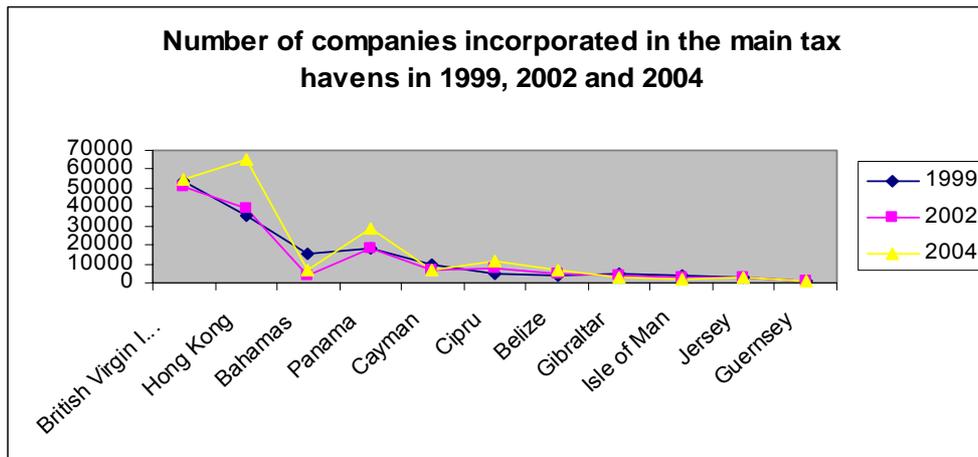
Theoretical, anywhere in the world it can be set up an offshore company, but not everywhere it is possible to obtain fiscal advantages, because a company will not be exempted from taxes because is an offshore company, it must be an offshore set up in a tax haven.

The main reason for establish an offshore company in a tax haven is the minimization of taxation and reducing of burden taxation, also a good management of the risk and an important costs reduction.

Offshore companies can be set up as Limited Liability Company (LLC), International Business Corporation (IBC – specific for the jurisdiction of British Crown), trust, exempted company, non-resident company. These companies can develop any kind of activity without restrictions. Only, for banking and insurances activities it is necessary a special approval.

Basically, an LLC allows for the flexibility of a partnership structure within the framework of limited liability, such as that granted to corporations. Another advantage of an LLC over a limited partnership is that the formalities required for creating and registering LLCs are much simpler than the requirements most states place on forming corporations; often they are no more complex than creating a corporate structure.

**Figure 1 Number of companies incorporated in the main tax havens in 1999, 2002, 2004**

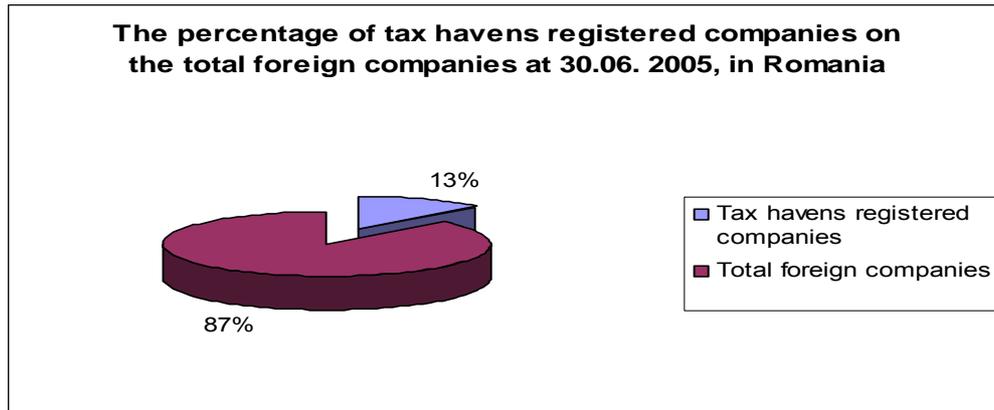


*Source: Author's calculation based on statistical data provides by National Commercial Office*

The figure 1 reveal the evolution of the main tax havens regarding the number of companies inregistered on their territories. British Virgin Islands was on the first position with 54361 incorporeted companies, but in 2004 Hong Kong is on the first position with 65558 incorporeted companies.

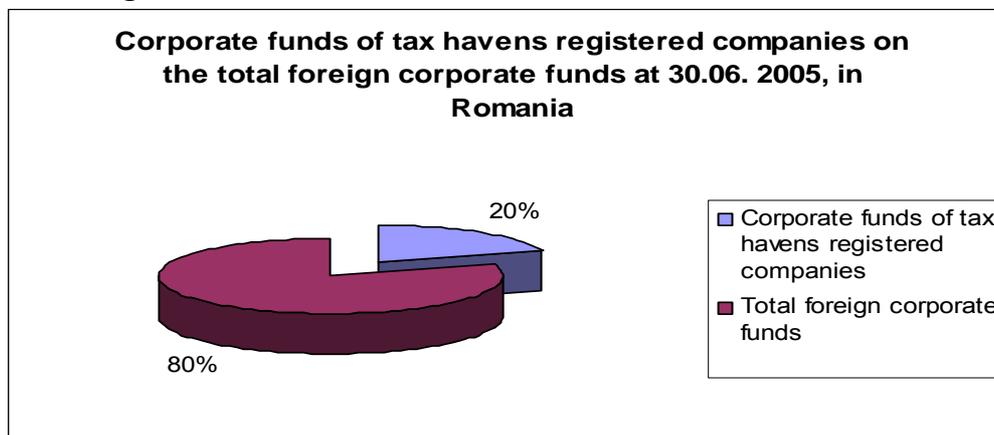
In Romania, the tax burden for companies and individuals was very high until recently. Beginning with this year, was introduced a flat tax rate – 16% for income (of companies and individuals), thus we can consider that Romania it is almost a “tax haven”, but this is far from reality. Many companies which are operating in Romania coming from tax havens. Figure 2 indicates that 13% of the foreign companies are from tax havens, and the percentage of corporate funds of this companies in total foreign corporate funds is much bigger 20% (figure 3).

**Figure 2**



Source: Author's calculation based on statistical data provides by National Commercial Office

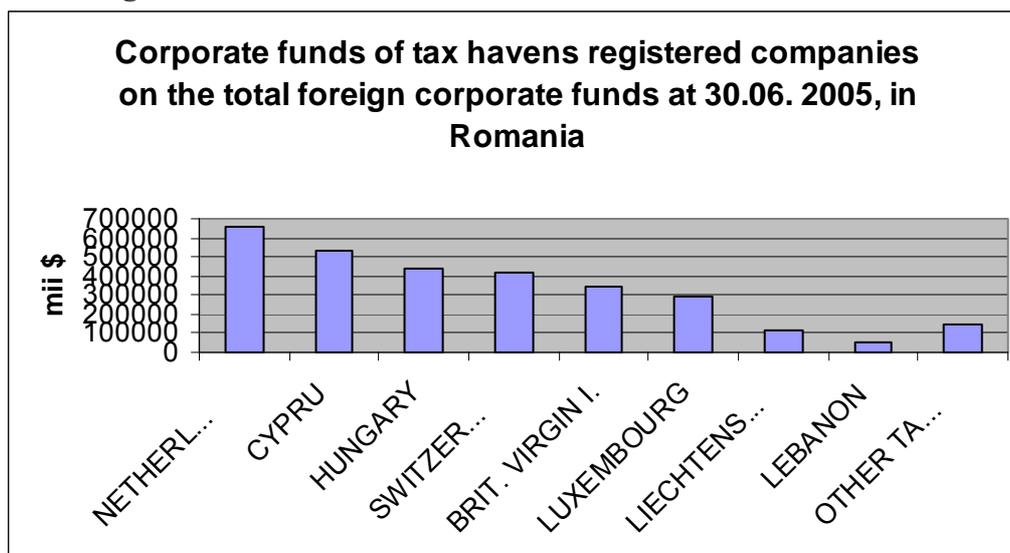
**Figure 3**



Source: Author's calculation based on statistical data provides by National Commercial Office

The most important part of corporate funds is provided by Netherlands Antilles, Cyprus, Hungary, Switzerland, British Virgin Islands, Luxembourg and Liechtenstein (Fig.4).

**Figure 4**



*Source: Author's calculation based on statistical data provides by National Commercial Office*

## **9. The growth of tax havens**

According to some estimates, as much as half of the world's stock of money either resides in tax havens or passes through them.<sup>22</sup>

Palan (2002) explain the growth of tax havens in recent decades through increasing regulation and taxation in the post-war OECD economies. Also, he suggests that haven activity is a "state strategy" for economic development in the context of the globalization.

James R. Hines, in a National Bureau of Economic Research (NBER) paper co-authored by Mihir Desai and Fritz Foley of Harvard Business School, found that "haven activity does not appear to divert activity from non-havens." In fact, their calculations indicate that "firms establishing tax haven operations expand, rather than contract, their foreign activities in nearby countries."<sup>23</sup> When firms can reduce their tax burden by means of affiliates in tax haven countries, the authors argue, sales and investment in nearby nonhaven nations increase. A one percent greater likelihood of

<sup>22</sup> Palan Ronen, 2002, *Tax Havens and the Comercialization of State Sovereignty*, International Organization 56.1, p. 151-176,

<sup>23</sup> Desai, M. A., Foley, C. F., Hines, J. R. Jr., 2004, *Economic Effects of Regional Tax Havens*, National Bureau of Economic Research, available at <http://www.nber.org/papers/w10806>

establishing a tax haven affiliate is associated with 0.5 to 0.7 percent greater sales and investment growth by non-haven affiliates, implying a complementary relationship between haven and nonhaven activity. The ability to avoid taxes by using tax haven affiliates therefore appears to facilitate economic activity in non-haven countries within regions.<sup>24</sup>

But don't the haven countries shortchange their own citizens by offering such favorable conditions for multinational corporations? In another NBER working paper, Hines suggests they don't. Per capita real GDP in tax haven countries grew at an average annual rate of 3.3 percent between 1982 and 1999, which compares favorably to the world average of 1.4 percent. Tax haven governments appear to be adequately funded, with an average 25 percent ratio of government to GDP that exceeds the 20 percent ratio for the world as a whole, though the small populations and relative affluence of these countries would normally be associated with even larger governments.<sup>25</sup> Table 2 presents a ranking of the countries based on GNI per capita. As we can see on the two first positions are Bermuda and Luxembourg (both tax havens).

**Table 2 GNI per capita 2003, Atlas method and PPP**

<i>Rank.</i>	<i>Economy</i>	<b>Atlas methodology - US \$-</b>	<i>Rank.</i>	<i>Economy</i>	<b>Purchasing power parity PPP -international \$-</b>
1	<b>Bermuda</b>	.. a	1	<b>Luxembourg</b>	54,430
2	<b>Luxembourg</b>	43,940	2	<b>Bermuda</b>	.. a
3	Norway	43,350	3	United States	37,500
4	<b>Switzerland</b>	39,880	4	Norway	37,300
5	United States	37,610	5	<b>Liechtenstein</b>	.. a
6	<b>Liechtenstein</b>	.. a	6	<b>Channel Is.</b>	.. a
7	Japan	34,510	7	<b>Switzerland</b>	32,030
8	Denmark	33,750	8	Denmark	31,210
9	<b>Channel Islands</b>	.. a	9	<b>Ireland</b>	30,450
10	<b>Iceland</b>	30,810	10	<b>Iceland</b>	30,140
11	Sweden	28,840	11	Canada	29,740
12	United Kingdom	28,350	12	Austria	29,610
13	Finland	27,020	13	<b>San Marino</b>	.. a
14	<b>Ireland</b>	26,960	14	<b>Cayman Is.</b>	.. a
15	<b>San Marino</b>	.. a	15	Belgium	28,930
16	Austria	26,720	16	<b>Hong Kong</b>	28,810
17	<b>Cayman Islands</b>	.. a	17	Japan	28,620
18	Netherlands	26,310	18	Netherlands	28,600

<sup>24</sup> Desai, M. A., Foley, C. F., Hines, J. R. Jr., 2004, Ibid.

<sup>25</sup> Hines, J.R. Jr., 2004, *Do Tax Haven Flourish?*, National Bureau of Economic Research, available at <http://www.nber.org/papers/w10936>

19	Belgium	25,820	19	<b>Monaco</b>	.. a
20	<b>Monaco</b>	.. a	20	Australia	28,290
21	<b>Hong Kong</b>	25,430	21	United Kingdom	27,650
22	Germany	25,250	22	France	27,460
23	France	24,770 b	22	Germany	27,460
24	Canada	23,930	24	Finland	27,100
27	Australia	21,650	25	Italy	26,760
28	Italy	21,560	26	Sweden	26,620
29	<b>Singapore</b>	21,230	30	<b>Singapore</b>	24,180
35	Spain	16,990	33	Macao, China	<i>21,920 a</i>
37	Kuwait	<i>16,340 a</i>	35	Spain	22,020
38	Israel	<i>16,020 a</i>	36	United Arab Emirates	<i>21,040 a, c</i>
40	New Zealand	15,870	38	New Zealand	21,120
41	<b>Bahamas, The</b>	<i>15,110 a</i>	41	Greece	19,920
43	Macao, China	<i>14,600 a</i>	42	<b>Cyprus</b>	19,530
45	Greece	13,720	43	Slovenia	19,240
47	<b>Cyprus</b>	<i>12,320 a</i>	45	Israel	19,200
49	Portugal	12,130	46	Malta	<i>17,870 a</i>
50	Korea, Rep.	12,020	47	Kuwait	<i>17,870 a, c</i>
51	Slovenia	11,830	49	Portugal	17,980
52	<b>Bahrain</b>	<i>11,260 a</i>	50	Korea, Rep.	17,930
53	Puerto Rico	<i>10,950 a</i>	52	<b>Bahrain</b>	<i>16,170 a</i>
54	Malta	<i>9,260 a</i>	53	Puerto Rico	<i>16,320 a, c</i>
55	<b>Barbados</b>	9,270	54	<b>Bahamas, The</b>	<i>16,140 a</i>
56	<b>Antigua &amp; Barbuda</b>	9,160	55	<b>Seychelles</b>	15,960
57	Saudi Arabia	<i>8,530 a</i>	56	Czech Republic	15,650
59	Oman	<i>7,830 a</i>	57	<b>Barbados</b>	15,060
61	Palau	7,500	58	<b>Hungary</b>	13,780

Source: World Development Indicators database, World Bank, September 2004

Notes: .. Not available.

GNI is gross national income (gross national product)

PPP is purchasing power parity.

Figures in italics are for 2002 or 2001.

a. 2003 data not available; ranking is approximate.

c. Estimate is based on regression; other PPP figures are extrapolated from the latest International Comparison Programme benchmark estimates.

From this ranking made by World Bank we can pointed that “tax haven strategy” is very efficient specially for microstates, which have no other sources of revenues except the tourism and the “tax haven strategy”.

## 10. Conclusion

As long as welfare states exist and expand there will be pressure to raise taxes. That's why there's been an intensifying assault lately by high-tax governments (including the U.S.) on the world's low-tax nations. A coordinated campaign organized by the Organization for Economic Development (OECD), European Union (EU), the World Bank, the International Monetary Fund (IMF), the U.N., the World Trade Organization (WTO), the U.S. Treasury Department and the U.S. Congress has targeted what are referred to as the harmful tax practices of low-tax nations, territories and jurisdictions – tax havens.

However tax havens are used for sheltering illegal money and also for legitimate business because of their peculiar characteristics such as secrecy, lack of exchange control, good banking, communication and transport structure, tax advantages end up being their major attraction both to wealthy individuals and large corporations.

As long as economic agents have become more sensitive to differences in effective tax rates and capital gained mobility within the process of growing integration of world's economies, capital tends to flow from high to low tax countries, mainly to those regarded as classical tax havens. Thus, tax havens have imposed an unfair tax competition for international capital, not only by means of reducing tax rates, but also introducing changes or distortions in the tax bases, which is less visible than low tax rates. Even some studies demonstrate that impact of tax haven is positive, developed countries try and fight for stopping the proliferation of tax haven. OECD issues a few reports in this context (1998 *Harmful Tax Competition: An Emerging Global Issue*, 2000 *Towards Global Tax Cooperation: Progress in Identifying and Eliminating Harmful Tax Practices*), but many of developed countries are veritable tax haven (United Kingdom, United States).

Tax havens will continue to exist and even in the globalization context their proliferation it is hard to stop because neither international authority has any right to affect the state sovereignty.

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# ASSESSMENT OF SOCIO-ECONOMIC TRENDS IN THE SLOVAK REPUBLIC IN THE CONTEXT OF TAX REFORM

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## **Abstract**

*Recently accepted tax reform is one of the most important initiatives of Slovak government towards creating a highly competitive and non-distortive market environment in Slovakia. In its Policy Statement, the government undertook to reduce income tax rates and to analyse the possibility of implementing a flat-rate tax. In fact, the actual reform goes even beyond these original ambitious objectives. Its ultimate goal is to transform the Slovak tax system into the most competitive one in the entire EU and OECD area. Assessment of the tax reform in Slovak Republic represents complicated issue from both professional and political point of view. Indisputably, there are positive effects, such as simplification of tax system, higher degree of transparency and creation of business-friendly environment. However, we can't notice also negative impacts. The resources of the society are being redistributed to higher income groups.*

**Keywords:** *Tax reform, direct taxes, indirect taxes, VAT, GDP*

## 1. Introduction

Recently accepted tax reform is one of the most important initiatives of Slovak government towards creating a highly competitive and non-distortive market environment in Slovakia. In its Policy Statement, the government undertook to reduce income tax rates and to analyse the possibility of implementing a flat-rate tax. In fact, the actual reform goes even beyond these original ambitious objectives. Its ultimate goal is to transform the Slovak tax system into the most competitive one in the entire EU and OECD area.

Assessment of the tax reform in Slovak Republic represents complicated issue from both professional and political point of view. Indisputably, there are positive effects, such as simplification of tax system, higher degree of transparency and creation of business-friendly environment. However, we can't notice also negative impacts. The resources of the society are being redistributed to higher income groups.

## 2. Macro-economic trends in Slovak Republic between January 1, 2001 and December 31, 2004

The trend of basic macro-economic indicators, indicating the development in Slovak Republic, is specified in the table below:

Indicator	2004	2003	2002	2001	Difference
1. GDP in constant prices in bill. SKK	827	783	750	713	+114
2. Unemployment rate in %	13,1	15,6	17,5	18,6	-5,5
3. Increase of consumer prices	5,9	9,3	3,4	6,5	- 0,60
4. Average monthly wage in SKK (1 Euro = 38,5 SKK)	15.825	14.365	13.511	12.365	+ 3.460
5. Nominal Wage Index in %	110,2	106,3	109,3	108,2	+ 2,00
6. Real Wage Index in % *	102,5	98,0	105,8	101,0	+ 1,50

Source: [www.nbs.sk](http://www.nbs.sk)  
[www.statistics.sk](http://www.statistics.sk)

\* Real Wage Index is counted as Nominal Wage Index divided by Index of consumer prices

**Basic socio-economic problems** in the Slovak Republic are concentrated in the following areas:

2. high unemployment rate despite the high rate of GDP growth
3. low GDP per capita (in 2004 it reached 153 580 SKK, i.e. approx. 3 989 Euro)
4. low average monthly wage (average monthly wage in 2004 was approx. 411 Euro)
5. tax reform impact on households (relatively high tax burden on middle and low-income earners)
6. distribution of sources to higher income groups after the implementation of tax reform in Slovak Republic (January 1, 2004)

### **3. Main principals and objectives of tax reform in Slovak Republic**

Recently accepted tax reform is one of the most important initiatives of Slovak government towards creating a highly competitive and non-distortive market environment in Slovakia. In its Policy Statement, the government undertook to reduce income tax rates and to analyse the possibility of implementing a flat-rate tax. In fact, the actual reform goes even beyond these original ambitious objectives. Its ultimate goal is to transform the Slovak tax system into the most competitive one in the entire EU and OECD area.

By a competitive tax system, the government does not merely mean low degree of taxation – far from it. The Slovak tax system should be competitive mainly because of the unusually high degree of its efficiency, transparency and non-distortiveness.

Designed as fiscally neutral, the reform is intended to achieve the following broad objectives:

1. creation of a business and investment friendly environment for both individuals and companies
2. elimination of existing weaknesses and distortionary effects of the tax law
3. achievement of a high degree of tax fairness by taxing all types and amounts of income equally

These goals should be achieved by a careful implementation of several simple **principles on which the tax reform is based:**

1. shifting of the tax burden from direct toward indirect taxes, from taxing of production towards taxing of consumption
2. introduction of low standard tax rates and elimination of all exceptions, exemptions and special regimes
3. introduction of flat tax rate in personal income tax, replacing the regime with different tax brackets
4. elimination of distortive roles of tax policy as instruments for achieving non-fiscal goals
5. elimination, as much as possible, of double taxation of income

### ***3.1 Implementation of flat tax rate***

In the area of direct income taxation, the tax reform concentrates on the implementation of the flat-rate tax. In accordance with the principle of **taxing all incomes of individuals and corporations equally**, only **one linear percentage rate of 19%** has been applied since January 1, 2004. The new legislation eliminated the 21 different types of taxation of direct income that were in force in Slovakia until January 1, 2004, including five different personal income tax rates (10%, 20%, 28%, 35% and 38%.) This radical change has several major advantages. First, the flat-rate tax still maintains the progressive nature of effective tax rates faced by individuals with different amounts of income. All personal income of up to 1.6 times the poverty line will be exempt from taxation. As a result, the effective tax rate for individuals below this threshold will be null. However, the average tax rate will start increasing once the individual surpasses this threshold. Hence, the introduction of flat tax on direct income will have no negative impact on low-income earners, negligible impact in the medium range of income distribution and a positive impact on people with the highest incomes. Second, the existence of single marginal tax rate for all income above the standard exemption sharply decreases the distortive effect of personal income taxation and limits the economic disincentives associated with it. This should increase labour productivity both in the short and long term, as it encourages higher work effort at any given point in time, as well more investments in human capital.

Effective January 1, 2004, the **corporate income tax rate was reduced to 19%** from the previous rate of 25%. At the same time, the new tax system follows the principle of taxing the investment and capital gains income only once as it is transferred from the corporate to the personal level. Thus,

dividend taxation has been cancelled and investment income will be taxed only once, at the level of corporate profits.

### ***3.2. Radical simplification on the tax law***

The Income Tax Act also radically simplifies the taxation of both individual and corporate income. In order to achieve the highest possible degree of tax transparency and to minimise economic distortions, the new tax law eliminates virtually all exceptions, exemptions and special regimes. In the area of personal income taxation, many exceptions, exemptions, deductions, etc. were established in the past with various non-fiscal goals in mind, for instance in the area of social policy. However, these measures usually generate significant negative side-effects, such as economic inefficiencies and distortions. The tax reform was coordinated with the social insurance reform, pension reform and healthcare system reform. Virtually all tax deductions and exemptions that were originally intended to achieve non-fiscal policy goals were replaced by targeted measures in the relevant policy areas. For instance, the child allowance was cancelled and a new form of targeted social compensations and entitlements was introduced, which should ensure a fairer distribution of income particularly benefiting low-income families with children. Exceptions and exemptions, including tax holidays, tax brakes, individual tax bases, and special tax rates were eliminated from the corporate tax law as well. Lump-sum taxes for entrepreneurs were cancelled and a regime of deductible lump-sum expenditures was introduced. The simplification of the tax law dramatically improves its transparency and business-friendliness. It eliminates one of the main business barriers identified in Slovakia by business surveys – the excessive complexity and frequent changes in the tax law. Thus, the implementation of the tax reform should positively affect the business environment in the medium-term and long-term and should serve as a major stimulus for further inflow of foreign direct investment. Moreover, the government expects that the low corporate tax rates and high transparency of corporate and investment tax laws should sharply reduce the scope for tax evasion and tax avoidance. As a result, tax collection should improve in medium and long-term in spite of decreased nominal tax rates.

In Income Tax Act (valid in 2003) **21** different income tax rates and 443 types of income were presented. Each type of income had to be assigned to particular tax rate. This was one of the reasons why was the Income Tax Act

so complicated. In case of flat tax rate there is only one tax rate introduced and any complications are avoided.

In Income Tax Act valid in 2003, for example, these rates could be recognised: 1 % - rent from financial lease, 2 % - lump-sum income tax from income up to 500.000, 2,25 % - lump-sum income tax from income up to 1.000.000, 2,5 % - lump-sum income tax from income up to 1.500.000, 2,75 % - lump-sum income tax from income up to 2.000.000, 10 % - social fund income, 15 % - income from shares, revenues from participations in limited liability company.

### *3.3 Unification of VAT rates*

The immediate result of the introduction of relatively low flat-rate direct tax would be a lower absolute amount of collected direct taxes. The lost revenue is therefore compensated by increased indirect tax revenues generated by higher indirect tax rates introduced as a part of the reform. Prior to the reform, Slovakia had a standard value added tax (VAT) rate of 20% and a reduced rate of 14%. As a part of the reform, the reduced VAT was cancelled entirely and a **unified 19% rate was introduced for all goods and services** as of January 1, 2004. In addition to generating increased tax revenues, the unification of VAT rates will also eliminate important economic distortions and inefficiencies associated with taxing of the consumption of various goods differently. The existence of reduced VAT rates was usually being justified by non-fiscal arguments. Reduced VAT rates were supposed to lead towards the achievement of non-fiscal policy goals. They were expected to generate lower prices, leading to better access of low income groups to basic food and other selected goods, or to increased consumption of goods deemed to be socially desirable. However, there is plentiful evidence casting serious doubt on whether reduced VAT rates truly support the fulfilment of such objectives in spite of the inefficiencies which they introduce. As a result, the Slovak government decided to replace these inefficient fiscal policy instruments with targeted instruments directly in the relevant policy areas, such as social policy and health care.

The tax reform also includes amendments to acts on excise duty on mineral oils, tobacco and tobacco products, and beer, which came into effect on August 1, 2003.

The amendments increased excise duty rates on these types of products. The increased excise taxes on tobacco products harmonised the Slovak tax law with EU regulations earlier than was expected in Slovakia's accession

treaty with the European Union. A new act on excise taxes on spirits also introduced stricter conditions for spirit producers and tax warehouses, which should prevent tax evasion and increase tax collection.

### ***3.4 Elimination of other forms of taxation***

**Real estate transfer tax, donation tax and inheritance tax were also cancelled** as a part of the tax reform. Donation tax and inheritance tax was eliminated as of January 1, 2004. With the elimination of the donation tax, donations are no longer recognised as tax-deductible expenditures. The real estate transfer tax was eliminated as of January 1, 2005.

The tax reform was followed by fiscal decentralisation, which includes significant changes in the structure of local taxes concerning real estate tax, road tax and local fees. In principle, the fiscal decentralisation significantly strengthens the fiscal competences of municipalities in the field of local taxes. The successful realisation of the tax and customs administration reform closely depends on a smooth adjustment of the Slovak tax system to the principals of the tax system in the European Union. Some of the most important activities that are currently being realised include the e-DP project (input of tax declarations via the internet) and e-TAX project (Electronic taxation and electronic communication with tax subjects).

### ***3.5 Fiscal impacts of the reform***

The government paid serious attention to ensuring that the tax reform will not have a negative impact on its fiscal position. In order **to ensure a fiscally neutral outcome** in the first year after the reform, the government produced and commissioned five independent estimates of its fiscal impact. A highly precise estimation of these effects was difficult to make because of complications with estimating precise tax elasticity, due to the lack of detailed data on the structure and development of tax revenues of households. In order to mitigate the negative effects associated with this uncertainty, the government based the reform on the most conservative of these estimates, which was also more conservative than one of the International Monetary Fund. The development of tax revenues in 2004 confirmed that these estimates were correct. The collected tax revenues correspond to the expectations and direct taxes even slightly surpass the expectations.

The responses from companies and economists from Slovakia and abroad confirm that the fundamental tax reform concept created in the Slovak Republic is one of the most competitive tax systems in the entire EU and

OECD area. The contribution of individual types of taxes to GDP in 2002 and the estimated development in 2006 are specified in the table below.

% GDP	2002	2006
Income tax	6,9	5,0
Personal income tax	3,4	2,4
Corporate income tax	2,7	2,2
Withholding income tax	0,9	0,4
Value added tax	7,6	8,4
Excise taxes	3,1	3,2
Donation, inheritance, real estate transfer tax	0,2	0,0
Local taxes	0,6	0,7
Road tax	0,2	0,0
Other tax revenues	0,4	0,1
Total tax revenues	19,0	17,3

*www.finance.gov.sk*

The government plans to decrease tax burden in 2006 in comparison to 2002 by 1,7 % on condition of high rate of GDP growth. Contribution of personal and corporate income taxes to GDP should be smaller and contribution of value added tax should, on the other hand, be higher.

#### **4. Assessment of tax reform effects**

For the purpose of assessment of first tax reform effects we have chosen the basic indicators of taxation system effectiveness, i.e. direct and indirect taxes.

Comparison of individual indicators in the year 2004 and 2003 can be seen in the table below:

Indicator in bill. SKK	2004	2003	Difference
1. VAT in bill. SKK	99,6	83,4	+ 18,8
2. Excise taxes ( on mineral oils, alcohol, tobacco )	43,4	38,0	+ 5,4
3. Personal and corporate income tax	55,8	61,0	- 5,2

Source: www.finance.gov.sk

There is a **basic economical assessment** of tax reform:

1. The expectations of government were met – the tax burden was directed from direct taxes to indirect taxes. Personal and corporate income tax revenues fell by 5,2 bill. SKK and value added tax and excise taxes rose by 24,2 bill. SKK in 2004 in comparison with 2003.
2. Tax reform in the first year of its introduction did not prove to be neutral as government supposed, as the excess taxation represent the amount of 19 bill. SKK.
3. Evidently, the positive effects of the reform on unemployment have not been observed yet. The unemployment fell by 2,5 % in 2004 in comparison to preceding year, the average fall being 1,83% for each of three preceding years.
4. The government presents the tax reform as a stimulus for direct foreign investments which reached the amount of 43 bill. SKK in 2004 (the government expects inflow of investments in the amount of 280,5 bill. SKK in the period of 2005 – 2008), in this context the professionals present the perspective of the investors not being interested in the amount of tax rate in the first place, but the qualification and price of labour in Slovakia.

## **5. Anticipated macro-economic trends in Slovak Republic in connection with entering the Eurocurrency market according to National Bank of Slovakia**

To define the date when Slovakia is going to enter the Eurocurrency market (1.1.2009) was a **big challenge for the central bank as well as for**

**the whole society.** Monetary policy of National Bank of Slovakia (NBS) should ensure meeting the inflation target and Maastricht exchange rate criterion. That's why NBS clearly defined its monetary policy in medium long term, not in the form of expectations but in a form of binding goals. NBS defines its monetary policy as inflation targeting in terms of ERM II. Monetary Programme of NBS was elaborated in cooperation with Ministry of Finance and Slovak government.

Monetary Programme of NBS for the period till 2008 is **based on real macro-economic results of the Slovak Republic in 2004.** At the same time it reflects the most up-to-dated information and predictions regarding the trends of basic external factors, e.g. oil prices, exchange rate changes or expected economical growth in other countries of European Union.

Estimated trend of selected macro-economic indicators in the period of 2004 – 2008 is presented in the table below:

Indicator	2004	2005	2006	2007	2008
1. HICP*	6,2 – 6,5	3,5 +/-0,5	below 2,5	below 2,5	below 2,0
2. GDP in constant prices	5,3 – 5,7	4,5 – 5,3	4,7 – 5,7	6,0 – 7,2	4,0 – 5,2
3. Real wages	1,9	2,3 – 3,4	2,4 – 3,1	2,8 – 3,6	2,8 – 3,6
4. Share of public sector on GDP (including expenses on pension reform)	- 4,0	- 3,8	- 3,9	- 3,0	- 2,1

Source: [www.nbs.sk](http://www.nbs.sk)

Note: HICP - Harmonised index of consumer prices

Macro-economic trend in Slovakia **in 2004** as a whole can be characterised by high GDP growth, higher deficit of current account of balance of payments, while the inflation was affected especially by its cost basis.

**In 2005 and later on strong deflationary development of Slovak Crown** is expected. The decrease of consumer prices in 2005 in comparison with 2004 should be based on less significant impact of increase of regulated prices and on the change of monetary policy of NBS that would concentrate primarily on identification and targeting of demand inflation.

Inflation development in 2005 – 2008 will be influenced by **administrative interventions** to economy to some extent, such as increase of tax on tobacco and tobacco products and introduction of tax on energy. These taxes should be increased in 2007 and 2008 and the estimated impact on inflation is 0,8% in 2007 and 1,1% in 2008.

Monetary Programme of NBS for the period till 2008 is based on **optimistic assumptions** of both public finance consolidation and economical growth.

**Share of public sector on GDP** (including the expenses on pension reform) is determined by individual phases of electoral cycle to the certain extent. In our opinion presented values of this indicator do not sufficiently take this correlation into consideration. We suppose that the indicator will worsen its position in 2006, when the elections will be held. Political influences after the elections in 2006 in Slovakia and their impact on indicator can not be predicted with high probability.

Although the acceptability of implemented reforms by inhabitants of Slovak republic is probably the highest possible, it would be good for Slovakia to ensure their positive fiscal results also after 2006, based on lower government consumption and higher activity of small and medium enterprises.

The development of political situation in European Union might be problematic as well, especially where European constitution, European monetary integration or meeting the Maastricht criteria by Germany or France is concerned.

NBS expects **high rate of GDP growth** in 2005 – 2008. Average rate of GDP growth in constant prices represents 5,32 %, while in 2007 it is expected to be 6,6%.

Presented GDP growth represents **ambitious estimation** that is based on assumption that the fundamental accelerating factor of economic growth in Slovak Republic in medium - long term will be the direct foreign investments to automobile industry. It is probable that due to increase of investment demand, import of production technologies will rise at first. That will lead to higher deficit of net export with negative influence on GDP growth. In the following period (probably in second half of 2006) NBS expects, in connection with the start of production in automobile companies PSA and

Kia – Hyundai, a significant increase of export of goods and services and the change of deficit of net export to surplus of balance of goods and services, with positive impact on economy growth.

This assumption is not free of the **risk**, which is also included in Monetary Programme of NBS and in prediction of macro-economical indicators. The risk arises from the fact that automobile industry build out of foreign investments is at present non-existing part of Slovak economy; and therefore the foreign investments as a accelerating factor of economical growth are very complicated to quantify, especially in connection with always changing economical environment. The assumption also reflects branch asymmetry of economical environment in Slovakia and too strong dependence on one industrial branch.

Convergence Programme defines **risks of GDP development** as follows:

1. Dynamics of final consumption of households will depend on particular **impact of implemented tax, pension and health care system reform** on development of gross available income of households.
2. Private consumption trend will be determined by actual real wages trend. Increase of expenses on consumption depends not only on real wages but also on preferences of consumer. NBS assumes that propensity to consume will be encouraged by wide offer of credit products of commercial banks as well as by positive trend of client interest rates.
3. The development of **final consumption of public administration** will depend on the level of meeting the planned deficit of public finance and on other factors.
4. Real level of investment demand will depend on constantly changing macro and micro-economic conditions in Slovakia, on economic development in neighbour countries and on expectations of domestic and foreign companies. The expectations of the companies will have an influence on willingness or unwillingness to realise investments in Slovak Republic.

The development of **labour productivity** should also be determined by inflow of direct foreign investments to automobile industry in 2006 and 2007. Inflow of direct foreign investments should create a solid base for non-inflationary growth of nominal and real wages. NBS assumes 5 to 6% growth of nominal wages in national economy that would be sustainable and acceptable. Assumed average growth of real wages would then be 3%.

**The risks for inflation trend in the period of 2005 to 2008 are the following:**

1. **Increase of prices of mineral resources.** The price of oil represents the main risk factor for consumer prices development. NBS assumes that price of oil will reach in average 40,8 USD for barrel in 2005; 36,8 USD for barrel in 2006; 34,6 USD for barrel in 2007 and 34,2 USD for barrel in 2008. More rapid growth of supply in comparison with demand is expected because of the fact that member states of OECD do not respect the quotas and restrictions. Considerable increase of oil production in non-member states and decrease of demand in China are also expected. Other risk factors affecting the price of oil are: conflict in Near East and Middle East, political instability in Russia, Venezuela and Nigeria, slow increase of capacities for oil producing in Iraq and continuous economical expansion in China.
2. **Development of exchange rate of SKK against EUR and USD.** The projection of inflation prepared by NBS is based on assumption of appreciation of balanced exchange rate in accordance with economy development. More significant depreciation of nominal exchange rate of SKK could endanger meeting the inflation target as it causes the increase of prices in trading sector.
3. **Increase of food prices.** Potential increase of food prices represents another risk. Food prices trend will be influenced by acceptance of principles of Common agricultural policy, by fertility of soil in following years and by impacts of implemented reform of Common agricultural policy. NBS assumes that acceptance of Common agricultural policy will have an impact on inflation in the amount of 0,3% in 2005.
4. **Regulated prices trend.** Certain amount of risk is connected with increase of regulated prices of energy and other commodities (for example in 2005 deregulation of prices of heat, transport, postage services and rent is expected). It is relatively hard to estimate possible secondarily effects in non-regulated part of the consumption basket. According to the data provided by NBS, deregulation of prices will have 1,6 % impact on inflation in 2005 (while the greatest impact is expected in connection with deregulation of gas prices – 0,5%). The impact of deregulated prices will gradually fall - to 0,4% in 2008.
5. **Changes in the area of excise taxes.** The impact of expected changes of excise tax rates on tobacco and tobacco products on inflation will be significant, approx. 0,8% in 2007 and 1,1% in 2008. NBS admits

that this represents a risk in regards to timing and extent of changes in the area of excise taxes, which are uncertain. Other risks can be seen in unexpected decisions of European Commission in the next period.

6. **Higher fiscal deficit in comparison with projected deficit.** Risk of higher fiscal deficit is defined in previous sections (the year of elections 2006, optimistic assumption of the economy growth, etc.)

## 6. Conclusion

Assessment of the tax reform in Slovak Republic represents complicated issue from both professional and political point of view. Indisputably, there are positive effects, such as simplification of tax system, higher degree of transparency and creation of business-friendly environment. However, we can not notice also negative impacts. The resources of the society are being redistributed to higher income groups.

Due to the insufficient competitiveness for example in the branch of distribution of petrol or banking, not much earning Slovak people are confronted with high level of prices of petrol, banking services or health care products.

Current government is being criticised by its political competitors for generous support of foreign investors (for example a state support in the amount of 5 bill. SKK has been approved for Peugeot Citroen Automobiles Slovakia or 5,4 bill. SKK for Kia), as there is a minimum state support of Slovak small and medium enterprises.

When presenting the ideas about future trends in Slovakia we used the information mentioned in Monetary Programme of NBS (central bank of the state, respected institution in Slovakia). Monetary Programme of NBS till 2008 is a very ambitious document, contents and orientation of which is influenced by the entering to European Union and later obligation to enter to European Economical and Monetary Union (Eurocurrency market).

The greatest challenge for NBS and a chance as well is to **obtain support of public** for meeting the targets of Monetary Programme till 2008. Formation of inflationary expectations in national economy represents a strong monetary instrument that has to be taken into consideration when making decisions on investments, savings and wages. Optimistic inflationary

expectations of public in combination with other monetary and fiscal measures of government and NBS may create favourable macro-economic environment for dynamic growth of Slovak economy and in the end increase standard of living of the inhabitants of the Slovak Republic.

In the period of nominal and real convergence of Slovak Republic with Eurocurrency market also several risks may occur. These have to be eliminated using reasonable and balanced monetary and fiscal policy by responsible institutions in the Slovak Republic.

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# PRESENT AND FUTURE PROBLEMS OF ROMANIAN TAXATION SYSTEM AND FISCAL REFORM

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## **Abstract**

*After 1989, the Romanian taxation system has been subjected to major transformations. It has adapted to the requirements of the market economy by taking over the main taxes levied in the developed countries. In the present, Romanian taxation system meets to a great extent the requirements imposed by a competitive economy. However, there are still certain problems, both general problems, regarding the entire fiscal system and the way it functions, and specific problems regarding each and every tax. The present paper tackles about the general problems of the fiscal system as well as problems regarding the direct taxes, profit taxes, income taxes, problems connected with the main indirect taxes, value added taxes and excise duties. As far as the fiscal reform is concerned, the present paper analyses mainly the fiscal simplification implemented by the present government, as a means to reduce the taxation in the business environment, to encourage the private initiative and to achieve the economic growth by expanding the scope of the taxes as a result of expanding the official economic activities.*

**Keywords:** *fiscal reform, fiscal policy, taxation system*

## **1. Introduction**

After 1989, Romanian taxation system has been subjected to major transformations, adapting to the market economy by taking the main taxes levied in the developed countries. In the present, Romanian fiscal system meets to a great extent the requirements improved by a competitive economy. However, there are still certain problems, both general problems, regarding the entire fiscal system and every important tax. First, we will tackle about the general problems of the fiscal system.

## **2. General Problems of Romanian Taxation System**

One first major problem which arises from the analysis of the evolution of the fiscal system after 1989 is the instability of the legal framework. In time, each of the main taxes has been subjected to repeated, more or less important changes. In fact, in many cases, the former settlements have been replaced by new ones, because of the repeated changes to which they have been subjected and which have made difficult the keeping under observation of the tax evolution and its levying.

One reason why the main taxes have been subjected to changes is the necessity to adapt them to the E.U. requirements. Another one is the necessity to have in view the practical experience of levying different taxes as well as their adaptation to economic circumstances. However, irrespective of the reasons, much instability of the legal framework in the fiscal field can not be justified, because it makes almost impossible long-term business plans, fails to attract the foreign investors and reduces the internal and external investments. Apart from this, the legal framework makes more difficult both for the tax payer and control authorities (because of the number and rapidity of changes) to know the content of the respective law and the way it is put into practice.

Another problem is the way in which the fiscal legislation is put into practice and the embezzlements. In Romania, only half of the taxes and contributions owed by the companies according to the data in the balance sheets are paid. In this case, there is a matter of nonobservance the fiscal legislation. The Romanian authorities have tolerated it and, some cases even supported it. There are various reasons why this happened but they all have in common the bad "habit" of the state-owned enterprises to pay their debits to the state only partially. The enterprises pay less than half of their debits because they are inefficient and because of the influence of the trade unions in the large state-owned companies which has been a real problem for all the

governments after 1989. Lately, this negative “habit” of unpaying the debits has extended to private firms.

Another reason which has made the applying of fiscal legislation difficult was the fact that Romanian authorities have derated or postponed the payment of debits for a large number of enterprises. In many cases, the tolerance for not paying the debits and derating or postponing the payment of debits has been influenced by the business and political circles, the politicians having in view to obtain extra-votes to find financing sources for their party, especially in election campaigns, and even to have some personal advantages. All these generate an uneven distribution taxation which has negative effects for the economic competition and makes private firms to turn their attention to subterranean economy.

A negative effect when putting the fiscal legislation into practice was generated by the fact that, usually, the laws and governmental order in the fiscal field are not very clear and can be subjected to interpretations and, sometimes the Ministry of Finances gives instructions which contradict or distort the settlements which they are supposed to interpret. In some cases, these instructions have a restrict circulation which makes them even more difficult to be understood by the tax payers and control authorities.

Another important problem Romanian taxation system has to face is the existence of a powerful subterranean economy. Taking into account various evaluations, the Romanian subterranean economy is 30-40% of the gross domestic product or even more which is a lot and has major fiscal consequences. Apart from all these controversies we must keep in mind the fact that this phenomenon is wide spread. It has been caused by the high level of taxation (especially that regarding the labour force) and its uneven distribution the legislative instability and the incorrect putting into practice of the fiscal legislation the corruption of the civil servants; the regress of the economic environment, etc.

Although there are voices that try to find the positive part of tax evasion (one of the arguments being that using this method one can risk capitals which, then, can be invested this contributing to economic growth) we must enlighten the negative effects it can have in economy. If the firms working in the field of the subterranean economy do not pay the taxes, the fiscal revenue (of the state) is reduced which makes necessary an increase of fiscality which, in its turn, will increase the numbers of the firms working in the field of the subterranean economy. This will diminish the fiscal revenue and generate a vicious circle. If the public expenses in Romania have significantly been reduced and many of them pay the public debit, a new diminishing of public expenses due to diminishing the fiscal revenue, will

jeopardize the very functioning of public institutions and the entire society. The most affected would be the socio-cultural expenses (education, health, culture) and those regarding the maintenance and the development of the infrastructure, which will affect the long-term economic and social development irremediably.

Therefore, urgent measures must be taken to reduce this. There have been voices which insisted to increase of the similar to those for crime. But we must have in view the fact that only enforcing coercive measures can not make this disappear. Other measures are needed, such as: reducing taxation and a more even distribution of it; drawing up a stable and clear legislative framework and its coherent putting into practice; the efficient use of some fiscal tools capable to discover the incomes obtained in subterranean economy and levy taxes in them.

A measure which could have important effects on fighting fiscal evasion and a better putting into practice of the legislation in the fiscal field would be the use of computerized data bases of the entire process of fiscal administration. At the same time, in order to fight the fiscal evasion a special attention must be paid to enhancing the fiscal control. This can be achieved by proper human and financial resources and new priorities for control. In this sense, we must have in view the professional training of the tax inspectors as well as applying modern criteria to select those tax payers that are to be controlled.

Without a fighting fiscal evasion which limits the range of the state's actions by embezzling funds it is impossible to rapidly achieve the goals for the accession in the E.U., as we have planned.

Other problems regarding the fiscal system as a whole are those connected to the amount of the taxes and the ratio between direct and indirect taxes.

As regards the amount of the taxes, as it was shown above, the Romanian fiscal system meets the requirements imposed by the European standards, especially those of the Eastern Europe, except the taxation of the labour force, case in which the amount is increased, due to the large social contributions. Being aware of this situation, the Romanian authorities took measures reducing the level of social funds from 60% to 57% in 2002. This continued in 2003, when level of social funds diminished with 5 percentages down to 52%. In 2004, it diminished down to 49.5%. The present government considers that since 2006 the contribution to social public funds will go on diminished so that in 2008 they will come to 39.5%. The contribution will significantly reduce in the case of the employer as compared to that of the employee.

As far as the ratio between direct and indirect taxes is concerned, the present government speculates that the indirect taxes will be the main source for the budget of the state. This makes the fiscal balance created by the Romanian fiscal system to be fragile. In order to solve this problem, the value of direct taxes when forms I the fiscal revenue must increase. This can be achieved only simultaneously with reducing the level of social contributions and increasing the tax base both by including of the economic growth in it and reducing the tax evasion.

It is normal that the organization / structure of the public financial resources vary from one country to another. But, if in many developed countries most of the public financial resources are determined / influenced by direct taxes, in the case of developing countries. Romania is one of them, they are determined by indirect ones, especially consumption / expenditure taxes (value-added taxes, excise duties).

Only by solving all the above-mentioned problems, Romania may increase the level of the fiscal returns without increasing the value of the taxes, thus reducing the discrepancy between it and other countries in Eastern Europe which at similar taxation quotas get several extra percentages of fiscal revenues in gross domestic product.

### **3. Problems Regarding Direct Taxes**

The system of levying taxes on legal entities incomes has undergone significant changes since the 1<sup>st</sup> of January 2000, when the taxation quota of the profit tax was reduced from 38% to 25%, as well as since the 1<sup>st</sup> of January 2004, when the present government decided to levy only one income tax. The taxation quota of 16% is wanted to be competitive as compared to the other states in order to attract direct foreign investments. Resorting to this measure, they fight against the fiscal evasion and encourage the economic activity.

In the present, the rate of the profit tax is only 16%, one of the lowest in Europe: in Hungary, it is 18%, in Croatia 20%, in Czech Republic 31%, Poland 27%, and Germany 39.58% and in Italy 38.25%

Starting from the 1<sup>st</sup> of July 2001, in the case of small companies, the profit tax has been replaced by a tax levied on their incomes, calculated with a quota of 1.5% from the incomes, irrespective of their source. The quota has increased with 3% starting with the 1<sup>st</sup> of January 2005. At the beginning all small companies, had to calculate the tax according to this quota. Later on, it was allowed to choose between the tax levied on small companies and the

profit tax which was not a very good idea, because of the possible fiscal evasion.

As far as the process of levying taxes on natural persons, incomes is concerned, an important step forward in the modernization of Romanian fiscal system is the introducing of the global income tax. In general levying this tax has many advantages as compared to levying taxes on incomes, each of them taken separately chancy these, mention can be made of:

- it contributes to fiscal balance; both the exact incomes of each individual and the personal situation of the tax payer are taken into account (which was not possible in the later above-mentioned case);
- it is more efficient by including in the tax base the income of a tax payer;
- it is an excellent way of fighting against fiscal evasion and criminal activation.

Up to the 1<sup>st</sup> of January 2005, for levying taxes on physical persons there were 5 taxation quotas which ranged between 18 and 40%. After the above-mentioned moment, a unique quota of 16% was introduced. This will has as main effect the significant reduction of the fiscal administration costs. The measure of reducing the taxation quota is similar to what has happened lately in the countries of the Central and Eastern Europe. Then, Russia has applied a unique 13% taxation quota of incomes Estonia and Latvia, also apply unique taxation quotas of 26% (the former) and 25% (the later). At the mine time, Croatia has three levels of taxation of 15.25% and 35%, Bulgaria – 4 quotas of 18, 24 28 and 29% and Czech – 5 of 15, 20, 25 and 32% in the present quota diminishing from 40% in 1982 to 32% in the present.

Another problem that arises when cones to levying the income tax in Romania is the fact no deductible expenses were provided from the taxable income. Granting these fiscal deductible expenses is a frequent in the developed countries and has a double function: on the one hand to bring to other to support certain economic branches by encouraging the consumption of the goods produced by them. The measure of granting much facility in Romania, too, would have positive effects on the receipts / returns resulting from this tax, as well as on the development of economy.

The most important problem of levying of the declared incomes is controlled. Normally, by controller the tax payers regularly and correlating the declared income mitt the level of the expenses in the same period, the undeclared incomes can be revealed if the value of the expenses exceeds that the incomes. In Romania, this control can not be made because the tax payers will say that the expenses that can not be justified by the level of the incomes are made due to the fortune acquired before the levying of this tax.

#### **4. The Problems Regarding Indirect Taxes**

The main indirect tax, the value added tax was introduced in Romania by law in July 1992 from the 1<sup>st</sup> of January 1993; it was enforced on the 1<sup>st</sup> of July 1993. Initially, Romania introduced a system with 2 quotas: a normal one of 18% and the zero quotas. A diminished quota, of 9 %, was added to these two ones, and it was applied to food, medication and medical equipment etc. In time the settlements regarding the value added tax have been subjected to many changes, the most important ones stipulating the diminishing of the number of products and services exempted by value added tax (VAT), the number and the value of the quotas, changed on the 1<sup>st</sup> of February 1998, the normal quota becoming 22% and the reduced one 11%. Starting from the 1<sup>st</sup> of January 2000, the normal quota has become 19% and the reduced one has been given up.

Latterly, value added tax has undergone significant changes having in view the harmonization with the provisions of the 6<sup>th</sup> Directive of the E.U. Comity Council. In this sense mention must be made of the fact that Romania not only has completed the harmonization measures which had 31<sup>st</sup> of December 2002 as deadline but also has completed in advance some of the commitments it has understood. This process of bringing Romania to a balance with various European provisions will go on. About 25 tax brackets that are not in accordance with the European standards in the respective field will have been eliminated up to 2006. At the same time, some exemptions stipulated in 6<sup>th</sup> Directive will be introduced in the Romania legislation, together with some special treatments for small entrepreneurs, agricultural producers and tourism companies.

As a result of the negotiations with the E.U. to temporarily close the 10<sup>th</sup> chapter "Taxation", Romania was all wed to keep the exemption VAT for the passengers transport for all kinds of transport: land, water, railway all these are to remain after Romania's accessions in the E.U. At the same time, E.U. also accepted the appliance of a taxation level of 3,500 € for VAT payer, in the condition in which this is of 5,000 € in the E.U. In the present Romania applies a taxation level of 5,000 € and will continue to do so up to its accession in the E.U. when it will go down to 3,500 €.

E.U. has also accepted the appliance of a reduced VAT quota (of minimum 5%) for the basic food, medication and flat building, but we must mention the fact that I.M.F. recommended the Romanian authorities to reject the introducing of a reduced VAT quota. The argument brought was the fact that this measure diminished significantly the efficiency of fiscal

administration, whose goal should be the VAT reimbursable in much many cases.

At the same time, it was enlightened the fact that the transfers for the homesteads with small incomes are superior to the possible social effects of a reduced VAT quota.

In the present in Romania there is a 19% standard quota and a 9% reduce one. Although the 2005-2008 governing programmer stipulates that, for a certain period of time, the present for VAT will be kept the positive effects of the tax relief on income and profit allowing a future level of 10% at the political level it is discussed the opportunity of increasing the 22% VAT normal quota and eliminating the reduced quota.

The main concern of the authorities is to bring the excise duties to the minimum E.U. quotas. As a result, the value of the excise duties has increased especially in the case of alcoholic drinks and cigarettes and this will go on in the future, too. Mention must be made of the fact that the European Commission has come to an agreement regarding a gradual and not a linear increase of the value of the excise duties. The gradual calendar has been adopted to increase the future incomes of the population so that the future price increase may be bearable. The same thing will happen mitt the excise duties for fuels.

## **5. Problems of Fiscal Policy**

Fiscal policy is a part of the state's economic policy which comprises the totality of the settlements / regulation regarding the setting and levying the taxes, having as main goal the encouragement of the economic growth and diminishing the oscillations of economic cycles.

The role of the fiscal policy is to protect or encourage certain economic branches; in this way, the fiscal intervention has various goals such as:

- encouraging the companies to make investments in certain fields;
- increasing the quality and the competitiveness of products;
- encouraging the export and small producers;
- protecting the environment etc.

When making decisions of fiscal policy, public authorities must satisfy some conditions being confronted with a series of restrictions and claims which can have certain consequences on using tools of fiscal policy in connection with the stage of development of the respective economy, the economic relations with other states; the degree of international integration

etc. Then the enforcing of fiscal policy measures must face certain restrictions such as:

- dimensional restrictions (the fiscal policy is in accordance with the financial potential of the country);
- the development of financial market, of credit market as well as the extent the state's intervention in economy;
- structural restrictions, calculated according to the taxation base and the development of various components of public economy;
- institutional restriction, which correlate the fiscal policy with the way in which the central and territorial institutions with fiscal functions are organized as well as with the existence of private companies;
- informative restrictions, which have in view the rapidity (in due time) of necessary information referring to the tax base and to the correlation with the incomes obtained from the taxes at a certain moment;
- instrumental restrictions which are closely connected to the previous restrictions and refer to the existing fiscal structures and mechanisms which generate fiscal instruments / tools.

In this initial stage, the fiscal reform in Romania had in view a system of taxes capable to assure adequate budgetary incomes, equitably and not really influence the prices. But unfortunately, the fiscal policy of Romania authorities hasn't taken into account the socio-economic evolutions. Imposing austerity budgets and increasing the value of the taxes, levying new taxes have all hindered for a long time the development and gradually affected the purchasing / buying power and the consumption.

The main goal of Romania's present government in the field of the fiscal policy is to assure stimulating role of taxes, having in view the economic growth and development, the fiscal stability and the development of the middle classes. The fiscal policy is wanted to function rather in favor of the tax producers / creators rather than of the tax collectors and to rely on a real partnership between the state and the tax payers.

The efficiency of the taxation system is seen both in the way in which the taxes are collected for the state's budget's and return in the form of the quality of the public services, and in the way in which they assure the maintaining and extension of tax base. The reform of fiscal legislation has in view the continuous reduction of immunities and exception regarding the taxes, having in view the improvement of the transparency of the business environment, the improvement of competition and the extending of the tax base.

The keystone of the present government's fiscal policy in the tax relief as a means to induce a relaxation in the business environment, to

stimulate the private initiative and to make legal the subterranean economy. At the same time, the tax relief will contribute to the economic growth by extending the tax base as a result of the extension of the range of official economic activities (both at the entrepreneurial level and at the level of the jobs offered). The tax relief will make the business environment in Romania more flexible and predictable. The government promotes the tax relief mainly because an increased value of taxes would have negative effects on the unreal economy: the evolution and the reorganization of the internal offer are no longer flexible; there are no records of a part of economic activity.

For the 2004 fiscal year the tax quotas levied on incomes were between 18 and 40% and that levied on the taxable profit was 25%. According to the Order for the modifying and completing the Law No. 571/2003 concerning the Fiscal Code, promulgated by Adrian Nastase government which was to come into force on the 1<sup>st</sup> of January 2005, the income tax was levied with distinct annual quotas between 14-38% and the tax quota levied on the taxable profit was 19%.

According to the Emergency Order No. 138/30<sup>th</sup> December 2004 for modifying and completing the Law No. 571/2003 concerning the Fiscal Code promulgated by Tăriceanu government, the tax quota for determining the tax levied on the incomes obtained from independent activities, wages, demising the right of using certain goods, pensions, agricultural activities, prizes and other sources, is of 16% and it is levied on the taxable income corresponding to each source and category, and the profit tax quota levied on the taxable profit is also of 16%. In this way for the unique taxable quota it is necessary that the taxation of incomes should be equal with flat of the profits.

The modification of the fiscal policy was Tăriceanu governments, first measure and one of the priorities of the governing programmer. The fiscal reform was initially presented as tax relief, having in view the support of private entrepreneurs, the encouragement of foreign investments and of free initiative, which should contribute to the consolidation and development of market economy in Romania, which is one of the main requirements that Romania has to fulfill in the its process of accession to the E.U.

Some critics have considered the unique taxable quota a rash / hasty measure, not justified by an impact analysis, one which theaters the budgetary balance. It should be accompanied by the increase of the value of other taxes, by levying menu taxes, the increase of the utilities prices and reducing the budgetary expenses.

To fill the budgetary emptiness's generated by the tax relief, the Finance Ministry, as a result of its negotiations with the I.M.F., had to suggest unpopular fiscal measures:

- doubling the tax levied on the turnover of small companies;
- the social insurance contributions are no longer reduced;
- postponing the increase of the budgetary person's salaries;
- postponing one of the stages of recalculating the pensions;
- doubling the tax levied on the dividends from natural persons;
- the 10 times increase of the taxation of the bank interests and of the earnings obtained the capital market;
- the more drastic taxation of the earning from the real estate transactions and rents, etc.

The unique tax is the most frequent topic of discussion in the states that have recently been made E.U. members and requests for simplifying and reducing the value of taxes have become common all over the Europe. In such a complex system, instead of a complex set of taxation rules the state declares a limit and if it is surpassed them everybody pays a fixed tax their own incomes. Usually limit has a low value in order to encourage the citizens to pay their taxes, instead of trying to avoid paying them. Such a system is instead of the idea that taxes are levied on all incomes only once.

The unique tax used to be a rule in all industrialized states in the former half of the XIX<sup>th</sup> century. But, finally, the capitalist states were the ones which adopted such a progressive or gradual system of taxes. Since then, the idea of a unique tax has been "brought to life" several times, many countries adopting one variant or another of the unique tax. The modern "renaissance" of the unique tax levied on income was initiated by Estonia in 1991, followed by Latvia (1994), Lithuania (1994), Russia (2001), Serbia (2003) and Romania (2005). It seems that Hungary and Poland take into account the introduction of one version of the unique tax in the near future. Here are the advantages and the disadvantages of the unique taxation quota.

#### Arguments in Favor of the Unique Taxation Quota and Its Positive Effects

- the unique quota does not run counter of communitary acquis. Chapter 10 "Taxation" in communitary acquis has in view the indirect taxes (VAT, excise duties) and not the direct ones (the tax levied on income is not a part of the category). It is not necessary a harmonization of the taxes levied in those states that are members of the E.U.
- the unique quota encourages work and exposes illegal work. It encourages a second job.
- the unique quota eliminates the complicated and expensive procedure of the yearly forms of return for certain categories of tax payers.
- it is characterized by simplicity, transparency and efficiency in the raising / collecting process.

- it is a system suitable for those states with reduced administrative and fiscal discipline.

- it reduces the subterranean economy. It exposes a part of the “grey” and “black” economy.

- it simplifies the producers of calculating, collecting and controlling the taxes.

- the exceptions, the deductions and the special regimes are easier exploited by the wealthy and informed persons than by the poor.

- the equality between the rates of the taxes levied on income and profit will no longer artificially stimulate a factor of production in detriment of another.

- the social redistribution will be made only by means of the expense policies, not by means of those for collecting the incomes.

- the distinction between personal deductions is a progress, even in the case of levying the unique quota.

- the unique quota coincides with the regional evolution of the fiscal policy. Countries that have already introduced it or are about to introduce it: Estonia, Latvia, Russia, Ukraine, Slovakia, Poland, The Czech Republic, Hungary, and Slovenia.

- the reduced taxes will encourage the Romanian investments and will attract foreign investments, allowing the capitalization of Romanian companies which will become more competitive on the external market.

- the discouraging of speculative transactions and the encouraging of capital investment in productive business that creates jobs.

Arguments Against the Unique Taxation Quota and Its Negative Effects

- the lack of coherence in the case of governmental declarations and measures.

- the lack of consultancy with the associations of employers and trade unions regarding the modification of fiscal policy.

- the lack of stability and predictability of fiscal policy.

- diminishing the local budgets taken from the income tax.

- the entrepreneurs can no longer evaluate the effect of the new taxes introduced in order to diminish the effect of the unique quota on budget.

- fiscal equity and social justice require a distinctive, progressive taxation, one in accordance with contributive capacity given by the value of the respective fortune, income and consumption.

- the modification of the Fiscal Code was made by an emergency decree and not by law, and this modification had to be put into practice 6 months before its effects become visible.

- this fiscal policy decision was taken without consulting the World Bank, I.M.F. and E.U. The developed countries in the E.U. do not do

something like that. At the same time, this decision is not supported by a large part of the political class (the parliamentary opposition) and by the trade unions. The government and the opposition have conflicting fiscal policies. The introduction of the unique quota requires the modification of the state budget.

- the taxation the social divisions and is a real advantage only for 1% of the population.

- it increases the value of the tax levied on the interests on bank deposits and on the earnings from the capital market (capital investments).

- the increase of the price for utilities (electricity, gases etc.).

- doubling the value of the tax levied on the dividends of natural persons.

- reducing to one half the deduction in case of the incomes obtained from rents, the lack of profitableness in the case of the business consisting in hiring out buildings, the temptation to hire out buildings illegally, without paying the respective taxes.

- doubling the tax levied on the turnover in the case of small enterprises.

- it increases the value of the excise duties imposed by the E.U. in the case of petrol, cigarettes, coffee and alcoholic drinks much sooner than it was established.

- postponing one of the stages of recalculating the pensions.

- increasing the value of the tax levied on the earnings from real estate transactions.

- the introduction of the unique quota might affect the process of reducing the inflation in 2005 by increasing the incomes of the population and the consumption. The increase of the product and service demand will generate inflation.

- the members of social assistance are more carefully selected and the social security benefit is reduced.

- the increase of the salaries of those paid by the state is stopped.

In order to be efficient, the tax relief must be accompanied by a strategy which has in view the improvement of the capacity of fiscal administration by:

- separating the fiscal administration from the fiscal policy;

- giving up on those policies having in view the exemption or rescheduling of the debts for the public budgets;

- considering the fiscal evasion an economic-financial offence and its punishment should be done with this fact;

- eliminating the policies of modification the fiscal norms by means of inferior laws;

- an increasing the administrative of those institutions which collect the taxes;
- assessing the fiscal control procedures and establishing strict ethical rules for fiscal control activity as the result of the good expiration between public authorities and businessmen.

## 6. Conclusion

We must keep in mind the fact that only applying the fiscal legislation correctly and coherently we can speak about an economic framework which will be one for all companies this being an advantage for those which are really efficient then contributing to the progress of economy. At the same time, an even distribution of fiscal tasks duties may reduce the level of fiscality which can diminish the subterranean economy and offer better conditions for the development of firms.

In order to change the way in which the fiscal legislation is applied, in practice, one needs political will and a separation clear cut distinction between the public and private interests, which is very difficult to accomplish. It is necessary that the measures which have been taken so far in this sense to be continued firmly, because, otherwise, their putting into practice must be a failure even if we improve the taxation system and adopt the E.U. standards.

The fiscal policy promoted by the present government is expected to have a favorable impact on economy to contribute to economic stability and reorganization and to economic growth.

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# **PUBLIC FINANCE AND PROJECTS OF PUBLIC PRIVATE PARTNERSHIP**

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## **Abstract**

*This paper refers to relations between policy of public finance and projects of public private partnership in the Czech Republic. In 2004 the government set out on a reform of public finances, which is aimed not only at gradually reducing the budgetary deficits but also at improving the quality of public finances. The Czech government has confirmed these objectives in its Programme Declaration. The government's declared expenditure priorities are as follows: research and development, education, transport infrastructure and programmes co-financed from the EU budget. The Czech Government has also adopted a policy introducing public private partnership ("PPP") as a standard tool serving the provision of public services and public infrastructure. The introduction of PPP represents a measure based on the requirement for fiscal moderation and a systematic control over the formation of long-term public sector liabilities. This measure, too, is of a pro-growth nature, stimulating as it is an increase of private investment in the building of public goods and provision of public services.*

**Keywords:** *public finance; project; public private partnership; public service*

## **1. Introduction**

In August 2004 a new Czech government was created and installed in office. The government confirmed in its Programme Declaration that it will follow up on the economic policy of previous governments, focussed in particular on promoting economic growth, reducing the unemployment rate and improving the competitiveness of the Czech economy, and will persist in the reform efforts that had been initiated. An updated medium-term economic strategy is relying on the following two basic pillars: the reduction of public finances deficit and effective promotion of economic growth.

The economic policy is aimed first and foremost at the acceleration of economic growth and at the reduction of unemployment in the nearest period. The government wants to concentrate on improving the legislative and institutional environment for entrepreneurship in the Czech Republic, both for domestic and foreign entities, and on preparation of the labour force to be able to withstand global competition. To ensure long-lasting and sustainable prosperity, this aim has to be incorporated into the final stages of public finance reform, so as to create the conditions for economic convergence with developed countries. Financing of joint programmes of the EU and the CR and promotion of expenditures on research and development and education have been made the budgetary priorities for 2005.

## **2. Government Objectives and Priorities**

The Czech government determined the following economic priorities in its Programme Declaration:

- Stabilization of public budgets and improvement of the effectiveness of public expenditure, with the aim of joining the euro area by 2010;
- Reduction of unemployment by creating better conditions for businesses, active employment policy (particularly in regions affected by structural imbalance) and enforcement of equal opportunities;
- Improvement of the legal environment for entrepreneurship, particularly in the area of bankruptcy legislation, shortening of waiting times for registration in the Commercial Register, introduction of measures aimed at reducing the administrative burden for entrepreneurs and simplifying the communication between entrepreneurs and state institutions; strengthening of law enforcement and continuation of the fight against the shadow economy;

- Improvement of targeting and implementation of government programmes aimed at the promotion of entrepreneurship, so that these would effectively encourage investment in production and services with high value added, creation of new jobs and economic growth based on innovations, investments in modern technologies and on support of small and medium-sized enterprises;
- Support of science, research and education through the development of a knowledge-based society, wider access of the population to lifelong learning and increased government investment in research and development;
- Development of transport infrastructure, including the construction of a high-capacity transport infrastructure and the promotion of public passenger transport;
- Support of families with children through the creation of a favourable social and economic environment;
- Improvement of conditions for a better quality of life in rural areas and respect for the environment;
- Preparation and submission of draft reform of the pension system.

A prerequisite for meeting the said priorities is maintenance of a stable political and macroeconomic environment by applying an optimal economic policy mix. Economic policy is focused on speeding up the process of economic convergence and increasing the adaptability of the economy, in order to reduce the risk of an economic slowdown caused by asymmetrical shocks. Since the beginning of transformation, the characteristics of the Czech economy have moved much closer to those of EU countries, but a certain degree of economic misalignment and structural differences still persist and will persist even after joining the euro area. Stabilisation of fiscal policy, flexibility of the labour market and effective functioning of the financial markets will be crucial for making the Czech economy sufficiently responsive to changes.

Fiscal reforms are prevented the public finances from becoming a barrier to full participation in the euro area (due to excessive deficits and insufficient structural adjustment, notably on the expenditure side). Completion of public finance reform is a basic prerequisite for achieving compliance with the Maastricht criteria.

Fiscal policy should be based on a process of fiscal consolidation and gradual reduction of the current excessive deficit. This process was launched by the public finance reform approved in year 2003. According to this strategy, the general government deficit should not exceed 3.8 % of GDP in 2006 and 3 % in 2008. The adopted system of fiscal targeting is based on two pillars that anchor the budgetary process - on legally binding medium-term nominal expenditure ceilings for central government and on the policy of earmarking any higher-than-budgeted revenues for swifter deficit reduction. Measures carried out during the first stage of public finance reform were primarily aimed at reversing the inbuilt deficit tendencies of public finance and reducing the growth dynamics of general government deficit.

In the next stage of public finance reform the Czech authorities will focus on neutralizing the fiscal impact of current economic policy priorities, i.e. of measures aiming to support the supply side of the economy and create conditions for faster growth of potential output, and on fiscal policy measures aiming for long-term sustainability of the fiscal targets achieved.

### **3. Reform of Public Finance**

In 2004 a number of legislative measures focused on rationalising public expenditure came into force. The government is striving to restructure public expenditure in a way that is strengthening the areas of research and development, education, transport infrastructure, while ensuring that spending on the government's priorities is not endanger the approved expenditure frameworks. Higher expenditure in priority areas should be financed from savings combined with a reassessment of other expenditure, including mandatory expenditure. Further opportunities for the financing of these priorities arise thanks to the savings measures approved in year and implemented in the 2004 state budget.

Furthermore, certain tax changes were approved towards the end of 2003 and have been effective since the beginning of 2004. These tax changes reduce the role of income taxes and raise the importance of indirect taxes. This means a shift from the taxation of labour and profit (which has a negative effect on the markets of production factors) towards the taxation of consumption. This autumn brought the beginning of a debate focussed on changes in income taxes, with special focus on the promotion of investment activity, research and development, as well as support of families with children

The preparation of public finance reform was based on the principle that in the process of deficit reduction expenditure savings should prevail over tax changes. Over the next three years the ratio of general government

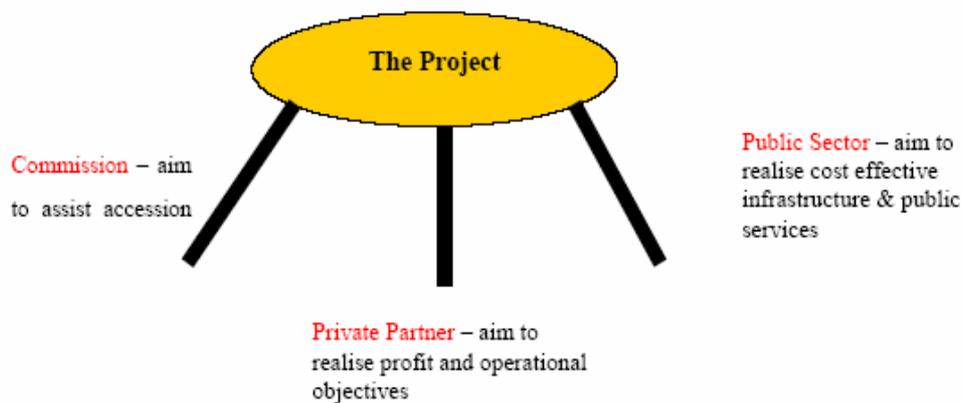
spending to GDP should drop by almost 4 p.p. Fiscal consolidation will affect almost all expenditure items; government consumption, social transfers and subsidies will experience the most significant decline. Starting in 2005, the government expenditures should no longer be burdened by transformation costs. In accordance with government priorities, government investment should increase. It will also be possible to fund additional investments from the Structural Funds and the Cohesion Fund.

#### 4. Public Private Partnership

One of the main commissions of a public sector is to provide public goods and public services in a high quality. As possibilities of public finance are very limited, it demands to look for new resources of financing and investing of these services. One of an alternative or supplemental form of financing of public services and goods could be public private partnership (PPP).

Conception of PPP is based on a partnership between the public and private sector for the purpose of delivering a project or service traditionally provided by the public sector. Public Private Partnership recognises that both the public sector and the private sector have certain advantages relative to the other in the performance of specific tasks. By allowing each sector to do what it does best, public services and infrastructure can be provided in the most economically efficient manner.

**Picture 1 PPP Relationship**



*Source: EUROPEAN COMMISSION. Guidelines for Successful Public - Private Partnerships, European Commission, 2003, page 67.*

Therefore the Czech Government has adopted a policy introducing public private partnership ("PPP") as a standard tool serving the provision of public services and public infrastructure.

The Government believes that a systematic and programmed application of PPP can bring about the following:

- real financial benefit and a better utilisation and allocation of public funds;
- development of efficient public infrastructures in shorter terms than otherwise;
- ensuring good quality public services;
- economic growth and boosted direct international investments by giving incentives to private investment in public infrastructure and public services;
- efficient control over the formation of long-term private sector liabilities;
- limitation of negative impact of non-systematic execution of PPP projects;
- increased possibility of drawing on EU funds by a higher co-financing share taken by the private sector in projects of public interest.

The introduction of PPP represents a measure based on the requirement for fiscal moderation and a systematic control over the formation of long-term public sector liabilities. This measure, too, is of a pro-growth nature, stimulating as it is an increase of private investment in the building of public goods and provision of public services. Thus, it is directly linked to the Czech Government's policy of long-term economic growth and social stability in the country. Its nature will facilitate investments into certain socially sensitive areas that otherwise could not be implemented due to fiscal reasons.

The introduction of PPP is conditioned by its programme and systematic application that makes known the PPP fiscal concept and that guarantees compliance with the following fundamental principles set out by the Czech Government:

- Value for Money – It is the main requirement that the resulting economic value of a PPP project should be lower than if implemented in a traditional manner of public sector funding. Since PPP represents a long-term and comprehensive concept, the total resulting economic value should also be viewed in a comprehensive manner (total costs of the public sector and opportunity costs) rather than solely from the sum of the cash payable from public budgets. The total economic value of a PPP project must be determined prior to launching the relevant PPP tender.
- Risk Transfer – That party best capable of managing risk should be that party to bear it; any material risks should be transferred to the private sector.
- Specification of Public Service Standards – The public sector in the capacity of a client must define standards applicable to public services, both in order to guarantee optimum public services and taking into account the economics of such standards.
- Maintenance of Public Assets Value – Since public assets would not be usually transferred to the PPP operator or they should come back to the public sector upon the expiration of the contract, it is essential to define clearly the relevant rules applicable to the maintenance of the value of such public assets managed by the private sector under PPP contracts (as a rule, 5-60 years)
- Ensuring Innovation and Competition – PPP contracts must not result in a monopoly of a single contractor; rather, PPP should manage competition so that it brings about utmost innovations in the given public service.

Those contracts between the public and private sectors can be considered PPP if they would bind the private sector to supply and/or operate public services or infrastructure projects that have typically been the realm of the public sector. They should mainly be projects or services that meet any of the following features:

- Shared responsibility for the supply of infrastructures or services whereby the private sector accepts higher risk, typically combining the design, construction, funding, management and maintenance elements.

- A long-term commitment (at least 3 years) by the private sector to provide good quality public services defined by the public sector.
- Shared expertise and capabilities by the private and public sectors so that the public sector may optimise the exposure and guarantee a higher value of public expenditure application, mainly while making use of qualities inherent to the private sector in the technical, financial, management, and innovation fields.

The implementation of PPP projects in individual sectors and the funding of the relevant infrastructure may also require amendments made to certain special legislative provisions. PPP projects are affected by a wide variety of legal provision. Although it is recommended to amend certain legislation and to adopt some new, it is not suggested that a specific PPP projects act be made.

There is no unique model suggest the development of one. Each project will define what is suitable and what is required. Additionally there is a growing realisation that cooperation with the private sector, in PPP projects, is able to offer a number of advantages, including:

- Acceleration of infrastructure provision - PPPs often allow the public sector to translate upfront capital expenditure into a flow of ongoing service payments. This enables projects to proceed when the availability of public capital may be constrained (either by public spending caps or annual budgeting cycles), thus bringing forward much needed investment.
- Faster implementation - the allocation of design and construction responsibility to the private sector, combined with payments linked to the availability of a service, provides significant incentives for the private sector to deliver capital projects within shorter construction timeframes.
- Reduced whole life costs - PPP projects which require operational and maintenance service provision provide the private sector with strong incentives to minimise costs over the whole life of a project, something that is inherently difficult to achieve within the constraints of traditional public sector budgeting.
- Better risk allocation - a core principle of any PPP is the allocation of risk to the party best able to manage it at least cost. The aim is to

optimise rather than maximise risk transfer, to ensure that best value is achieved.

- Better incentives to perform – the allocation of project risk should incentivise a private sector contractor to improve its management and performance on any given project. Under most PPP projects, full payment to the private sector contractor will only occur if the required service standards are being met on an ongoing basis.
- Improved quality of service - international experience suggests that the quality of service achieved under a PPP is often better than that achieved by traditional procurement. This may reflect the better integration of services with supporting assets, improved economies of scale, the introduction of innovation in service delivery, or the performance incentives and penalties typically included within a PPP contract.
- Generation of additional revenues – the private sector may be able to generate additional revenues from third parties, thereby reducing the cost of any public sector subvention required. Additional revenue may be generated through the use of spare capacity or the disposal of surplus assets.
- Enhanced public management – by transferring responsibility for providing public services government officials will act as regulators and will focus upon service planning and performance monitoring instead of the management of the day to day delivery of public services. In addition, by exposing public services to competition, PPPs enable the cost of public services to be benchmarked against market standards to ensure that the very best value for money is being achieved. International interest in PPPs is attributable generally to three main drivers:
- Investment in infrastructure -economic growth is highly dependent on the development and enhancement of infrastructure, particularly in utilities (such as power, water and telecommunications) and transport systems. Furthermore, in many countries there is an urgent need for new social infrastructure such as hospitals and healthcare equipment, prisons, education facilities and housing. For many governments this is seen as the most pressing area for private sector involvement.

- Greater efficiency in the use of resources - the experience of privatisation has shown that many activities, even those traditionally undertaken by the public sector, can be undertaken more cost effectively with the application of private sector management disciplines and competencies.
- Generating commercial value from public sector assets – significant amounts of public resources are invested in the development of assets such as defence technology and leading edge information systems that are then often used for a narrow range of applications within the public sector. Engaging private sector expertise to exploit these assets in a wider range of applications can lead to the realisation of substantial incremental value for the public sector.

However while certain advantages do exist and can be harnessed, PPP should not be regarded as representing a miracle cure nor indeed a quick fix to infrastructure and service development. PPP should be regarded as an option amongst a range of possible tools to be applied only where the situation and project characteristics permit it and where clear advantages and benefits can be demonstrated. Indeed consideration of PPP should not preclude other options including the traditional public – public models

## **5. Conclusion**

The Czech Republic is currently reporting an excessive deficit, which poses an obstacle on the way towards compliance with convergence criteria. Public finance consolidation and gradual budgetary deficit reduction are the main government priorities. Spending reforms of public finance are aimed not only at gradually reducing the budgetary deficits but also at improving the quality of public finances. As resources of public finance are strong limited, it demands to look for new ways of financing public goods and public services. One of an alternative or supplemental form of financing can be projects of public private partnership (PPP).

Conception of PPP is based on a partnership between the public and private sector for the purpose of delivering a project or service traditionally provided by the public sector. Public Private Partnership recognises that both the public sector and the private sector have certain advantages relative to the other in the performance of specific tasks. By allowing each sector to do what it does best, public services and infrastructure can be provided in the most economically efficient manner.

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# PROJECT FINANCE (APPLICATION FOR TRANSPORT INFRASTRUCTURE)

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## **Abstract**

*Public Private Partnership (PPP) or more specifically Public Participation in Infrastructure (PPI) represents one of the most common tools of project finance nowadays. So we will define the project finance in the first place and differentiate it from the other kinds of crediting instruments. The article shall give you overview of commence, development and present state of the PPP, its forms as various ways of cooperation between state and private corporation in the role of creditors, sponsors, builders or operators. Application for transportation infrastructure, namely projects of motorways in the Central and Eastern European Countries (CEECs) and some of the largest motorway-projects in the world will follow.*

**Keywords:** *project finance, public private partnership, special purpose vehicle*

## 1. Project finance

There are a lot of definitions for project finance in literature. For example, J. D. Finnerty defines project finance as: "...the raising for funds to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project."<sup>1</sup>, while F. J. Fabozzi define it as: "A financing of a particular economic unit in which a lender is satisfied to look initially to the cash flow and earnings of the economic unit as the source of funds from which a loan will be repaid and to the assets of the economic unit as collateral for the loan."<sup>2</sup> and the International Project Finance Association (IPFA) defines project financing as: "... the financing of long-term infrastructure, industrial projects and public services based upon a non-recourse financial structure where project debt and equity used to finance the project are paid back from the cash flow generated by the project."<sup>3</sup> Relatedly, Standard & Poor's Corporation defines a "project company" as: "... a group of agreements and contracts between lenders, project sponsors, and other interested parties that creates a form of business organization that will issue a finite amount of debt on inception; will operate in a focused line of business; and will ask that lenders look only to a specific asset to generate cash flow as the sole source of principal and interest payments and collateral."<sup>4</sup>

Although none of these definitions uses the term "nonrecourse debt" explicitly (i.e., debt repayment comes from the project company only rather than from any other entity), they all recognize that it is an essential feature of project finance.<sup>5</sup>

The following definition, albeit slightly more cumbersome, allows one to distinguish project company finance from other financing vehicles, something the previous two definitions cannot do: Project finance involves the creation of a legally and economically independent project company

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<sup>1</sup> **Finnerty, J., D.:** Project Financing – Asset-based Financial Engineering, John Wiley & Son, New York 1996, p. 2

<sup>2</sup> **Fabozzi, F., J., Nevitt, P., K.:** Project Financing – 7<sup>th</sup> edition, Euromoney Books, London 2000, p. 1

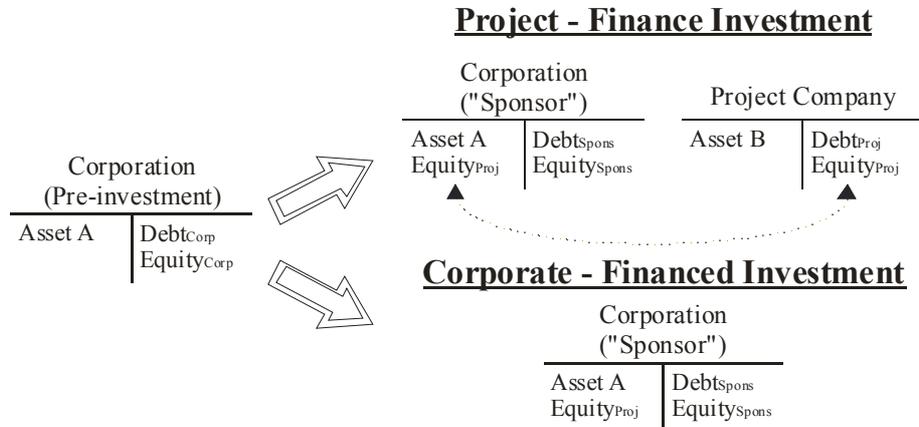
<sup>3</sup> **www.ipfa.org**

<sup>4</sup> **Standard & Poor's corporation:** Project Finance Summary Debt Rating Criteria, 2003

<sup>5</sup> Limited recourse debt – debt that carries a repayment guarantee for a defined period of time, for a fraction of the total principal, or until a certain milestone is achieved (e.g., until construction is complete or the project achieves a minimum level of output) – is a subset of nonrecourse debt. The distinguishing feature is that at least some portion of the debt becomes nonrecourse at some point in time.

financed with nonresource debt (and equity from one or more corporate sponsors) for the purpose of financing a single purpose, capital asset usually with a limited life. (See the following chart)

**Figure 1 Distinguishing between project and corporate financing**



Source: Benjamin C., Esty, Harvard Business School, 2004

### 1.1 History of project finance

Private investment in major infrastructure projects is not unusual. Prior to World War I, railways, roads, bridges, power plants, ports, water works and gas-distribution systems were being built all over the world by private entrepreneurs willing to risk all in return for high rewards. Fortune were made and lost.

During the 19<sup>th</sup> century ambitious projects such as the Suez Canal and the Trans-Siberian Railway were constructed, financed and owned by private companies. However, the private-sector entrepreneur disappeared after World War I and as colonial powers lost control, new governments financed infrastructure projects through public sector borrowing. The state and public-utility organizations became the main clients in commissioning of public works, which were then paid for out of general taxation.

During this post – World War I period in Europe, states invested in the reconstruction of war-damaged infrastructure and new nationalized industries. After World War II most infrastructure projects in industrialized countries were built under supervision of the state and were funded from their respective budgetary resources of sovereign borrowings.

This traditional approach of government in identifying needs, setting policy and procuring infrastructure was by and large followed by developing countries, with the public finance being supported by bond instruments or

direct sovereign loans by such organizations as The World Bank, The Asian Development Bank and The International Monetary Fund.

### **Development in the early 1980s**

The convergence of a number of factors by the early 1980s led to the search for alternative ways to develop and finance infrastructure projects around the world. These factors include following:

- Continued population and economic growth meant that the need for additional infrastructure – roads, power plants, water-treatment plants – continued to grow;
- The debt crisis meant that many countries had less borrowing capacity and fewer budgetary resources to finance badly needed projects; the debt burden required them to adopt an austere approach when planning fiscal spending, compelling them to look to the private sector for investors for projects which in the past would have been constructed and operated in the public sector;
- Major international contracting firms which in the mid-1970s had been kept busy, particularly in the oil-rich Middle East, were, by the early 1980s, facing a significant downturn in business and looking for creative ways to promote additional projects;
- Competition for global markets among major equipment suppliers and operators (particularly in the power and transportation industries) led them to become promoters of projects to enable them to sell their products or services;
- Outright privatization was not acceptable in some countries or appropriate in some sectors for political or strategic reasons and governments were reluctant to relinquish total control of what may be regarded as state assets.

During the 1980s as a number of governments, as well as international lending institutions, became increasingly interested in promoting the development of the private sector, a consensus developed. It supported tapping in the energy and initiative of the private sector, and the discipline imposed by its profit motive, to enhance the efficiency and productivity of what had previously been considered public-sector services.

It is now increasingly recognized that the private sector can play a dynamic role in accelerating growth and development. Many countries are encouraging direct private-sector involvement and making strong efforts to attract new money through new project financing techniques.

Such encouragement is not borne solely out of the need for additional financing, but it has been recognized that private-sector involvement can

bring with it the ability to implement projects in a shorter time, the expectation of more efficient operation, better management and higher technical capability and, in some cases, the introduction of an element of competition into monopolistic structures.

Project Finance is being introduced in both developed and developing countries as an alternative way to finance infrastructure and industrial projects, both small and large. The concept is being used in transportation (toll roads, toll bridges, toll estuarial crossings and railways); energy (private power stations, waste-to-energy plants and gas-distribution pipelines); sewage and water-treatment plants, health care (construction and operation of new hospital buildings and clinical waste disposal plants); education (provision of student accommodation and facilities for universities, colleges and schools); and provision of government offices.

### **1.1.1 Development of BOOT**

#### **Concessions**

The search for a new way to promote and finance infrastructure projects led to the introduction of technique, originally used in the 19<sup>th</sup> and 20<sup>th</sup> centuries, known as concessions. Concessions were widely used in many parts of the world to develop infrastructure. The Suez Canal is one of many examples of a privately financed concession and this method was also used to build canals, railroads, tramways, water works, electric utilities and similar projects in both industrialized and less-developed countries.

The BOOT formula adds to the old system of concessions, providing new possibilities for reducing or eliminating the direct financial burden which governments would otherwise bear. The objective is to transfer as much borrowing risk as possible to the private-sector promoter and the project itself. Therefore the BOOT promoter must finance the project. (The promoter typically does this by obtaining financing from groups of commercial banks, other financial institutions, export credit agencies and multilateral finance agencies.) Financing is made available on the strength of the project's projected revenue stream and its other assets including the promoter's equity. Normally the lenders would have limited or no resources to the promoter or shareholder of the promoting company.

#### **Project finance**

This financing technique, generally known as project finance, was perfected in the 1970s for major private-sector projects, mainly in the area of oil and gas exploration and extraction, but has been extended widely since then. Project techniques are now applied across the world to numerous privately promoted infrastructure projects including power stations, gas pipelines, waste-disposal plants, waste-to energy plants, telecommunication

facilities, bridges, tunnels, toll roads, railway networks, city-centre tram links and now the building of hospitals, education facilities, government accommodation and tourist facilities. Financial markets have become increasingly sophisticated in engineering financing packages to finance almost any type of reasonably predictable revenue stream.

Over the last two decades major international contracting firms, individual entrepreneurs and a number of developing countries have begun to promote infrastructure projects on a BOOT basis. Projects are financed on a limited-resource basis and built operated under a concession from the state or similar public body as a private venture. At the end of the concession the project is transferred back to the state or public body.

### **What is BOOT?**

One method used to involve the private sector in large-scale infrastructure investments is where the private sector is granted a concession from the state to build, finance, own and operate a facility and after the time specified in the concession period is obliged to hand it back to the state. This concept is variously described as BOT, BOOT, BOO, BRL, BLT, BT and BTO, depending on the terms of the agreement.

The acronym BOT stands for “Build, Own and Transfer”, or “Build, Operate and Transfer” (these terms are often used interchangeably). The “owning” is an essential element since the main attraction to host governments is that the promoter’s equity stake underwrites its commitment to a project’s success.

Other variants include BOOT (Build, Own, Operate and Transfer) and BOO (Build, Own, Operate). In BOO projects the promoter finances, designs, constructs and operates a facility over a given period but it does not revert to the government as it would using the BOOT strategy.

Further extensions of the concept are BRT or BLT (Build, Rent/Lease and Transfer) or simply BT (Build and Transfer immediately, but possibly subject to instalment payments of the purchase price).

Another approach, BTO (Build, Transfer and Operate), has become increasingly popular in the Far East and is particularly preferred by power and telecommunications authorities. It is a simpler transaction or concept than BOT and BOOT that can be implemented in a shorter time without the need for the formation of a project company and with the project assets being owned by the public sector.

### **Stages of a BOOT project**

- Build
- Design

- Manage project implementation
- Carry out procurement
- Finance
- Construct

**Own**

- Hold interest under concession

**Operates**

- Manage and operate facility
- Carry out maintenance
- Deliver products/service
- Receive payment for product/service

**Transfer**

- Hand over project in operating condition at end of concession period

**1.1.2 The development of PPP**

The concept of a PPP – Public Private Partnership has been adopted by various governments in recent years. Instead of the public-sector producing a capital asset and providing a public service, the private sector create the asset through a single stand alone business (financed and operated by the private sector) and then deliver a service to the public sector client, in return for payment linked to the service levels provided.

**2. Public Private Partnership**

**2.1 Requirements for successful PPPs**

*Political support* at the policy level is important for the private sector, because unless PPP is seen to offer continuing business opportunities, firms will be reluctant to develop the necessary that is required to bid for contracts.

*Enabling legislation* PPP projects need to be supported by enabling legislation that is firmly embedded in the legal structure of the host country. A key aspect of this enabling legislation is the existence of a concession law that can be readily applied to projects.

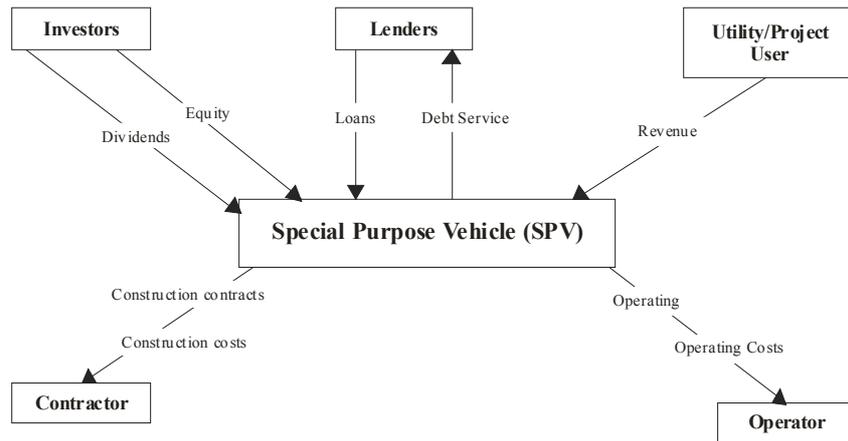
*Expertise*. Both the public and private sectors must have the necessary expertise to deal with the PPP process.

*Project prioritization*. The government needs to identify those sectors and projects that should take priority in the PPP process and undertake a review of the viability of each scheme before the project is procured. This avoids unnecessary failures and high bidding costs.

**Heavy Deal flow and standardization.** A regular and predictable flow of deals based on recognized risk allocation templates, assists the development of a successful PPP programme. Guidance on contract structure also helps to keep costs down.

## 2.2 The BOOT/PPP structure

**Figure 2: Example of a simple BOOT/PPP Structure**



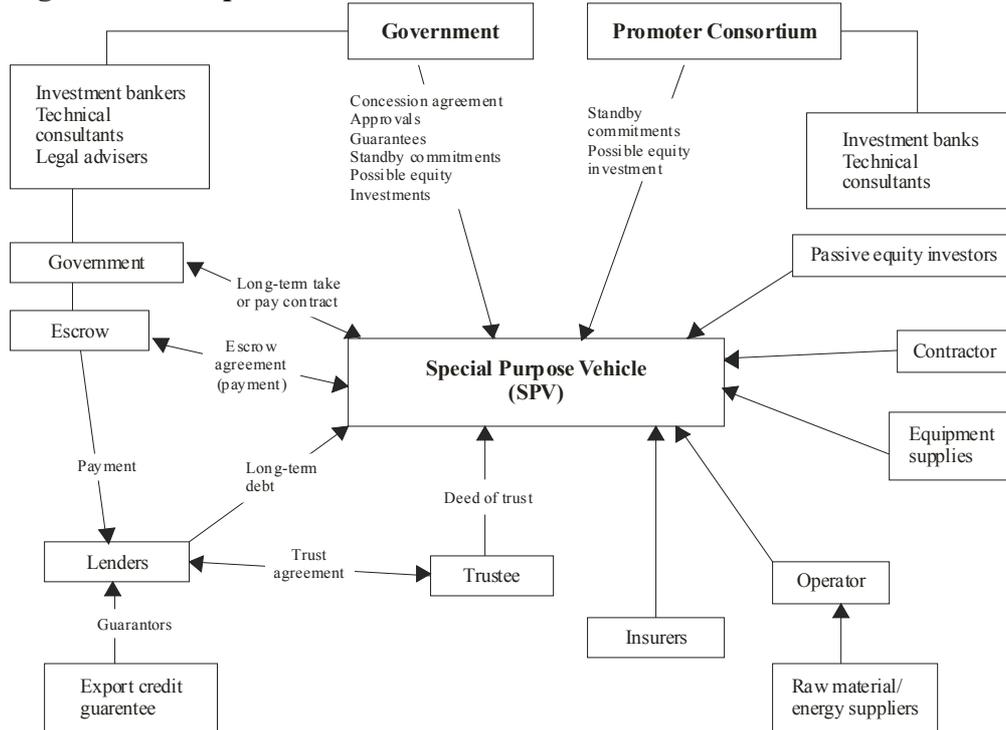
Source: [www.ipfa.org](http://www.ipfa.org)

- The concession company promotes the project and has the ultimate liability to the government under concession agreement.
- The concession agreement (sometimes referred to as the implementation or project agreement) is the primary contract between the government and the concession company and forms the contractual basis from which the order contracts are developed. It entitles the concession company to build, finance and operate the facility and imposes conditions as to design, construction, operation of the project and establishes the concession or operation period.
- The equity investors' and lenders' security for their loans and investment is limited to the revenues to be received by the concession company. They will therefore have considerable interest in the revenue forecasts produced by the concession company. Likewise the two areas that place the concession company and equity investors and lenders are the construction contract and operating contract.
- The construction contract. The parties would prefer a contractor to give a fixed price for completion by a fixed date without exclusions.

This is rarely possible in projects of this nature. Finance providers are therefore only prepared to commit themselves to a fixed amount because if the project costs more their funds will be in jeopardy due to the interest burden. Lenders will not accept the risk of delay to completion, although they will normally provide a standby facility to offer some protection against time-and-cost overruns.

- The operating contract. The lenders have to be assured that an experienced operator will be available on completion of construction.

**Figure 3: Example of an international BOOT/PPP Structure**



Source: [www.ipfa.org](http://www.ipfa.org)

- The offtake contract. This is one of the key contracts. As limited-resource projects are, by definition, funded on the security of the future cash flow, there has to be some form of buyer. Projects fall into two categories: those where the identity of the buyer is obvious, for example toll roads and some power stations and those where there is physical product which has to be sold, often on the world market. Where there is a product involved it is essential to identify the offtaker or buyer and to establish the basic terms. Lenders prefer

guaranteed minimum or “floor” prices, but these are frequently unobtainable. There is then the need to establish whether the future price of the product is something upon which the potential lenders to the project are prepared to take a risk. There may be an opportunity for the offtaker to take some of the downside risk by providing a very low floor price, for example one which is below the level; at which the debt would have to be rescheduled with the lenders risking such rescheduling. In exchange the offtaker would expect a high reward in good times.

### **3. PPP in transportation**

Today 30 – 40 percent of PPP are transport-related and the majority of these for motorways and toll roads. The list of PPPs issued by the UK and other industry associations suggests that – on average – including both existing and newly built, there will be about 5 to 10 toll roads/tunnels in each of EU countries over the next 10 years, says Isabelle Kayaloff of IJK & Associates in Germany.

For example, a person driving from the UK in 2004 to Belgrade will have to cover 1.200 km of road and pay € 15 of tolls. The optimal itinerary suggests that that person will travel through at least six countries. Estimated travel time without stopping is about 19 hours. For such a journey, an average car will require a minimum of three tanks of fuel. Total cost of the trip is thus about € 213. The same calculation applies if a traveller wishes to drive to Athens. Total mileage is 1.670 km with a travel time of 30,5 hours and an estimated toll cost of € 160.

In 2008 that picture will change. The same person departing for Belgrade will travel through six countries, of which half will have now some toll system in place. If the standard of 7,5 cents per km is applied – which is generally used in France and Spain – the total toll cost alone of a journey to Belgrade will be in excess of € 54 and for Athens, close to € 200.

#### **What are the solutions?**

PPPs need to be relevant to the real needs of the communities they are intended to service. Transportation PPP’s need to be rationalised to address:

- Segregation of road/tunnels that are designed to mitigate specific traffic congestion particularly in urban areas.
- Investment in alternative means of mass transit.
- Re-routing proposed motorways away from towns and residential areas.

- Addressing the traveller's capacity to pay, through possible cross-border harmonisation of tolls (likely to be controversial and not achievable in short term).
- Liberalising rail freight markets and creating efficient management railway networks.

### **3.1 Case studies<sup>6</sup>**

#### **3.1.1 Hungary's M Motorway**

Hungary's M5 motorway is a pioneering project in the Central Europe region. It is the first genuine road PPP transaction to close in the region and beat neighbouring countries off the mark to draw in foreign investment to its roads infrastructure, writes Angus Leslie Melville.

The financing was put in place to pay off the existing project debt, provide a payment to equity and fund the construction of a new, 46 km stretch of motorway linking Budapest to the Serbian border.

Indeed, the deal was so impressive that it was nominated as one of the top 10 transactions of 2004 at the Infrastructure Journal Annual Awards 2004, held on 20 January at the Victoria & Albert Museum, London.

The project was popular with the banks from its inception as it forms a vital link in the Trans-European motorway network linking Berlin with Thessaloniki and was seen as a sound investment.

In short, the project was set up to refinance Phase 1 of the M5 motorway and finance Phase 2. The first phase was finished in 1998 and operated as a real toll road up to March 2004 when Hungary incorporated the motorway into the national vignette system.

The existing project financing was refinancing and switched from a toll-based financing structure to a structure based on availability payments by the Hungarian government.

The deal took many industry observers by surprise as it was structured in less than six months and it involved converting a real toll road into an availability road – a first in the project finance world.

Hungary is seen as being pivotal to European efforts to develop an integrated transport system. Success in Hungary is key as it has six essential international roads pass through it – each one representing a major channel of trade economy and communication.

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<sup>6</sup> Case studies are taken from International Journal on Infrastructure

The Hungarian government has been forward-thinking over its role in Europe and had the wisdom to see how it could benefit from being seen as a vital link in the Trans-European Network.

It set forth its objectives back in 2003 for the road sector within the framework of its general transport policy until 2015 – by which time it aims to have reached the EU network density average.

In order to achieve these objectives, the government legislated to enable the use of PPPs in its road building and maintenance regime. Prior to its acceptance of the PPP structure, Hungary favoured wholly-privatized concessions.

As Hungarian transport minister Istvan Csillag says of the M5 project: ‘This is a truly ground breaking transaction, the first of its kind in Hungary – and the professional advisors have contributed significantly to the success of the project.’

‘I am convinced that the success of the M5 will give a boost to the smooth implementation of the M6 motorway currently taking place as well as underlining the importance of the PPP structure in the rapid development of infrastructure sector in Hungary and the whole CEE region.’

### **Transaction**

The M5 motorway was originally financed, built and operated on a private basis, but the government decided to scrap the real toll system at the start of the year and replace it with an availability-dependent PPP deal.

The change to the model means that the government now has to pay AKA an annual unitary charge of €80 m until the end of the concession in 2030 – which covers national vignette holders using the road and compensates for the loss of real toll revenues.

In addition, the government – through its highway management company AKA – has taken a 40 percent stake in the concession company, with Bouygues and Strabag still holding equal shares of the scheme and control of the project.

The financing was also fairly complicated as the lead arrangers – having refinanced the real toll road at the end of 2003 for €205 m – on 11 March 2004 had to buy back the €205 m refinancing from seven syndicate banks when the real toll system was scrapped. They then held it themselves with the debt being serviced via the availability dependent deal to AKA. This debt was taken out as part of the €750 m refinancing.

The second phase closed on 22 September 2004 and involved raising €750 m (US \$ m). Phase 2 financing and implementation of an availability-based payment and performance mechanism for the project.

**Table 1: M5 Road Project Restructuring at a Glance**

Project name	M5 Road Project Restructuring
Location	Hungary
Description	The M5 motorway comprises an existing 27 km motorway (the already operational Budapest - Szeged section) and a new 40 km new dual lane motorway (from Szeged - Kiskunfélegyháza towards the Serbian border). The first phase of the transaction was closed in March 2004 and saw the motorway brought into the national vignette system of the Hungarian motorways and, following the relevant amendments to the concession agreement, the first Hungarian PPP structure was implemented on the basis of the availability fee model. The second phase, which signed in September 2004, included the refinancing of the facility for the existing section of the motorway and new financing for the extension to the road.
Sponsors	Strabag, Bouygues and Colas
Project Company	Alföld Koncessziós Autópálya (AKA)
Operator	Magyar Intertoll
EPC Contractor	A joint venture between Colas, Bouygues and Strabag
Total project value	€853m (For Phase I and II)
Total debt	€750m
Equity	€83m
Financing	The €750m financing for the project will refinance the original €205m facility for the existing section of the motorway and also finance the extension to the road. EBRD's involvement in the financing is as a parallel lender alongside the commercial banks.
Pricing	The deal is priced at 130 bp during construction of the new section of the road until end - 2005, 120 bp for the first five years thereafter, 130 bp for the next five, 140 bp for the next five and 160 bp for the last 3,5 years.

Tenor	20 years
Mandated lead arrangers	Banco Espirito Santo, WestLB, CIB/Banca Intesa, MFB and EBRD
Arrangers	Banco Espirito Santo (€50m), WestLB (€50m), CIB/Banca Intesa (€79,9m), MFB (€100m), EBRD (€130m), AIB (€18,5m), KfW (€18,5m), Bank of Ireland (€18,5m), Landesbank Hessen-Thuringen (€18,5m), CDC Ixis (€18,5m), Mizuno (€18,5m), Depfa (€18,5m), Natexis (€18,5m), Dexia (€18,5m), OTP (€18,5m), HVB (€18,5m), SMBC (€18,5m), ING (€18,5m), RBS (€18,5m), Islandsbanki (€18,5m), Unicredito Banca Mediocredito (€18,5m) and K&H/KBC (€18,5m)
Co-arrangers	Banca OPI (€12,4m) and IKB (€12,4m)
Legal Advisor to the Banks	White & Case
Legal Advisor to the Government	Clifford Chance
Legal Advisor to the Sponsor	Bouygues in-house counsel
Financial Advisor to the Sponsor	None
Financial Advisor to the Government	ING
Technical Consultant	Kellogg Brown & Root
Model Audit Consultant	PKF
Insurance Consultant	Willis
Environmental Advisor	Scott Wilson
Date Transaction Signed	21-st September 2004
Date of Financial Close	22-nd September 2004

*Source: Author's compilation*

### **3.1.2 Canada's Anthony Henday Drive SE road PPP**

At the end of January the Government of the state of Alberta reached financial close on the Can\$493 m (US\$ 397 m) Anthony Henday Drive

(AHD) SE road scheme PPP with the Access Roads Edmonton (AREL) consortium, writes Alex Black.

The scheme is part of the province's Can\$2bn (US\$1,5bn), three-year highway construction and improvement programme and was the first DBFO scheme to reach financial close in Alberta.

The other Anthony Henday Drive project – the south west or SW project – is currently under construction. Entirely funded by the Alberta government, it is scheduled to be completed and open to traffic in the autumn of 2006 and will cost around Can\$245m (US\$204m).

Alberta has one of the fastest growing economies of all Canadian provinces and the city of Edmonton is the fifth largest in Canada with a population approaching 1m people.

**Table 2: The Anthony Henday Drive SE PPP road scheme at a Glance**

Project name	The Anthony Henday Drive SE PPP road scheme
Market	Transport/PPP
Sector	Road
Country	Canada
Date of Financial Close	25-th January 2005
Sponsors	PCL Construction Management, ABN AMBRO and LaFarge Canada
Project Company	Access Roads Edmonton LtD (AREL)
Total project value	Can\$493m (US\$397m)
Construction value	Can\$365m (US\$302m)
Total bond issue	Can\$290m (US\$240m) in two tranches (see Bonds table)
Equity invested by federal government	Can\$75m (US\$62m)
Financial adviser to the project	PwC

*Source: Author's compilation*

**Table 3: Bonds table**

Series 'A' bonds	
Bank	ABN AMRO
Bond issue date	January, 2005
Term	32,66 years
Maturity date	September 30, 2037
Repayment	The bonds fully amortise over the term through monthly payments of principal and interest (following an interest only period during the construction period)
Estimated face value	Can\$150m (US\$124m)
Series 'B' bonds	
Bank	ABN AMRO
Bond issue date	Late 2005
Term	31+ years
Maturity date	September 30, 2037
Repayment	The bonds fully amortise over the term through monthly payments of principal and interest (following an interest only period during the construction period)
Estimated face value	Can\$140m (US\$116m)

*Source: Author's compilation*

#### 4. Conclusion

In February 2005 Ministry of Finance of the Slovak Republic published study on PPP/PPI in Slovakia. This comprises theory of PPP/PPI and gives opinion on it. More important it stipulates that government shall encourages these kinds of investments even though they were not of hundred per cent access in the neighbouring countries – from which – as this study stresses – we should learn our lessons.

There is not much left to comment, probably we should really try to learn how to use this ‘trendy’ instrument for financing of public infrastructure – not only while it has been successfully implemented in the Northern America or also Ireland (not mentioned in this article) which is great example for our economy in many different ways – but also while PPP/PPI in their essence are more efficient and effective than public investment themselves.

Slovak Republic has also very good opportunity – as a member state of the European Union – to combine private resources with EU Cohesion Fund, which would make these investments even more rentable.

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# FISCAL POLICY AND ITS PLACE IN TOURISTIC DEVELOPMENT

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## **Abstract**

*The present state of Romanian tourism is also due to the fiscal measure and regulation promoted by the governments that have run the country after 1990. Even if the Romanian fiscal system has been subject to major transformations in the process of adapting to the requirements of the competitive market economy there are still certain problems to be solved, problems which affect all companies, including those which work in the touristic sector. Fiscal policy can have a positive influence on sustainable touristic development if its goals are: the encouragement of those companies working in the touristic sector to make investments and to improve the quality and the competitiveness of touristic services, the encouragement and promotion abroad of Romanian touristic destination, the protection of the environment. The fiscal system that has been introduced after 1990 was very burdensome for the companies working in the touristic sector, reducing significantly their income. We hope that tax relief promoted by the present government will attract more tourists and encourage the investments in the touristic sector*

**Keywords:** *fiscal reform, fiscal policy, sustainable development*

## **1. Introduction**

The complexity of tourism, its social, cultural and economic implications, the interlinking of its distinct components are all reasons for the governments all over the world to pay attention to tourism as they have understood the fact that they can benefit by it.

Tourism is a very complex and complicated industry that comprises many fields. There is no other industry to comprise such a vast group of associated fields as tourism does. It is a combination of industries from all over the world, of the greatest diversity, having a very complicated structure. Taking this as a starting point, it is obvious that the complexity of tourism requires coordination; only governments have the authority and the necessary mechanism to organize such a complex sector.

## **2. Aspects of State's Implication in the Economic Fields**

From the very moment of its coming into being and up to the present, state has had to make a difficult choice: freedom or control? This choice is called by the specialized literature "the dilemma of modern society" and consists in the difficulty of modern society to choose either freedom, giving up on the society's chances to survive or to choose control, in this case giving up on individual freedom.

Therefore, from the economic point of view, the main problem is to choose between the market supremacy and the state's lack of involvement on the one hand, and state's supremacy over the market, on the other. Reality has proved that choosing the individual freedom and the free market has proved to be better than choosing the coordination of the economy by the state. At the same time, it is a well-known fact that individual freedom does not guarantee the support of the citizens, that they need social support and the free market, in its turn needs a stabilizing support from the part of the state. Therefore, from the economic point of view, The main problem is to choose between the market supremacy and state's lack of involvement on the one hand and state's supremacy over the market, on the other. Reality has proved that choosing individual freedom and free market has been better than choosing the coordination of the economy by the state. At the same time, it is a well-known fact that individual freedom does not guarantee the support of the people, that they need social support and, in its turn, free market needs a stabilizing support from the part of the state. Thus, it is a fact that both free market and the state are complementary factors of the economic system, and the boom of the modern economy depends on achieving a balance and sharing the responsibilities between market and state.

Although tourism is an activity supported especially by private initiative, governments play an important part in its development. They have strong reasons to involve in tourism sector. Their involvement is necessary having in view the economic and social importance of tourism and its contribution to the increase of life's quality. At the same time, tourism can have a greater contribution than other fields to achieving some broad goals established by the governments as priorities in the general interest of the citizens: fighting against poverty, improving life's condition, increasing currency chased, intensifying the links between countries and even political goals.

The complex mechanism of interaction between state and market economy requires that the public authority should make use of some means and techniques which are adequate to the difficult role which state has in economy. The allotting, distributive and especially regulator role of the state requires the promotion of the economic policy.

As compared to other economies in the Central and Eastern Europe, the process of transition in Romania has been slow and rather unstable. This state of fact is, in part, due to initial difficult conditions of the previous period of transition when the priorities were the heavy industry, which wasted a lot of energy, the big inefficient agricultural units, the unproductive project and the reducing of imports to allow the prepayment of the foreign debt, to the detriment of the living standards and technological modernization of economy. But, on the other hand, Romania's slow progress regarding transition is caused especially by a not very firm approach and a not very good implementation of structural reform, as well as by a lack of continuity of macroeconomics policies.

### **3. Problems of Romanian Taxation System after 1990**

The present state of Romanian tourism is due to the measurement and fiscal regulation adopted by the governments that have ruled Romania since 1990. In the case of the market economy there is no longer a direct connection between the state than plans and the way of achieving the plan, as it was in the case of the demand based economy. State's attributions are reduced only to promoting financial, fiscal and commercial policies that improve the business environment and are further on applied according to the principle of full autonomy of business in each company.

The reaction of the economy to different policies of the state depends both on the feasibility and adjusting the policies as well as on the degree to

which the economic environment enforces the laws, the efficiency of the democratic mechanism and the inner rules of each enterprise.

After 1989, the Romanian fiscal system has undergone significant changes, adapting to the requirements of the market economy. Today, it satisfies to a great extent the requirements of a competing economy, but there are still a series of problems, both general problems, regarding the entire fiscal system and the way in which it functions, and the problems that are specific for each tax. These problems affect all companies, including those that work in the tourism sector. A main problem identified in the analysis of the evolution of the fiscal system after 1989, is the legislative instability. In time, each of the main taxes has undergone repeated, more or less important changes. Therefore, making long-term business plans is almost impossible, the foreign investors are not encouraged and the internal and external investments are diminished. Another important matter is the way in which fiscal legislation is put into practice and the manner in which the lack of fiscal order is dealt with. In Romania, the taxes and shares owed by the companies do not bring many benefits, this having a negative impact on the economy, as a whole, and on each of its fields. It is very important to keep in mind that only a correct and coherent way of applying the fiscal legislation creates an economic environment that will offer equal conditions for all companies, a fact that will be an advantage for those which are really efficient, thus developing the economy. At the same time, an equal distribution of the fiscal duties might reduce taxation, which will limit the subterranean economy and offer better conditions for firms' development. Another important problem that the Romanian fiscal system has to face is the existence of a strong subterranean economy. This has major negative effects on the economy. Because some firms involved in the subterranean economy do not pay taxes, the fiscal incomes of the state are reduced, which makes necessary a new growth of taxation, which, in its turn, generates an increase of the number of the firms functioning in the field of subterranean economy. This will certainly lead to diminishing the fiscal incomes and to going into a vicious circle. Other problems regarding the fiscal system as a whole are those connected to the value of the taxes. When it comes to the value of the taxes, the Romanian fiscal system is in accordance with what exists at European level and especially in Eastern Europe, but there are still certain steps to be made till the Romanian fiscal legislation will be brought to a balance with that of the European Union.

#### **4. Taxes for Touristic Companies in Romania**

The present Romanian taxation system is the result of many years of transition and, although there have been made many efforts, it contains many regulations that hinder the economic development, and especially the touristic sector, where there is a serious competition in the European continent. The fiscal simplification promoted by the present government is hoped to create a better business environment, to contribute to a durable economic growth and to make the Romanian business environment moiré flexible and predictable. The main reason for which government encouraged the fiscal simplification is that increased values of the taxes can have negative effects on the real economy: they hinder the evolution and the restructuring of the internal offer and a part of the economic activity is not taken into account by the national accountancy.

According to the Plan of Governing for 2005 – 2008, in Romania the fiscal policy will be based on the following principles:

- the principle of fiscal neutrality: the fiscal norm must have the same consequences on every company; fiscal neutrality will be limited only by the situations in which, in order to achieve the goals of the plan of governing, there must be accepted, for short periods of time, unequal fiscal consequences;

- the principle of fiscal effectiveness (performance): fiscal norm must have a strong impact on the respective fiscal behavior; it is not accepted any other fiscal norm that does not change a fiscal behavior;

- the principle of the equality of the fiscal treatment: the companies that have similar economic functions, in an certain lapse of time, will be treated in the same way, from the fiscal point of view, irrespective of the existing differences between them;

- the principle of the sustainability of fiscal norm: the taxes will be established in such a way as the taxable base to be stimulated by the tax itself, the respective taxable material becomes more stable and transparent.

The fiscal system introduced after 1990 has been very burdensome for the companies working in the touristic sector, reducing significantly their incomes.

Local taxes represent the first category of taxes which must be paid by the companies working in the touristic sector. This are paid for the local budget of the administrative-territorial unit in the area of which the respective touristic asset is situated:

- first, the tax on buildings must be paid. This is calculated by applying a quota whose value is situated between 0,5% and 1% from the inventory value of the respective buildings, the quota being established by a decision of the local board. It is a well-known fact that a characteristic of tourism is the unequal distribution of tourists and services in time and space. Many accommodation unit, especially those at the seaside, function only a few months a year; other, have tourists all the year round but there are only few. For a long time, they have paid the taxes for the whole year. The fiscal legislation that has become effective in 2004 provides that the tax on building to be reduced with 50% for those buildings owned by the legal persons, buildings that are used exclusively for offering touristic services for a period of maximum five months in a year. This is a very good idea.

- if touristic companies own means of transportation (cars, coaches, minibuses, boats, yachts, ships or means of entertainment – motor bicycles, scooters, motor boats), they must pay the tax for means of transportation. This is calculated according to the respective type of means of transportation, according to law. For these, the companies working in the touristic sector pay the tax for the entire year, although there are not continuous flows of touristic transports. We can speak of continuous flows of tourists especially in peak seasons. A 50% reduction of the tax on the means of transportation will be beneficial, if they are used in touristic activities only five months a year.

- any company working in the touristic sector that must get a certificate, advice or any other kind of license, must pay the tax for issuing the town planning certificate construction licenses and other similar licenses to the specialized department of the local public administration before the respective certificate, advice or necessary license is released. The taxes for releasing construction licenses, sanitary licenses, licenses for carrying on economic activities are insignificant, but the tax for issuing the necessary license for site organization activities having in view the building of construction is 3% of the authorized value of the site organization activities, and the tax for issuing the license for organizing tent camps, for little houses and trailers or champs is 2% of the authorized value of the construction works. The value of these taxes is rather high even if we take into account the fact that the recovery of the investment in the touristic sector is a long term one and not a short time recovery, as in other sectors.

- any firm that works in the touristic sector and benefits from advertising and publicity services according to a contract or any other kind of agreement with another person, has to pay to the local budget a tax. This tax is calculated by applying the quota of 1 – 3% of the value of the advertising and publicity services. At the same time, any touristic company that use a notice board, poster board or any other kind of board for advertising and publicity in a public place has to pay a tax to the local budget of the local

public administration in the area of which the respective notice board, poster board or other kind of boards are placed.

- some touristic companies organize artistic performances or entertaining activities. They must pay to the local budget the tax on performances. The tax quota is 5%. For a play, ballet, opera or any other kind of musical performances, for the broadcasting of a movie in a cinema hall, or for a performances at the circus, the tax quota is 2%. In case of artistic performances or entertaining activities that take place in a discotheque, the tax is calculated according to the area of the respective building inside of which the respective performance takes place, according to the sum fixed by the local council.

- the local council can levy a tax on the accommodation in a hotel, in a place which falls under its authority. This tax, called the hotel tax, is collected by the respective hotels when the person are accommodated. The tax quota is between 0,5 – 5% and is levied on the accommodation tariff, according to the number of stars of the hotel. This tax is benefic, if it is levied in accordance with its goal: to promote the sustainable touristic development of the respective area.

The profit tax has undergone significant changes during transition. Since the 1<sup>th</sup> of January 2000, the taxation quota of the profit tax has been reduced from 38% to 25%. Even this quota was too high for the touristic companies, because every 3 – 5 years, the touristic structures for accommodation, food or entertainment must be modernized to increase the value of the services offered. A good measure for touristic companies is reducing the value of the profit tax from 25% to 16%, starting with the 1<sup>th</sup> of January 2005. Such a reduced quota, together with the simplification of the present settlements, will contribute to the development of the business of the touristic companies, especially by increasing direct investments in touristic structures.

We must take into account the fact that many of the touristic companies are small enterprises. A small company is a Romanian legal entity with fulfils the following condition:

- it produced material goods; provides services and/or carries on commercial activities;
- it has 1 up to 9 employees;
- the value of its income does not exceed 100.000 euros;
- the registered capital of the respective legal entity is held by persons, other than the state, local authority an public institutions.

For this, in 2001, the profit tax was replace by the tax levied on all those persons' incomes, calculated with a 1,5% quota for all the incomes irrespective of their source. The value of this quota was increased to 3%,

starting with the 1<sup>th</sup> of January 2005. This was a rather controversial measure and some economic analysts criticized it. However, both the measure of levying a tax of the income of small enterprises and that of reducing the value of the profit tax have in view the stimulation of economic activity and fighting fiscal evasion. The former goal seems to have been achieved by the small enterprises that work in the touristic sector, although this is not due only to the taxation system. But the measure taken by Romania's Parliament when adopting this tax as low, to allow the small enterprises to choose between the tax levied on small enterprises and the profit tax are not very good. It allows fiscal evasion.

The Value Added Tax (VAT) has undergone significant changes during the entire period of transition. The enforcing of VAT in Romania was promulgated by law in July, 1992. Although the law had to come into force on the 1<sup>th</sup> of January 1993, it has been enforced since the 1<sup>th</sup> of July 1993. The VAT was the less stable of all the taxes enforced in Romania. Initially, Romania introduced a system with two quotas: a normal one of 18% and the zero quota; shortly after this, a reduced quota of 9% has been added to these, a quota that was also applied to the tariffs in the Romanian touristic industry. In time, the settlements for VAT have undergone many changes, the most important of these being the reduction of the number of products and services exempted by VAT, but also the number and the value of the taxation quotas. Thus, as far as the level of quotas is concerned, these underwent changes of the 1<sup>th</sup> of February 1998, the normal quota being of 19% and, as a result of this, the tariffs in Romanian touristic industry were calculated using this quota.

The present fiscal code, which came into force on the 1<sup>th</sup> of June 2005, has in view a standard quota of 19% and a reduced one of 9%. This reduced quota of 9% is enforced when accommodating in the hotel sector or in other similar sectors, including the hiring of those lands for camping. A low value of VAT can stimulate any touristic company, in a case in which the tariffs of touristic companies are rather high because of the advantage of the price for electric power, water, to which the normal quota of VAT is also applied. The same reduced quota of 9% is applied to the tariffs for entering castles, museums, memorial houses, historical monuments, architectural and archeological monuments, zoos, botanical garden, fairs and exhibitions. But the accommodation, food and treatment services provided by the companies that work in spas or health resort are exempted by paying the VAT, if they have contracts with The National Pension House and Other Rights for Social Insurances.

The 6th Directive of the European Union Council caused the successive changes undergone by the VAT. This process will go on; a series

of fiscal facilities is to be eliminated by the moment of Romania's integration. At the same time, some exceptions stipulated by the 6th Directive which, in the present, are not enforced in Romania, as well as some special treatments for small entrepreneurs, agricultural producers and touristic companies are to be introduced in our legislation.

The present government has in view to keep the present settlements for VAT for a certain period of time; the positive effects of fiscal relief on income and profit will increase the value of VAT up to 16% in accordance with the settlements of the comunitary acquis.

We are going to see if Romania's taxation is burdensome or not (Table no. 1).

**Table no. 1. The evolution of Romania's tax revenue in case of inhabitant in dollars and the general and partial taxation degree as well as that for social purposes in the period 1991 – 2003**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
A)	1 244	859	1 158	1323	1564	1563	1565	1844	1585	1645	1773	2220*	2316 *
B)	413	288	362	373	451	420	415	521	476	484	502	612*	646*
C)	33,2	33,5	31,3	28,2	28,8	26,9	26,5	28,2	31,4	29,4	28,3	27,6	27,9
D)	23,2	23,2	22,0	20,3	20,9	19,4	20,0	20,3	22,4	18,6	17,4	16,9	17,1
E)	10,0	10,3	9,3	7,9	7,9	7,5	6,5	7,9	9,0	10,8	10,9	10,7	10,8

\* in euros

A) GDP per inhabitant In US dollars

B) The average tax revenues per inhabitant in US dollars

C) General taxation degree: (taxes + contribution) x 100/ GDP

D) Partial taxation degree: (taxes) x 100 / GDP

E) Taxation degree for social purposes: (Contribution to social insurances.x 100) / GDP

Source: *The Reports of the National Bank of Romania, 1991 – 2003.*

It is not my intention to analyze the manner in which the taxation degree (general, partial and for social purposes) evolved in the period 1991 – 2003. It was an oscillating evolution, reflecting the options of the governments that ruled the country during the above-mentioned period. However, the general trend is a decreasing one, being influenced both by the measures of economic and fiscal reform and by the functioning of the economy. My intention was to observe if the taxation is or not burdensome for companies. Having in view the data shown in the above table, we can conclude that the level of taxation is very low in Romania as compared to

that of other countries, especially the European Union countries, where the general taxation degree is between 30% and 55%. This contradicts the opinion of most Romanian citizen.

These low value of taxation are especially due to the fact that the statistics take into account only the tax revenue cashed by the state which, according to some sources, represent only half of the fiscal and social liabilities owed by the tax payers, according to law. Therefore, if they all were collected, the tax degree would be 50 – 60% of the Gross Domestic Product. But in Romania, they are taxpayers that declare and pay all the fiscal and social liabilities correctly, case in which taxation becomes a real burden. At the same time, there are also tax payers that neither declare pay anything or pay only a small amount of the fiscal and social liabilities, and these ones do not feel taxation as burdensome.

Therefore, although the medium level of taxation in Romania is relatively low as compared to that of about 30% of the Gross Domestic Product in other states, taxation is not evenly distributed so that, where as some tax payers pay a taxation of only 10 – 20%, others pay one of 50 – 60%. Most of these are companies working in the touristic sector. At the same time, it is much difficult to take 500 dollars of a 1,800 dollars GDP than taking a sum of money ten times larger of a similar GDP. Although, in both cases, the taxation degree is the same, in the former situation the money remaining after the payment of the respective tax is hardly enough to satisfy personal needs.

## **5. Fiscal Measures for Encourage companies of Touristic Sector**

By introducing the new fiscal policy measures, the present government hopes a tax relief as a means to encourage the business environment, the private initiative and to make legal the underground economy.

Public authorities can use fiscal policy to achieve such goals as:

- influencing the economic processes;
- correlating the economic cycle;
- eliminating the economic dysfunctions.

It is obvious that these goals do not have direct effects on tourism, but they contribute to the process of developing the economy as a whole and to macroeconomic stability; in their turn, these have direct effects on touristic development. A second class of goals has in view the way in which the

measures of fiscal policy influence the activity of companies in general, these, in their turn, influencing directly the companies working in the touristic sector.

Fiscal policy can contribute to economic stability. The fiscal measures compensate the fluctuations of the investment demand eliminating, thus, side effects. Tax abatement, together with the increasing of public expenses is a strategy used, as a rule, during recession, whereas the opposite fiscal measures are used when the aggregate demand tends to become excessive. At the same time, we must take into account the ratio taxation economic circumstances.

On the other hand, the measures taken under certain circumstances can influence the yield of certain taxes, on the other hand these can be used to influence the economy, the fiscal goals being the economic recovery. Beside this, we must have in view the fact that the macroeconomic balance depends on that achieved at the budgetary level. Achieving the budgetary balance requires either diminishing the governmental expenses or increasing the tax values, all these being closely connected to the situation of the economy analyzed in the framework of the fiscal policy of the state.

In order to develop a competing economy, the fiscal policy must correlate the goal of sustainable growth with the requirements of economic stability. Fiscal policy must contribute to encouraging savings and investments by:

- controlling the budget deficit;
- completing the fiscal reform;
- rationalizing the budget options in accordance with the priorities established in the field of expenses;
- ensuring transparency in spending public money.

The most important thing when it comes to the influence of the fiscal policy on companies is its effects on saving and forming the capital. An increase of taxation has as consequence the reducing of savings and of the capital for investments. It is a well-known fact that in tourism, perhaps more than in other fields, upgrading of touristic structures are necessary, in order to enhance the quality of the services provided. So, taxation can hinder the evolution of the companies working in the touristic sector.

Various types of fiscal measures can be used to encourage companies of touristic sector. The most important ones are:

- granting fiscal deductions, for limited periods of time, representing a share of the value of the investments;
- reducing the tax rate for firms for that part of the profit which is ploughed back;

- reducing some of the investment expenses (tax exemption for imported equipments, fiscal reduction for imposing a tax on equipments, etc.);
- granting fiscal reduction for those firm which work hard in the research sector or in professional training or for those which function in disfavored areas;
- granting fiscal reduction, subventions or fiscal incentives for those firms that take measures to protect the environment;
- adopting special fiscal regimes for the groups of companies thus allowing the fiscal integration of the whole results of the group;
- tax exoneration, exemption, reducing or delaying the tax payment;

The budget measures can also influence the touristic development. Among these mention can be made of the financing from the state budget and the local budgets of those touristic activities which encourage the development of any areas and components of touristic offer and promote, in other countries the Romania touristic destination.

## **6. Conclusion**

The fiscal policy can be beneficial for tourism development in Romania if one takes into account the actual state of things in Romanian tourism, the present requirements and future needs; otherwise, if all these are not taken into account, the fiscal policy can hinder the development or even cause the recession of this important field of national economy. Fiscal policy has a positive impact on tourism development only in the case in which public actions are undertaken having in view the priorities in every stage of development, have economic, social effect or other kind of effects correlated with the financial effort, takes into account simultaneously the short-term plans and the middle and long-term plans.

By means of fiscal policy, the development of touristic sector can be protected or encouraged; in such a way, fiscal interventions have in view such goals as: the encouragement of the companies working in the touristic fields to make investments, the improving of the quality and competitiveness of touristic services, the encouragement and promotion abroad of Romanian touristic destinations, the protection of the environment.

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# SOME FISCAL ISSUES REGARDING LEASING OPERATIONS IN ROMANIA

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## **Abstract**

*The spectacular evolution of the leasing market in Romania has determined the association of leasing companies into professional associations, as well as the emergence of a coherent and professional legal framework. The present study aims at examining the way in which leasing operations, irrespective of their type, influence the financing of the activity performed by both individuals and legal entities. The leasing companies begun to separate based on the services offered, to get to be known by financing objects specific to several market niches. The market's evolution to a superior stage is although conditioned by the sustainability of the economic growth and also by the strengthening of the business environment in Romania. Data in 2004 show that the leasing is a financial product adapted to the Romanian market requests, despite of unfavorable impact of legal background. The increase of leasing companies' portfolios quality, availability of financing sources and the accurate analysis of clients' creditworthiness are considered the main success factors.*

**Keywords:** *financing, through leasing, leasing companies, financial leasing, lease-back, time-sharing, leverage leasing.*

## 1. Introduction

The increase of macroeconomic ratios and especially their contribution to the companies' income, inflation decrease and the necessity of technological upgrade through investments represent just a few of the factors which will impact the leasing market. Moreover, the premise of implementation of the project for leasing regulations' modification shall contribute to the development of such operations. Even if the new regulations will not bring the necessary clarifications, the experience has proven that even with an insufficient legislation, the leasing is considered a very well known activity on the Romanian financial market. Needless to say that by including the software applications among the goods which can be bought in leasing will increase the market share of leasing companies which will assume the additional risks related to such financings.

The development of leasing operations is closely linked to economic development as a whole, therefore, the technological upgrade, production of goods, the sales and circulation, new services are just a few of the important gains for the leasing activity.

## 2. Legal requirements regarding leasing activity

A first legal definition of the leasing process in Europe appears in France, and it is called "crédit-bail", according to the law nr.66-455, from the 2<sup>nd</sup> of July 1966. It included only the real estate leasing, defining the "crédit-bail" process as being a company which can give you real estate stuff for professional use, stuff bought or built by the company itself. The order nr.67-837 from 28<sup>th</sup> of september 1967 made complete the law from the 2<sup>nd</sup> of July 1966, differentiating the "crédit-bail" process for personal goods, from the "crédit-bail" operations for imobil stuff and creating the S.I.C.O.M.I. Status (real estate companies for industry and trade).<sup>1</sup>

As one can notice from the legal regulation concerning the leasing process of the states members of the Leaseurope, many countries in Europe had no specific legal legislation.<sup>2</sup> So, the leasing operations are the subject of the general regulations of the civil and / or commerciale legislation.

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<sup>1</sup> E.M.Bey, C.Gavalda (1983) – *Le crédit-bail immobilier*, Presses Universitaires de France (PUF), Paris, pag.7

<sup>2</sup> Source : [www.leaseurope.org/pages/Leasing/Legal\\_Aspects/Leasing\\_Legal.asp](http://www.leaseurope.org/pages/Leasing/Legal_Aspects/Leasing_Legal.asp)

As it concerns the regulation procedure of the leasing companies from the countries-members of the Leaseurope, one can notice that the ones that belong to France, Portugal, Hungary, Spain and Italy is under the supervision of the Central Bank, whereas the leasing companies from Luxemburg and Sweden are under the supervision of the Supreme Financial Authority. In Belgium and Germany, the subsidiaries leasing companies of some banks, enter, indirectly , under the supervision of the Central Bank.

In countries like Belgium, Greece, Luxemburg and Norway are necessary special approvals for the setting up of leasing companies. With the exception of Greece and Spain, there is no other country known as a member of the Leaseurope where is made a distinction between the leasing operators from the UE and the ones that are not residents in the UE; but in Spain is also needed an authorization from the Ministry of Finance for the leasing companies that are not resident in the UE.

As it was mentioned above, few countries have a specific legislation in the leasing field, although more and more countries are about to legislate the leasing and the progress made in this field is accelerating. Where such laws were put into operation , these were molded according to the Unidroit Convention on International Financial Leasing.<sup>3</sup> Although the Convention is oriented towards international transactions, it is a useful pattern for the internal regulations from each country that needs a specific leasing legislation.

In Romania, the first leasing contracts have spread out before the existence of a special law intended to the regulation of this operation. As a result, the way of approaching the leasing was more similar to a let out.

The first regulation concerning the leasing appeared in Romania due to the Government's ruling no.51 dated on the 28<sup>th</sup> of August 1997 regarding the leasing operations and the leasing companies, that forecast that the leasing is an operation “ in which a part, also known as lessor, is engaged , following the instructions of a second part, also known as a lessee , to purchase from a third part and to confer the usage and the possession of a

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<sup>3</sup> The Unidroit Convention regarding the International Financial Leasing, signed on the 28<sup>th</sup> of May 1998 at Ottawa, establishes the juridical backround upon which should take place the leasing operations and should be solved the recent litigations, leaving to the “common law ” the fixing of the competent instances for solving these litigations.

mobile or immobile good, with the purpose of its commercial exploitation or for the final consumption”<sup>4</sup>.

In rule no.90 dated on the 28<sup>th</sup> of April 1998<sup>5</sup> for the approval of the Government’s ruling no 51/1997 some changes have intervened, such as: “the lessor is obliged, at the lessee’s request, to purchase or to take over from a third part, also known as a supplier, a mobile or immobile good and to assign the lessee with its possession or usage, in exchange of a payment called due, with the purpose of exploiting or purchasing the good”<sup>6</sup>.

It can be noticed that in the new exact wording the *employment* of the lessor is transformed into *obligation*, and the user’s indication becomes *request*. As well, the lessor can *overtake* the good, not just buy it. Furthermore, concept of *supplier* appears. The term *to confer* is replaced by the *assigning* of the possession or usage ( here appears or instead of and) upon the good. At the same time, the purpose of the exploitation is no longer reduced to the *commercial* one or to the *final consumption*, the purpose being, according to the new formulation, the plain and simple exploitation or the acquisition of a good.

In January 2000, the Government’s ruling no.51/1997 was republished, on the grounds of art. VII from rule no.99/1999<sup>7</sup>, and the definition comprised in the new regulation is the following: the leasing is that operation “ by which a part, known as lessor /financier, assigns for a limited period of time the right of usage of a good whose owner is the other part, known as lessee, at the last one’s request, in exchange of a periodical payment, called leasing installment, and at the end of the leasing period, the lessor /financier is obliged to respect the user’s right of the option to purchase the good, to extend the leasing contract or to put an end to the relations stipulated by contract<sup>8</sup>.

In the new definition of the leasing operation also appears the term *financier* , and *the due* has been replaced with the notion of *leasing*

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<sup>4</sup>Government’s ruling no.51/1997, art.1,align.1 ( the initial form of the ruling )

<sup>5</sup> Published in O.M. no.170 dated on the 30 of April 1998.

<sup>6</sup>Rule no.90/1997,art. I, point 1.

<sup>7</sup>Published in O.M. no.236 dated on the 27<sup>th</sup> of May 1999. Rule no.99/1999 also known as “The rule regarding a few measures for the speeding of the economic reform” has six titles, title II being “The modification and completion of the Government’s ruling no.51/1997 regarding the leasing operations and the leasing companies”.

<sup>8</sup>Government’s ruling no.51/1997, republished ,art.1,align.1.

*installment*. In addition, the possibility of assigning the right of possession disappears, the notion of possession being used incorrectly, because, in juridical terms, possession signifies either an attribute of the property law, when the property law is exerted by the owner, or a state of things, respectively a material ownership of a good due to an annullable title, which permits the owner the acquirement of a property through usurpation<sup>9</sup>.

This triple option which is at the user's hand **differentiates** the leasing contract from other contracts and confers **individuality** to it. For example, the location contract does not bring upon any sales obligation, the inhabitant being obliged to return the good in the same condition it was given to him at the very beginning.

The location-sales contract mentions lessee's obligation to purchase the good taken into location, being assigned to him the property over the good which makes the object of the contract at the same time with the payment of the last installment.

The sales contract with the keeping of property until the payment of the price subordinates the transfer of the property to the complete payment of the price. The sales on credit contract transfers immediately to the buyer the property over the good.

### **3. The evolution of leasing in Romania**

Leasing has proved to be one of the most dynamic areas of Romanian economy, its positive evolution being the more important if we consider the difficult conditions specific to the Romanian economy at this point such as the slow privatization process that has determined foreign investors to keep their distance and, most significant of all, the financial scandals linked with the disappearance of commercial or popular banks and of investment funds, all of the above mentioned having a strong impact on the whole Romanian financial system.

The leasing market has thousands of economic agents who fulfill the main conditions requested by law in order to be marketers: the inclusion of the "leasing activity" in the activity object category and an equity capital of 500 million lei.

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<sup>9</sup> D.Clocotici, Gh. Gheorghiu – *Operations of leasing*, Edition Lumina Lex, Bucharest, pg.32.

### **3.1 Dimensions and degree of concentration on the Romanian leasing market**

There are two representative associations of this industry in Romania: The Romanian Leasing Association of Companies (ASLR) and The Banking Leasing Association (ALB).

**The Romanian Leasing Association of Companies (ASLR)** <sup>10</sup> was founded in 1996 as a professional nongovernmental, nonprofit, nonpolitical and independent organization created with the purpose of developing and extending cooperation and collaboration in the leasing operations area. Beginning with the year 2002 ASLR is a member of Leaseurope.

**The Banking Leasing Association (ALB)** was funded in April 2004 reuniting eight of the leasing companies subsidiary to the Romanian commercial banks, all of them with foreign capital.

Considering the data offered by the ASLR we can conclude that the evolution of the Romanian leasing market has been an upward dynamical one as we see in table 1 .

**Table 1 The value of goods financed in leasing - EUR mln.-**

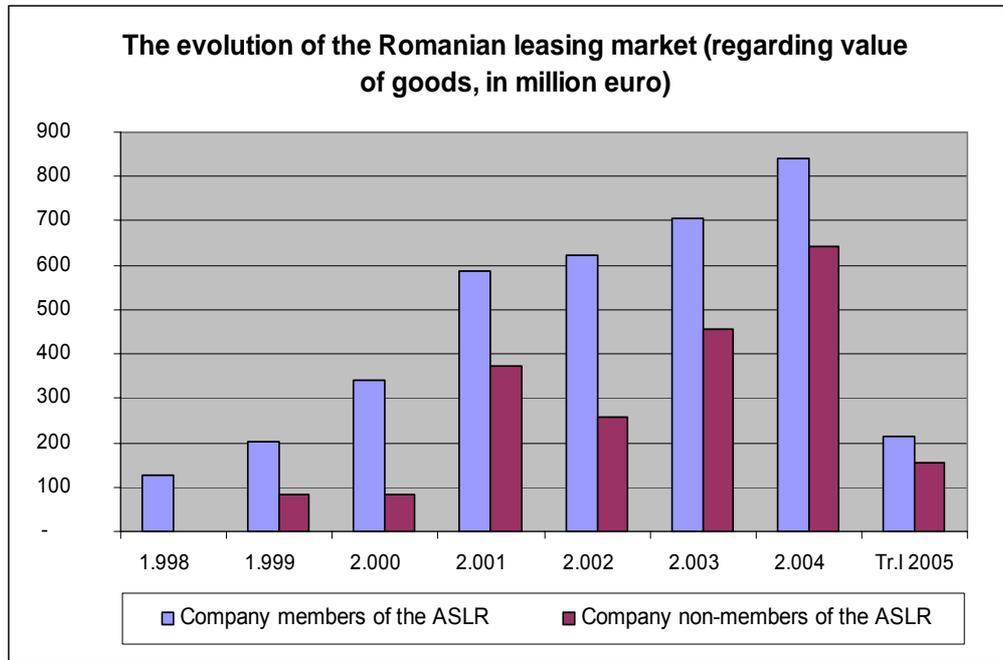
	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>Tr.I 2005</b>
<i>Company members of the ASLR</i>	128.5	202.9	340.0	587.6	624.1	706.3	841.1	215
<i>Company non-members of the ASLR*</i>	n.a	82.1	82.2	374.4	257.7	457.0	642.5	155.6
<b>Total</b>	-	<b>285.0</b>	<b>422.2</b>	<b>962.0</b>	<b>899.8</b>	<b>1,163.3</b>	<b>1,483.6</b>	<b>370.6</b>

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<sup>10</sup> The initial name of this organization has been “The National Union of Leasing Companies in Romania” (UNSLR), it was changed in June 2003 to “The Romanian Leasing Association of Companies” (ASLR).

\*We add that the total value of goods financed in leasing accomplished by ASLR members is only an estimate, as there is no unitary report base for these participants yet.

**Figure 1 The evolution of the Romanian leasing market (regarding value of goods, in million euro)**



*Source: ASLR reports*

The evolution of the Romanian leasing market in the last few years is as follows (table 2):

**Table 2 The evolution of the leasing market (at ASLR level)**

	1998	1999	2000	2001	2002	2003	2004
<i>Number of contracts</i>	6,160	8,746	7,854	14,991	36,093	34,027	49,361
<i>Variation</i>	-	41.98%	-10.20%	90.87%	140.76%	-5.72%	45.06%
<i>Value of goods (million euro)</i>	128.5	202.9	340.0	587.6	624.1	706.3	841.1
<i>Variation</i>	-	57.9%	67.5%	72.8%	6.2%	13.17%	24.63%
<i>Value of contracts (million euro)</i>	-	-	-	-	-	850	1,029
<i>Variation</i>	-	-	-	-	-	-	21.06%

*Source: ASLR reports*

We can observe that, beginning with 1998 the volume of transactions concluded at ASLR level has registered continuous increase, so that by the end of 2003 the value of goods financed in leasing has been of approximately 0.71 billion euro, respectively a total value of contracts (goods, interest rates and commissions) of about 0.85 billion euro. Although the value of goods financed in leasing has grown in the year 2004 by almost 25% compared to the year 2003, the total value of contracts has only grown by 21%, a fact that proves the reduction of financial and non-financial expenses to be stood by leasing users.

By the end of **the first quarter of 2005** the registered value for goods financed in leasing has been 215 million euro and the total value of contracts 265.5 million euro.

In addition to that, the number of contracts has been situated on an upward slope from 6,160 in 1998 to 36,093 in 2002 and 34,027 in 2003 reaching by the year of 2004 the value of 49,361, 45% more than in 2003. In the first quarter of 2005, at ASLR level, 13,477 contracts have been concluded. This evolution can be explained by taking multiple factors into consideration such as the annual increase in the number of members (17 in 2000, 37 in 2004, 33 in the first quarter of 2005), the market development, the clients awareness regarding the importance of leasing transactions as a way to finance their investments.

Considering the distinction between financial and operational leasing, the main direction of leasing contracts carried on by the company members of the ASLR is towards financial leasing. This can be clearly identified from the data shown in table 3.

**Table 3 Financial versus operational leasing (at ASLR level)**

	<i>Financial leasing</i>							<i>Operational leasing</i>			
	2002	2003		2004		Trim.I 2005		2002	2003	2004	Trim.I 2005
	<i>Total</i>	<i>Total</i>	<i>Of which cross border</i>	<i>Total</i>	<i>Of which cross border</i>	<i>Total</i>	<i>Of which cross border</i>	<i>Total</i>	<i>Total</i>	<i>Total</i>	<i>Total</i>
<i>Number of contracts</i>	90.1	92.65	2.16	95.93	0.97	96.54	0.89	9.9	7.35	4.07	3.46
<i>Value of goods</i>	88.4	86.03	5.8	92.96	2.05	96.23	2.8	11.6	13.97	7.04	3.77

*Source: ASLR reports*

The preference towards financial leasing operations can be explained by the much clearer definition of this form of finance compared to operational leasing. The value of cross-border leasing operations (carried on by leasing companies not residing in Romania) was in 2003 5.8% of the total value, about 39.14 million euro, in 2004 their weight dropped to 2.05% of the total value, about 17.22 million euro. Without regard to the type of shareholders, most of the clients of leasing companies are legal entities.

At ASLR level, in 2004, the value of goods financed through leasing represented about 74.90% of the total market, 17.40% being held by the public division the rest of 7.70 concerns legal entities. In the first quarter of 2005 the value of goods financed through leasing in the case of legal entities represented about 63.42% of the total market, 26.78% concern the public division and ONG and the rest, 9.8%, belong to legal entities.

The significant growth of the finance weight for the public division and the ONG by over 9% compared to the statistical data obtained for the year of 2004 is a notable fact. Table number 4 describes the situation of contracts concluded with legal entities in 2004 compared to 2003, reported to the global market for ASLR members, depending on the value of financed goods and the number of contracts.

**Table 4 The situation of contracts closed with legal entities**

	<i>Financial leasing</i>		<i>Operational leasing</i>		<i>Total</i>	
	<i>2003</i>	<i>2004</i>	<i>2003</i>	<i>2004</i>	<i>2003</i>	<i>2004</i>
<i>Value of goods (million euro)</i>	492.5	704.14	32.8	30.06	525.3	734.2
<i>% Of the total market</i>	72.97%	83.71%	4.86%	3.57%	77.83%	87.28%
<i>Number of contracts</i>	28,012	40,963	2,106	1,948	30,118	42,911
<i>% Of the total market</i>	82.32%	82.98%	6.19%	3.94%	88.51%	86.92%

*Source: ASLR reports*

In the “clients of legal entities” category, a distinction between the private and the public division can be made. Thus, of the total 49,561 contracts carried on in 2004, the majority were linked with the private division, that means 84.47%, the public division, other clients division and ONG representing about 15.52%.

We must also notice the awareness of the public division concerning this form of finance, the evolution of leasing finances being, in this case, a spectacular one (from 1% in 2003 to 15.52% in 2004).

The companies belonging to ALB concluded in 2004 a number of 18,200 contracts with a total value of 544 million euro, 81% more than in 2003 when approximately 9,000 contracts with a total value of 300 million euro had been concluded.

From the total number of contracts concluded by the members of this association 95% are finances for corporate clients, 3% for the retail component and 2% belong to the public division.

The legal entities segment has dominated the market represented by company members of ALB with a weight of 96.63%, the quote for legal entities being only 3.21%.

Most of the leasing contracts closed were those with external suppliers: 75.4% and 65% of their value in 2004 for ASLR and respectively ALB.

A classification of leasing contracts made by the ALB depending on the tenor span indicates the fact that 60% of these contracts are between 1 and 3 years, more than 31% are between 3 and 5 years and the rest of 9% have a maturity greater than 5 years.

Parallel to the continuous growth of the market, a tendency of concentrating the leasing operations to a smaller number of companies can be observed. Thus, we find, with a volume of financed goods of about 1.5 million euro in 2004, Porsche leasing, Afin Romania, BCR Leasing, RCI Leasing and Tiriac Leasing – 5 of the 37 companies who have subscribed to ASLR in 2004 – totalizes a market quote of about 36%. Also, the 9 companies belonging to the ALB own another 36.26% of the market.

**Table 5 The first 15 companies members of the ASLR – 2004**

<i>Position</i>	<i>Company</i>	<i>Market share at ASLR level*</i>	<i>Value of financed goods (million euro)**</i>	<i>Market share at market level***</i>
1	Porsche Leasing România	17.87%	145.60	9.70%
2	Afin România	15.85%	121.65	8.11%
3	BCR Leasing	12.99%	119.00	7.93%
4	RCI Leasing România	10.62%	77.77	5.18%
5	Țiriac Leasing ***	9.20%	77.37	5.15%
6	Motoractive	6.97%	58.60	3.90%
7	Eurial Leasing	4.88%	50.00	3.30%
8	TBI Leasing	4.51%	37.92	2.52%
9	Romstal Leasing	4.03%	33.40	2.22%
10	Ager Leasing	2.69%	20.10	1.30%
11	Romexterra Leasing	1.83%	16.12	1.07%
12	D.R.T. Group	1.30%	11.18	0.74%
13	Toyo Motor Center ***	1.23%	10.34	0.69%
14	Auto Italia	1.22%	10.16	0.67%
15	Atlassib Leasing	1.04%	8.75	0.58%
<i>Total (rd.1 – 15)</i>		96.23%	797.96	53.06%
<i>TOTAL, including the other company members of ASLR</i>		<b>100%</b>	<b>841.1</b>	<b>55.06%</b>

\* Source ASLR (the market quote is calculated depending on de the value of financed contracts)

\*\* The data is supplied by the companies

\*\*\* The numbers have been calculated considering the market share supplied by ASLR, reported to the total volume of goods financed by the members of ASLR

\*\*\*\* The numbers were calculated considering the volume of financed goods for the entire market (1,5 billion euro) and the volume financed by each of the companies

*Source Mediafax – Financial Directory 2005*

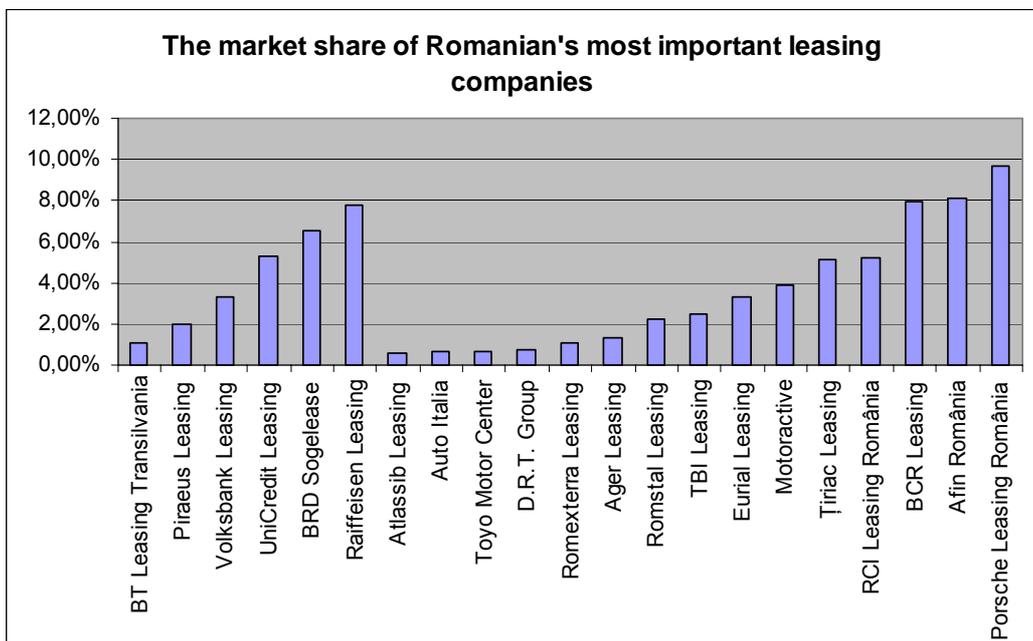
**Table 6 Company members of the ALB – 2004**

<i>Company</i>	<i>Market share at ALB level*</i>	<i>Value of financed goods (million euro)**</i>	<i>Market share at market level***</i>
<i>Alpha Leasing</i>	-	-	-
<i>BRD Sogelease</i>	18.00%	98.00	6.53%
<i>UniCredit Leasing</i>	14.58%	79.34	5.28%
<i>Piraeus Leasing</i>	5.51%	30.00	2.00%
<i>Finans Leasing</i>	-	-	-
<i>Volksbank Leasing</i>	9.19%	50.00	3.33%
<i>Raiffeisen Leasing</i>	21.50%	117.00	7.80%
<i>HVB Leasing</i>	-	-	-
<i>BT Leasing Transilvania</i>	2.90%	15.79	1.05%
<b>TOTAL, company members of the ALB</b>	<b>100%</b>	<b>544</b>	<b>36.26%</b>

\* The numbers were calculated according to the data offered by the companies and the total volume of goods financed by the ALB

\*\* The data was supplied by the companies

\*\*\* The numbers were calculated considering the volume of financed goods for the entire market (1,5 billion euro) and the volume financed by each of the companies



Note that bank subsidiaries and captive societies belonging to dealers like Porsche, Iveco or Renault occupy the first positions. Motoractive, TBI Leasing, Romstal leasing and Ager Leasing are the only independent companies who have found a place between the top ten companies of the ASLR.

This polarization is natural because a small sized leasing company as well as a recently funded one cannot overcome the classification, winning a strong position on the market depends greatly on the financial power and the involvement of the shareholders in the activity of the company, simultaneously with an approach of the segments with great development opportunity such as equipment or real estate.

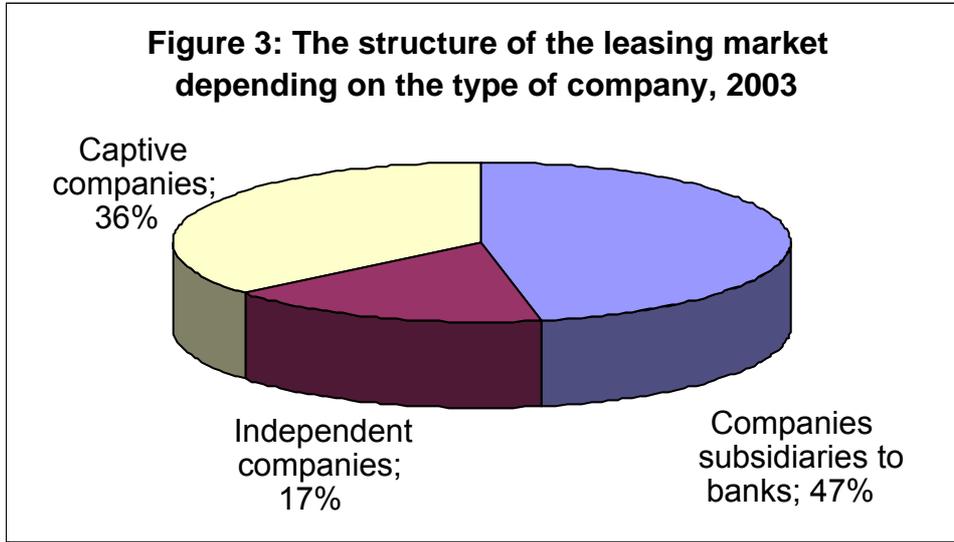
The present configuration of the market is determined not as much by the efficiency of the large companies as by the incapacity of the smaller, especially the independent ones, to raise funds from banks, either due to a weak capitalization or because they weren't able to find a suitable niche on the market. The large weight of companies, subsidiaries to the banks in the market is a consequence of the accessibility to competitive financial resources and a larger clients base.

In the perspective of joining the EU, leasing is expected to evolve in the direction of a stronger structuring of the market between companies affiliated to banks or with a bank status, belonging to manufacturers and independent companies.

The concentration trend of the market is also confirmed by a study of the ALB showing that half of the leasing market belongs to companies subsidiaries to banks, while captive and independent companies have a share of 33% and, respectively, 17%. Together with the nine companies belonging to the ALB, the study has also taken into account the data of BCR Leasing, Romexterra Leasing, Egnatia Leasing, D.R.T. Leasing and Immorent. According to the data of the ALB, contracts that were closed last year by its nine companies represented at the time about 75% of the total volume of contracts financed by all leasing companies affiliated to banks.

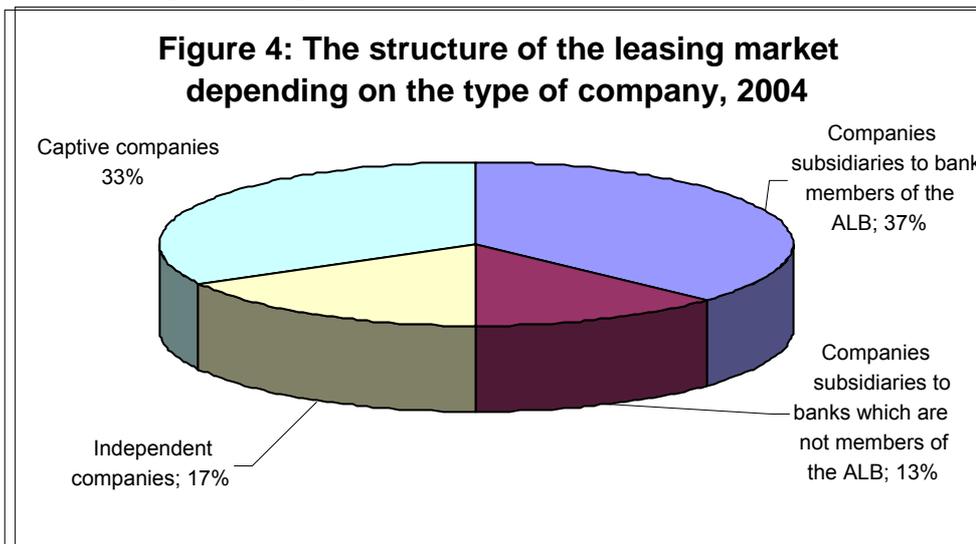
**Figure 3 The structure of the leasing market depending on the type of company, 2003**

- Companies subsidiaries to banks 47%
- Independent companies 17%
- Captive companies 36%



**Figure 4 The structure of the leasing market depending on the type of company, 2004**

- Companies subsidiaries to bank members of the ALB 37%
- Companies subsidiaries to banks which are not members of the ALB 37%
- Independent companies 17%
- Captive companies 33%



### 3.2 The portfolio of leasing companies in Romania

The different shareholder – types bank, automobile manufacturer, or investors – influences the portfolio of financed goods.

The access to considerable and competitive financial resources for periods exceeding three years, the capacity to analyze a good business plan, risk reducing management strategies or the sales policy in the particular case of captive companies all ensure availability for financing well defined categories of goods.

**Table 7 The portfolio of the ASLR and ALB members depending on the financed goods**

	<i>ASLR</i>				<i>ALB</i>	
	<i>2002 *</i>	<i>2003 *</i>	<i>2004</i>	<i>Trim I. 2005</i>	<i>2004</i>	<i>Trim. I 2005</i>
<i>Auto</i>	75.30%	87.84%	92.67%	91.47%	70%	72%
<i>Equipment</i>	23.86%	10.46%	7.07%	7.71%	26%	25%
<i>Real estate</i>	0.84%	1.7%	0.26%	0.82%	4%	3%

\* Alpha leasing, BRD Sogelease, HVB Leasing and UniCredit leasing, companies presently reunited in ALB, were in 2002 and 2003 also members of ASLR.

*Source Mediafax – Financial Directory 2005*

At ASLR level, an organization reuniting 33 members at the end of the first quarter of 2005 compared to 37 members at the end of 2004, 75% are independent leasing companies, 15 % are leasing companies affiliated to manufacturers or goods suppliers and 10% are leasing companies subsidiaries of banks. The structure of leasing contracts at ASLR level depending on the object of the contract is shown in table nr 8.

**Table 8 The structure of leasing contracts depending on the object of the contract**

	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>Trim. I 2005</i>
<i>Vehicles</i>	75.30	87.84	92.67	91.47
<i>Cars</i>	33.70	56.25	61.06	72.02
<i>Auto utilities</i>	41.60	31.59	31.61	19.45
<i>Commercial vehicles</i>				
<i>Busses</i>				
<i>Industrial equipment</i>	10.06	5.90	4.04	5.18
<i>Agricultural equipment</i>	6.40	2.32	0.67	0.21
<i>Planes / ships</i>	-	0.03	-	-
<i>Rolling material - railways</i>	-	0.02	-	-
<i>Other (office materials medical technique)</i>	7.40	2.19	2.36	2.32
<i>Real estate – office</i>	0.84	1.60	0.21	0.57
<i>Real estate – residential</i>	-	0.10	0.05	0.25

*Source: ASLR reports*

In case of companies reunited in ASLR the segment of auto vehicles dominates leasing operations representing 92.67% in 2004. Automobiles have won for themselves 61.06% followed by auto utilities, commercial vehicles and busses with 31.61%. On the following positions we find industrial equipment with a 4.04% quote, farming equipment with 0.67%, while real estate represents only 0.26%. In contrast with the preceding years, a considerable drop of equipment finances can be noticed. The downward trend in this segment at ASLR level can be explained through the fact that companies such as Alpha leasing, BRD Sogelease, HVB Leasing and UniCredit Leasing, presently constituents of the ALB, have been members of ASLR in 2002 and 2003.

**Table 9 The structure of leasing contracts depending on the object of the contract (at ALB level)**

	<b>2004</b>	<b>Trim. I 2005</b>
<i>Auto vehicles, of which:</i>	70.87%, of which:	72.78%, of which:
<i>Automobiles</i>	54%	55%
<i>Heavy auto vehicles</i>	34%	35%
<i>Light auto vehicles</i>	10%	10%
<i>Equipment</i>	25.87%	24.26%
<i>Real estate</i>	3.26%	2.96%

*Source: ALB reports*

In the case of companies reunited in the ALB, the automobile segment owns a smaller share of about 70%. Of these, 54% are automobiles, 34% heavy commercial vehicles, 10% light commercial vehicles and 2% other types of vehicles. Here we can see a diversification of the portfolio, industrial equipment owning about 26% of the total finances and the real estate segment holding 4%. This type of structure reflects the profile of the companies affiliated to banks addressing at the same time all economical branches. The companies members of the ALB have total assets of 645.6 million euro and over 350 territorial branches. ALB leaders estimate a value of approximately 806 million euro for the bank leasing market at the end of 2005.

First quarter operations in 2005 haven't been able to bring about major changes in this direction.

#### **4. Conclusion**

Leasing plays a very important role in the investment conduct, having a significant importance for the economy as a whole and contributing in a positive manner to the general economic situation.

In Romania, the leasing can not be cheaper than the loan, for the simple reason that the majority of the leasing companies are financed by the banks in order to be able to purchase the goods that will make the object of the future contracts. According to LCAR estimations, at present, the banks require, as an average, an interest of 8 - 9% in foreign currency, while leasing companies apply an average of 11 % interest.

The cost of the leasing is influenced by the credit risk of the enterprise. This is the reason why, it is more convenient to make an individual comparison of the cost of the two forms of finance, by taking in consideration the profile of the beneficiary enterprise and, at the same time, the residual value risk taken by the lessor and the credit availability (a rational enterprise can be determined to accept a high price in order to give up its investment project).

As opposed to the financial leasing, in which case the locator presents the value of the leasing installment value, as well as the deducted value of the leasing installments in liquidations and interests, as far as the operational leasing is concerned, the debit installment is rarely known by the beneficiary of the loan, because this information is not made known by the locator through other means but the installment graphic, and not as a interest installment, as the bank creditors do.

Also, the comparison of the costs of the two forms of finance (loan or leasing) has to be drawn up upon the cost after tax. Due to this aspect, the integral deductibility of the leasing installments, an aspect valid in Romania just as far as the operational leasing is concerned, can represent an argument concerning the usage of leasing<sup>11</sup>, unlike the bank loan, in which case just the expanses with interest are deductible (the enterprise has the right to liquidate the good and to deduct the endowments from the liquidations).

Another advantage of the leasing is that it improves the structure of the balance sheet of the enterprise. Even if this argument is often quoted by the lessors to justify the enterprises' motivation in choosing the leasing, considering the present approach of the leasing's accounting. Even if this leasing variant is not registered in the balance sheet of the lessee enterprise, this form of financing is considered as being an indebtedness form and treated accordingly by the financial institutions and by the financial analysts, regardless of the mean of reflection in the financial situations.

Even if the advantages which incite to the usage of the leasing exist, the enterprise can limit the resort to this form of financing and prefer instead the

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<sup>11</sup> This aspect is applied only if the leasing installments are normal: the residual value shouldn't be too small, because, in this case, the leasing installments grow, thus growing the deductible expenses as well. If the leasing installments are decreasing, they must have a similar value to the fiscal liquidations which would have been used if the enterprise was the owner of the good; the value of the leasing installments paid in the first year must not overcome 50% of the total installments value, if the duration of the contract is 3 years, 40% for a 4 year contract and 38% for a 5 year contract.(A. Maheu, C. Maige(1998)-*Op.cit.*)

bank loan, if the extreme negative effects of the leasing are high. They refer, in principal, to the loss of the operational flexibility of the utilizing enterprise.

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*International  
Finance*

# MONETARY POLICY AND ASSET PRICES: WHAT ROLE FOR CENTRAL BANKS IN NEW MEMBER STATES?<sup>1</sup>

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## **Abstract**

*The paper deals with the relationship between monetary policy and asset prices. Besides surveying the general discussion, it attempts to extend it to recent developments the New Member States of the EU (NMS), namely in the Czech Republic, Hungary, Poland and Slovakia (EU4). After a brief description of current macroeconomic situation in the NMS, the appropriate reaction of monetary policy to asset prices bubbles is dealt with and the main pros and cons associated with this reaction are summarised. Afterwards, the risks of asset markets bubbles in the EU4 countries are evaluated. Since the capital markets are still underdeveloped and real estate prices boom seems to be natural reaction to the initial undervaluation, the risks are viewed as rather small. The conclusion is thus that for a central bank in mature economies as well as in the NMS is crucial to conduct their monetary policies as well as its supervisory and regulatory roles in a way that does not promote build-up of asset market bubbles. In exceptional times, central banks of small open economies must be ready to use monetary policy steps as a kind of insurance against adverse effects of potentially emerging asset market bubbles.*

**Keywords:** *Monetary Policy, Asset Markets, Central Banking, New Member States*

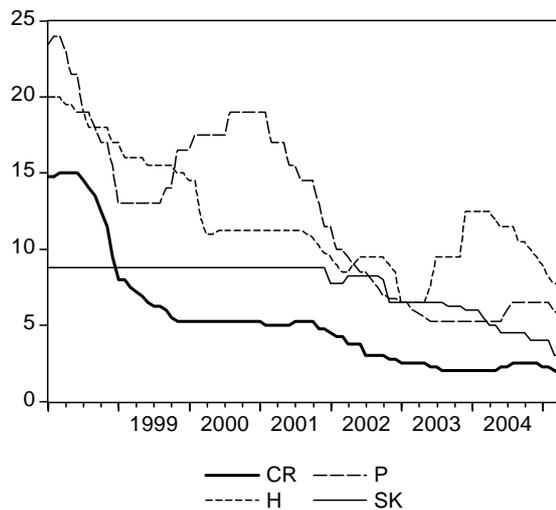
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<sup>1</sup> The authors note that everything contained in this paper represents their own views and should not be construed as representing those of the Czech National Bank. This research was supported by the Czech Grant Agency (no. 402/05/2758).

## 1. Introduction: Current Developments in New Member States

The new Member States of the European Union (NMS) went through successful stabilization process. With low inflation and pressures for the nominal appreciation of domestic currencies, their central banks lowered short-term interest rates to historically low levels. Figure 1 shows the development of monetary policy interest rates of the selected NMS, namely of the Czech Republic, Hungary, Poland and Slovakia (EU4). There is a significant downward trend in all rates, with the exception of Polish rate during 2000 and Hungarian policy swings during 2003. The lowest rates were always seen in the Czech Republic during the period monitored, which is the only economy with experience of negative interest rates differential against ECB rates.<sup>2</sup>

**Figure 1: Monetary Policy Interest Rates in the EU4 (%)**



*Note: CR=Czech Republic, H=Hungary, P=Poland, SK=Slovakia.*

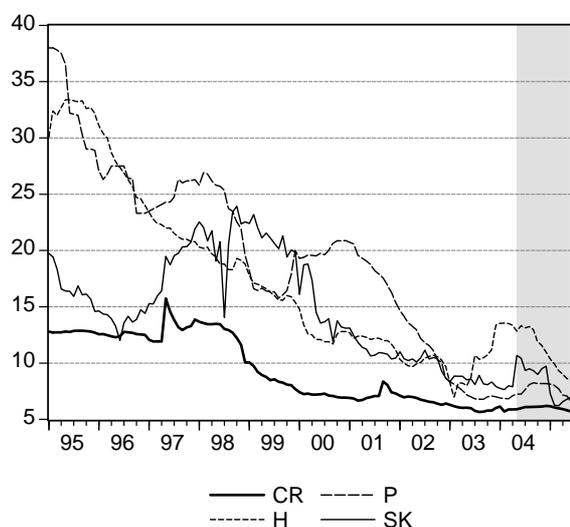
*Source: Eurostat, the EU4 central bank web pages.*

Figure 2 presents the development of the average lending rates of the EU4 countries, which also slope down during the last decade, especially in Hungary, Poland and Slovakia. The Czech lending rates moved to very low levels already in 1999. The long-term nominal interest rates went also sharply down, not only thanks to the expectations of the euro adoption. In addition,

<sup>2</sup> The Czech National Bank was setting the monetary policy rate (2-weeks REPO rate) in three periods below the European (ECB) level: during 26.7.2002–6.12.2002, 31.1.2003–7.3.2003, and 29.4.2005–27.10.2005. The negative interest rate differential was always 0.25 p.p. except for the period 1.11.2002 – 6.12.2002 (0.5 p.p.).

restructured and privatized banks recently began again to extend credit to corporate sector as well as to the households.

**Figure 2: Average Lending Rates in the EU4 (% p.a.)**



*Note: CR=Czech Republic, H=Hungary, P=Poland, SL=Slovakia.*

*Shadow part identifies the EU membership*

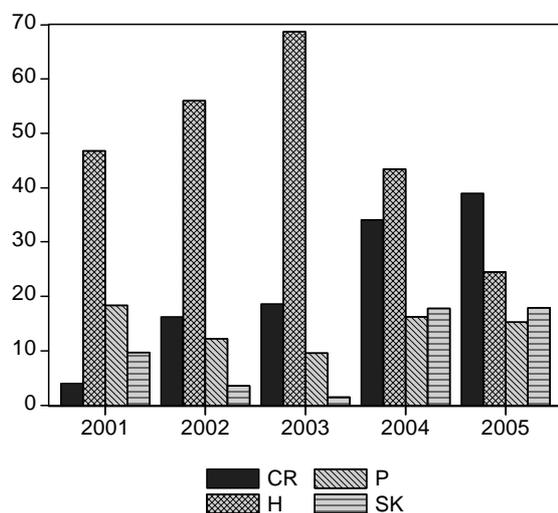
*Source: IMF-IFS CD-ROM.*

The combined effect can be seen mainly in rapid credit expansion in the household sectors, in housing loans segment with yearly increases between 30 to 50% in most countries – see Figure 3. There are fears that the mix of credit boom and optimistic expectations may support investments of a speculative kind and create asset bubbles similar to those experienced by many developed economies in the past. And in the same way, the formation of these bubbles may not be accompanied by visible pressures for consumer prices inflation which is the main focus of central banks. And at the same time, the NMS became part of the worldwide discussion on the impact of low interest rate environment, high liquidity and easy credit availability on the asset markets and on the role of monetary policy in supporting and subsequently taming the asset price inflation.

The central banks in the NMS thus now face the same questions as their counterparts in many developed countries: Are current monetary policies supporting the build-up of asset market bubbles? Should central banks incorporate asset prices into their policy decision process and react by interest rate changes to the asset price inflation? These particular questions have been discussed lively in recent years among central bankers and

academics in the US and many other countries. Our intention is to help to extend the discussion also to the local scene, though it may look premature at least to some observers. For these reasons, we will focus mainly on the mentioned EU4 economies.

**Figure 3: Household Credit Growth (y-o-y, %)**



*Note: CR=Czech Republic, H=Hungary, P=Poland, SL=Slovakia.*

*Source: Eurostat, IMF-IFS CD-ROM and authors' calculations.*

## 2. How Should Monetary Policy Respond to Asset Prices?

### 2.1 Importance of Asset Prices for Central Banks

Whether monetary policy should actively seek to encourage asset price<sup>3</sup> stability or even whether monetary policy should seek to prevent or at least reduce asset price bubbles really was one of the key current topics of debate is among central bankers. Despite what media sometimes say, hardly any central banker argues that central banks should completely ignore asset prices and focus only on consumer prices defined in terms of consumer price index (CPI) changes. As stressed for example by Bollard (2004), the economists agree that central banks should take asset prices into account, they disagree on whether they should respond to asset prices drifts.

<sup>3</sup> By an asset price we mean the price of something bought to generate income or to sell for a profit later. Examples are physical assets - like real estate or collectables - and financial assets - like shares, bonds, foreign exchange and other financial instruments.

Central banks automatically take asset price developments into account when setting monetary policy, even if formally they focus on price stability defined solely in terms of prices of consumption. This is primarily because asset price movements impact on CPI inflation and large movements in asset prices can have significant implications for CPI inflation. If prices of real estate, for example, are rising faster than inflation, people try to build more houses. To do it they demand more materials used for building, putting pressure on their prices. In addition to that direct impact, asset price movements also feed into CPI inflation through the "wealth effect". As asset prices rise, people tend to feel wealthier. This can apply with any kind of asset, but in many countries we see this mostly through house prices, due to the high proportion of household wealth associated with housing. The Czech Republic also belongs to countries in which housing has got a major share in household wealth, and at the same time, share of net financial assets is relatively low and does not have a clear tendency to grow. In countries with developed and broad stock markets the wealth effect applies also to share prices.

Asset prices also feed through into spending and hence inflation in other ways. For example, asset price increases improve balance sheets, increasing the borrowing capacity of firms and individuals. Increases in net worth tend to increase the willingness of lenders to lend and borrowers to borrow, facilitating a general expansion in spending as well as an expansion in spending on the investment to appreciating assets. Most of the time asset and consumer prices roughly move together and asset prices present no major problem for monetary policy. There are however times when asset prices move well out of line with underlying economic fundamentals. Sometimes, asset prices can become disconnected from reasonable expectations of future earnings, resulting in speculative bubbles that cannot be justified by economic fundamentals. Sooner or later, speculative bubbles will burst. But a damage they can do to the economy may be quite huge. This brings us to the question of whether central banks should try to constrain asset price bubbles.

## ***2.2 Three Main Opinions on Asset Price Bubbles***

The economists have a variety of opinions on this particular question. We prefer dividing them into three groups. *The first one* is comprised of these who say that central bank should pay attention to asset markets' developments, but cannot and should not try to constrain asset price bubbles on their own. Ben Bernanke, famous academic economist, former Fed governor and a future Fed chairman, seems to serve as the speaker of the group. We will use his words to define the other two groups while explaining

his views on the issue. We will then question his views and explain why more active approach may sometimes be justified.

Bernanke (1999, 2001 or 2002) suggest a very simple rule for central bank policy regarding asset-market instability: Use the right tool for the job. Bernanke (2002) says that the Fed has two sets of responsibilities – maximum sustainable employment, stable prices, and moderate long-term interest rates on one hand, the stability of the financial system on the other. To achieve that, the Fed has two sets of policy tools: policy interest rates and a range of powers with respect to financial institutions. By using the right tool for the job, he mean that the Fed will do best by focusing its monetary policy instruments on achieving its macro goals, while using its regulatory, supervisory, and lender-of-last resort powers to help ensure financial stability.

Bernanke agrees that a central bank must monitor financial markets intensively and continuously. To the extent that a stock-market boom causes higher spending on consumer goods and investments, it may indicate future inflationary pressures. Policy tightening might therefore be an adequate reaction. But the goal of reaction should be to contain the incipient inflation, not the stock-market boom. Central bank cannot be arbiter of security valuation. In other words, a central bank should use monetary policy to target the economy, not the asset markets. He believes that a far better approach is to use micro-level policies to reduce the incidence of bubbles and to protect the financial system against their effects.

To protect financial system, the central bank should use its regulatory and supervisory powers instead. In particular, it should ensure together with other financial sector regulators that financial institutions and markets are well prepared for a large shock to asset prices. To achieve that, commercial banks must be well capitalized and well diversified and they should stress-test their portfolios against a wide range of scenarios. The central bank can also contribute to reducing the probability of boom-and-bust cycles by supporting more transparent accounting and disclosure practices and working to improve the financial literacy and competence of investors. And if a sudden correction in asset prices does occur, the central banks's first responsibility is to do its part to ensure the integrity of the financial infrastructure-in particular, the payments system and the systems for settling trades of securities and other financial instruments. If necessary, the central bank should provide ample liquidity until the immediate crisis has passed.

Bernanke (2002) “sends” the advocates of a more active monetary policy response to asset prices into two broad camps, differing primarily in how aggressive they think the central bank should to be in attacking the

bubbles. *The first group* favours the lean-against-the-bubble strategy. Its representatives agree that the central bank should take account of and respond to the implications of asset-price changes for its macro goal variables. But also, according to this view, a central bank should try to gently steer asset prices away from a presumed bubble path. The theoretical arguments that have been made for the lean-against-the-bubble strategy are not entirely without merit. It seems that it may be worthwhile for a central bank to take out a little "insurance" against the formation of an asset-price bubble and its potentially adverse effects. Bernanke nevertheless assumes that "leaning against the bubble" is unlikely to be productive in practice.

*The second group* comprises those preferring a more activist approach. Bernanke labels it aggressive bubble popping. Aggressive bubble-poppers would like to see a central bank raise interest rates proactively to eliminate potential bubbles. Bernanke views this particular approach as risky and dangerous. He supports this opinion by pointing out to Federal Reserve Policy in the 1920s. When the interest rates peaked in August 1929, the economy was already slowing, though the stock prices were still rather high. The Fed was trying to prick the stock market bubble but succeeded only to kill the economy. It seems to us that something of the sort may also happened in Japan during 1990s. The result was the lost decade of Japanese economy.

We agree that generally there are clear-cut arguments against an activist approach. First, a central bank cannot reliably identify bubbles in asset prices. This seems to be a crucial argument. What we know is that monetary policy response to an asset price increase should depend on the source of the increase. And we agree that central banks should not react to asset prices unless they indicate changes in expected inflation. Unfortunately, it is rather difficult to know at a certain point in time whether the increase reflects fundamental improvements or excessively optimistic expectations. It is thus also difficult to know whether the asset prices changes indicate improved productivity or higher expected prices. But in some occasions we can be quite sure that bubble is on the way because we simply cannot find fundamentals behind asset price drift.

Second, even if a central bank could identify bubbles, monetary policy does not possess appropriate tools for effective use against them. A small increase in policy interest rate can only lead to correspondingly modest decline in the likelihood or size of a bubble. It is unlikely that a small increase in short-term interest rates, unaccompanied by a significant slowdown of economy, will induce speculators to modify their equity or real estate investment plans. Interest rates simply have a limited power to affect the perceptions which move asset prices in the first place. To materially affect some asset prices, such as housing, interest rates might need to move

probably by much more than would be required just to keep CPI inflation comfortably within the target range. Since interest rate changes affect not just house prices, but also the prices of most other assets, goods and services, there would be secondary, unintended consequences, with potentially serious consequences for the economy as a whole.

Third problem is timing of a central bank's reaction. Once a central bank becomes sure that a bubble has emerged, it will probably be too late to act with interest rate hikes. These may conflict with other economic forces that began to act, instead. Given the lag that we think applies between an interest rate move and its effect on the real economy, the risk is high that policy moves would be wrongly timed and only make matters worse. If interest rates are high at the moment that a bubble bursts, those high interest rates will still impact on the economy two years on. This would make the landing harder.

Fourth, pursuing a separate asset price objective could mean having to compromise on normal inflation objective. Seeking to stabilise rising house prices or an overheated stock market might mean having to force inflation lower than otherwise would be required. It might also mean greater variability in the real economy, interest rates and, potentially, the exchange rate.

Does all that mean that Bernanke is right? We would say that in many ways yes. But we would also say that Bernanke ignores some important aspects. First he seems to ignore the question what to do if the bubble is emerging without any signs of inflationary pressures? Inflation measured in terms of consumer prices has not always signalled when imbalances in the economy have been building up. A strong expansion in credit and increasing asset prices have preceded almost all banking crises and the majority of deep recessions in countries around the world over the past one hundred years. In many cases inflation has at the same time been low and stable before the crisis.

Central bank reaction to growth in asset prices is believed to be adequate only when signals exist that economy may become overheated. However, prevailing monetary policy models used to forecast inflation pressures often derive demand pressures (approximated by the output gap) from current inflation pressures. Given that, some signals that inflation pressures may increase in a more distant future may be ignored, especially if monetary policy horizons are too short.

Here we can provide a realistic scenario for a small open economy. It may appear when higher economic growth creates excessively optimistic expectations that lead to nominal appreciation of domestic currency. In such

a situation, a very low inflation can prevail even under a rapid credit growth and asset price acceleration for rather a long time. When the open inflation pressures finally appear, it may be too late for monetary policy to react. Forecasts of resource utilization and inflation can also be systematically inaccurate because the models and assessments used do not take account of the independent role that asset prices and debt can play. Also, as a result of structural changes, historical relationships may have changed, thus causing the central bank, for example, to come to incorrect conclusions about the output gap and potential growth. Nevertheless, the central banks in increasing numbers compile financial stability analyses that should reveal these particular risks.

If these analyses identify the risk of emerging bubble, responding is rather challenging. Nonetheless, the risks of the landing from the build-up and bursting of large asset price bubbles warrants taking some risks in an attempt to moderate the problem. There are cases when the asset price misalignment is sufficiently obvious that one can be confident enough to take the risk. Such situations are likely to be rare. And the risks may be considerable. In such a situation, tightening monetary policy may lead consumer price inflation even outside the target range. Central bank can be then blamed for squeezing growth from the economy. Nevertheless, by raising interest rates at an early stage when asset prices are starting to accelerate and before the expansion in credit has become too sharp, the central bank can indeed achieve somewhat lower inflation than is desirable in the short term, but may avoid a subsequent collapse in asset prices that could lead to considerably lower output and inflation in the longer term. And somewhat tighter monetary policy than otherwise would be able to counter an over-optimistic pricing of financial assets and properties.

### ***2.3 Prudential Measures and Regulatory Features as a Solution?***

Bernanke also seems to forget that micro-policies are also difficult to apply in reality. He is not the only one. The new issue of the IMF World Economic Outlook (September 2005, p. 134) argues that *"in cases where house price inflation remains robust, a combination of moral suasion and if necessary prudential measures could help limit potential risks; over the long term, regulatory features - including those that potentially constrain supply - that may exacerbate price pressures need also to be addressed"*.

Hilbet et. al. (2005) provide an extensive list of such measures and features. Among prudential measures, higher and differentiated capital

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<sup>4</sup>The recommendations seem to build on recent IMF Working Paper by Hilberts et. al. (2005).

requirements, tighter loan classification and provisioning rules, dynamic provisioning (accounts for the phase of business cycle in calculating loan-loss provisions), stricter assessment of collateral, or tighter eligibility criteria for certain loans are suggested. Supervisory measures include increasing disclosure requirements, closer inspection, periodic stress testing. Some countries also applied administrative measures like bank-by-bank credit limits or mandatory credit rationing. These measures are not generally viewed as "first best option" for taming excessive credit dynamics. This applies especially for the "prudential measures" that should be used only when normal prudential measures (limits) do not work well and when the new ones can move the system towards the "best practice"<sup>5</sup>. All this sounds well, but reality is a bit frustrating. It is rather difficult to find examples of the "prudential measures" or "regulatory features" that would be in use in developed countries. A typical applicant is a developing or transitional country in major problems, though sometimes an attempt to apply them appears in mature economies too.

Can some measures of this kind be recommended to the Czech Republic or other NMS if a housing bubble emerges in the future and at the same time, no problems with price stability exist? Probably not, not only because the framework has been already strengthened and there is hardly any room for further tightening. Besides that, the banking sector is preparing for the adoption of Basel2 rules. These together with international accounting rules make the application of some nonstandard measures not so easy.

The possibility to use prudential measures (in terms of anticyclical action) with the intention to address asset price bubbles was convincingly questioned by Bollard (2004). He finds administrative instruments blunt, harming newcomers to the market, distorting resource allocation and potentially depriving the private sector of sound investment opportunities. Prudential measures are unlikely to be very effective in addressing asset price cycles too. The implementation of policy changes would take time, after which there would be a potentially long and variable lag in the impact on asset prices. The use of such tools for macroeconomic purposes conflict with the objective for which such tools were originally designed - i.e. financial stability. Indeed, the use of prudential regulation to moderate asset price cycles might backfire in some circumstances, creating perverse incentives for

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<sup>5</sup> This sort of measures was used in the Czech Republic at the end of 1990s. Supervisory authority required the banks to mount up provisions for covering the loss credits collateralized by real estate to 100% value during three years. The reason behind the measure was the evidence that banks during 1990s were lending against rather overestimated values of real estate.

banks to bias their lending into riskier ends of the lending spectrum, which in turn could reduce the stability of the financial system.

### **3. Asset Markets and Risk of Bubbles in the NMS**

Restructuring and strengthening of financial sectors in the NMS increased significantly the access to external financing. This facilitates the development of investments in various asset markets (stock market, housing markets, bond market). Despite remarkable progress, some of these markets are generally still relatively thin and undeveloped relatively to mature economies. Nevertheless, this does not mean that the risks are relatively small. It may rather imply that it is more difficult to analyze these markets and detect potential imbalances. The difficulties are enhanced by the data incompleteness as to the developments of the asset markets in the NMS.

From the point of view of international investors, the foreign exchange and stock markets the most interesting in countries that are of our focus. Domestic investors usually predominate in real estate markets with the exception of some major cities. Naturally, fast growth of domestic credit should have a potential to initiate bubbles in these particular markets. Unfortunately, lack of reliable data on these markets in the NMS prevent us from providing comparisons and deriving conclusions. Besides looking at the EU4 economies, we will comment separately on the Czech asset markets events. This is a natural reflection of a specific knowledge and lower uncertainty as to the data.

Despite rapid growth of credit to private sector, prudential indicators do not indicate a sizable increase in financial vulnerabilities in the banking systems of the EU4 countries and the NMS in general. Banks are well capitalized, they make hefty profits and the share of nonperforming loans in their portfolios is declining. However, these are normally lagging indicators of banking problems. We must therefore pay attention to potential risks of rapid credit expansion. The implications of rapid credit growth to private sector are very often discussed with other the EU4 central banks. We usually agree that the risks are relatively low or even nonexistent. The reason is quite simple – the low base phenomenon.

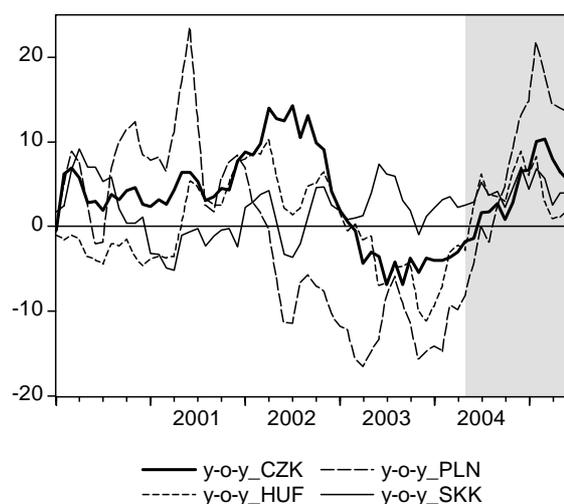
#### ***3.1 Foreign Exchange Markets***

There is an asset price that is a subject to direct reaction of monetary policy of many central banks – exchange rate. This reaction is given by the straight impact of exchange rate on the inflation. There might be disputes whether or not foreign exchange is an asset as well as whether or not monetary policy interest rates should react to exchange rate swings. In

practice, exchange rate is such an important variable that central banks, especially in small open economies, can hardly ignore. Many central banks, which apply the floating regime, therefore adjust their interest rates or intervene when facing significant exchange rate changes (Frait, 2005).

The currencies of the EU4 countries became popular assets among international investors soon after the initial period of transition. The exchange rates of these currencies have been rather volatile in some periods and some swings may be viewed as bubbles. Figure 4 shows year over year changes of the EU4 currencies, which demonstrates relatively high correlation of appreciation and depreciation waves.

**Figure 4: Dynamics of Nominal Exchange Rates of the EU4 against EUR (y\_o\_y, %)**



*Note: CZK=Czech Koruna, HUF=Hungarian Forint, PLN=Polish Zloty, SKK=Slovak Koruna; (+) appreciation, (-) depreciation.*

*Shadow part identifies the membership of the EU.*

*Source: Eurostat, IMF-IFS CD-ROM and authors' calculations.*

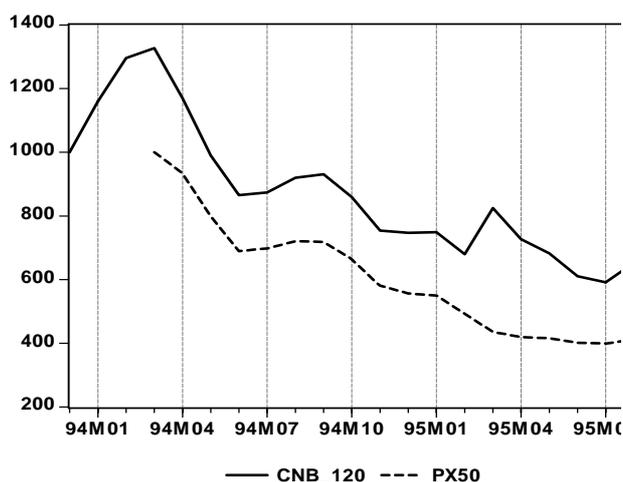
In the Czech Republic, a bubble-like situation was observed in 2002 when the CNB viewed the sharp appreciation of the koruna as unjustified by the fundamentals, labelled it a bubble and responded by interventions as well as interest rates cuts. The CNB was explaining its stance by the supposition that the appreciation was caused by the ill-perceived expectations of massive capital inflows due to privatization sales. The CNB thus tried to spread the correct information among the market participants and acting on top of speaking was necessary to secure credibility of the information content. The fact is that finally the koruna started to depreciate and up to now is still a bit weaker compared to its peak in July 2002 (left hand side of figure A1 in the

appendix). The right hand side of this figure then shows what we can expect from floating exchange rate regime: y-o-y appreciations by 10 to 15% followed by similar depreciation. PLN seems to be even more volatile than CZK: 20% up in 2001, then 15% down in 2003 and 20% up again in 2005. HUF also behaves like this though the focus of the authorities on the exchange rate limits the fluctuations.

### 3.2 Stock Exchange Markets

Probably the first asset market bubble registered during the recent history of the Czech economy followed the voucher privatization in 1993-1995. During this period more than 60% of population obtained shares in hundreds of firms or privatization funds. Despite the initial optimistic expectations, the bubble burst soon since most of the shares were losing the value rapidly. The bust is captured, though only partially, by the decline in the official CNB-120 and PX-50 stock market indices<sup>6</sup> - see figure 5.

**Figure 5: Stock Market Indices in the Czech Republic (points)**



*Note: CNB\_120 = The Czech National Bank monitored trends in the share price movements of 120 issues traded on the Prague Stock Exchange. The component companies were chosen to reflect the economy as a whole and thus all industries*

<sup>6</sup> There were two waves of voucher privatization. The shares from the first one started to be listed in June and July 1993 (622 plus 333 titles), from the second one in March 1995 (674 titles). The CNB-120 index was published from the end of 1993 till 31.12.1999. Publishing of PX-50 began in April 1994 and throughout time changed composition completely. The index is thus rather an imprecise description of the voucher shares performance. Many shares of individual firms as well as privatization funds that were not included in the index lost value completely and were removed from any trading.

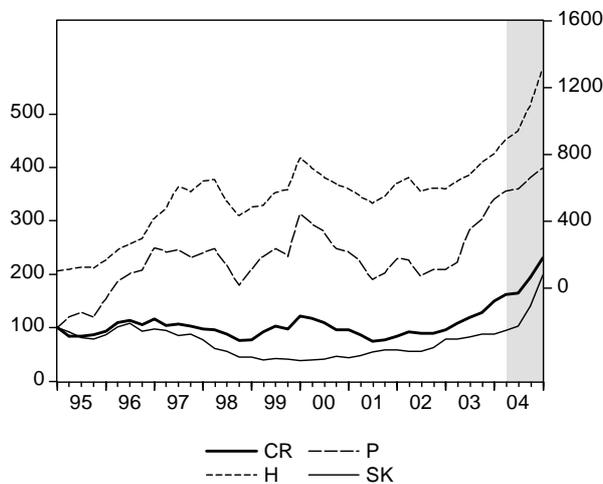
(1<sup>st</sup> March 1995 = 1000 points); PX50 = consists of the most attractive domestic stocks traded on the Prague Stock Exchange in terms of turnover and market capitalization (5<sup>th</sup> April 1994 = 1000 points).

Source: www.cnb.cz

The allocation of the shares among the population surely had a kind of wealth effect which was probably not that strong. Hanousek and Tůma (2002) conclude that the consumers behaved according to the permanent income hypothesis and demonstrate that only a minor part of newly created assets actually lead to an immediate increase in household consumption. Strong growth in domestic demand of the period was thus driven primarily by the corporate credit boom brought about by loose financial constraint of the newly emerged banking sector. It was no surprise that the stock prices bust was followed by the real economy bust later on (Frait 2000). Monetary policy could not react much because its objective during those days was to keep the exchange rate fixed.

How about current stock markets in the EU4 countries? Recent sharp increases in stock exchange indices have already opened debate on potential overvaluation due to purchases of foreign investors searching for some higher yields. Figure 6 displays almost ten years history of stock exchange indices in the EU4 economies. The movement were similar especially among Czech, Hungarien and Polish capital market. Especially from the second half of 2003 we observe clear strong growth of all indices

**Figure 6: Stock Market Indices in the EU4 (1995Q1=100)**



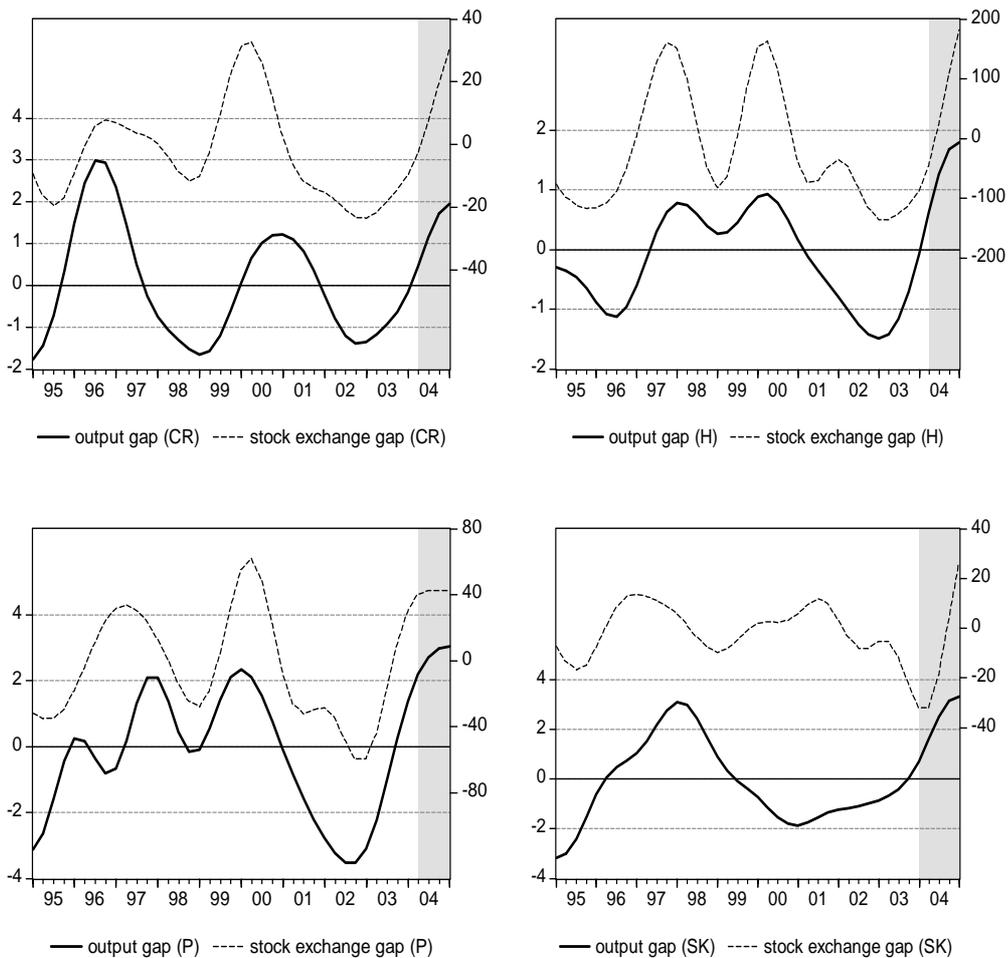
Note: CR=Czech Republic (PX50), H=Hungary (BUX, rhs),

P=Poland, SK=Slovak Republic. Shadow part identifies the membership of the EU.

Source: Eurostat and authors' calculations.

Our ambition is not to add to this particular debate. Instead, we tried to find to what extent the cycles in EU4 stock exchanges were associated with corresponding business cycles. With this in mind, we calculated output gaps and stock exchange gaps by detrending the original series by Band-Pass filter.<sup>7</sup> The final outcomes are presented in figure 7, which also confirms that the development of the Czech, Hungarian and Polish capital market is in accordance with the development of the real GDP. This relationship was not valid for significant period in the Slovak case.

**Figure 7: Output and Stock Exchange Gap in the EU4 (%)**



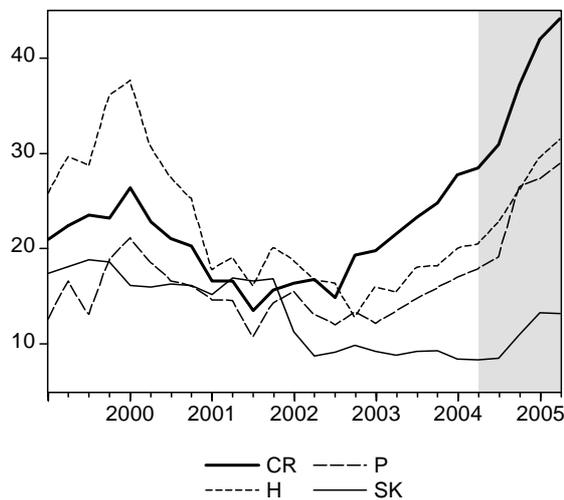
*Note: stock exchange gap on rhs; CR=Czech Republic, H=Hungary, P=Poland, SL=Slovakia. Shadow part identifies the membership of the EU.*

*Source: Eurostat, IMF-IFS CD-ROM and authors' calculations.*

<sup>7</sup> See for example Christiano and Fitzgerald (2003).

The results suggest that stock prices generally reflect economic activity. Positive output gaps would in this case indicate future inflation pressures, the associated positive gap in stock prices would then provide no new piece of information. Reality is a bit different. Standard monetary policy models base their estimations of actual output gap more on the current state of inflation pressures than on the data on economic activity. Monetary policy models in some countries therefore do incorporate stock market data. The inclusion of stock market depends on a country and a structure of model used. However, the features of stock markets in EU4 countries (like limited issuance of quoted equity or a low level of market capitalization) mean that their information content has rather a limited importance. Figure 8 confirms, that the highest market capitalization is in the Czech Republic (from the second half of 2002) and that in all the EU4 countries their levels increase (strongly in the Czech Republic, Hungary and Poland, slowly in Slovakia).

**Figure 8: Market Capitalization in the EU4 (% of GDP)**



*Note: CR=Czech Republic, H=Hungary, P=Poland, SL=Slovakia.*

*Shadow part identifies the membership of the EU.*

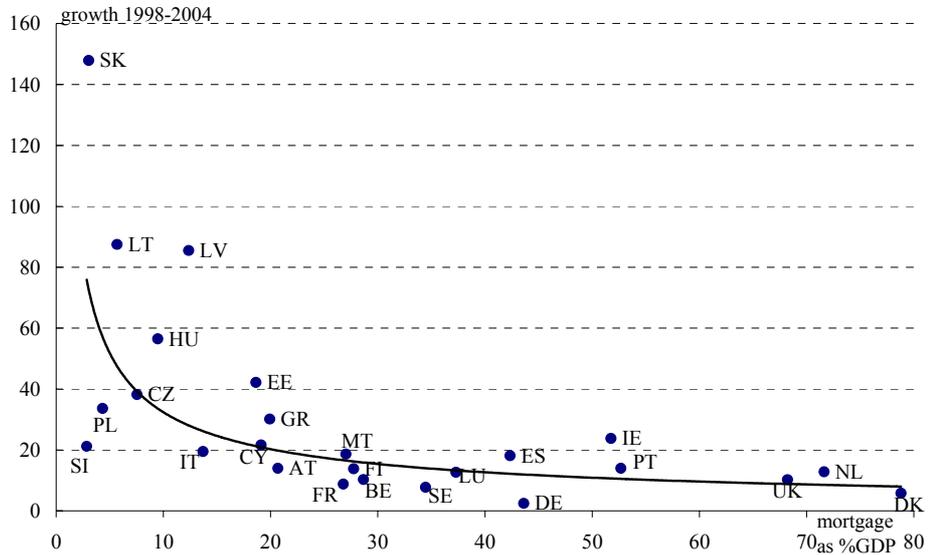
*Source: Eurostat.*

### **3.3 Housing Market**

The growth rates in mortgage markets in the NMS countries in recent years seem to be tremendous. However, the share of mortgages on GDP is still negligible compared to countries like Netherlands or Great Britain. This is captured well by figure 9 plotting growth in mortgage lending between 1998

and 2004 against mortgages stock as a percentage of GDP. All EU4 countries are where they should be as economies in a catching-up process.

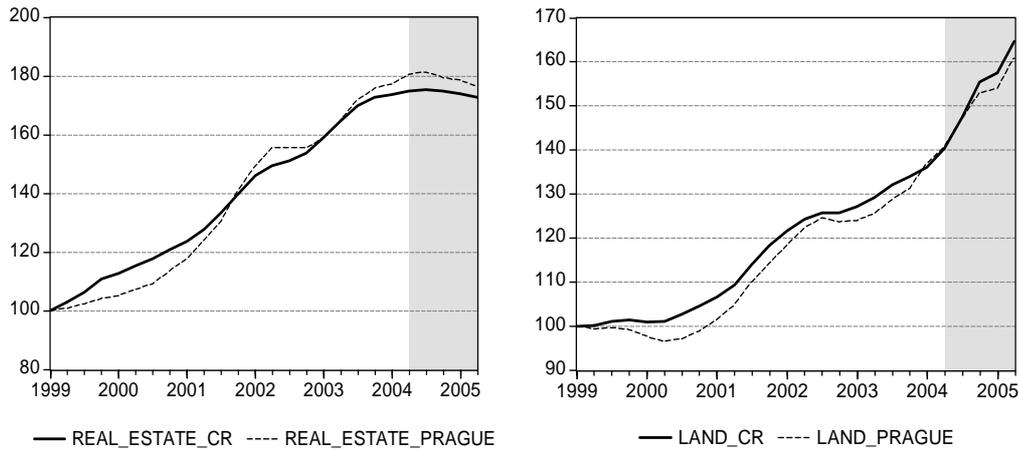
**Figure 9: Housing Market**



Source: ECB.

Housing loans are the fastest growing component of credit in the EU4 countries too. How much should central banks be concerned with potential house prices bubble? It is difficult generally to say because we do not have comparable data series at our disposal. As far as the Czech Republic is concerned, available data presented in figure 10 can hardly be interpreted as a risk of a bubble. Despite remarkable dynamics in land prices, real estate prices seem to be flat in the last two years. Price increases so far must be viewed mostly as movements towards more realistic values.

**Figure 10: Real Estate and Land Prices in the Czech Republic and Prague (1999Q1=100)**



*Note: CR=Czech Republic. Shadow part identifies the membership of the EU.*

*Source: Czech Statistical Office and the internal calculation of the Czech National Bank.*

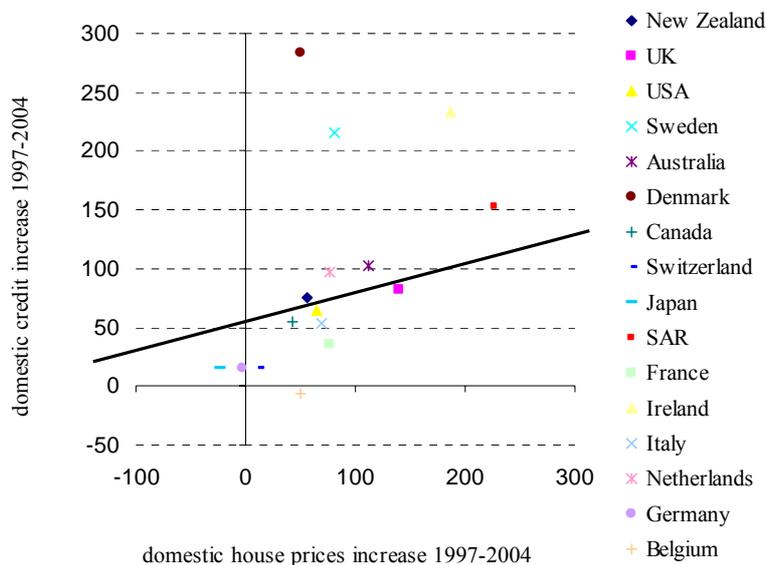
### **3.4 Global Liquidity, Housing Loans and Real Estate Prices**

In the last few years, low nominal and real interests plus high global liquidity were reflected in many countries by relatively high growth in credit and money supply. At the same time, many countries have experienced a real estate prices boom. There is an interesting discussion among economists whether the money supply dynamics causes real estate prices to rise or whether increased money creation is only a natural consequence of increased money demand due to the wealth effect of real estate prices developments. This particular discussion is important for assessing the inflationary potential of current money supply dynamics. If it is a consequence of the above defined wealth effect, the inflation risk may be low since after the real estate price growth slows down, demand for money will slow down too. Money supply growth rates would then tend to much lower numbers.

Of course, money supply growth may add to real estate price expansion. In many countries, credit dynamics is apparently associated with housing loans extension. We could see number of countries with real estate price increase of more than 10% yearly in recent years (France, Greece, Ireland, Italy, Spain, Great Britain, South Africa, New Zealand, U.S.A. or Australia). According to the Economist (that compiles representative indices of real estate prices), relatively to income, the real estate prices peaked historically in 2004 in the U.S., Australia, Great Britain, France, Ireland,

Netherlands, New Zealand and Spain<sup>8</sup>. In some countries, structural changes in financial markets seem to be behind it. In some countries of the euro area, the fall of nominal interest rates to a German level acted as a booster. We plot credit growth and real estate prices in figure 11. We can see a relatively strong correlation. Still, we cannot assign a causal relation to it.

**Figure 11: Correlation between credit growth and real estate prices in developed countries**



Note:  $DOMESTIC\_CREDIT=65.96+0.088*HOUSE\_PRICES$

Source: own calculations based on IMF IFS and the Economist indices (Economic Intelligence Unit database).

Real estate market trends should be of concern of central banks in countries in which real estate prices have a strong impact on consumer spending. This applies primarily to economies with prevailing mortgages with floating interest rate and with widespread “mortgage equity withdrawal” (borrowing that is secured of the housing stock but not invested in)<sup>9</sup>. And these are the same countries that are prone to real estate market bubbles associated with periods of low real interest rates and strong credit expansion.

A dominant view among central bankers is the one that does not associate actual growth in real assets with the inflation because it does not

<sup>8</sup> Currently we can see stagnation or even a decline in real estate prices in some of these countries.

<sup>9</sup> One of the examples is Netherlands where decline in real estate prices growth from 20% in 2000 to zero in 2003 lead to drop in consumption and to recession. It may hardly make a sense to blame the euro.

have influence on value of money expressed in goods and services. The reason is simple - the future inflation should already be embodied in real asset prices. These can be expressed as discounted value of future incomes from holding the assets. The discount factor for real asset valuation can be approximated by real interest rate. If central banks base their decisions on the estimated future inflation, they stabilize in a certain way real interest rate. The prices of real assets then do not constitute a new piece of information. The application of this particular logic to real estate prices is nevertheless questionable. Number of activities linked to real estate influence value of money in terms of goods and services. The changes in real estate prices then have a direct impact on domestic demand via the wealth effect or via the ability to borrow against collateral. Real estate prices change can thus be, under some circumstances, viewed to some extent as new information for policymakers. As far as the EU4 countries are concerned, current credit dynamics does not seem to pose risks to asset markets and financial sectors. For their monetary policies thus “benign neglect” still makes sense.

#### **4. Conclusion**

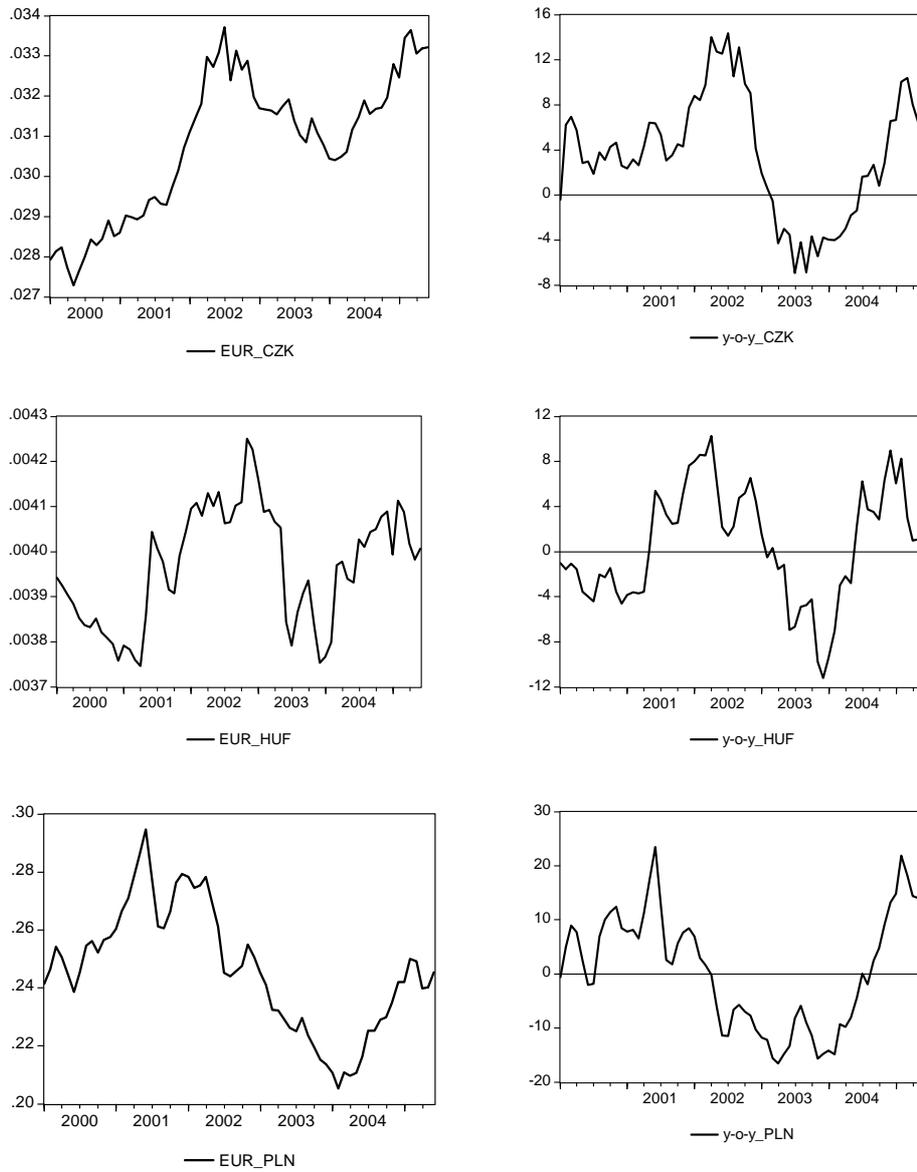
Central banks do have tremendous difficulties in identifying and taming asset price bubbles. Neither monetary policy instruments nor the supervisory and regulatory measures can be much helpful when a bubble occurs. It is therefore crucial for a central bank to conduct its monetary policy as well as its supervisory and regulatory roles in a way that does not promote build-up of asset market bubbles. Monetary policy must therefore be maximally forward-looking. Central banks should not be thinking only in terms of the next two years which is a standard of monetary policy models. Given the potentially long-term nature of asset price misalignments, analyses of financial stability supporting monetary policy making must look at longer horizons while applying risk management approach to financial market developments. In exceptional times, central banks of small open economies must be ready to use monetary policy steps as a kind of insurance against adverse effects of potentially emerging asset market bubble. Reaction to other sort of bubbles should be rate, depends on particular conditions prevailing in a particular moment. As far as EU4 countries are concerned, current credit dynamics does not seem to pose risks to asset markets and financial sectors. For their monetary policies thus “benign neglect” still makes sense.

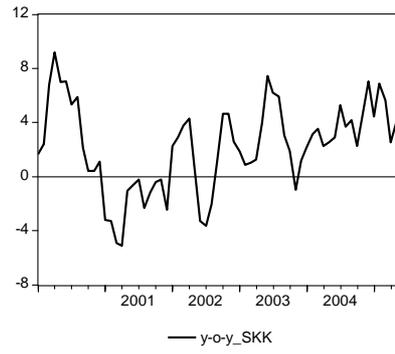
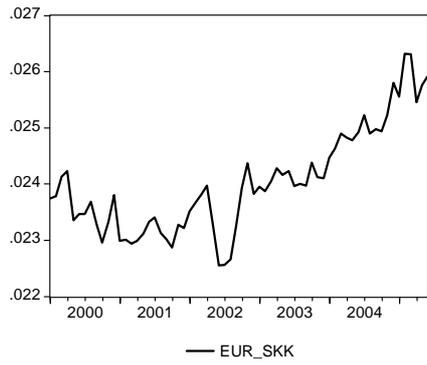
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## Appendix

Figure A1: The Nominal Exchange Rates in the EU4





*Note: rhs: (+) appreciation, (-) depreciation.*

*Source: Eurostat, IMF-IFS CD-ROM and authors' calculations.*

# CURRENCY SUBSTITUTION IN A TRANSITIONAL ECONOMY WITH AN APPLICATION TO THE CZECH REPUBLIC

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## **Abstract**

*Currency substitution appears to be an important issue affecting the design of monetary policy, especially in transition economies. Therefore, this paper strives to analyse the particular relevance of the currency substitution phenomenon in the Czech Republic's case. We initially discuss the role of currency substitution in small open economies in transition with some illustrations relating to the Czech Republic. We distinguish and analyse a locally and globally substituting currency from substituted ones and discuss the consequences of euroisation. Further, we estimate a modified Branson and Henderson portfolio model for the Czech Republic. This provides a multi-perspective approach to currency substitution in the broad sense. We attempt to intensify the robustness of our estimations by applying several cointegration techniques, namely the Johansen procedure, ARDL, DOLS and ADL. Finally, we discuss the potential implications of the currency and asset substitution present according to our estimates in the Czech economy.*

**Keywords:** *Currency substitution, demand for money and assets, transition, Czech Republic, cointegration*

## 1. Introduction

Currency substitution is a very important concept in the history of economic thought and one of the most ambiguous concepts in economics. A closer look at the way currency substitution has been defined in the vast literature brings little clarity. There we can distinguish several main areas, problems and incentives of current research. We discuss the idea of a locally (regionally) and globally substituting currency and a substituted currency (the currency being substituted). Further, we deal with these issues by discussing transition phenomena of currency substitution (especially in the Czech Republic) and the problem of *euroisation* (by unilateral or bilateral decision), which is becoming very topical at the end of 2001.

This paper presents an empirical analysis of currency substitution phenomena in the case of the Czech Republic. We introduce the portfolio balance model of Branson and Henderson (1985) which creates the basis for our multi-perspective analysis. This model consists of four equations, two representing the demand for domestic and foreign currency and two describing the demand for domestic and foreign bonds. We modify this model for local Czech conditions and discuss the building of the estimated equations, substituting the variables suggested by theory with their factual equivalents or approximations. Finally, based on our estimates we discuss some of the implications stemming from economic theory and from the experience of other transitional countries.

## 2. Currency substitution in small open transition economies

In most transition economies, the initial conditions and the process of transformation have been similar, i.e. for more than ten years there have been simultaneous periods of internal and external liberalisation and a process alignment with the more developed countries. Internal liberalisation has been brought about by price liberalisation in a higher inflation environment, restructuring of industries, adoption of new tax systems, etc. External liberalisation has been caused by trade liberalisation and, in particular, by external convertibility of national currencies and liberalisation of capital accounts. Generally it can be concluded that the launch of the reform process was coupled with greater economic uncertainty<sup>1</sup> (and in some countries by political instability) and the absence of developed financial markets.

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<sup>1</sup> This implies a high and volatile nominal exchange rate and inflation, large budget and current account deficits, and the establishment of new national currencies (in the countries of

## ***2.1 Macroeconomic Policy and Currency Substitution***

The implications of currency substitution for macroeconomic policy differ between developed and developing countries and, in two respects, in particular. First are the effects of currency substitution on the efficiency of stabilisation programmes, and second are the effects of currency substitution on the authority revenues received from inflation.

One of the problems of developing countries is the credibility of their stabilisation programmes. The relevant question in this context is: Does dollarisation (euroisation or other -isation) help to stabilise an economy and increase the credibility of its policies? Credibility can increase when foreign currency circulation eliminates the authorities' incentives to manipulate the domestic currency. In the past, many stabilisation programmes have involved fixing nominal exchange rates or establishing crawling pegs. These arrangements have ensured the progressive appreciation of real exchange rates. The other issue relating to stabilisation programmes is the discussion between fixed and floating exchange regimes. Results of currency substitution models and other empirical observations indicate that the presence of a currency substitution exchange rate implies higher volatility, with potentially distribution effects on the economy. These findings lead to the defence of fixed exchange rates (or exchange rate regimes with narrower fluctuation bands) during a "stabilising" period, when currency substitution plays a significant role in the economy.

Inflationary financing of a government deficit poses another relevant question relating to these issues. It can be intuitively said that the higher the substitutability of the domestic currency with foreign currency, the more difficult it is for the government to finance its deficit by printing money. On the one hand, holding foreign currency balances makes it possible to get seigniorage, so that, the demand for foreign currency may act as an inflationary tax. The resulting revenue will be (in the presence of currency substitution) lower for each level of this tax.<sup>2</sup>

Currency substitution also suggests a recommendation for the optimal rate of inflation. The transaction models of currency substitution imply that the marginal rate of transformation (represented by a relative price, i.e. the real exchange rate) between two goods (domestic and foreign) is different

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the former Soviet Union, the new countries of the former Yugoslavia, and in the Czech Republic and Slovakia).

<sup>2</sup> A discussion of the seigniorage and inflation tax phenomenon, applied in the Czech transition period without considering external influences, is presented by Hanousek, Kubin and Tůma (1995). The influence of currency substitution on revenues from seigniorage in Eastern European economies has been estimated by Aarle and Budina (1995).

from the marginal rate of substitution for these two goods, owing to the costs of liquidity. These liquidity costs are influenced by the rates of inflation in both countries. This model then defines an optimal relative rate of inflation, existing when the marginal rate of transformation is equal to the marginal rate of substitution. If the foreign rate of inflation is known, then the domestic rate of inflation should be set in such a way as to minimise misrepresentation of the aforementioned relative prices.

## ***2.2 Quantification of the Degree of Currency Substitution***

It is useful to look at how we can quantify or measure the degree of currency substitution. Sarajevs (2000) concludes that, ideally, the measure of currency substitution is the value of foreign currency notes circulating in the economy (as a means of payment and a store of value) and all checking accounts and short-term deposits in foreign currency held by residents in domestic banks and abroad. Available data is lacking not only for transition economies, but also for industrial countries. Therefore, most studies generally calculate currency substitution either as (i) the ratio of foreign currency deposits to M2 (broad domestic monetary aggregates), or as (ii) the ratio of foreign currency deposits to broad monetary aggregates, including foreign currency. The next part will show that these two measures of currency substitution have moved together in the case of the Czech Republic.

Which factors can explain currency substitution in the Czech Republic? A number of competing explanations come to mind: (i) The Czech Republic, with its lack of restrictions on capital flows, is a safe place for foreign exchange dealers from many countries. (ii) A lag occurs as financial markets and economic agents adapt to an economic environment with large foreign exchange flows (as individuals and banks get used to dealing with high levels of currency substitution, there are extra costs associated with turning the situation back). (iii) A sharp increase in the openness of the Czech economy increased foreign exchange balances during the transformation.

Another interesting question is: For whom is currency substitution most relevant? In the presence of inflation, poor people suffer more from inflationary taxation than do others. The poor cannot afford to use financial market instruments (including foreign currency) to avoid the inflation tax. Currency substitution can also make it more difficult for the government to renege on its economic stabilisation programme and fall back on the use of the inflation tax.

## ***2.3 Substituting and Substituted Currencies***

In this subsection we distinguish a locally (regionally) and globally substituting currency from a substituted one (the currency being substituted).

The reason for our terminology is as follows. We think that a local and global dimension of currency substitution can generally be found. While the global currencies are definitely the US dollar (USD), the German mark (DEM), the Swiss frank (CHF) and the Japanese yen (JPY), other currencies act more locally than globally. The vast majority of the four global currencies is held by citizens of nations outside the borders of the issuing states. Doyle (2000) presents the relevant research in this area – an estimation of worldwide currency substitution. Using a currency demand equation implied by cointegrating vectors for Canada, the Netherlands and Austria, he estimates for 1996 that only a surprising 30% of USD was held outside the United States, although as much as 69% of DEM was held outside Germany. It must be remembered that foreign holdings of these three main currencies (USD, DEM, CHF) have significantly increased international currency substitution in the world, which roughly tripled between 1986 and 1996.<sup>3</sup>

Of course, several other currencies might qualify to fulfil this role, most notably for historical reasons (the colonisation period). There are at least two candidates: the British pound (GBP) and the French franc (FRF). The best candidate countries for “*poundisation*” include either relatively successful or developed economies such as those of Australia, New Zealand, Canada, South Africa, the Asian tigers (Hong Kong, Singapore and Malaysia) and parts of Middle Eastern territories. The best candidates for “*francisation*” are French former colonies in Africa, which used the Central African franc. This currency was for long time pegged to the French franc. So, we see that worldwide currency substitution is not solely an American or German phenomenon.

Generally, we can specify the reasons for currency substitution, i.e. the reasons why a currency is being substituted: (i) Macroeconomic instability with a sizeable rate of inflation, exchange rate instability and volatility, and a less optimistic country rating. (ii) The existence of a large illegal or underground economy (especially when this sector produces tradable and export goods such as drugs). Examples are to be found in Europe’s former socialist bloc. (iii) A history of financial crisis and risk-averse behaviour by economic agents trying to eliminate this potential risk. (iv) The lack of higher-denomination bank notes issued by the central bank.

The largest increase in currency substitution occurred in the last decade, suggesting that the main reasons for this were the collapse of the former socialist bloc in Europe and the tendency toward dollarisation, especially in South America.

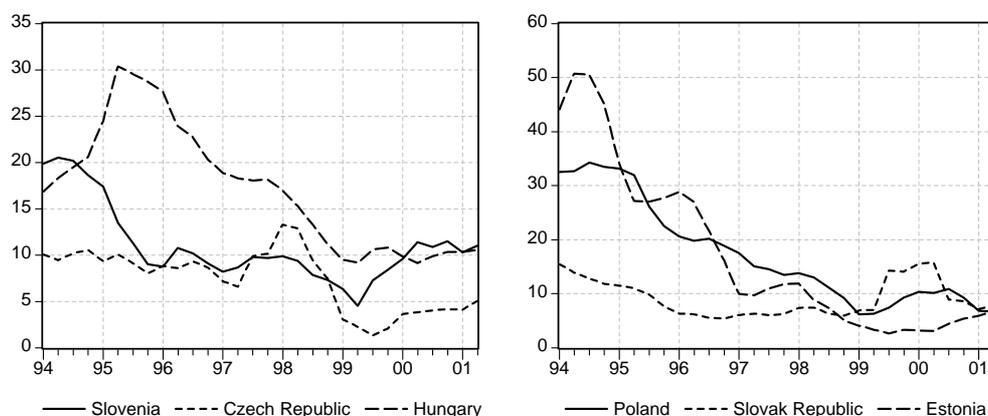
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<sup>3</sup> These estimations are adjusted for inflation.

## 2.4 The Czech Koruna – A Substituting Currency or Substituted Currency?

We see local substituting currencies as being those which are mostly used in a local environment within a specific economic region. It can be shown that the Czech koruna (CZK) is not only a substituted currency, but has also for several years been the substituting currency for some post-socialist countries. The reasons for this collateral role of the Czech koruna as a substituting currency include the following: (i) Since its inception in 1993, the Czech koruna has remained very stable and not too volatile against the two main currency pairs, i.e. USD and DEM/EUR (Figure 5); (ii) The Czech koruna has not had an inflation rate higher than other transition countries (Figure 1); (iii) The Czech koruna has quite a good general reputation abroad; (iv) The Czech koruna became externally convertible quite soon after 1993; (v) The Czech economy has absorbed a fairly significant amount of post-socialist workers, for whom it is better to hold earned money in Czech koruna (rather than exchanging it for world-wide substituting currencies); (vi) The Czech National Bank issues bank notes with a relatively high nominal denomination of CZK 5000. Conversion from the highest GBP, FRF or USD<sup>4</sup> denominations yields a smaller amount of money than reflected in our highest note.<sup>5</sup> The new EUR notes will have two higher denominations compared to Czech notes and recalculated to CZK: the EUR 200 and EUR 500 notes.

**Figure 1: Inflation rates in transition economies 1994–2001**



Source: Author's calculation based on CNB database (<http://www.cnb.cz>) and IMF-IFS statistics.

<sup>4</sup> Excluding the special issuance of notes between 1914 and 1923, when the FRB issued notes with nominal values of 500, 1,000, 5,000 and 10,000 USD.

<sup>5</sup> See also the work presented by Feige, Faulend, Šonje and Šočič (2000).

## ***2.5 Currency Substitution, Euroisation and Enlargement Process***

The other relevant topic relating to the currency substitution issue (especially from the macroeconomic point of view) is the problem of euroisation in non-eurozone countries, which has become very topical in many transition countries at the end of 2001. Generally, we can distinguish the euroisation process as being based on either a unilateral decision or a bilateral one.

The former (unilateral) decision involves adoption of the euro without the official agreement and permission of the EU/EMU authorities before a candidate country officially joins the Eurozone.

An accession country may generally see various advantages to adopting the euro, namely: (i) the stability of its exchange rate to the Eurozone area is increased (incentives for international investment). (ii) the risk of speculative attacks on the domestic currency is virtually eliminated. (iii) the general necessity of holding foreign reserves is lessened (thanks to lower exchange risk). (iv) lower interest rates and lower inflation. (v) lower transaction costs which are larger for small open economies. (vi) re-establishing the domestic currency and re-creating an independent central bank remain theoretically possible (only for unilateral euroisation).

The general disadvantages (risk and costs) might include: (i) the higher probability of runs on commercial banks in the absence of a “national” central bank acting as a lender of last resort and risk of boom bust cycles, as interest rates become very low and the central bank loses this lender of last resort function. (ii) the general or probable lack of foreign reserves. (iii) the low official euroisation of most first-wave accession countries. (iv) as the independence of monetary and exchange rate policy is lost, these could overburden other policies, especially fiscal policy (plus the possibility of political feuding because monetary policy is much less independent of other countries). (v) non-compatibility of monetary policy instruments with the ECB (though not problematic for those countries in the first wave of accession). (vi) the record of dollarised economies has shown that dollarised nations had a lower rate of economic growth than others. (vii) loss of seignorage income. The European authorities have made clear that unilateral euroisation is not a legally and economically sound option for accession countries on their way to the EU and Eurozone.

The latter (bilateral) decision represents the stage of integration into the Eurozone after accession to the EU and after fulfilment of all necessary conditions. The candidate states: (i) will join the EU, (ii) then they will participate in ERM2 (exchange rate mechanism) for at least two years, (iii) have to fulfil the other four nominal convergence criteria (Maastricht criteria)

and (iv) in a last step, they will introduce the euro as their national currency. This will include a non-trivial process of determination of the euro locking rates for the currencies of transition countries.

The main reason for adopting the euro as late as possible is the modification of the structure of real appreciation accompanying the real convergence process. This process will only be possible through higher inflation and no longer through appreciation (nominal and real) of the exchange rate. This has important implications for macroeconomic policy in the accession (catching-up) countries.

### 3. Empirical Analysis of Currency Substitution In The Czech Republic

Our analysis of currency substitution in the Czech Republic is based on a portfolio model developed by Branson and Henderson (1985), which we further modify to match the conditions in the Czech economy. This portfolio approach enables us to focus on currency substitution phenomenon from several perspectives. It incorporates money demand for both domestic and foreign currencies, and capital mobility, i.e. demand for both domestic and foreign bonds. We consider this approach very useful, since it comprises several independent views on currency substitution analysis, examining the robustness of estimates not only from the perspective of the applied estimation techniques but also from that of different markets (relationships).

We follow Branson and Henderson (1985), without explicit solution of the optimisation problem, and assume that the domestic demand (i.e. that of domestic residents) for assets depends on their relative returns, satisfying the usual wealth constraints:

$$M = M(i, (i^* + e^{ex}), e^{ex}, PY, P^c, W) \quad (1)$$

$$eM^* = M^*(i, (i^* + e^{ex}), e^{ex}, PY, P^c, W) \quad (2)$$

$$B = B(i, (i^* + e^{ex}), e^{ex}, PY, P^c, W) \quad (3)$$

$$eB^* = B^*(i, (i^* + e^{ex}), e^{ex}, PY, P^c, W) \quad (4)$$

The first argument in equations (1) to (4),  $i$ , is the return on holding bonds denominated in domestic currency relative to the return on domestic money (that is minus the rate of domestic inflation). It is assumed that all four assets are substitutes in the portfolio. Hence, an increase in  $i$  raises the demand for domestic bonds but lowers the demand for their substitutes in the portfolio. The nominal return on bonds denominated in foreign currency is  $i^*$ .

Expressed in domestic currency, this return becomes  $i^*+eex$ , with  $eex$  the expected change in the exchange rate. It affects the demand for foreign securities positively and that for other assets negatively. Once again, this second argument is in fact a real return differential, where the return on domestic money is minus the rate of inflation.<sup>6</sup> Similarly, the third argument,  $eex$ , is the return on foreign money, converted into the domestic currency<sup>7</sup>.

The fourth argument,  $PY$ , represents the home currency value of domestic output and affects demand for all assets positively.  $Pc$  is the price of the domestic consumer's consumption bundle expressed in the home currency. An increase in  $Pc$  increases the demand for both moneys and lowers the demand for bonds denominated in domestic and foreign currency. The positive effect on domestic wealth  $W$ , the last argument, reflects the assumption that all assets are "normal assets".

We modify this portfolio approach to the local conditions of the Czech Republic. Specifically, we take account of the institutional features of the Czech economy, which arise from both historical and recent developments in this country. When we go through the portfolio balance approach, the first equation represents the traditional domestic money demand equation which has been estimated in slightly modified form and analysed by several authors with respect to the Czech economy (most recently e.g. Melecký, 2001 and Arlt, Guba, Radkovsky, Sojka and Stiller, 2001). The modification (or difference) lies in the fact that the Czech Republic's broad monetary aggregate (M2) includes foreign deposits. Therefore we will concentrate, as regards equation (1), on M2 adjusted for foreign deposits.

Equation (2) in our case describes domestic demand for foreign currency, i.e. foreign currency in circulation and foreign deposits in the Czech economy. However, monitoring foreign currency in circulation is very difficult and is left for future research. We consider only the demand for foreign deposits. These are probably held in the Czech Republic mostly for

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<sup>6</sup> Indeed, the real return on the foreign bond in terms of domestic bonds equals the own real rate of interest on the foreign bond plus the expected rate of change in the real exchange rate – the expected rate of change of the nominal exchange rate plus the expected foreign price inflation, minus the expected domestic price inflation. Subtracting the real rate of return, we obtain the nominal return in the equation.

<sup>7</sup> Again, the real return on foreign money expressed in terms of foreign goods is minus the expected foreign rate of inflation. This can be transformed into a real return expressed in domestic goods by adding the expected rate of change of the exchange rate. Finally, adding the expected domestic rate of inflation (that is, subtracting the return on the domestic money stock expressed in terms of domestic goods) we are left with the expected change in the nominal exchange rate.

their store-of-value purpose (although we would not omit the influence of foreign trade), as the Czech economy is not considerably dollarised (or D-markised) and therefore foreign currency is not commonly used as a medium of exchange or unit of account.

The first problem arises when we look at residents' demand for domestic bonds. In the Czech Republic, as a consequence of historical developments, financial intermediation goes largely through the banking sector and the capital markets are generally either inaccessible or illiquid and inefficient. More specifically, owing to the prevalent credit system, the Czech bond market is underdeveloped, so we are left with government bonds and Treasury Bills only. However, these constitute a rather exclusive market that is accessible only to selected large financial institutions.<sup>8</sup> A similar situation exists on the stock market. Furthermore, when considering the demand for credits we face the problem of credit rationing. This has been present in the Czech Republic for, at least, half of our sample period. The above considerations lead us to exclude equation (3) from the portfolio approach.

Although an analysis of the demand for foreign bonds, or foreign portfolio assets generally, may be associated with some inconsistency in data series, we attempt to estimate the function capturing the demand for foreign portfolio assets in the case of the Czech Republic as proposed by equation (4). In addition, the constraints, or rather controls, on capital movement imposed by the Czech National Bank at the beginning of our sample may influence the results, in the sense of increasing the importance of all foreign variables in determining portfolio investment abroad in our case. We take in to account this aspect while estimating the demand for foreign assets.

### ***3.1 Description of the Data Series Used***

We use quarterly data spanning the period from the first quarter of 1994 to the second quarter of 2001. Where a particular variable is of discrete form we use a quarterly average calculated as the simple arithmetic average of the monthly end-of-period values for the three months in the current quarter and the last month of the previous quarter. We use seasonally adjusted data only in the case of the scale variable, which is the only one showing a marked seasonal pattern. (Data source: CNB database, i.e.: <http://www.cnb.cz>.)

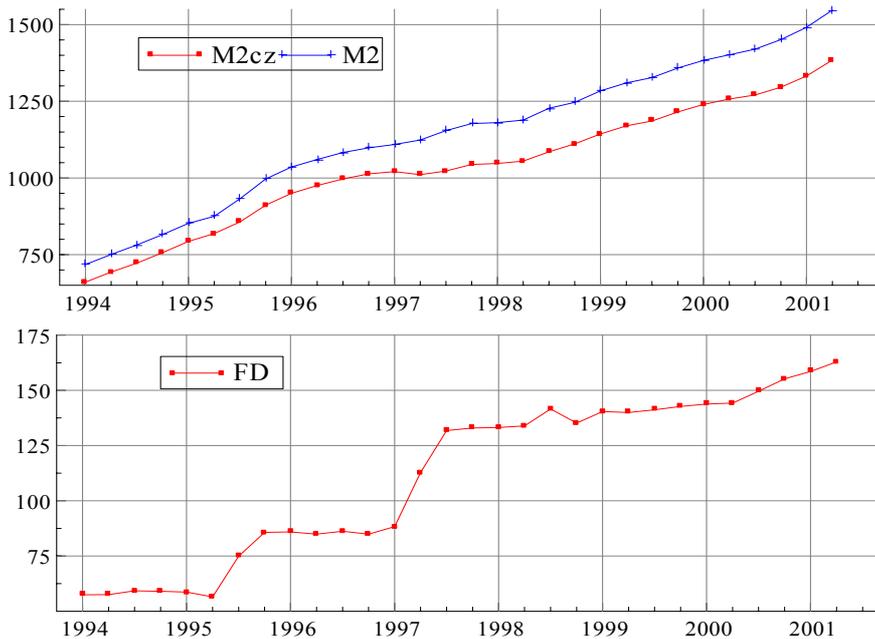
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<sup>8</sup> A thorough discussion on financial intermediation in transition countries and various aspects of its development can be found in Mishkin (2001).

### 3.1.1 Dependent variables

We first attempt to model the *Mcz* variable, representing deposits in the domestic banking system denominated in the Czech currency. This variable is calculated as the difference between the M2 monetary aggregate and deposits in the domestic banking system denominated in foreign currencies. We further subtract Czech currency in circulation, since we cannot include foreign currencies in circulation in our analysis owing to a lack of data series. Figure 2 depicts the development of the M2 and M2cz series.

**Figure 2: M2cz and M2 Series**

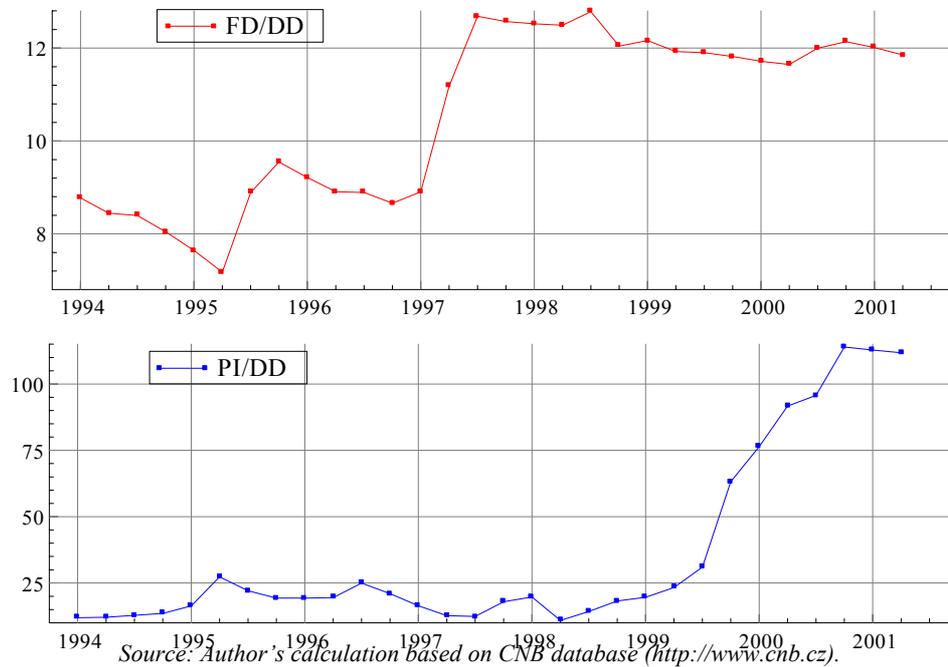


Source: Author's calculation based on CNB database (<http://www.cnb.cz>).

The next modelled variable is the ratio of foreign to domestic currency deposits ( $FD/Mcz$ ); we name this variable the  $FD/DD$  ratio. The modelled variable is similar to those proposed by Feige, Faulent, Šonje and Šošić (2000) in the case of Croatia; and by Mongardini and Mueller (1999) in the case of the Kyrgyz Republic for analogous purposes. We use this ratio to precisely pursue the effect of changing relative prices of assets under consideration on domestic residents' behaviour. We thus differentiate between increases in foreign deposits resulting from an overall increase in wealth and the move from domestic deposits to foreign deposits induced by changes in relative returns. Figure 3 shows a rapid increase in the  $FD/DD$  ratio during the period of currency crisis that seems to be persistent. This may

point to dollarisation of the Czech economy from the store of value perspective.

**Figure 3: FD to DD Ratio (%) and Cumulative PI to DD Ratio (%)**



The last dependent variable, that we attempt to explain, is the ratio of cumulative portfolio investment abroad to domestic deposits. We use this variable to properly evaluate the effect of changing relative prices of foreign assets and deposits in the domestic currency on wealth allocation. Further, we again attempt to eliminate the effect of rising wealth using DD as a denominator. We can see in Figure 3 that domestic agents have only recently extended the use of foreign assets for wealth allocation purposes. However, this extension appears to be highly significant.

### 3.1.2 Explanatory variables

We use the consumer price index (CPI) as an approximation of the variable  $P_c$  in equations (1) to (4). This index should precisely describe consumption basket price development in the Czech Republic and thus correctly deflate nominal variables from the perspective of the domestic agent. Furthermore, we approximate the variable  $P_Y$  in equations (1) to (4)

using domestic absorption (AE), which would measure the amount of transactions in the Czech economy and possibly an accumulation of wealth. We employ this variable, as it is more significant for such purposes according to Sommer (1997) and Melecký (2001). Instead of the return on domestic bonds we use the interest rate on credits, since this seems to be the most significant measure of the opportunity cost of holding money and represents an alternative vehicle for wealth creation. For the purpose of measuring return on foreign money we employ two bilateral exchange rates – CZK/USD and CZK/DEM – since they have experienced a somewhat different historical development<sup>9</sup>. This could result in a rather different relative significance of the two variables. We use current and one-period-lagged values of the exchange rate to approximate exchange rate expectations, since we assume that most agents form their expectations adaptively and the rest base their forecast on the random walk process. This approach is, in our opinion, reasonable since the structure of the economy changes quite considerable during transition. Thus, we do not use purchasing power parity or uncovered interest rate parity to approximate “rational” expectations of changes in the exchange rate. Finally, we consider the return on both USD- and DEM-denominated assets to explicitly consider their relative importance in equations (1) to (4). We calculate this return as the sum of the interest rate and the log of the particular exchange rate, i.e.  $i+e$  (see also Govannini and Turleboom, 1992). Figure 4 describes the development of our core explanatory variables.

Some readers may notice a certain inconsistency between the introduced model and the explanatory variables used. Namely, although the model implies a use of first differences of nominal exchange rates, we use levels of that variable for three particular reasons. First, cointegration techniques comprise or deal with those first differences either implicitly, as in the case of Johansen procedure, or explicitly, as in the case of DOLS. Second, given the I(1) order of integration of nominal exchange rates (see Table 1 below) we would have to find two cointegration vectors when including the change in the exchange rate instead of its levels, as we do. In another words, since the first difference of nominal exchange rate is stationary itself we have to find two cointegration vectors to be able to justify the existence of stationary linear combination of the remaining I(1) variables.

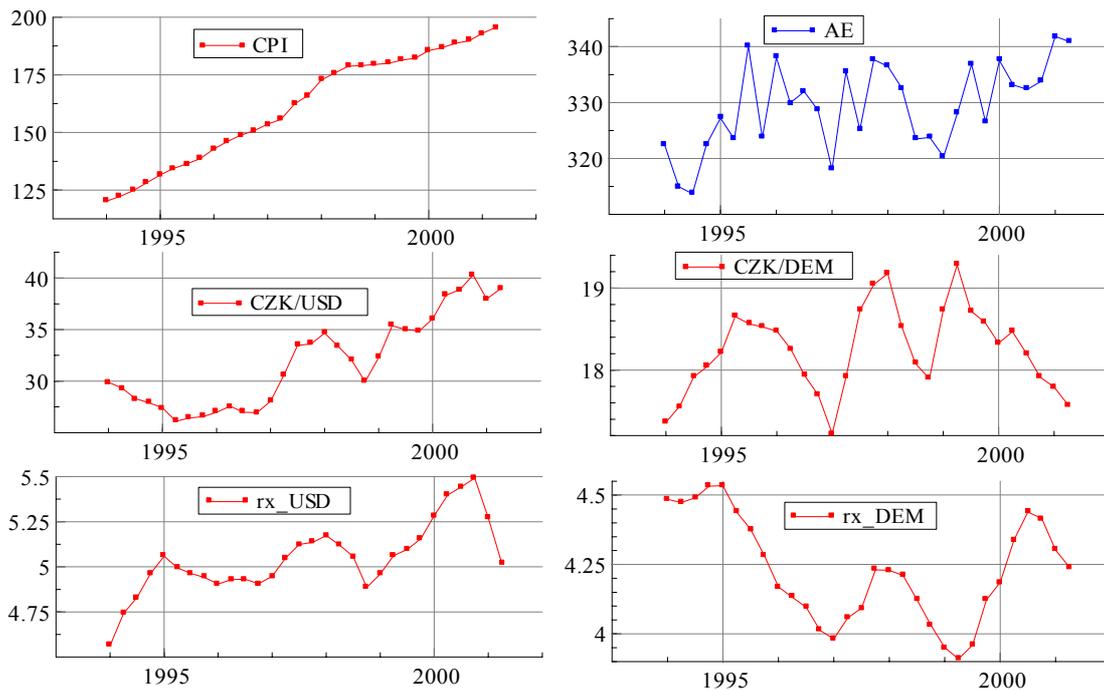
Third, except for these rather technical reasons, there is another one related to the institutional features and historical development of the Czech Republic’s external conditions. Given the identity that express the expected

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<sup>9</sup> We also check for the significance of nominal effective exchange rate (NEER) to possibly reduce the number of explanatory variables (see below).

change in exchange rate as a result of interaction of capital flows and trade balance (see e.g. Goldberg, 2000) we can accept the following assumption in the Czech republic's case. Given the fact that we have interest rate differential that drives the capital (portfolio) flows already incorporated in the model, it remains to consider the effect of overvaluation of the real exchange rate. The factors responsible for the fluctuation in the real exchange rate have been different between the first and second half of our sample period. In the first half the fluctuation and thus overvaluation of the real exchange rate was nearly exclusively determined by movements in the domestic price level, given the fixed exchange rate regime prevailing at that time. In the second half, these fluctuations have been the result of both price level and nominal exchange rate movements. And concerning the very end of our sample, the real exchange rate movement has been driven mainly by the nominal exchange rate as the Czech Republic adopted the convergence criteria for EU accession and the consequent adoption of euro. Since we have the domestic price level already included in our model, inclusion of the nominal exchange rate would complete our set of explanatory variables, given our small sample of observations.

Figure 4: Explanatory Variables



Source: Author's calculation based on CNB database (<http://www.cnb.cz>).

Conventionally, we first explore the stationary properties of analysed time series, as they are expected to be integrated of order I(1). Results of applied ADF- and PP-tests are summarised in Table 1:

**Table 1: Unit Root Tests of Time Series Applied**

Variable	Unit Root Tests		Likely Degree of Integration
	ADF	PP	
m_cz	3.07 (c,t,3)	2.67 (c,t) !!	Rather I(2)
d(m_cz)	1.98 (c,3)	2.18 (c)	
d2(m_cz)	2.56 (2)**	5.45 ***	
fd/dd	1.22 (c,2)	1.96 (c,t) !	I(1)
d(fd/dd)	4.41 (c,t,4)***	3.84 ***	
pi/dd	1.39 (c,t,1)	1.24 (c,t) !	I(1)
d(pi/dd)	3.81 (c,1)***	4.31 ***	
cpi	1.71 (c,3)	2.34 (c) !	I(1) or I(2)
d(cpi)	3.07 (c,t,2)	4.07 (c,t)**	
d2(cpi)	3.27 (4)***	9.7 *** !	
ae	3.53 (c,t,3)*	4.63 (c,t) ***	I(0) or I(1)
d(ae)	3.62 (c,4)**	10.60 ***	
lr	2.40 (c,t,3)	1.39 (c,t) !!	I(1) or I(2)
d(lr)	1.55 (c,2)	3.19 (c)**	
d2(lr)	5.89 (1)***	7.48 *** !	
czk/usd	3.34 (c,t,1)*	2.69 (c,t) !	I(1)
d(czk/usd)	3.63 (c,1)**	3.69 ***	
czk/dem	3.74 (c,1)***	2.56 (c) !	I(0) or I(1)
d(czk/dem)	3.59 (3)***	3.53 ***	
rx_usd	4.02 (c,t,3)**	2.71 (c)* !	I(0) or I(1)
d(rx_usd)	3.07 (3)***	2.49 **	
rx_dem	2.79 (c,4)*	1.88 (c) !!	Rather I(1)
d(rx_dem)	4.99 (c,t,4)***	2.68 ***	

*\*, \*\* and \*\*\* indicate rejection of the null hypothesis of unit root existence. Numbers in brackets indicate the number of lags included in the ADF test and letters c and t indicate that constant and trend are involved in the particular test. ! indicates violation of the assumption of no serial correlation of residuals.*

Since the dependent variables are integrated of order I(1), as are most of the explanatory variables,<sup>10</sup> we need to use cointegration analysis to

<sup>10</sup> Although there are some indications that certain variables could have been integrated of order I(2), we do not consider this higher degree, since for the case of our small finite sample of observations applied unit-root tests do not have much power and size. Therefore, the higher- order effectiveness of these tests is somewhat problematic.

prevent spurious regression phenomenon. For this purpose we use the Johansen technique (see Johansen and Juselius, 1990); the ARDL procedure developed by Pesaran (see Pesaran, Shin and Smith, 1996); the dynamic OLS estimation, DOLS (see e.g. Stock and Watson, 1993); and the ADL technique (see e.g. Arlt, Radkovský, Sojka and Stiller, 2001).

### ***3.2 Empirical Analysis of Currency Substitution in the Czech Republic from the Demand-for Money Perspective***

We analyse the potential presence of currency substitution in the Czech Republic using the demand for money approach. More specifically, we use equation (1), which describes demand for deposits denominated in Czech korunas. If currency substitution is one of the important techniques of portfolio allocation, then the opportunity costs of holding Czech deposits with respect to deposits in foreign currency and/or foreign assets are to be significant determinants of the demand for Czech deposits.

The procedure for the empirical analysis of currency substitution in the Czech Republic is divided into three stages.<sup>11</sup> First, we explore the existence of currency substitution concerning the effect of exchange rates. In this stage the particular currencies are assumed to compete as a store of value in the domestic banking system. Second, we examine the potential existence of the extensive part of nominal exchange rate elasticity, since the first case considers only the intensive part (see below). Finally, we extend this analysis to include the determinants relating to capital mobility.

Analysing the demand for deposits denominated in Czech korunas we estimate equation (5) of the following form:

$$m_{cz} = \beta_0 + \beta_1 cpi + \beta_2 ae + \beta_3 lr + \beta_4 e^{usd} + \beta_5 e^{dem} + \beta_6 e^{neer} + \xi \quad (5)$$

where  $m_{cz}$  is the M2 monetary aggregate adjusted for deposits in foreign currencies (DFC), i.e. (M2-DFC);  $cpi$  is the consumer price index, measuring price level development;  $ae$  is domestic absorption (GDP-NX), measuring the amount of transactions in the Czech economy;  $lr$  is the lending interest rate, representing domestic interest rates on alternative assets; and  $e$  is, respectively, the CZK/USD and CZK/DEM nominal exchange rates and the nominal effective exchange rate. We thus explicitly test the significance of the alternative approximation of the Czech koruna performance relative to foreign currencies, i.e. the opportunity cost of holding Czech currency.

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<sup>11</sup> We choose this approach since we want to consider a wide range of possible foreign variables that might be important determinants of currency substitution and we have only a small number of observations.

In the second stage, we consider the possible extensive part of the exchange rate's elasticity, including in the estimated equation two so-called "ratchet" variables that consist of peak values of the CZK/USD and CZK/DEM exchange rates. Following Mulligan and Sala-I-Martin (1996), we assume that when the actual value of the exchange rate hits the peak value during the analysed period, additional agents always decide to adopt financial technology to help them convert the domestic currency into foreign currency. They do so since they are facing the very level of opportunity costs that they consider too high to accept, given current wealth allocation, and that makes them react in this respect (see also Feige, Fautent, Šonje and Šošić, 2000 and Mongardini and Mueller, 1999).

We proceed to the third stage by adding variables that should represent the impact of capital mobility, i.e. the return on foreign assets. We consider returns on U.S. Treasury Bills and German Treasury Bills expressed in Czech korunas, as perceived from the position of Czech residents. The final estimation results using the Johansen's procedure are as follows<sup>12</sup>:

$$m_{cz} = 1.08cpi + 2.52ae - 0.012lr - 0.34e_{t-1}^{usd} - 0.62e_{t-1}^{dem} \quad (6)$$

(0.06)\*\*\* (0.24)\*\*\* (0.002)\*\*\* (0.07)\*\*\* (0.19)\*\*

Summarising our three-stage estimation, we can conclude that the estimating methods applied indicate the presence of currency substitution in the Czech Republic. The important variables accounting for this phenomenon are lagged value of the CZK/USD exchange rate and the lagged value of the CZK/DEM exchange rate. These two bilateral exchange rates seem to be superior to the nominal effective exchange rate. This conclusion may reflect the fact that in certain periods the values of CZK/USD and CZK/DEM evolve in opposite directions, making the NEER less significant (CZK/USD and CZK/DEM are the main components of the NEER).

We find no support for the existence of an extensive part of exchange rate elasticity when using either the Johansen or the other estimation techniques. We can thus conclude that currency substitution performs only through the "intensive" part of exchange rate elasticity.

An inspection of the estimation results gives no support for the existence of significant effect of returns on foreign assets, i.e. capital mobility, on the demand for Czech korunas from the perspective of domestic residents. We can thus conclude that substitution of currency within the domestic banking system (its intensive part) is the only relevant pattern for

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<sup>12</sup> See table A1 in the appendix for the final estimation results using ARDL, DOLS and ADL.

Czech resident behaviour. Furthermore, in this respect money holdings in Czech currency were substituted by holdings denominated in both Deutsche Marks and U.S. dollars.

Finally, all the domestic determinants are highly significant. The coefficient on the *cpi* variable supports linear homogeneity of deposits in Czech Currency with respect to the price level. The high coefficient on the *ae* variable then points to the wealth accumulation effect. In another words, deposits are perceived to be a luxury good, i.e. as agents reach higher income levels they start to save by holding more of their funds as deposits. In terms of the poorest part of population, it implies that after attaining a certain level of income the impecunious agents not only consume but also start to save.

### ***3.3 Empirical Analysis of Currency Substitution in the Czech Republic from the Perspective of Demand for Foreign Deposits***

In this part, by estimating equation (2) we inspect the presence of currency substitution estimating the domestic demand for foreign deposits. We do not consider the pure stock of foreign deposits in the domestic banking system but rather model the ratio of such stock to domestic deposits.

Using the same set of explanatory variables as in the previous case, we estimate equation (7) of the following form:

$$fd/dd = \beta_1 cpi + \beta_2 ae + \beta_3 lr + \beta_4 e^{usd} + \beta_5 e^{dem} + \beta_6 rx^{usd} + \beta_7 rx^{dem} + \xi \quad (7)$$

where *fd/dd* is the ratio of foreign currency to domestic currency deposit stocks and the explanatory variables are the same as for the money demand. The results of our estimates of equation (7) using the Johansen technique are as follows:

$$fd/dd = 1.03cpi + 0.04lr + 0.74e^{usd} \quad (8)$$

(0.19)\*\*\* (0.01)\*\*\* (0.22)\*\*\*

Given our results, we conclude that agents are concerned with the real value of the *fd/dd* ratio. Thus we can justifiably assume price homogeneity in the case of *fd/dd* ratio demand. The overall insignificance of the scale variable most probably suggests that foreign deposits are held solely for store-of-value purposes. The estimates of the *lr* effect on the *fd/dd* ratio seem to be robust<sup>13</sup> and significant, though it has the opposite sign than was originally expected.

To explain the *lr* effect we recall that *lr* stands for the interest rate on credits. In the case of the Czech Republic this means the cost of financing,

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<sup>13</sup> See table A2 in the Appendix.

assuming that financial intermediation goes mostly through the banking system. So if  $lr$  increases, agents probably look for an alternative source of financing. In the absence of effective domestic capital markets, this involves borrowing on foreign or international financial markets, resulting in an increase in foreign deposits in the domestic country when the funds are raised. The mechanism described here is relevant for Czech corporations, as these made intensive use of international sources of financing between 1990 and 1997.

When we move to the estimates of the returns on foreign currency, there is general support for the existence of a significant effect on the  $fd/dd$  ratio only from the CZK/USD exchange rate. The higher significance of the CZK/USD exchange rate probably results from the higher volatility of this rate, which has made domestic agents more aware of the opportunity cost of holding domestic currency.

From the perspective of capital mobility or (more precisely, in our case) of portfolio investment abroad, there is generally no support for returns on foreign assets having any effects on foreign currency deposits in the Czech Republic. This inference may result from some capital movement constraints at the beginning of our sample and/or lower incentives from domestic residents to invest abroad caused by a lack of information concerning the international market and only slow adoption of the technology necessary for international investment.<sup>14</sup>

Finally, we also include some additional ratchet variables to inspect various potential aspects of currency substitution. First, we employ the maximum level of the  $fd/dd$  ratio in the history of the estimated sample to inspect the possible dollarisation of the Czech economy. This variable is significant only in the equation estimated by ARDL, leading us to conclude that it is generally not important. Moreover, we again incorporate the historical peak values of the CZK/USD exchange rate to examine the possible presence of an extensive part of its elasticity. Again there is no support for this variable across the estimation techniques used. In the last step, we include historical peak values of inflation to inspect the effect of the creditworthiness of the Czech currency relative to foreign currency. Again, we find no support for such an effect on the  $fd/dd$  ratio.

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<sup>14</sup> Nevertheless, we may still see this approach as a rather indirect method of estimating the demand for foreign assets. More precise insights concerning the effectiveness of the demand for foreign assets would provide an estimation of equation (4) in the portfolio model.

### 3.4 Empirical Analysis of Currency Substitution in the Czech Republic from the Perspective of Demand for Foreign Assets

This part is concerned with an examination of portfolio capital movement and its determinants. As a framework, we use equation (4) in the portfolio model presented above. We approximate domestic demand for foreign bonds using cumulative gross outflow of portfolio investment. Again, instead of using the pure cumulative value of domestic portfolio investment abroad, we model its ratio to deposits in the domestic currency.

We apply various cointegration techniques to equation (9) in log-linear form:

$$pi/dd = \beta_1 cpi + \beta_2 ae + \beta_3 lr + \beta_4 e^{usd} + \beta_5 e^{dem} + \beta_6 rx^{usd} + \beta_7 rx^{dem} + \xi \quad (9)$$

where  $pi/dd$  is the ratio of cumulative domestic portfolio investment abroad to deposits in the domestic currency and the set of explanatory variables is defined similarly as in the two previous cases. The estimation results using the Johansen technique are presented below:

$$pi/dd = 1.14rx_{t-1}^{usd} + 0.71rx^{dem} - 0.28lr - 1.17e^{usd} \quad (10)$$

(0.38)\*\*      (0.30)\*\*      (0.04)\*\*\*      (0.70)\*

The insignificance of coefficients on  $cpi$  and  $ae$  show that both the real value of foreign assets holdings and the alternative use of such funds for transaction purposes are not important in the determination of portfolio investment abroad. Such a conclusion may reflect the possible lower liquidity of such assets stemming from exchange rate risks and transaction cost. So we may suspect that once Czech residents invest their funds in foreign assets for store-of-value purposes, such funds are no longer used for prospective direct extension of medium-of-exchange stock. We find a highly significant, negative coefficient on the  $lr$  variable entering the decision-making process related to the demand for foreign assets.

Moreover, we can infer that there is significant influence of the return on foreign deposits held in the domestic banking system on the holdings of foreign assets, which would offer domestic agents higher liquidity and lower risks, assuming they are better informed about the domestic macroeconomic situation. However, this effect is not significant at the 5% level. Finally, the significance of the returns on foreign assets is what we are most interested in regarding the determination of capital mobility. According to the estimation techniques applied, the approximations of the returns on both USD- and DEM-denominated assets are highly significant. The effect of the return on USD-denominated assets seems to have its peak at around one lag and that of DEM-denominated assets at around the current value. In the Czech Republic's case, domestic agents perceive investment abroad as one possible

alternative of wealth allocation. We suppose that this pattern will promote itself even more in the close future.

### ***3.5 Summary of the Results and their Implications***

We can conclude from our analysis that both currency substitution (i.e. substitution of deposits in the domestic currency by deposits in foreign currency) and capital mobility effects (i.e. altering of deposits in the domestic banking system by holding foreign assets) are elements of Czech agents' behaviour concerning wealth allocation. When we consider the existence of currency substitution in the broad sense relating to the Czech Republic, we have to take into account several implications suggested by theory and/or experience from other transitional countries.

It is widely believed that allowing a foreign currency to coexist with the domestic one provides an opportunity for greater domestic intermediation, promotes financial sophistication by increasing the number of available assets, and increases credibility by raising the cost of poor monetary discipline. Moreover, the rapid development of foreign-currency denominated operations in the domestic banking system affects the stability of monetary aggregates, the dynamics of exchange rates and the government's revenues from seigniorage. Specifically, the higher the money demand elasticity of substitution between moneys, the larger is the shift from foreign to domestic currency as a result of a fall in expected relative inflation and, thus, the greater is the fall in the nominal exchange rate. Currency substitution also reduces monetary independence, which may then endanger the ability of central bankers to implement stabilisation programmes.

In other words, monetary and fiscal policies, the choice of exchange rate regime and interventions in foreign exchange markets are often undertaken in economies that experience "unofficial" or "*de facto*" dollarisation, i.e. where individuals and firms choose to use a foreign currency as a substitute for some of the monetary services of the domestic currency. Feige, Faulent, Šonje and Šošić (2000) suggest that under such circumstances the effective money supply may be much larger than the domestic money supply and may be subject to endogenous behavioural responses reflecting currency substitution on the part of the public. Similarly, the greater the extent and variability of dollarisation, the weaker is the central bank's knowledge of and control over the effective money supply. Such scenarios are, however, of lesser importance in the case of the Czech Republic. On the other hand, unofficial dollarisation will tend to dampen government efforts to employ inflationary finance to impose implicit taxes on domestic monetary assets. And again somewhat similarly, growing unofficial dollarisation reduces the ability of the monetary authority to earn seigniorage

from its own currency issue. Unofficial dollarisation also reflects citizens' perceptions of the stability of the domestic monetary regime, the credibility of monetary policies and the perceived stability of the domestic banking system.

#### **4. Conclusion**

In this paper we have discussed the possible presence of currency substitution and its resulting potential implications in a transitional country. First, we have analysed the performance of currency substitution in small open transition economies, stating the initial conditions and the process of transformation as similar for the countries considered. The first decade of the transformation process has been associated with simultaneous periods of internal and external liberalisation and alignment with developed countries. We have concluded that the launch of reforms was coupled with greater economic uncertainty, resulting in high and volatile exchange rates and inflation, large budget and current account deficits and inducing the use of foreign money for monetary purposes. In this context we have proposed several explanations concerning the factors determining currency substitution in the Czech Republic's case. These are associated with a relative lack of restrictions on capital flow, early adoption of necessary financial techniques and a sharp increase in openness. Moreover, we have discussed perspectives of substituting and substituted currencies in the global and local context. We propose four reasons for currency substitution: macroeconomic instability, the existence of a large illegal or underground economy, the former occurrence of financial crisis, and a lack of higher-denomination bank notes issued by the central bank. We have shown that the Czech koruna is not only a substituted currency, but has also for several years been the substituting currency for some post-socialist countries. A set of arguments for (and against) unilateral and bilateral euroisation has also been included here.

The last part has been dedicated to an empirical analysis of the currency substitution phenomenon in the case of the Czech Republic during the period 1994–2001. We have based our analysis on a multi-perspective portfolio approach. However, we have first modified, or rather reduced, the system, excluding the equation describing the demand for domestic bonds or alternative assets since the capital market is somewhat underdeveloped or, in the case of bonds, generally inaccessible in the Czech Republic. We have thus been left with three equations to describe the demand for domestic and foreign currency and for foreign assets. In this respect we have modelled the demand for domestic currency in circulation plus deposits denominated in domestic currency; the ratio of deposits denominated in foreign currency in the domestic banking system to deposits denominated in the domestic

currency; and the ratio of domestic portfolio investment abroad to domestic currency deposits. We have used a set of explanatory variables which approximate those suggested by theory, namely: the consumer price index, domestic absorption, the CZK/USD and CZK/DEM exchange rates, and the returns on U.S. and German Treasury Bills expressed in Czech currency. We have detected the presence of currency substitution in the domestic banking system and capital mobility. Exploring the full implication of these for the stability of monetary aggregates and demand for money, the revenues from seigniorage and the changing dynamics of exchange rates is left for further research.

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## Appendix

Table A1: Final Estimates of the Demand for Deposits Denominated in Czech Currency

Variable	Estimation Methods			
	JOH(1)	ARDL(1,0,1,0)	DOLS	ADL
$m_{cz}(-1)$	-----	-----	-----	0.80 (0.05)***
cpi	1.08 (0.058)***	2.19 (0.56)***	2.11 (0.11)***	1.30 (0.02)***
ae	2.52 (0.24)***	1.55 (0.60)***	0	0
$ae(-1)$	-----	-----	-----	0.35 (0.03)***
lr	-0.012 (0.002)**	-0.034 (0.008)***	-0.023 (0.003)***	-0.02 (0.001)***
czk/usd	0	-0.80 (0.24)***	-0.44 (0.08)***	0
$czk/usd(-1)$	-0.34 (0.07)***	0	-----	-0.40 (0.03)**
czk/dem	0	0	-0.71 (0.17)***	0
$czk/dem(-1)$	-0.62 (0.19)**	-1.10 (0.65)**	-----	0
neer	0	-1.20 (0.56)**	0	0
rx_usd	0	0	0	0
$rx\_usd(-1)$	0	0	-----	0
rx_dem	0	0	-0.15 (0.04)***	0
$rx\_dem(-1)$	0	0	-----	0
constant	unrestricted	unrestricted	-----	0

\*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% probability levels respectively. 0 denotes an acceptance of zero-restriction on the particular coefficient and ----- indicates that the given variable was not included in the estimated equation. In the case of multi-equation estimation methods (JOH, ARDL) the variables  $m_{cz}$ , *cpi* and *ae* were assumed to be endogenous.

The only dissimilarities compared to the Johansen estimates reported in the main text are the significance of nominal effective exchange rate in the

ARDL estimates and the significance of CZK/DEM exchange rate and return on German assets in the DOLS estimates. Nevertheless, the results presented in the main text are consistent with the results from the other estimation methods.

*Table A2: Estimates of Equation (7) Using Various Techniques*

Variable	Estimation methods			
	JOH(1)	ARDL	DOLS	ADL
fd/dd(-1)	-----	0	-----	0.31 (0.15)**
cpi	1.03 (0.19)***	1.13 (0.14)***	1.48 (0.13)***	1.03 (0.19)***
ae	0	0	-2.05 (0.41)***	0
lr	0.04 (0.008)***	0.04 (0.006)***	0	0.04 (0.007)***
e_usd	0.74 (0.22)***	0.76 (0.14)***	0	0.74 (0.18)**
e_dem	0	0	2.24 (0.83)**	0
rx_usd(-1)	0	-0.18 (0.074)**	0	0
rx_dem	0	0	0	0
constant	Unrestricted	-5.56 (0.52)***	0	-3.01 (0.73)***

\*, \*\* and \*\*\* indicate significance at 10%, 5% and 1% probability levels respectively. 0 denotes an acceptance of zero-restriction on the particular coefficient and ----- indicates that the given variable was not included in the estimated equation. In the case of multi-equation estimation methods (JOH, ARDL) only the *fd/dd* variable is assumed to be endogenous.

We can account for the significant negative coefficient on the *ae* variable in the DOLS estimated equation with following explanation. The increase in transaction amounts in the domestic economy is an impulse for the transfer of foreign deposits into domestic currency sight deposits for transaction (medium-of-exchange) purposes, although this hypothesis has no support from the other estimates.

Although the CZK/DEM exchange rate estimation seems to approximate the own rate of return on FD in the case of the DOLS estimation, this variable is not significant when the other estimation methods are used. We can however conclude that returns on foreign currency significantly affect the demand of domestic agents for foreign-currency-denominated deposits.

Table A3: Estimates of Equation (9) Using Various Techniques

Variable	Estimation Methods			
	JOH(1)	ARDL	DOLS	ADL
pi/dd	-----	0.40 (0.12)***	-----	0.40 (0.12)***
cpi	0	0	2.36 (0.77)***	0
ae	0	0	0	0
lr	-0.28 (0.04)***	-0.27 (0.03)***	-0.41 (0.06)***	-0.27 (0.03)***
e_usd	-1.17 (0.70)*	-0.90 (0.53)*	-2.35 (1.26)*	-0.90 (0.33)*
e_dem	0	0	0	0
rx_usd(-1)	1.14 (0.38)**	1.21 (0.34)***	-----	1.20 (0.26)***
rx_dem	0.71 (0.30)**	0.78 (0.27)***	0.77 (0.28)***	0.78 (0.17)***
constant	Unrestricted	0	0	0

\*, \*\* and \*\*\* indicate significance at 10%, 5% and 1% probability levels respectively. 0 denotes an acceptance of zero-restriction on the particular coefficient and ----- indicates that the given variable was not included in the estimated equation. In the case of multi-equation estimation methods (JOH, ARDL) only the *pi/dd* variable is assumed to be endogenous.

The results in Table A3 supports findings presented in the main text. The only additional finding is the significant positive coefficient on the *ae* variable in the DOLS estimated equation. As expected, this variable approximates the positive effect of increasing wealth on the demand for foreign assets.

# FOREIGN EXCHANGE INTERVENTIONS IN THE CZECH REPUBLIC: DID THEY MATTER?

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## Abstract

*This paper studies the impact of daily official foreign exchange interventions on the Czech koruna's exchange rate vis-à-vis the euro (German mark prior to 1999) from 1997 to 2002. Using both the event study methodology extended with official interest rate moves and a variety of GARCH models reveal that central bank interventions, especially koruna purchases seem to have been relatively ineffective from 1997 to mid-1998 compared to the size of the interventions. At the same time, from mid-1998 to 2002, koruna sales turn out to be effective in smoothing the path of the exchange rate up to 60 days. Nevertheless, the event study approach indicates that the success of FX interventions may be intimately related to the coordination of intervention and interest rate policies.*

**Keywords:** *central bank intervention, foreign exchange intervention, interest rate policy, event study, GARCH, transition economies*

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# REAL CONVERGENCE CRITERIA AND THE BALASSA-SAMUELSON EFFECT IN ROMANIA

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## **Abstract**

*The paper analyzes the degree of meeting the convergence criteria for adopting the euro in Central and Eastern European countries, spotlighting the particular aspects that characterize this process in Romania. A special focus is placed on the importance of not limiting the convergence process to the nominal criteria, as stated in the Maastricht Treaty, but also taking into account the real convergence degree with the euro zone. We propose a set of indicators to be monitored for assessing the level of real convergence, such as: GDP per capita; the structure of the economy; the degree of openness; the weight of bilateral trade with EU Member States in total trade and calculate their levels in Romania in the period 2000-2004. An important part of the paper is dedicated to assessing the relevance of the Balassa-Samuelson effect in Romania, as part of the catching-up process in order to ensure real convergence with the euro area. In this context, we research whether the exchange rate appreciation is only explained via the Balassa-Samuelson effect or underpinned by several other factors.*

**Keywords:** *real convergence criteria; Romania's integration in the EMU; Balassa-Samuelson effect; euro area; optimum currency area.*

## 1. Introduction

The problematic experience of Greece, Spain and Portugal in the process of ensuring economic convergence with the euro area brought into discussion the importance of completing the nominal convergence criteria with the real convergence ones, whose meeting must precede or at least accompany the meeting of the Maastricht criteria. By real convergence we understand the catching up of the gap between real GDP per capita in Romania and in the EU, as well as the need for implementing structural reforms and finalize the transition towards a functional market economy. Given the fact that economic literature is not overwhelming in providing a set of real convergence indicators, the present paper aims at providing such a set, which is quantified and interpreted for Romania.

For the assessment of the readiness of Central and Eastern European countries to join the euro area, Maastricht criteria can induce misunderstandings, given the conceptual differences, the interpretations and methodology that are used. Adopting the euro must be prudently put in practice and a forced meeting of the Maastricht criteria could generate substantial costs for the real economy of a candidate country to the EMU. The optimum currency area theory must be also taken into account, as well as the warnings addressed by both the European Commission and the European Central Bank on the risks incurred by a country who prematurely adopts the euro, while its economy is not enough convergent with the Western European structures.

According to the optimum currency area theory, states within a monetary union can be in the win-win position after abandoning their national monetary policies and adopting a common currency only when their economic structures have a high degree of real convergence (ensured via flexible prices and wages; integrated labor markets; integrated financial markets; high degree of openness; diversification of production and consumption; political will for integration). Central and Eastern European countries, Romania included, are very sensitive to the occurrence of asymmetric shocks; therefore the incapacity to use their national monetary policies as a stabilizing instrument could cause serious problems. In such a context, it is very important to *ex ante* assess both nominal and real convergence criteria.

According to the real convergence criteria, the successful participation of Romania to the euro area depends upon the capacity to reduce the occurrence of asymmetric shocks and to consolidate the efficiency of the adjustment mechanisms in the absence of independent monetary policy. Four elements are particularly taken into account:

[1] synchronizing business cycles from Romania and the euro zone;

[2] fiscal policy must acquire a stronger role in stabilizing the economy both before and after adopting the euro. The main objective is to ensure a “budgetary field of maneuver” in the event of asymmetric shocks. Moreover, fiscal policy will play a very important part in case of pressure on the current account as a result of constant deterioration in the savings/investment ratio for the private sector;

[3] flexibility of prices and wages should be ensured. In what the flexibility of wages is concerned, the gap to be caught up by Romania is not so large, whereas the situation regarding prices flexibility is still critical. In this respect, competition on the internal market should be consolidated, together with finalizing the privatization process, obeying competition rules, giving up administrated prices, decreasing the regulation burden on the business sector and providing constant support for entrepreneurship;

[4] a certain level of competitiveness must be ensured and maintained. After joining the euro area, Romania could suffer from losses of competitiveness as a consequence of pressures exerted over wages and prices, on the background of increased domestic demand, encouraged by low interest rates.

Taking into account the obvious importance of measuring and monitoring the degree of real convergence between the Romanian economy and that of the euro area, we have deemed useful to draw a grid of real convergence criteria for Romania, based on the optimum currency area theory, to be analyzed together with Maastricht nominal convergence criteria grid.

## **2. Real convergence criteria grid**

The following criteria have been included: real GDP per capita; the degree of labor market integration and labor mobility; the degree of openness of the economy; production diversification; trade intensity and business cycle correlation.

### ***2.1 GDP per capita***

GDP per capita can provide a meaningful image on real convergence among countries, be they member states or candidate countries and can be expressed using nominal exchange rates or the purchasing power parity.

Table 1 and Graph 1 show the high degree of divergence between the Romanian economy and that of the EU. They also point to the fact that the group formed by Romania, Bulgaria and Turkey is characterized by a much

lower level of GDP (both at nominal exchange rate and purchasing power parity – PPP) as compared to the other European countries.

**Table 1 GDP per capita (euro)**

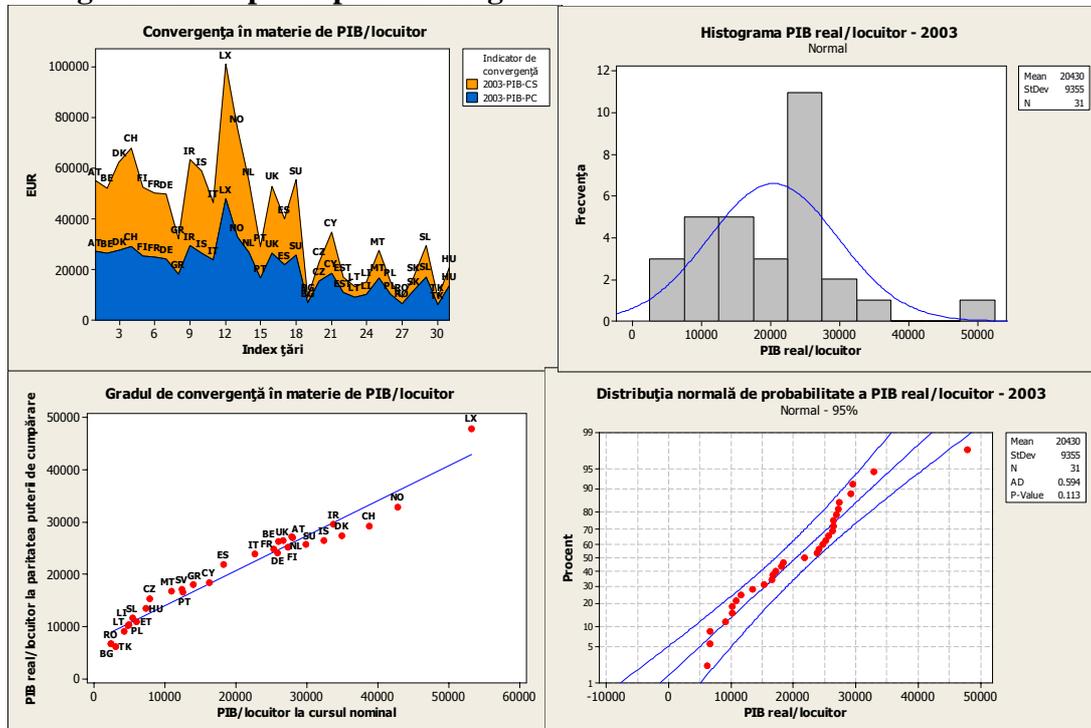
<i>Country</i>	<i>GDP per capita at nominal exchange rates</i>			<i>GDP per capita at PPP</i>		
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
<i>Austria</i>	26460	27444	27926	26140	27072	27272
<i>Belgium</i>	24690	25278	25983	24970	25750	26277
<i>Denmark</i>	33200	34063	34913	26930	27019	27394
<i>Finland</i>	26070	26880	27339	24270	25010	25216
<i>France</i>	24220	24993	25305	24470	24914	24764
<i>Germany</i>	25180	25549	25790	23640	23973	24122
<i>Greece</i>	11980	12923	13890	15680	17149	18044
<i>Ireland</i>	29780	32946	33773	27480	29573	29554
<i>Island</i>	29900	31398	32380	26750	26401	26499
<i>Italy</i>	21060	22052	22584	23380	24043	23849
<i>Luxemburg</i>	49800	51133	53235	45360	46927	47909
<i>Netherlands</i>	26750	27569	28000	26450	26927	26987
<i>Portugal</i>	11930	12403	12450	16480	16945	16602
<i>UK</i>	27080	28045	26597	24530	25998	26424
<i>Spain</i>	16219	17230	18250	19670	20862	21820
<i>Sweden</i>	27530	28778	29830	24790	25319	25706
<i>Bulgaria</i>	1930	2108	2257	6080	6353	6623
<i>Czech Republic</i>	6670	7684	7851	14610	14916	15338
<i>Cyprus</i>	14550	15596	16219	18290	18422	18443
<i>Estonia</i>	4590	5488	5931	9020	10121	10868
<i>Latvia</i>	3650	4187	4244	7790	8592	9144
<i>Lithuania</i>	3810	4303	4711	8690	9352	10215
<i>Malta</i>	11060	10914	10883	16219	16381	16767
<i>Poland</i>	5360	5297	4847	9670	10067	10255
<i>Romania</i>	2002	2224	2332	5700	6311	6594
<i>Slovakia</i>	4320	4784	5381	10430	11336	11675
<i>Slovenia</i>	10920	11788	12313	15840	16607	17136
<i>Turkey</i>	2360	2768	2999	5570	5860	6178
<i>Hungary</i>	5680	6782	7227	12020	12919	13500

Source: [www.insse.ro](http://www.insse.ro)

Scenarios regarding the catching up of this gap are not very optimistic. Supposing a long term differential in GDP growth of about 4%,

the gap might be caught up in about 60 years, without taking into account the appreciation of the national currency in real terms. Forcing economic growth to higher rhythms, for example 8% per annum, would overheat the economy; feed inflation, the current account deficit or a combination of the two.

**Figure 1 GDP per capita convergence**



## 2.2 Labor market integration and labor force mobility

Mundell, Eichengreen, Bentolilla, Thomas, Braunerhjelm, Faini, Norman, Ruane and Seabright, Fatas, Blanchard and Katz point to the fact that production factor mobility is a strategic attribute of an optimum currency area and an adequate criterion for assessing real convergence. Once this criterion is met and asymmetric shocks are met, no adjusting is needed as labor force mobility can act as an automatic stabilizer.

It is likely that EU enlargements would open the perspective of free labor force movements within Europe and further on contribute to an increase in the degree of economic convergence of European economies. As for Romania, we have considered useful to assess unemployment rate per region according to the following judgment pattern: when there is no homogeneity for unemployment between the Romanian regions and taking into account the

fact that distances are small and there are no legislative, language or cultural barriers, it is less probable that labor mobility towards the EU would increase in future.

Table 2 presents unemployment rates for the Romanian regions and Bucharest in december 2003. Statistics show that there is a low propensity for labor force mobility in the North-East, South-East, South and South-West regions, as compared to the Western and North-Western ones.

**Table 2 Unemployment rates in the Romanian regions and Bucharest, 2003**

Region	Unemployment rate (%)
North-East	9,0
South-East	8,1
South	8,3
South-West	9,1
West	7,0
North-West	5,4
Bucharest	2,8

*Source: Annual Statistics of Romania, 2004.*

### **2.3 Degree of openness of the economy**

*Beck, Weber and McKinnon* show that in an open economy, the exchange rate can be easily fixed and the country can become a member of the monetary union, with no important costs associated. We have considered it relevant to measure the degree of openness of the Romanian economy by using as a proxy the degree of trade integration (the ratio of cumulated exports and imports in total GDP).

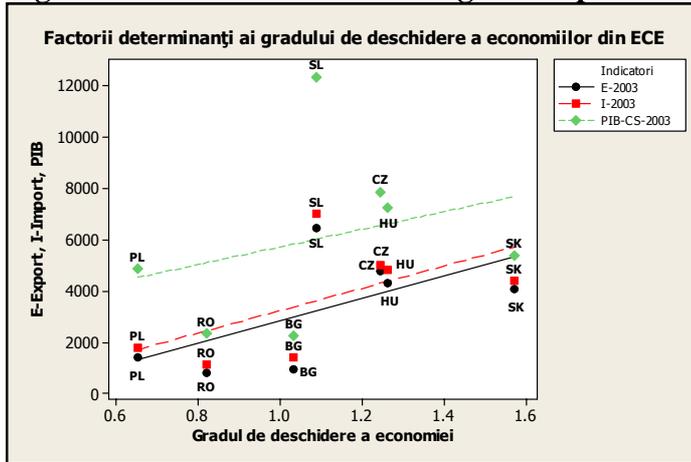
Table 3 and Figure 2 show an average degree of openness for Romania, much lower than for the Czech Republic, Slovakia and Hungary, but higher than that of Poland.

**Table 3 Degree of openness for Central and Eastern European Economies**

	2000	2001	2002	2003
Bulgaria	116,8	118,7	112,9	116,8
Czech Republic	143,0	144,2	132,7	134,4
Poland	63,1	59,8	63,3	72,6
Romania	70,6	74,5	76,5	80,4
Slovakia	146,0	156,5	152,7	157,8
Slovenia	116,6	116,5	114,2	114,6
Hungary	153,6	150,2	131,1	134,6

*Source: central banks and national institutes of statistics*

**Figure 2 Determinants for the degree of openness**



#### 2.4 Degree of production diversification

*Bini-Smaghi, Vori and Krugman* show that countries with diversified structure of production should try to take benefit of the advantages generated by a fixed exchange rate given the fact that demand fluctuations and supply shocks would cancel one another at microeconomic level. A well diversified structure of production and exports can protect the economy from the effects of asymmetric shocks or at least disperse these effects.

Within the sectoral structure of GDP in Romania, agriculture has the highest weight, a much too high one, comparable with the one in Bulgaria, as can be noticed in Table 4.

**Table 4 Sectoral structure for GDP**

	Agriculture					Industry					Services				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
<b>BG</b>	13,9	13,4	12,5	11,5	13,0	24,5	24,1	23,4	30,1	21,0	56,9	57,9	59,7	58,4	60,0
<b>CZ</b>	4,3	4,3	3,7	3,1	3,4	32,3	32,7	31,9	35,5	39,3	56,3	56,2	57,9	61,4	57,3
<b>PL</b>	3,6	3,8	3,1	3,0	2,9	25,7	24,1	23,8	25,7	31,3	62,6	65,0	66,5	65,0	65,9
<b>RO</b>	11,1	13,3	11,3	11,7	13,0	27,3	27,7	28,4	28,4	27,0	46,3	44,5	45,1	43,7	44,1
<b>SK</b>	4,7	4,5	4,5	4,0	3,5	27,6	26,7	26,4	28,3	30,1	62,4	63,8	63,6	64,2	66,4
<b>SI</b>	3,4	3,3	3,1	3,0	3,0	30,0	30,3	30,4	35,9	36,0	60,4	60,7	63,8	60,2	60,0
<b>HU</b>	4,3	4,3	4,0	3,3	4,1	27,8	26,2	29,0	30,6	30,6	62,7	64,4	64,0	66,1	65,3

*Source: national institutes of statistics, European Commission*

**Table 5 Value added in agriculture, industry and services in 2003**

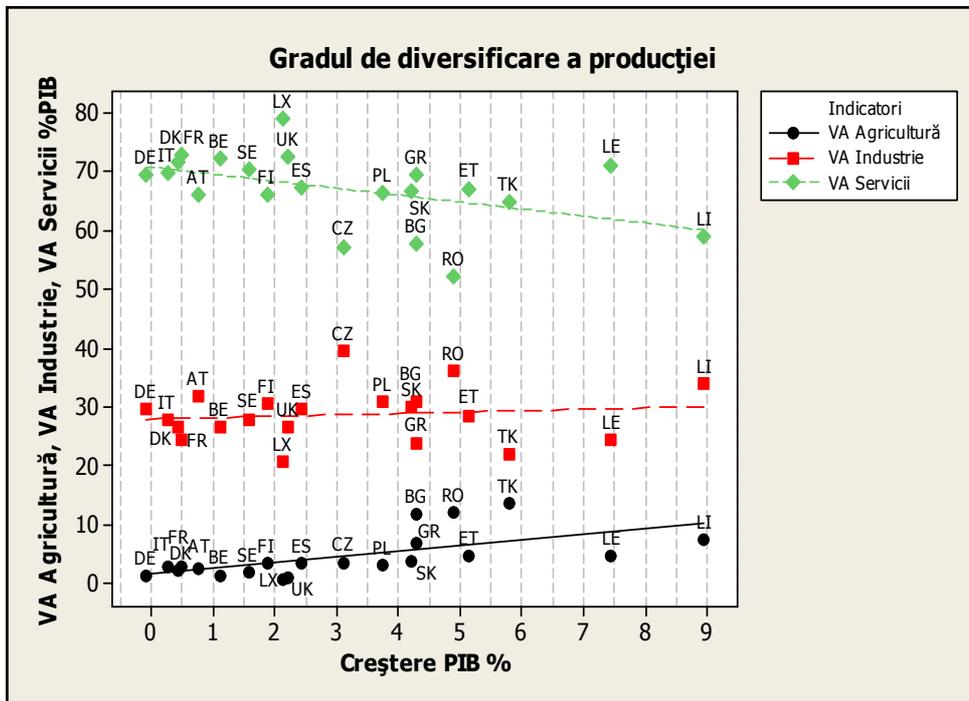
	<b>VA in agriculture (% GDP)</b>	<b>VA in industry (% GDP)</b>	<b>VA in services (% GDP)</b>	<b>GDP growth rate (%)</b>
Austria	2.35	31.74	65.92	0.75
Belgium	1.32	26.48	72.19	1.11
Bulgaria	11.71	30.74	57.54	4.28
Czech Republic	3.48	39.37	57.14	3.11
Denmark	2.13	26.41	71.46	0.43
Estonia	4.49	28.48	67.03	5.14
Finland	3.46	30.52	66.02	1.88
France	2.71	24.47	72.82	0.47
Germany	1.14	29.45	69.41	-0.1
Greece	6.87	23.83	69.3	4.28
Italy	2.65	27.8	69.55	0.26
Latvia	4.52	24.43	71.04	7.46
Lithuania	7.27	33.77	58.96	8.96
Luxemburg	0.63	20.49	78.89	2.13
Poland	3.13	30.73	66.15	3.75
Romania	11.86	36.09	52.05	4.9
Slovakia	3.66	29.73	66.61	4.21
Estonia	3.32	29.59	67.1	2.43
Sweden	1.8	27.87	70.33	1.58
Turkey	13.38	21.89	64.72	5.79
UK	0.97	26.59	72.44	2.22

Source: The World Bank Group, WDI data, <http://devdata.worldbank.org>.

Table 5 shows a comparison regarding the value added in agriculture, industry and services as percent of GDP in 2003.

Figure 3 points to the fact that Romania is asymmetrically positioned in the inferior side of the distribution interval regarding services and the superior side regarding agriculture.

Figure 3



### 2.5 Business cycles correlation

Business cycle correlation degree can be used to assess the nature of dominant shocks affecting the respective countries. If business cycles are synchronized, countries can form an optimum currency area. We have researched whether the business cycle of Romania is correlated with those of its main trade partners, namely UE as a whole and Germany and Italy as individual partners.

In order to estimate the degree of correlation between the business cycles, we consider that the most relevant indicator is the growth rate of real GDP and we analyze the deviations of GDP growth rates against the trend on the bases of seasonally adjusted Hodrick Prescott data for Romania, Italy, Germany and the EU (Table 6).

**Table 6 Seasonally adjusted real GDP growth rates**

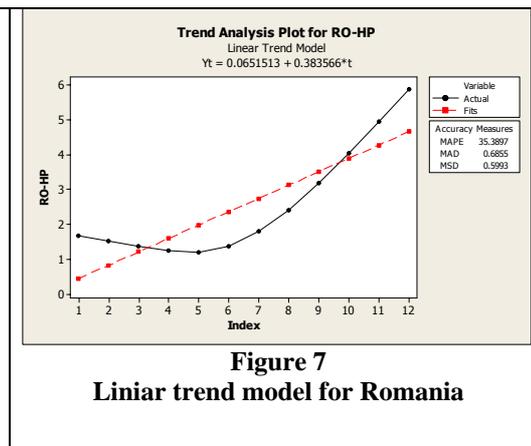
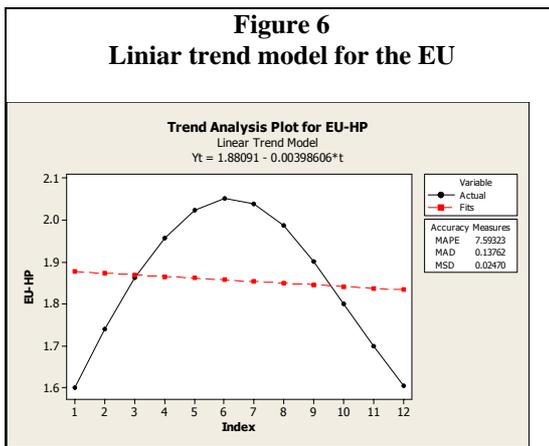
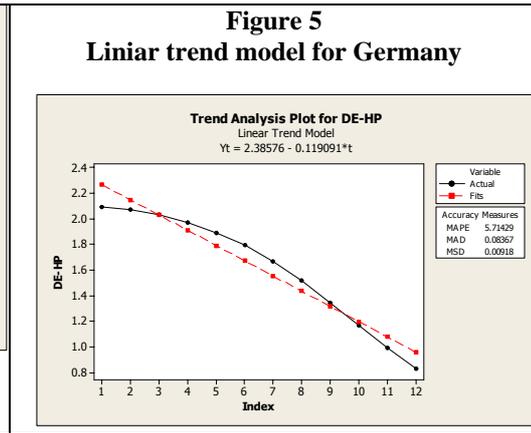
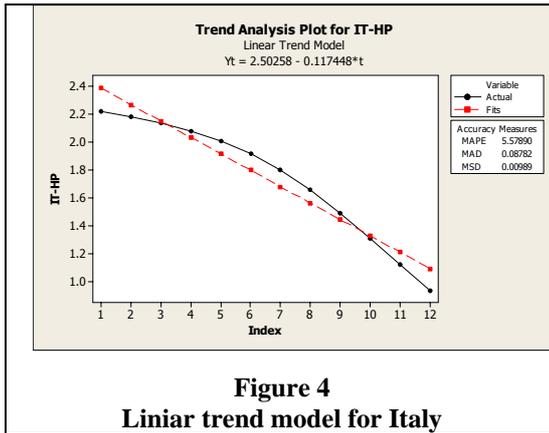
	EU	DE	IT	RO	EU-HP	DE-HP	IT-HP	RO-HP
1993	-0.25	0,2	1,5	1,5	1.599179	2,09197	2,22164	1,67459
1994	2.81	4,1	2,4	3,9	1.739549	2,06901	2,18314	1,52484
1995	2.30	1,9	2,6	7,1	1.861426	2,02713	2,13743	1,37334
1996	1.53	1,4	1,4	3,9	1.957025	1,96773	2,07946	1,24211
1997	2.36	2,2	2,2	-6,1	2.022943	1,89091	2,0088	1,2104
1998	2.70	2	2,4	-4,8	2.051509	1,79113	1,91824	1,38408
1999	2.43	2,05	1,66	-1,2	2.038421	1,66591	1,80247	1,79589
2000	3.30	2,86	3,03	2,1	1.985863	1,51487	1,661	2,41674
2001	1.38	0,85	1,76	5,7	1.899935	1,34148	1,49193	3,18758
2002	0.90	0,18	0,36	5,1	1.799877	1,16265	1,30703	4,04617
2003	0.70	-0,1	0,26	5,2	1.699731	0,99038	1,12076	4,95544
2004	2.10	1,7	1,3	8,3	1.604540	0,82684	0,93811	5,88882

In order to ensure high accuracy to the analysis, we have used a linear function, as well as a quadratic function for the trend. The results can be summarized as follows.

In case of applying the **linear function**, we get the following sets of data for characterizing the trend and residuals, respectively (Table 7 and Figures 4-7).

**Table 7 Linear trend functions**

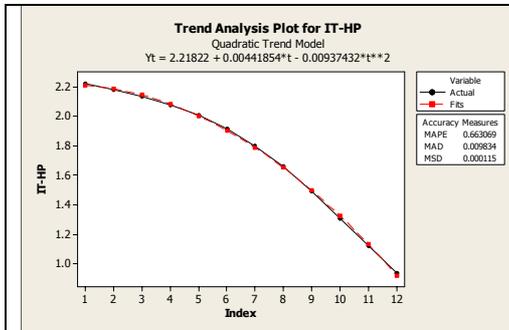
	LINIAR_ UE	REZ_LIN_ UE	LINIAR_ _DE	REZ_LIN_ _DE	LINIAR_ _IT	REZ_LIN_ _IT	LINIAR_ RO	REZ_LIN_ _RO
1993	1,87692	-0,277744	2,26667	-0,1747	2,38513	-0,16349	0,44872	1,22587
1994	1,87294	-0,133388	2,14758	-0,07857	2,26768	-0,08454	0,83228	0,69255
1995	1,86895	-0,007525	2,02848	-0,00135	2,15023	-0,0128	1,21585	0,15749
1996	1,86496	0,092060	1,90939	0,058334	2,03279	0,046675	1,59942	-0,35731
1997	1,86098	0,161964	1,7903	0,100608	1,91534	0,093463	1,98298	-0,77258
1998	1,85699	0,194516	1,67121	0,119914	1,79789	0,120347	2,36655	-0,98247
1999	1,85301	0,185414	1,55212	0,113784	1,68044	0,122024	2,75012	-0,95422
2000	1,84902	0,136842	1,43303	0,081838	1,563	0,098006	3,13368	-0,71694
2001	1,84503	0,054900	1,31394	0,02754	1,44555	0,046381	3,51725	-0,32967
2002	1,84105	-0,041172	1,19485	-0,0322	1,3281	-0,02107	3,90082	0,14536
2003	1,83706	-0,137332	1,07576	-0,08538	1,21065	-0,0899	4,28438	0,67106
2004	1,83308	-0,228537	0,95667	-0,12982	1,09321	-0,1551	4,66795	1,22087



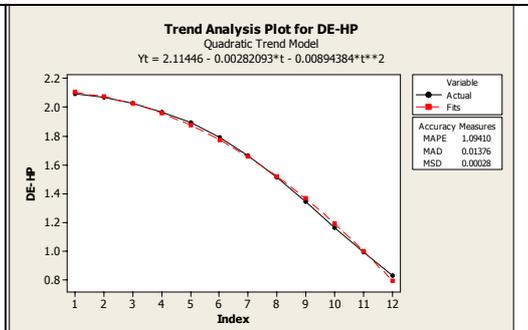
In case of applying the **quadratic function**, we get the following sets of data for characterizing the trend and residuals, respectively (Table 8 and Figures 8-11).

**Table 8 Quadratic trend functions**

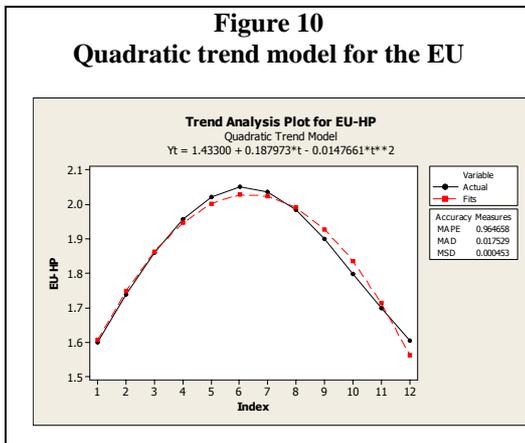
	PATR_U E	REZ_PATR_ UE	PATR_D E	REZ_PAT R DE	PATR IT	REZ_PAT R IT	PATR_R O	REZ_PAT R RO
1993	1,60621	-0,0070326	2,1027	-0,01073	2,21327	0,008371	1,78399	-0,1094
1994	1,74989	-0,0103374	2,07304	-0,00403	2,18956	-0,00642	1,43922	0,085612
1995	1,86403	-0,0026030	2,0255	0,00163	2,14711	-0,00967	1,24013	0,133213
1996	1,94864	0,0083856	1,96008	0,007652	2,08591	-0,00645	1,1867	0,055408
1997	2,00372	0,0192253	1,87676	0,014151	2,00596	0,002844	1,27893	-0,06853
1998	2,02926	0,0222452	1,77556	0,015569	1,90726	0,01098	1,51683	-0,13275
1999	2,02528	0,0131432	1,65647	0,009439	1,78981	0,012657	1,9004	-0,10451
2000	1,99176	-0,0058966	1,51949	-0,00462	1,65361	0,007387	2,42963	-0,01289
2001	1,92871	-0,0287742	1,36462	-0,02314	1,49867	-0,00674	3,10453	0,083045
2002	1,83613	-0,0362496	1,19187	-0,02922	1,32498	-0,01795	3,92509	0,121079
2003	1,71401	-0,0142809	1,00123	-0,01084	1,13253	-0,01178	4,89132	0,064118
2004	1,56237	0,0421750	0,7927	0,034147	0,92134	0,016762	6,00322	-0,1144



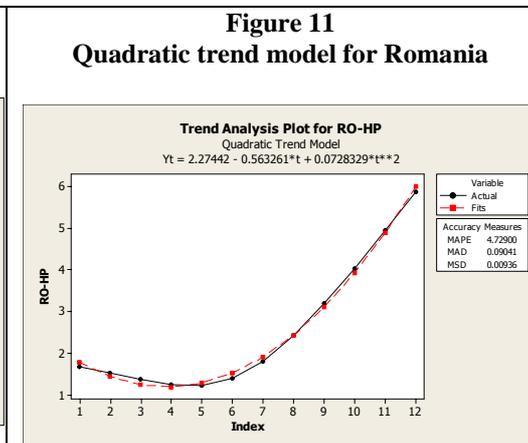
**Figure 8**  
Quadratic trend model for Italy



**Figure 9**  
Quadratic trend model for Germany



**Figure 10**  
Quadratic trend model for the EU



**Figure 11**  
Quadratic trend model for Romania

By comparing the accuracy indicators: MAPE (*Mean Absolute Percentage Error*); MAD (*Mean Absolute Deviation*); MSD (*Mean Squared Deviation*) we can assess that the quadratic trend model is more appropriate for the purpose of the analysis. We then analyze the correlation between real GDP growth rate deviations from the trend approximated by a quadratic function in Romania, Italy, Germany and the EU

Pearson correlation shows the following results with a high trust level (p-value is lower than 0,05):

**Correlations: REZ\_PATRATIC\_IT, REZ\_PATRATIC\_RO**

Pearson correlation of REZ\_PATRATIC\_IT and REZ\_PATRATIC\_RO = -0.932  
P-Value = 0.000

**Correlations: REZ\_PATRATIC\_DE, REZ\_PATRATIC\_RO**

Pearson correlation of REZ\_PATRATIC\_DE and REZ\_PATRATIC\_RO = -0.641  
P-Value = 0.025

**Correlations: REZ\_PATRATIC\_EU, REZ\_PATRATIC\_RO**

Pearson correlation of REZ\_PATRATIC\_EU and REZ\_PATRATIC\_RO = -0.732  
P-Value = 0.007

We can thus notice that there is a high degree of reverse correlation between the business cycle in Romania and those in Italy and the EU, as well as a reverse correlation, but not that intense between the Romanian and the German business cycles.

### **3. The Balassa-Samuelson effect in Romania**

A large part of the economic literature is dedicated to the discrepancy between purchasing power parity and the exchange rate. The Balassa-Samuelson hypothesis links the differential of relative prices (tradables and non-tradables, domestic and abroad) to the differential in labor productivity. Productivity tends to increase faster in the sector of tradables as compared to the non-tradables, which pushes wages upwards in the entire economy. Given the fact that in the economies that follow a catching-up process the increase in productivity is higher than in mature economies, given the imperative to ensure real convergence, the Balassa-Samuelson effect will imply a higher increase in the consumer price index in the candidate countries to the EMU and their real exchange rates will tend to appreciate.

We consider it important to spotlight the weak points and eventual shortcomings of the model pointing to the Balassa-Samuelson effect. First of all, the hypotheses referring to perfect competition on the international markets of goods, perfect labor mobility and the absence of competition in

the field of services are not part of reality. Moreover, it is possible that real appreciation induced by gains of productivity to be diminished or intensified by exogenous factors to the model. Gains in productivity are not limited to the industrial sector, but on the contrary, expand to banking services, insurance, transports, distribution etc. When the gain in productivity is the same in the field of tradables and services, the Balassa-Samuleson effect could be null.

There is no clear evidence of the increase in productivity in Central and Eastern European countries higher than in the euro area. Gains in productivity have been indeed impressive in the 90s, but have been rather exceptional, especially by reducing the artificial employment level from socialism and it would be useful to know if these gains could be maintained (opposite factors such as high energy and labor consumption per product can have a high negative influence, especially in the agriculture sector).

#### **4. Conclusion**

At least for the moment, the initiative of creating a currency union by Romania and its trade partners of the EU would be not appropriate, given the high probability of not being able to face asymmetric shocks. A potential deficit of the approach that we have used is the fact that it is based on historical data and situations can change in future, even as a consequence of the deepening in the monetary integration process. It is nevertheless desirable that Romania would make serious efforts to gradually meet real convergence criteria along with the nominal convergence ones.

In what the applicability of the law of one price is concerned, transition economies are able to align to international prices for tradables, no matter what exchange rate regime they choose. The *de facto* application of the law of one price will be obvious for aligning prices to the EU level and in such a context it is questionable whether Central and Eastern European countries are ready to give up the exchange rate instrument.

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# A STUDY OF EXCHANGE RATE PASS-THROUGH EFFECT IN RUSSIA<sup>1</sup>

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## **Abstract**

*This paper studies exchange rate pass-through effect (PTE) on consumer and producer prices in Russia. We find that PTE is significant on most prices and very diverse, but incomplete even in the long run. We also find asymmetry in price reactions to exchange rate appreciation and depreciation. Since the studied period includes Russia's balance of payments crisis of August 1998, we test PTE before and after the crisis and find that PTE was the highest during the crisis and decreased after some structural adjustment of the economy. We also estimate that monetary policy increased PTE during the crisis what pushed prices further.*

**Keywords:** *pass-through effect; exchange rate; inflation; monetary policy*

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## 1. Introduction

The term "pass-through effect" refers to the effect of changes in the exchange rate of a domestic currency for foreign currency (or a trade-weighted portfolio of foreign currencies) on the country's domestic prices for traded and non-traded goods. The famous survey of Goldberg and Knetter (1997) defines pass-through effect (or pass-through elasticity) (PTE) as "percentage change in local currency import prices resulting from a one-percent change in the exchange rate between the exporting and importing countries". Other authors (Menon 1995, McCarthy 2000, Hufner and Schoder 2002) understand pass-through effect in a broader sense, as "the process how home prices change in response to changes of exchange rates". Before the end of 1970s academic economists did not pay enough attention to this phenomenon. However, in recent years this topic has become increasingly popular in many countries, perhaps in response to globalisation of the international markets and foreign trade growth. Higher PTE implies greater dependence of an open economy on external shocks in the world market and higher volatility of domestic prices due to changes in the exchange rate. Therefore, the government authorities should know the degree of PTE to forecast domestic inflation and conduct adequate inflationary and exchange rate policies.

This paper is devoted to estimation and analysis of PTE in Russia, measured as the percentage change in Russian prices in response to a 1-percent change in nominal effective exchange rate of rouble (pass-through elasticity). The purpose of our research is to answer the questions: "What is the effect of nominal exchange rate changes onto domestic inflation?", "Does this effect differ across different price categories?" and "What are the factors which determine the degree of PTE?".

This research program is interesting for the following reasons. First, PTE has not been studied properly in Russia: so far there is no single published research paper devoted to this problem. The studies based on other countries' data convincingly show that domestic prices less-than-fully react on the exchange rate fluctuations, implying the PTE is incomplete. Does a similar tendency hold for Russia, and if yes, what are the peculiarities of the Russian experience, and how they can be explained? Second, besides pass-through incompleteness, researchers and practitioners alike are naturally interested in the speed of domestic prices' adjustments. In August 1998, during the currency and debt crisis, the Russian rouble lost more than 60% of its value against US dollar in a week, but this sharp depreciation did not cause a similar and simultaneous burst of the domestic inflation, backed by the expansionary monetary policy, which had an additional effect on domestic

prices. In addition to that, depreciation of rouble has led to great structural changes in the Russian economy and, hence, PTE might have changed as well. Based on this assumption, in this work we study PTE before, during and after the crisis and analyse changes in it.

This research program is related to several theoretical issues and has some practical implications. From *microeconomic viewpoint*, our results may be used by enterprises in different industries to forecast future cash flows and profits, for developing pricing strategies and analysis and management of the exchange rate risk. For example, if PTE in an industry is low, the costs of the imported goods to the Russian firms, expressed in domestic currency, will rise more in case of rouble depreciation, than the revenues which arise from selling these goods on the domestic market, because it is impossible to pass the whole exchange rate change onto output prices. In such case the Russian importer will not only lose a part of its profits, but also might find itself in a situation when it cannot repay its debt to the foreign creditor, which is denominated in foreign currency terms. This exchange rate risk is especially strong in industries with low PTE, which should take care of hedging against it. From *macroeconomic* point of view, this research may be useful for the government and the Central bank for forecasting inflation in Russia on aggregate level and in different industries, as well as for the determination of monetary and exchange rate policies and for industrial regulation purposes. For example, if PTE on consumer prices in a country is large, then in order to maintain the targeted inflation rate and to reduce prices volatility the Central bank should adjust money supply in response to the exchange rate fluctuations, thus reducing PTE. In other words, monetary policy should be endogenous to the exchange rate. Testing this prediction amounts to the estimation of the effects of monetary policy on PTE, which is done in the third section of our paper.

In this paper we estimate and compare different-term PTE on different price categories (the consumer price index (CPI), the producer price index (PPI)<sup>3</sup> and their components) from the beginning of 1995 till the end of 2002. We explain the differences in PTE on consumer and producer prices, on traded and non-traded goods and in different industries of the Russian economy; we analyse the influence of monetary policy on PTE; finally, we study PTE before, during and after the crisis of 1998 and in periods of rouble depreciation and appreciation. To estimate PTE, we apply two-stage procedure of constructing Error Correction Model, which takes into account the long-run relationship.

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<sup>3</sup> In this paper we do not study PTE on import prices since the import price index is unavailable.

The rest of the paper is organised as follows. The next section describes existing theories and findings of other authors. Section 3 is devoted to estimation and analysis of different-term PTE on consumer and producer prices. In section 4 we study influence of government monetary policy on PTE. Sections 5 and 6 analyse structural changes in PTE after the crisis of 1998 and asymmetries of PTE in case of appreciation and depreciation of rouble respectively. The last section is devoted to conclusions and policy recommendations.

## 2. Literature review and existing evidence

### 2.1. Theories of exchange rate PTE

$$P = P^* \times E$$

where  $P$  – domestic price level,  $P^*$  - foreign price level (assumed to be constant),  $E$  – exchange rate, measured in units of the domestic currency per unit of the foreign currency (indirect quotation – see e.g. Obstfeld and Rogoff (1995, 1998, 2000a))<sup>4</sup>. But even in the simplest models assuming PPP, inter-country differences in PTE of exchange rate on domestic prices may exist. In a *large economy* the inflationary effect of depreciation of domestic currency is counteracted by a decline in world prices (due to decreased world demand), which tends to decrease the observed PTE, whereas in a *small economy* PTE should be complete. However, this theoretical model is based on several assumptions, which do not hold in real world, e.g. the assumptions of perfect competition and absence of transaction costs. Empirical studies show that PTE is not complete in most cases (Isards, 1977; Rogoff, 1996), including that of small economies (Lee, 1997).

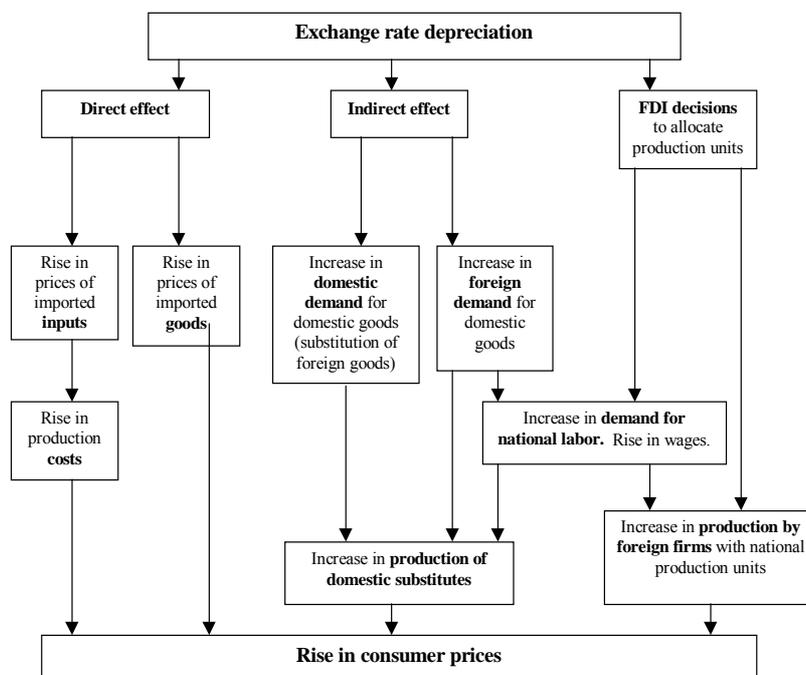
A number of theories were proposed to explain why PTE is incomplete in real life. Obstfeld and Rogoff (2000b) model assumes presence of transportation costs, which increase prices of imported goods and preclude their perfect substitutability for the competing domestic goods. A related argument is that the costs of imported inputs constitute only a small part of the cost of a final good, but the majority of costs being attributable to non-traded services, such as marketing and distribution. Several authors (Bergin and Feenstra, 2001; Bergin, 2001, Corsetti and Dedola, 2001; Bachetta and Wincoop, 2002), argue that PTE may be below 100% even if prices are fully

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<sup>4</sup> It should be noted that The Law of One Price has an economic sense only for import prices and not for all domestic prices in an economy, since there is no theoretical reason why exchange rate should completely pass through onto the prices of domestically produced goods.

flexible, but markets are imperfectly competitive, which may create incentives for optimal price discrimination or strategic pricing. Finally, if the imported good is an intermediate good, which has locally produced substitutes priced in domestic currency, the local producer may replace the imported input by the domestic one in response to exchange rate changes. Obstfeld (2001) terms this “expenditure-switching effect”, which depends on the degree of substitutability between local and imported goods.

**Figure 1. Mechanisms of PTE**



There are at least three possible chains through which prices of final goods adjust to the fluctuations of nominal exchange rate: direct, indirect and flows of FDI. Lafleche (1996) summarizes them in a diagram, which is adjusted for the Russian experience and presented on Figure 1.

The *direct effect* chain includes direct change in prices of imported intermediate and final goods due to a change in exchange rate, akin to the income effect in demand theory. Empirical literature uses import price index to study this effect separately. Obstfeld and Rogoff (2000) and other authors present evidence that import prices are more sensitive to changes in nominal exchange rate than consumer prices in general. In this paper we do not study the direct effect separately due to unavailable import price index for Russia.

The *indirect effect* chain is based on substitution between foreign and domestic goods. This includes substitution between domestic and imported final goods at home markets (internal substitution), as well as that at foreign markets of our country's trade partners (external substitution). *Internal substitution* can follow devaluation of the domestic currency, which induces "flight from quality" (Burstein et al. (2003)). *External substitution* takes place because devaluation makes domestic goods relatively cheaper for foreigners who increase demand for them. If nominal wages are fixed in the short run, real wages decrease and hence national output increases. However, when real wages adjust to their original level, production costs will increase, the overall price level increases and output falls. In the long run this effect is described by the Marshall-Lerner condition, and confirmed empirically by the Russian current account data.

The *FDI decisions* also are induced by devaluation of domestic currency, which depresses demand for foreign goods and deflated nominal wage in terms of foreign currency. Foreign producers and multinationals then face a dilemma – either to lose the export market or to start production in the devaluing country to exploit comparative advantages of location, cheaper resources and lower wages. This is exactly what happened in Russia after the devaluation of the rouble in 1998, resulting in production boost, increased labour demand and wages, followed by an increase in prices in the longer term.

## **2.2. Empirical evidence**

However compelling are the above explanations, discrimination between them is not straightforward, not least because empirical evidence of PTE is quite heterogeneous. Most part of existing research is concentrated on the effects of exchange rate changes on *import prices* (Goldberg and Knetter (1997) provide a detailed survey). Several works study PTE on *producer and consumer prices* (e.g. Woo (1984), Feinberg (1986, 1989), Parsley and Popper (1998), McCarthy (2000)); some more consider its relationship to the export prices (e.g. Klitgaard (1999), Dwyer, Kent and Pease (1993)). Most authors concentrate on PTE across industries and products, as well as its dependence on macroeconomic policy measures, such as monetary policy, as discussed in the next subsection.

Almost all studies report that exchange rate PTE on national prices is incomplete and varies greatly across countries, industries and other parameters under investigation. Most works are based on the American markets because of their size and superior quality of the data (Menon (1995) describes results of 43 such papers). Quite a few authors analyse PTE on other OECD countries, such as the EU (e.g. Hufner and Schoder (2002),

Fouquin et al (2001)), Australia (Menon (1996), Dwyer, Kent and Pease (1993)), Japan (Tokagi and Yoshida (2001)); as well as developing countries, such as Korea (Lee, 1997), Taiwan (Liu, 1993), Chile (Garcia, Jose and Jorge, 2001), Belarus (Tsesliuk, 2002) and Ukraine (Kuzmin, 2002). Some papers study inter-country differences in PTE for developed countries (e.g. McCarthy (2000), Hufner and Schoder (2002)). Darvas (2001) and Dubravko and Marc (2002) are two of several papers which study PTE in some developing countries, where the effect appears to be larger than for the developed ones. Empirical results also imply that PTE is heterogeneous across countries: thus, Dwyer, Kent and Pease (1993) concluded that pass-through on import prices is higher than that on export prices in short run in Australia, while the tendency appears to be opposite for Japan (Takagi and Yoshida, 2001).

Research on PTE at the *industry level* was mostly concentrated on studying pricing strategies and behaviour of mark-ups (the difference between the selling price and the cost of goods sold) in response to changes in an exchange rate. A theoretical basis for most of these studies was the work of Dornbusch (1987), which appeals to the arguments from industrial organization. Specifically, it explains the differences in PTE by market concentration, degree of import penetration and substitutability of imported and local goods. For instance, if profit-maximizing firms have significant market power in a given industry, PTE is expected to be high in spite of other factors (Phillips (1988)). On the contrary, if firms aim to maximise their market share instead of profits, PTE will be lower (Hooper and Mann (1989), Ohno (1990)). Moreover, if opportunities to discriminate between markets exist, then the situation of “*pricing-to-market*” may occur, which will lead to different PTE in different segmented markets (Krugman (1987), Gagnon and Knetter (1992)).

Goldberg and Knetter (1997) reported that PTE on import prices is lower in more segmented industries, where producers have more opportunities for third-degree price discrimination. Yang (1997) estimated, that PTE is positively related to the degree of product differentiation (i.e. negatively related to the degree of substitutability of goods) and negatively depends on the elasticity of marginal costs with respect to output. Also, PTE is affected by the degree of returns to scale in production of imported goods (Olivey (2002)). On the basis of these principles Feinberg (1986, 1989) concluded that PTE on prices of national producers is higher in industries, which are less concentrated and which have higher import share. These conclusions have been occasionally challenged. E.g. Menon (1996) found that PTE negatively depends on quantitative restrictions (quotas) for imports,

foreign control (presence of multinational corporations), concentration, product differentiation and import share in total sales and positively depends on substitutability between imported and domestic goods.

### 2.3. Influence of monetary policy on PTE

According to the principle of money neutrality an increase in money supply causes a proportional increase in home prices in the long run. This effect co-exists with the exchange rate pass-through. Expansionary monetary policy provokes devaluation of home currency, what make extra pass-through in home prices, but, on the other hand, monetary policy in many countries is aimed at achieving price stability and is adjusted to the exchange rate fluctuations to reduce PTE<sup>5</sup>. Empirical literature on western economies (Parsley and Popper (1998)) concludes that the monetary policy can offset exchange rate changes and reduce pass-through. Is this the case for Russia? This seems quite possible, especially given that monetary policy and exchange rates are interdependent because the exchange rate is not freely floating. Therefore, following economic logic and findings of the other authors, monetary policy should be taken into account when estimating PTE.

Parsley and Popper (1998) demonstrate empirically that omission of this variable results in biased estimates of pass-through, and suggest that monetary policy should be explicitly included into the model. To show the effect of its omission, suppose that the price of a particular good is determined by the following function: in each period,  $t$ ,

$$p_{it} = E\{f_i[e_t, m(g_t), z_{it}]I_t\}$$

where  $p_{it}$  is the price of the  $i$ -th good,  $e_t$  is the nominal exchange rate in terms of foreign currency units per domestic currency unit,  $m(g_t)$ , is monetary policy, implemented using some instruments  $g_t$ ,  $z_{it}$  summarises all other factors that affect the individual price, and  $I_t$  represents the information available when the price is determined.

Then the underlying responsiveness of individual and aggregate prices to the exchange rate can be characterised as follows:

$$\gamma_i = \frac{\partial E\{f_i[e_t, m(g_t), z_{it}]I_t\}}{\partial e}, \text{ and } \gamma = \int_0^1 \alpha_i \gamma_i di$$

When monetary policy is unrelated to exchange rate movements, these parameters,  $\gamma_i$  and  $\gamma$ , can be estimated directly. In practice, measuring the impact of exchange rate changes on domestic prices may be complicated

<sup>5</sup> For example, the European Central Bank has cited the possible inflationary effects of the weak Euro as one factor behind its tightening of monetary policy in 2000 (May 2000 issue of the ECB Monthly Bulletin).

by the actions of the Central bank. The monetary policies of many countries respond to changes in the exchange rate, even if only implicitly. That is, often  $\frac{dm(g_i)}{de} \neq 0$ . This means that monetary policy is endogenous to the exchange

rate. In such cases, the exchange rate affects prices in two ways. It affects prices directly, through the parameters  $\gamma_i$  and  $\gamma$ , and it affects prices indirectly through its influence on monetary policy,

$$\frac{\partial p_i}{\partial m(g_i)} \frac{dm(g_i)}{de} \text{ and } \frac{\partial p_i}{\partial m(g_i)} \frac{dm(gt)}{de}$$

Ignoring the role of monetary policy will bias measures of the underlying responsiveness of prices to exchange rate changes. This problem affects estimates of the responsiveness of both individual prices and the aggregate price index: ignorance of monetary policy during domestic currency depreciation would result in underestimation the effects of the exchange rate on prices.

The same will be true if we assume that monetary policy can moderate price fluctuations not only by offsetting the effect of changes in the exchange rate, but also by influencing the exchange rate itself. In such a case we assume that both monetary policy and the exchange rate are generally endogenous to each other. Such a situation is relevant for Russia, where the Central bank used to maintain the exchange rate in a corridor by changing its reserves and money supply. Again, if monetary policy during depreciation of domestic currency is ignored, the effect of the exchange rate on domestic prices may appear smaller than the true PTE. This would mean that monetary policy is aimed at reducing pass-through and price volatility.

### **3. Estimation of different-term PTE**

#### **3.1. Data**

All data used in this research are time series with monthly frequency and cover time span from the beginning of 1995 till the end of 2002. All indices are transformed to the base period January, 1995 and are expressed in natural logarithms. The main sources of data are Official Statistics of Goskomstat (State Statistical Committee of Russian Federation) and International Financial Statistics (IFS). Data are available from the authors upon request.

Dependent variables:

National Producer Price Index (LN\_PPI). Detailed structure includes indices for the following industries: energy, oil, ferrous and non-ferrous metals, chemical industry, petrochemical industry, machinery, construction materials, textile, food processing and wood industry. The primary data on price indices are taken from Goskomstat Statistical Annual Report, 2003. On aggregate level PPI is presented in International Financial Statistics, 2003, series code 92263XXZF.

National Consumer Price Index (LN\_CPI). Detailed structure of CPI includes food (FOOD), goods (GOODS) and services (SERV). The primary data of CPI and its components are taken from Goskomstat Statistical Annual Report, 2003. On aggregate level CPI is taken from International Financial Statistics, 2003, series code 92264XXZF.

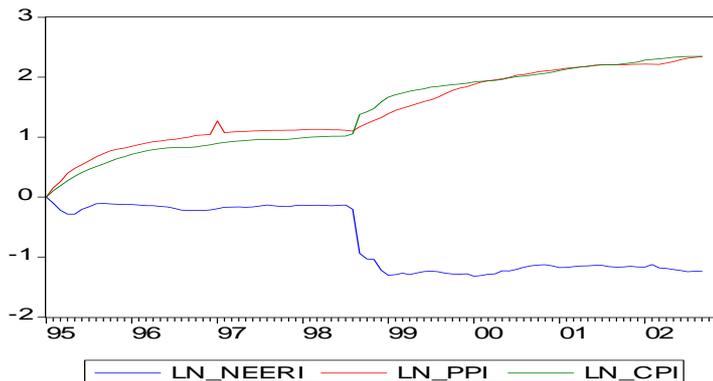
Explanatory variables:

Nominal Effective Exchange Rate Index (LN\_NEERI). The exchange rate is measured as the number of units of trade weighted foreign currencies per unit of domestic currency (Russian rouble). An increase in NEERI means appreciation of the rouble. The primary source of data is International Financial Statistics, 2003, series code 922..NECZF. Figure 2 below demonstrates time profile of the three variables central for our research. The outlier in the 12/97 originates from IFS statistics.

Price of Oil (LN\_OIL). Price of “UK Brent” serves as a proxy for the price of Russian oil “Urals” (which is more relevant for our analysis), since the price of “Urals” is not available for the whole time period, but on the available sample the prices correlate with coefficient 0.96. Monthly time series are provided by International Financial Statistics, 2003, code 11276AAZZF.

Money Supply (LN\_MONEY). Aggregate money supply (M1) from International Financial Statistics 2003, code 92234..ZF..

**Figure 2. Time profiles of NEERI and national price indices**



Real Consumption (LN\_RCONS). Serves as a proxy for real GDP because monthly data on real GDP is not supplied in Russia. The source of data: Goskomstat Statistical Annual Report 2003.

All data have been tested for stationarity. We used ADF test with the specification chosen according to Dolado, Jenkinson'a, Sosvilla-Rivero (1990) procedure:

$$dY_t = \alpha + \beta \cdot t + \sum_{i=1}^p \lambda \cdot dY_{t-1} + \delta \cdot Y_{t-1} + \varepsilon_t$$

Choice of augmentation (parameter p) was done according to “general to specific” procedure proposed by W. Charemza (1997), which starts with reasonably large number of lags and is followed by iterative elimination of insignificant ones until only the significant lags are left in the model. As it was expected, the test rejected the stationarity hypothesis for all data in favour of non-stationary with the level of integration 1 (I(1)). We cannot totally rely on this test since it could confuse a structural break with a unit root. But the Phillips-Perron test for structural breaks confirmed our results. Moreover, the same conclusion about non-stationarity was obtained in the papers described in section 2, which deal with longer and more stable data of western economies.

### 3.2. Methodology and results

To estimate different term PTE we apply two-step procedure of constructing Error Correction Model (ECM). In the first step we estimate the following specification using Johansen cointegration analysis with 3-4 lags as usually the major adjustments occur within this time period in Russia:

$$LN\_P_t = \alpha_0 + \alpha_1 * LN\_NEER_t + \alpha_2 * LN\_MONEY_t + \alpha_3 * LN\_RCONS_t + \alpha_4 * LN\_OIL_t + \varepsilon_t \quad (1)$$

where LN\_P is the dependent variable under investigation: national CPI, PPI or their components in logs. We find that cointegration exists for all price indices<sup>6</sup>, what enables us generate stationary residuals  $\varepsilon_t$ .

In the second step we construct a modified ECM of the following specification using the residuals found above with 1 lag, which takes into account long run adjustments:

$$\begin{aligned} \Delta(LN\_P_t) = & \sum_{i=0}^5 \alpha_{1i} * \Delta(LN\_NEER_{t-i}) + \\ & + \sum_{i=0}^2 \alpha_{2i} * \Delta(LN\_MONEY_t) + \alpha_3 * \Delta(LN\_RCONS_t) \\ & + \alpha_4 * \Delta(LN\_OIL_t) + \alpha_5 * AR(1) + \alpha_6 * \varepsilon_{t-1} + v_e \end{aligned} \quad (2)$$

<sup>6</sup> Results of these and all subsequent estimations are available from the authors upon request.

where  $\hat{\alpha}_{10}$  is the estimate of 1-month PTE and  $\sum_{i=0}^k \hat{\alpha}_{1i}$  with  $k = 2$  and  $5$  are the estimates of 3-month and 6-month PTE respectively. The coefficient of  $\varepsilon_{t-1}$  shows convergence.

The number of NEERI and money supply lags was chosen according to the “general to specific” procedure of iterative elimination of insignificant lags. Lags after the 5<sup>th</sup> for LN\_NEERI and after the 2<sup>nd</sup> for LN\_MONEY were insignificant for all price indices. Also, if we look at the correlation of exchange rate and inflation with different leads, we see that the highest correlation exists with inflation in the following 5 months (see Table 1). Consumer prices in Russia react to exchange rate changes faster than producer prices, and the overall pattern of correlation of consumer and producer prices is similar to that in Brazil and Poland (correlation coefficients of 0.97 and 0.92 respectively (Dubravco and Marc (2002))). In addition, in these three countries the highest correlation exists with inflation in the current period and it is close to one.

Since lags after the 5<sup>th</sup> are all insignificant, we interpret the period of about half a year as long run for price adjustments. Also, we see that consumer prices react to exchange rate changes somewhat faster than producer prices. In terms of this correlation of consumer prices Russia can be compared with Brazil and Poland (corresponding correlation coefficients are -0.97 and -0.92 respectively (Dubravco and Marc (2002))), as in these three countries the highest correlation exists with inflation in the current period and it is close to one.

**Table 1. Correlation of exchange rate with inflation in the current and the following 12 months\***

	<b>CPI</b>	<b>PPI</b>
d(ln_p)	<b>-0.87</b>	-0.20
d(ln_p(+1))	-0.21	<b>-0.21</b>
d(ln_p(+2))	-0.16	-0.16
d(ln_p(+3))	-0.28	-0.13
d(ln_p(+4))	-0.22	-0.19
d(ln_p(+5))	-0.08	-0.18
d(ln_p(+6))	-0.03	-0.11
d(ln_p(+7))	-0.04	-0.08
d(ln_p(+8))	-0.01	-0.09
d(ln_p(+9))	0.01	-0.09

d(ln_p(+10))	-0.03	-0.09
d(ln_p(+11))	0.00	-0.12
d(ln_p(+12))	-0.01	-0.15

\* The highest correlation is in bold.

Since we cannot reject the hypothesis that the first differences of I(1) variables are stationary, we estimate the ECM by Ordinary Least Squares method. We test two sets of hypotheses for all price indices:

*1) Short run PTE (1 month):*

$$H_0: \alpha_{10} = 0 \text{ (No PTE)}$$

$$H_1: \alpha_{10} \neq 0 \text{ (PTE exists)}$$

*2) Long run PTE (6 months by assumption):*

$$H_0: \sum_{i=0}^5 \alpha_{1i} = -1 \text{ (Complete PTE)}$$

$$H_1: \sum_{i=0}^5 \alpha_{1i} > -1 \text{ (Incomplete PTE)}$$

The results of the estimation of PTE on consumer prices are presented in table 2. The statistically significant values are marked in bold. Pluses in the second column stand for confirmed cointegration.

**Table 2. Estimates of different run PTE: consumer prices**

Price index (in logarithms)	Coin- tegratio n	Pass-through elasticity		
		1 month	3 months	6 months
<b>CPI</b>	<b>+</b>	<b>-0.42</b>	<b>-0.40</b>	<b>-0.40</b>
t-statistics		-32.01	-10.06	-5.24
<b>Food</b>	<b>+</b>	<b>-0.45</b>	<b>-0.45</b>	<b>-0.56</b>
t-statistics		-25.43	-8.68	-6.33
<b>Goods</b>	<b>+</b>	<b>-0.55</b>	<b>-0.48</b>	<b>-0.29</b>
t-statistics		-34.88	-10.55	-3.16
<b>Services*</b>	<b>+</b>	<b>-0.05</b>	-0.06	-0.08
t-statistics		-3.15	-1.31	-0.96

\* Insignificant PTE at least in one period

We see that PTE in one month is significant for all consumer prices, what rejects the null hypothesis. This means that the effect of exchange rate

on prices really exists even in one month. To test whether 6-month PTE is complete we perform the t-test of the null hypothesis for the cumulative effect of the six months PTE. The t-statistics are reported in table 3.

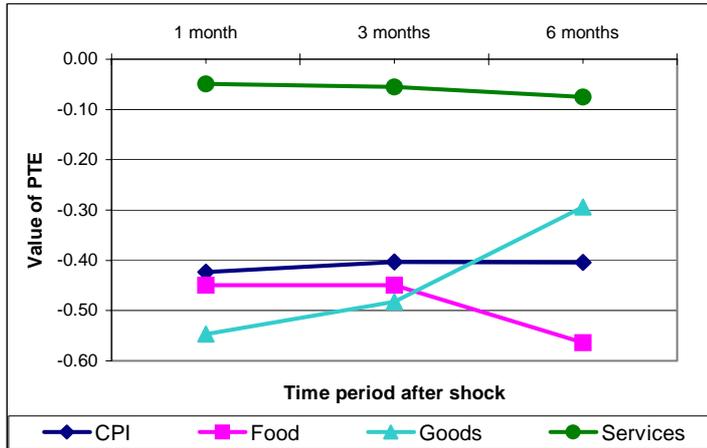
**Table 3. t-statistics for testing long-run PTE: consumer prices**

<b>Price index</b>	<b>t-statistics</b>
CPI	-7.5
Food	-4.89
Goods	-11.83
Services	-11.5

Thus we may reject the null hypothesis about complete PTE in 6 months on all consumer prices, implying that Purchasing Power Parity does not hold in Russia. Further, all consumer prices except those for services are highly exchange rate elastic and the most remarkable adjustment occurs within the first month after the exchange rate change. Prices for services do not highly depend on exchange rate, which is natural for non-tradable goods. The term structure of PTE on consumer prices is presented on Figure 3.

These results suggest a number of conclusions can be made. First, the aggregate CPI adjusts to exchange rate changes for 40% during half a year and the full adjustment (even some overshooting) occurs within the first month. Second, goods prices react faster than others in the first month and adjust for 55%. But the highest pass-through elasticity in 6 months is observed for food prices, which adjust for 56% in half a year. Third, prices for services are exchange rate inelastic and the PTE accounts for only 8% in half a year and is statistically insignificant since services are non-traded goods.

**Figure 3. Term structure of PTE on consumer prices**



These findings come in line with the results for Western economies presented in Table 4 (borrowed from Hufner and Schroder (2002), who use a similar econometric technique).

**Table 4. Estimates of PTE for European countries**

	After 6 months	After 12 months
France	0.01	0,07
Germany	0.07	0,08
Italy	0,06	0,12
Netherlands	0,12	0,11
Spain	0,09	0,08

Tables 2 and 4 suggest that the PTE in Russia is much stronger than in European countries, confirming that Russia is a small economy, which is highly dependent on foreign markets.<sup>7</sup> Stronger PTE in Russia can also be explained by relatively high import share of consumer goods, gradual depreciation of rouble and less competitive Russian economy. If we compare PTE in Russia with that for other developing countries, estimated by Dubravco and Marc (2002), the strength of pass-through on consumer prices is similar to Hungary (-0.54) and Turkey (-0.56). Hence, we can make a general conclusion that PTE in developing countries is stronger than in the developed ones, and Russia is not an exception.

<sup>7</sup> Higher PTE implies more flexible prices. Our results do not contradict the informational theory of financial disturbances expansion, which asserts that in less-developed economies maturities of contracts are shorter, than in developed, so prices are more volatile.

**Table 5. Estimates of different run PTE: producer prices**

Price index (in logarithms)	Coin- tegration	Pass-through elasticity		
		1 month	3 months	6 months
PPI	+	<b>-0.11</b>	<b>-0.20</b>	<b>-0.23</b>
t-statistics		-2.50	-3.10	-3.66
Construction materials	+	<b>-0.04</b>	<b>-0.09</b>	<b>-0.12</b>
t-statistics		-4.40	-3.42	-2.36
Chemistry	+	<b>-0.10</b>	<b>-0.21</b>	<b>-0.23</b>
t-statistics		-5.07	-4.62	-2.87
Energy*	+	-0.03	-0.08	<b>-0.17</b>
t-statistics		-1.20	-1.41	-1.88
Ferrous metals*	+	<b>-0.05</b>	0.03	0.10
t-statistics		-3.04	0.60	0.93
Food processing	+	<b>-0.26</b>	<b>-0.37</b>	<b>-0.50</b>
t-statistics		-20.09	-10.42	-7.86
Fuel*	+	<b>-0.08</b>	<b>-0.18</b>	-0.22
t-statistics		-2.09	-1.75	-1.23
Machinery	+	<b>-0.12</b>	<b>-0.17</b>	<b>-0.24</b>
t-statistics		-9.88	-4.64	-3.44
Non-ferrous metals	+	<b>-0.22</b>	<b>-0.59</b>	<b>-0.77</b>
t-statistics		-5.85	-9.19	-9.57
Petrochemistry	+	<b>-0.05</b>	<b>-0.05</b>	<b>-0.17</b>
t-statistics		-3.95	-1.21	-2.17
Textile	+	<b>-0.13</b>	<b>-0.27</b>	<b>-0.32</b>
t-statistics		-14.31	-8.72	-5.86
Wood	+	<b>-0.06</b>	<b>-0.24</b>	<b>-0.41</b>
t-statistics		-6.02	-9.53	-8.56

\* Insignificant PTE at least in one period

The same analysis applied to producer prices estimates by industries is presented in Table 5. Again, the statistically significant values are marked in bold; pluses in the second column stand for existing cointegration. The null hypothesis for 1-month PTE is rejected for all producer prices except energy prices. Independence of energy prices can easily be explained by monopolization and high regulation of this industry. Although in long run, PTE in this industry is small but significant. It follows that PTE is significant for most producer prices even in one month.

Long run PTE is significant for all producer prices except ferrous metals and fuel industries. Insignificant PTE in ferrous metals can be a result of wide use of long-term contracts in this industry. Absence of PTE in fuel

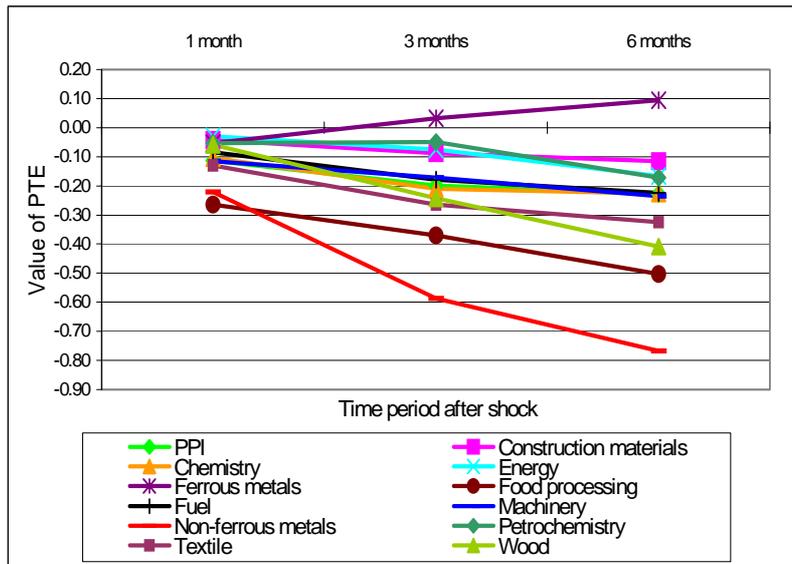
industry is due to monopolization and regulation of prices. To test if PTE in 6 months is complete, we performed another t-test reported in Table 6. This table shows that PTE on prices in all industries is incomplete in the long run., implying that producers are unable to transfer a change in their costs due to a change in the exchange rate to prices fully.

**Table 6. t-statistics for testing long-run PTE: producer prices**

<b>Price index</b>	<b>t-statistics</b>
PPI	-12.83
Construction materials	-17.6
Chemistry	-9.63
Energy	-9.22
Ferrous metals	-11
Food processing	-8.33
Fuel	-4.33
Machinery	-10.86
Non-ferrous metals	-2.88
Petrochemistry	-10.38
Textile	-11.33
Wood	-11.8

Term structure of PTE on producer prices is presented on figure 4. We see that the maximum 1-month PTE is on food prices – 26%, while the maximum PTE in 6 months is on non-ferrous metals prices – 77%. The minimum 1-month PTE is 3% in energy industry, which is monopolized and regulated, while the minimum 6-month PTE is in ferrous metals and equals +10% and insignificant. The remarkable difference between PTE in ferrous and non-ferrous metals industries can be explained by different market structures. Ferrous metals are usually OTC traded using long-term contracts, while non-ferrous metals are traded on an exchange where prices adjust very quickly.

**Figure 4. Term structure of PTE on producer prices**



These arguments imply we can divide all industries into two groups:

- 1) industries with long-run PTE higher than that of PPI (>23%) – food processing, machinery, non-ferrous metals, textile and wood industries. These industries use quite high share of imported inputs.
- 2) industries with long-run PTE lower than that of PPI (<23%), but still significantly different from zero – materials for construction, energy, chemistry and petrochemistry. These industries use local raw materials and are export-oriented.

The conclusion about different PTE for import and export industries comes in line with results of Dwyer, Kent and Pease (1993) for Australian market. They also find that prices in import industries are more exchange rate elastic than prices in export-oriented ones.

It can be noticed that PTE on producer prices is significantly lower than that on consumer prices. This can be explained by the fact that consumer prices include import prices, PTE on which should be significant. Moreover, producer prices adjust to exchange rate changes more slowly than consumer prices, with some time lags.

If we look at food prices, we can notice that consumer prices are more elastic than producer prices. There are two reasons for this. First, consumer prices include prices of imported food. Second, wholesale and retail markets are organized differently.

#### 4. Influence of monetary policy on PTE

As monetary policy in a country is often aimed at targeting inflation, it may decrease influence of exchange rate changes on prices when exchange rates are highly volatile. As argued above, and following Parsley and Popper, we now incorporate monetary policy variable into the model developed in the previous section.

Our test is based on comparison of the estimated elasticities with and without monetary policy in order to determine the influence of this latter on PTE and inflation. In order to estimate PTE without monetary policy we again use ECM of the following specification for CPI and PPI:

$$LN\_P_t = \alpha_0 + \alpha_1 * LN\_NEERI_t + \alpha_3 * LN\_RCONS_t + \alpha_4 * LN\_OIL_t + \psi_t \quad (3)$$

$$\Delta(LN\_P_t) = \sum_{i=0}^5 \theta_i * \Delta(LN\_NEERI_{t-i}) + \alpha_3 * \Delta(LN\_RCONS_t) + \alpha_4 * \Delta(LN\_OIL_t) + \alpha_6 * AR(1) + \alpha_7 * \psi_{t-1} + \xi_e \quad (4)$$

The obtained estimates are compared with the estimates from the previous section in order to determine the behaviour of monetary policy. If the “biased” PTE is smaller than the “true” one ( $\left| \sum_{i=0}^k \theta_i \right| < \left| \sum_{i=0}^k \alpha_i \right|$ ), this will mean that monetary policy is aimed at reducing price fluctuations and PTE in Russia. If the opposite situation is true ( $\left| \sum_{i=0}^k \theta_i \right| > \left| \sum_{i=0}^k \alpha_i \right|$ ), this will mean that monetary policy has some aims other than controlling inflation and it increases PTE and, hence, increases price volatility in Russia.

The results of the estimation are the following. While estimation of cointegration equation (1) produced the coefficient of exchange rate equal to  $-0.61$  for CPI and  $-0.73$  for PPI and monetary policy had a remarkable effect on CPI (coefficient  $-0.40$ ) and almost no effect on PPI (coefficient  $-0.09$ ), estimation of cointegration equation (3) without monetary policy produced coefficient of exchange rate equal to  $-1.03$  for CPI and  $-0.85$  for PPI, what means that PTE increased by absolute value greater for CPI (for which monetary policy is significant) than for PPI (insignificant monetary policy). So we conclude that omission of monetary policy leads to biased estimates of PTE, and that monetary policy in Russia in the long run increases the

exchange rate PTE on prices. This last result goes at odd with Parsley and Popper findings, who found out that omission of monetary policy leads to lowers PTE, implying that monetary policy in the USA is aimed at diminishing PTE.

Short run “true” PTE on CPI and PPI are presented in Tables 2 and 4 correspondingly. The estimates of the “biased” PTE without taking into account monetary policy are presented in Table 7. This table again shows that monetary policy leads to stronger PTE on CPI and PPI, but in periods longer than 1 month. An interpretation is that during the studied period monetary policy in Russia did not smooth exchange rate fluctuations and their consequences on prices.

**Table 7. Estimates of PTE without monetary policy**

Price index (in logarithms)	Coin- tegrati on	Pass-through elasticity		
		1 month	3 months	6 months
<b>CPI</b>	<b>+</b>	<b>-0.42</b>	<b>-0.41</b>	<b>-0.44</b>
t-statistics		-31.40	-9.17	-5.87
<b>PPI</b>	<b>+</b>	<b>-0.11</b>	<b>-0.21</b>	<b>-0.28</b>
t-statistics		-2.03	-3.02	-3.22

What is the aim of monetary policy then? Recall that before the crisis of 1998, government budget deficit was financed by state bonds (GKO) which led to accumulation of government debt to domestic and foreign investors. When the government defaulted on GKO, demand for the national currency from the side of foreign investors fell remarkably, what resulted in sharp depreciation of the rouble on FOREX market. The direct effect of this depreciation was significant rise of domestic prices (high PTE during the crisis). Therefore, Russian economy needed more money for transactions at higher prices and financing the budget deficit, which resulted in money emission reflected in the statistical data. This type of monetary policy (expansion during rouble depreciation) explains why our findings contradict those of Parsley and Popper and others, and why monetary policy in Russia does not eliminate PTE, but, on the contrary, makes it stronger.

## **5. Structural changes after the crisis of 1998**

Before 1998, the Central Bank of Russia followed different kinds of fixed exchange rates regimes, most often the currency corridor. In August 1998, the Central Bank of Russia announced floating exchange rate, but it

hardly implemented this, as the subsequent fluctuations of the rouble/US dollar exchange rate was dependent on various factors, such as the monetary policy goals and oil prices.

These facts pose a question: “Has the exchange rate regime any impact on PTE?” Cuddington and Liang (1999) conclude that “relative price among two categories of tradable goods exhibit greater volatility under flexible exchange rate regimes than under fixed one” – is a similar tendency valid for Russia? Moreover, dramatic changes in the Russian economy (e.g. inflow of FDI, substitution of inputs from foreign to domestic, expanded domestic production, etc.) give reasons for a change in PTE.

To test whether PTE has changed after the crises due to structural changes in the Russian economy we splitted our sample into three periods: before the crises, the crisis and the short-term recovery, after the recovery – by inclusion of two dummy variables:

$$D1 = \begin{cases} 0, & 01/95 - 12/99 \\ 1, & 01/00 - 12/02 \end{cases}$$

$$D2 = \begin{cases} 0, & 01/95 - 06/98 \text{ and } 01/00 - 12/02 \\ 1, & 07/98 - 12/99 \end{cases}$$

The following table demonstrates explicitly which value each dummy takes in each period.

**Table 8. Time periods and corresponding values of dummies**

Dummy	Time periods		
	01/95-06/98	07/98-12/99	01/00-12/02
<b>D1</b>	0	0	1
<b>D2</b>	0	1	0

We test for structural changes in 1-month PTE only, as it is most significant for all prices and testing changes in different-term PTE is not favoured by very short time series. Still we include lagged values of the exchange rate since omission of them will result in a bias of 1-month PTE.

$$\begin{aligned} \Delta(LN\_P_t) = & \alpha_0 + \alpha_1 * \Delta(LN\_NEERI_t) + \\ & + \beta_1 * D1 * \Delta(LN\_NEERI_t) + \beta_2 * D2 * \Delta(LN\_NEERI_t) + \\ & + \sum_{i=1}^5 \alpha_{1i} * \Delta(LN\_NEERI_{t-i}) + \sum_{i=0}^2 \alpha_{2i} * \Delta(LN\_MONEY_{t-i}) + \quad (5) \\ & + \alpha_3 * \Delta(LN\_RCONS_t) + \alpha_4 * \Delta(LN\_OIL_t) + \\ & + \alpha_5 * AR(1) + \alpha_6 * \varepsilon_{t-1} + v_e \end{aligned}$$

We test the following hypotheses using OLS:

$H_0: \beta_1 = \beta_2 = 0$  (No difference in PTE between periods)

$H_1: \beta_1, \beta_2 \neq 0$  (There is a difference in PTE between periods)

If the coefficients of D1 and D2 differ from zero significantly we cannot reject the hypothesis that pass through elasticity has changes after the crisis. Table 9 presents pass-through elasticities in all periods as well as the significance of dummy coefficients (“+” stands for “significant” and “-” stands for “insignificant”), which shows whether PTE is significantly different between periods or not. Statistically significant estimates of PTE are marked in bold.

We can notice that PTE in the period of crisis (column 5) is most closely related in its degree to the whole period PTE (column 7). The null hypothesis about equal pass-through elasticities in all periods is rejected for 6 price indices. Through, PTE is significantly different in all three periods in only two industries – chemistry and wood production. In these industries PTE used to be significantly positive before the crisis, then became significantly negative during the crisis and has become close to zero when the economy recovered from the crisis. For three consumer prices (CPI, food and goods prices) PTE during the crisis differs significantly from that in the other periods. Moreover, it is large and significant in this period only. PTE on energy prices differs in the after-crisis period, when it became significantly positive. But this is probably connected with price regulation in this industry.

For other 10 price indices (services and almost all producer prices) PTE is not significantly different between the periods, what makes us reject the null hypothesis.

It can be noticed that pass-through elasticity of CPI has fallen after the crisis and has become closer to the estimates for European countries. Thus, we can conclude that due to after-crisis structural adjustment of the Russian economy, Russia has become less dependent on exchange rate fluctuations, than it used to be before the crisis.

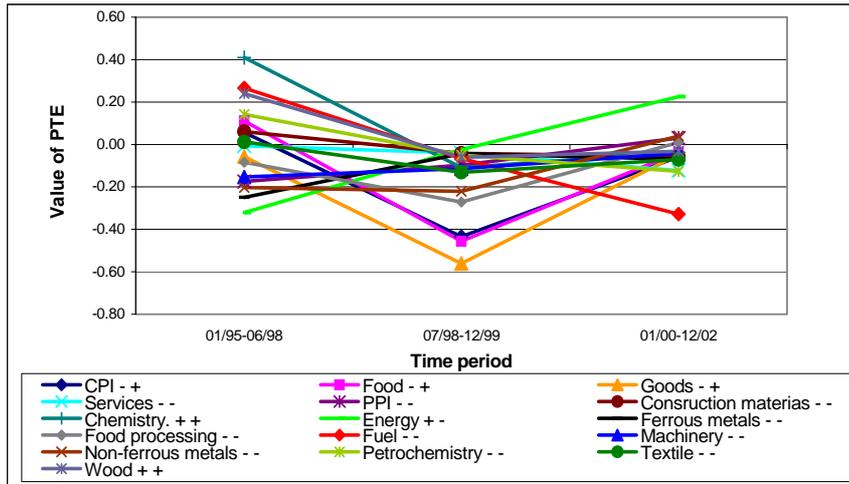
The results are summarised on the Figure 5, where each line shows changes in PTE during the three time periods.

**Table 9. Estimates of 1-month PTE in different time periods**

Price index (in logarithms)	$\hat{\beta}_1$	$\hat{\beta}_2$	Period elasticity			
			01/95- 06/08	07/98- 12/00	01/00- 12/02	Whole period*
CPI	-	+	0.06	<b>-0.43</b>	-0.06	<b>-0.42</b>
t-statistics			0.48	-47.09	-1.23	-32.01
Food	-	+	0.11	<b>-0.46</b>	-0.04	<b>-0.45</b>
t-statistics			0.60	-32.08	-0.48	-25.43
Goods	-	+	-0.06	<b>-0.56</b>	-0.05	<b>-0.55</b>
t-statistics			-0.60	-73.69	-1.23	-34.88
Services	-	-	-0.01	<b>-0.04</b>	-0.12	<b>-0.05</b>
t-statistics			-0.04	-2.79	-1.47	-3.15
PPI	-	-	-0.17	<b>-0.10</b>	0.03	<b>-0.11</b>
t-statistics			-0.50	-2.37	0.15	-2.50
Construction	+	+	0.06	<b>-0.04</b>	-0.06	<b>-0.04</b>
t-statistics			0.49	-4.29	-1.15	-4.40
Chemistry	-	+	<b>0.41</b>	<b>-0.11</b>	-0.04	<b>-0.10</b>
t-statistics			1.78	-5.78	-0.34	-5.07
Energy	-	-	-0.32	-0.02	<b>0.23</b>	-0.03
t-statistics			-1.10	-1.01	1.69	-1.20
Ferrous metals	-	-	-0.25	<b>-0.04</b>	-0.07	<b>-0.05</b>
t-statistics			-1.42	-2.99	-0.84	-3.04
Food processing	-	-	-0.08	<b>-0.27</b>	0.01	<b>-0.26</b>
t-statistics			-0.57	-23.01	0.16	-20.09
Fuel	-	-	0.27	<b>-0.07</b>	-0.33	<b>-0.08</b>
t-statistics			0.51	-1.60	-1.53	-2.09
Machinery	-	-	-0.15	<b>-0.11</b>	-0.04	<b>-0.12</b>
t-statistics			-1.01	-9.76	-0.67	-9.88
Non-ferrous	-	-	-0.20	<b>-0.22</b>	0.04	<b>-0.22</b>
t-statistics			-0.45	-5.89	0.18	-5.85
Petrochemistry	-	-	0.14	<b>-0.05</b>	<b>-0.13</b>	<b>-0.05</b>
t-statistics			0.85	-3.79	-1.88	-3.95
Textile	-	-	0.01	<b>-0.13</b>	-0.07	<b>-0.13</b>
t-statistics			0.11	-14.33	-1.58	-14.31
Wood	+	+	<b>0.24</b>	<b>-0.06</b>	-0.03	<b>-0.06</b>
t-statistics			1.96	-6.29	-0.66	-6.02

\* Whole period elasticities are the estimates of 1-month elasticities from Section 2.

**Figure 5. Dynamics of PTE in different periods\***



\*Signs +/-

near price indices indicate significance of the two dummy variables

We can observe the following general tendencies: PTE is rather high and significant for the majority of prices only in the period of the crisis and it is close to the estimate for the whole period. This can be explained by the fact, that since during the crisis the exchange rate fell sharply, most prices were fixed in US dollars. Several papers (Bachetta & van Wincoop (2002), Giovannini (1998) show, that countries with unstable domestic currency tend to fix prices in foreign currencies, what makes PTE close to 100%.

Interestingly, prices of services, which are non-traded goods, were also significantly dependent on the exchange rate during the crisis. This corresponds with the conclusions of Tsesliuk (2002), who finds that if all national prices in a country are expressed in foreign currency, exchange rate will affect all prices including prices of non-traded goods.

Before the crisis, PTE used to be insignificant for most prices, probably, due to the fixed exchange rate regime (a corridor), when menu costs might have overweighed the benefits of changing prices as a result of small exchange rate changes. After after-crisis adjustments, pass-through elasticity almost returned to its before-crisis level. But this may be because the sharp rouble depreciation led to remarkable decrease in real income, measured in terms of foreign currency, and hence, to a fall in demand for foreign goods. This resulted in import-substitution, high foreign direct investment and growth in the domestic production. So, after the recovery of the Russian economy, it became less dependent on the world markets and exchange rate changes.

To conclude, the studied three periods are characterized by different exchange rate regimes and consumption structure and, hence, PTE is also different, although not always significantly. After the crisis, PTE has decreased and become closer to the values for developed countries. Also this may be due to some institutional factors, as some researches find that PTE in many countries has recently decreased for institutional reasons.

## 6. Asymmetry in PTE in cases of rouble depreciation and appreciation

Exchange rate depreciation causes an increase in prices, so, logically, we can expect that exchange rate appreciation will ceteris paribus cause deflation. However, casual observations suggest that prices are downward rigid: depreciation of rouble leads to a rise in prices, while its appreciation does not lead to price fall. The purpose of this section is to compare 1-month PTE in cases of depreciation and appreciation and to determine whether there are any significant asymmetries. To do this, we estimate the following ECM by OLS method:

$$\begin{aligned} \Delta(LN\_P_t) = & \alpha_0 + \alpha_1 * \Delta(LN\_NEERI_t) + \\ & + \gamma_1 * D * \Delta(LN\_NEERI_t) + \sum_{i=1}^5 \alpha_{1i} * \Delta(LN\_NEERI_{t-i}) + \\ & + \sum_{i=0}^2 \alpha_{2i} * \Delta(LN\_MONEY_{t-i}) + \alpha_3 * \Delta(LN\_RCONS_t) + \\ & + \alpha_4 * \Delta(LN\_OIL_t) + \alpha_5 * AR(1) + \alpha_6 * \varepsilon_{t-1} + \nu_t \end{aligned} \quad (6)$$

where  $D = \begin{cases} 0, & \text{if nominal effective exchange rate appreciates} \\ 1, & \text{if nominal effective exchange rate depreciates} \end{cases}$  and  $\varepsilon_{t-1}$  is a residual of

regression (1) with 1 lag. We test the following hypotheses:

H<sub>0</sub>:  $\gamma_1 = 0$  (No statistical difference, symmetric PTE in case of appreciation and depreciation of rouble)

H<sub>1</sub>:  $\gamma_1 \neq 0$  (Statistically significant differences, asymmetry of PTE)

If the coefficient of the dummy variable appears to be significant, then we null hypothesis is rejected in favour of the alternative

**Table 10. 1-month PTE for appreciation and depreciation of rouble**

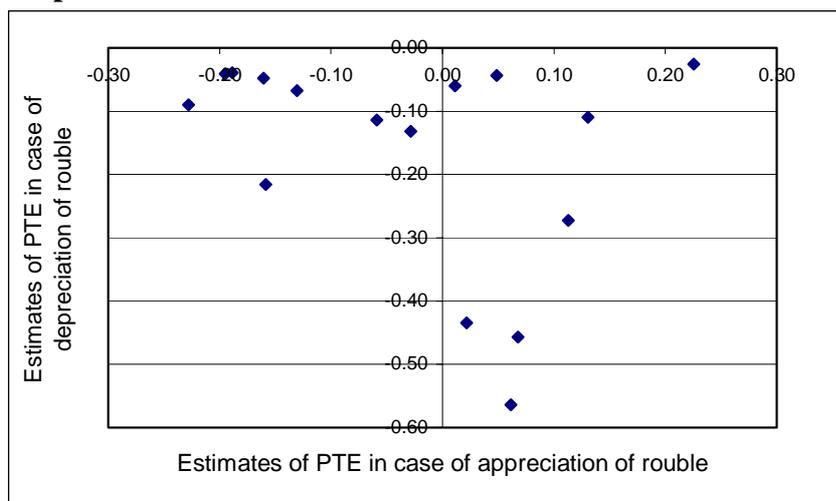
Price index (in logarithms)	$\hat{\gamma}_1$	Value of PTE		
		Appreciation	Depreciation	Whole sample*
<b>CPI</b>	+	0.02	<b>-0.43</b>	<b>-0.42</b>
t-statistics		0.26	-39.32	-32.01
<b>Food</b>	+	0.07	<b>-0.46</b>	<b>-0.45</b>
t-statistics		0.60	-29.39	-25.43
<b>Goods</b>	+	0.06	<b>-0.56</b>	<b>-0.55</b>
t-statistics		0.77	-51.94	-34.88
<b>Services</b>	-	<b>-0.19</b>	<b>-0.04</b>	<b>-0.05</b>
t-statistics		-1.66	-2.69	-3.15
<b>PPI</b>	-	<b>-0.23</b>	<b>-0.09</b>	<b>-0.11</b>
t-statistics		-0.85	-2.20	-2.50
<b>Construction</b>	-	0.05	<b>-0.04</b>	<b>-0.04</b>
t-statistics		0.73	-4.57	-4.40
<b>Chemistry</b>	-	0.13	<b>-0.11</b>	<b>-0.10</b>
t-statistics		0.88	-5.71	-5.07
<b>Energy</b>	-	0.23	<b>-0.03</b>	<b>-0.03</b>
t-statistics		1.22	-1.05	-1.20
<b>Ferrous</b>	-	<b>-0.20</b>	<b>-0.04</b>	<b>-0.05</b>
t-statistics		-1.68	-2.80	-3.04
<b>Food</b>	+	0.11	<b>-0.27</b>	<b>-0.26</b>
t-statistics		1.41	-23.07	-20.09
<b>Fuel</b>	-	<b>-0.13</b>	<b>-0.07</b>	<b>-0.08</b>
t-statistics		-0.44	-1.61	-2.09
<b>Machinery</b>	-	<b>-0.06</b>	<b>-0.11</b>	<b>-0.12</b>
t-statistics		-0.69	-9.68	-9.88
<b>Non-ferrous</b>	-	<b>-0.16</b>	<b>-0.22</b>	<b>-0.22</b>
t-statistics		-0.54	-5.68	-5.85
<b>Petrochemist</b>	-	<b>-0.16</b>	<b>-0.05</b>	<b>-0.05</b>
t-statistics		-1.71	-3.59	-3.95
<b>Textile</b>	-	<b>-0.03</b>	<b>-0.13</b>	<b>-0.13</b>
t-statistics		-0.46	-14.30	-14.31
<b>Wood</b>	-	0.01	<b>-0.06</b>	<b>-0.06</b>
t-statistics		0.16	-6.07	-6.02

\* Estimates of PTE for the whole sample from section 2

Table 10 presents the estimates of PTE in both cases as well as significance of the dummy variable (“+” in the second column means “significant”, while “-” means “insignificant”). All significant elasticities are in bold. PTE in case of depreciation is very close to its estimate in the whole sample probably because during the whole studied period the exchange rate

was mostly falling. Significance of the coefficient of the dummy suggests rejection of the null hypothesis for all consumer prices except services and for only one producer price – price of food processing industry. Thus, these prices react to rouble appreciation and depreciation differently: PTE is very strong in case of depreciation (meaning that prices rise), but is positive and insignificant in case of appreciation (meaning that prices do not fall, but may even still rise). This asymmetry is shown on Figure 6, which is a scatter plot, where the coordinates of each point are the corresponding estimated of PTE in both cases.

**Figure 6. Asymmetric PTE in cases of appreciation and depreciation of rouble**



This figure shows strong asymmetry: had PTE been symmetric, all points would have lied in the south-west quarter on a straight line with slope +1. But here most prices are distributed along the horizontal axis, what means that while in case of rouble depreciation PTE is negative and significant for most prices, in case of appreciation the estimates of PTE differ from  $-0.23\%$  (PPI) to  $+0.23\%$  (energy) and are mostly insignificant. But in spite of the visual differences, the estimates of PTE in both cases are not significantly different for most prices.

The four outliers in the lower part of the diagram stand for CPI, prices of food, goods and food processing industry. For these prices PTE in case of rouble depreciation is high (by absolute value) and very significant, but in the other case it is positive and insignificant. Theses differences are probably attributable to short-term contracts (consumer prices) and short production

cycle (food processing industry). Hence we may see that, in general, consumer prices react to exchange rate changes asymmetrically, while producer prices do not.

Similar studies undertaken for European countries find few evidence supporting PTE asymmetry (Gil-Pajera, 2000). Another paper analyzed PTE in period of deflation in some developed countries and found out, that exchange rates did not play a significant role, if any, in explaining deflation (McCarthy (2000)), but it played a significant role in explaining inflation. This means that PTE in case of depreciation of domestic currency (period of inflation) is higher, than in the case of appreciation (period of deflation), what corresponds with our findings.

## **7. Conclusions and recommendations**

In this paper we study exchange rate PTE on domestic consumer and producer prices in Russia and the influence of government monetary policy on PTE for the period from January 1995 till December 2002. We find that PTE on all prices studied in this work is incomplete even in the long run, while even 1-month PTE is significant for most prices.

PTE on consumer prices is quite high and equals approximately 50%, what corresponds to the results for other developing countries and is higher than PTE in developed countries. This characterizes Russia as a small economy, which is exposed to the shocks in the world markets. Therefore, in order to decrease price volatility, monetary policy in Russia should be endogenous and should eliminate the effect of exchange rate changes on prices, if the exchange rate is fully flexible, or the exchange rate should be in a corridor.

Almost all PTE on consumer prices occurs during one month, which supports the idea of flexible prices in Russia. Consumer prices, prices of food and goods are highly exchange rate elastic while prices of services do not react to exchange rate changes. This can be explained by the fact that services can be an example of non-traded goods with rather low level of imports.

PTE on CPI is higher than that on PPI and CPI adjusts more quickly than PPI, which adjusts with some time lags. This is partially explained by presence of imported goods in CPI, PTE on which should be high.

Prices in different industries of Russian economy have different PTE. Low PTE is observed in industries with insignificant import shares (raw materials) and in highly regulated industries (e.g. energy). Companies which work in competitive industries with low PTE and which have high imports are subject to high exchange rate risk, which should be managed properly. High PTE is observed in those industries, which are closely connected with world markets and use a significant amount of imported intermediate goods (e.g. production of food and textile).

Estimation of PTE without taking into account monetary policy would result to biased estimates, while incorporation of monetary policy effects results in stronger effect. This finding goes at odd with the results for western economies, and can be explained by monetary expansion following the crisis of 1998. This crisis itself resulted in structural changes: although for most price indices the hypothesis of symmetric PTE cannot be rejected, four price indices (most consumer prices and food processing prices) react differently to exchange rate changes in different directions, what supports real-life observations. These prices are exchange rate elastic in case of the rouble depreciation, but are not sensitive in case of appreciation, meaning that prices do not fall when the national currency becomes stronger. This phenomenon is probably explained by expectations of price-setters of future depreciation of the rouble.

The results of this paper may be interesting for development of inflation and exchange rate policies as we have shown that it is impossible to manipulate inflation solely through changes in money supply when exchange rate is flexible and has an additional effect on domestic prices. If the aim of the government is to target inflation rate, then monetary policy should be endogenous (should adjust to exchange rate changes) since consumer prices are highly exchange rate elastic during periods of rouble depreciation.

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*Corporate and SME's  
Financing*

# FACTORS INFLUENCING A DECISION- MAKING PROCESS REGARDING CAPITAL STRUCTURE AS WELL AS BUSINESS DEVELOPMENT<sup>1</sup>

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## **Abstract**

*Decisions concerning capital structure and development projects represent the main long-term budget, capital and financial decisions of a firm. These decisions are affected by the choice of both methods and models of the capital structure optimization, economic efficiency of the project evaluation as well as many other factors. Following two factors influencing this decision-making process in Slovak enterprises are presented in this lecture by income tax and cost of capital.*

**Keywords:** *capital structure, development projects, tax shield*

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<sup>1</sup> The paper has been worked out as part of research in the VEGA Project No. 1/2632/05 *The optimim allocation of capital and management of financial processes in a company and a group of companies (holding)after the accessionto EU.*

## **1. Introduction**

Decisions on the capital structure and company development projects are affected by the choice of methods and models of capital structure optimization, by evaluation of the economic efficiency of projects, economic climate and many other factors. In the paper, we are to present the impact of changes of two factors in the economic climate, namely income taxes and interest rates from long-term credits on these decisions in Slovak companies.

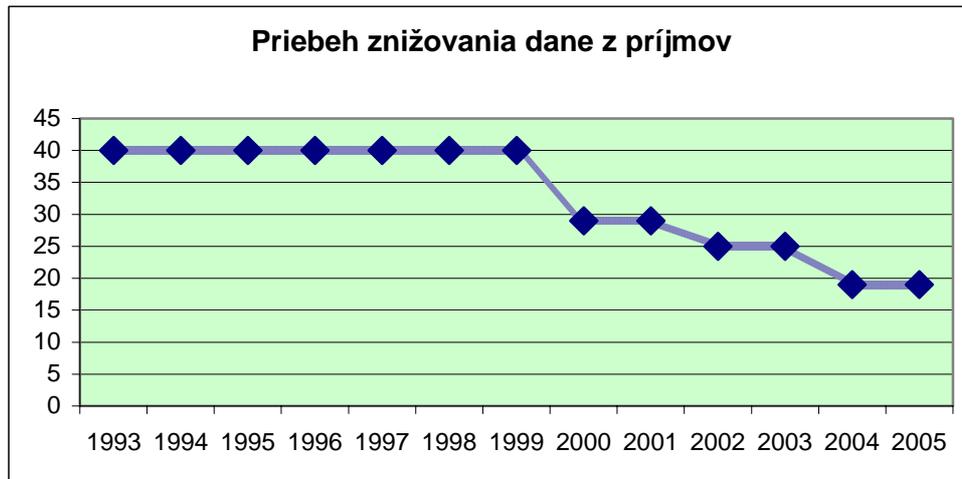
## **2. Development of the Income Tax and Interest Rates**

The transformation process in the Slovak economy made it possible to create space for a gradual decrease of the tax burden of businesses from 1993 (establishment of the Slovak Republic) to 2004 and a decrease of interest rates on credits.

The rate on income tax of legal entities was between 40 and 19 %. The level of 40 % was effective up to 1999, in 2000 and 2001 it was 29 %, in 2002 and 2003 25 %. Since 2004, the rate of income tax valid in the Slovak Republic has been 19 %.

The level of the capital price is also affected by including interests in the company costs. Credit interests included in the company costs decrease the price of the foreign capital (tax shield). The impact of the tax shield in Slovak conditions has recorded a significant change of impact in the past decade. In 1993, the saving on taxes (40 % tax rate from about the 18 % interest rate) was not lower than 7.2 %, in 2004 only 1.3 %, in dependence on the analyzed sector (industries, private sector, etc.). Basically, it moves within the scale 1.0 to 2.0. The decisive fact is that the importance of this factor has gradually declined. Further dramatic fall is not expected in future.

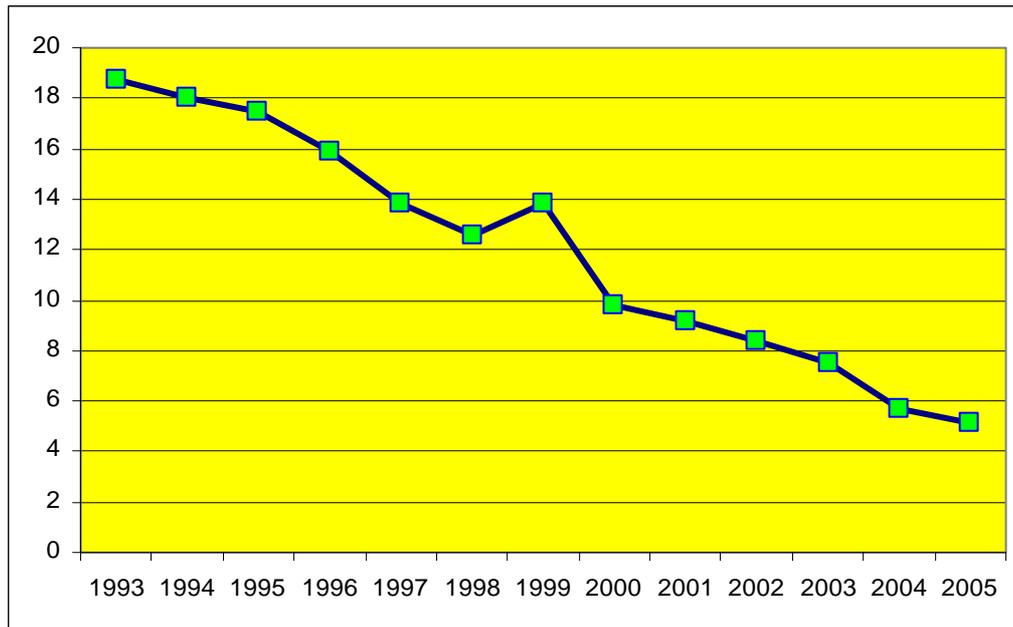
**Diagram 1: Progress of the income tax decrease in 1993 – 2005 (in %)**  
**Progress of the Income Tax Decrease**



Source: *www.drsr.sk*

A significant fall has been seen also in the interest rates on long-term bank credits. Gradually, conditions and prerequisites for their decline have been created. The trend resulting from the Diagram 2 suggests a definite development up to the year of 2005 (till August). Due to the shortage of sources in the past, the interest rates were quite high which resulted in a disproportionate increase in the foreign capital and did not affect a support of company development favourably. At present, the level of the interest rates is much more acceptable. In the analysis, we only assess interests from long-term credits, and do not consider short-term credits part of the capital structure.

**Diagram 2: Development of Interest Rates from Long-term Bank Credits in 1993 – 2005 in the SR (v %)**



*Source: www.nbs.sk*

The income tax rate of legal entities and interest rates from long-term bank credits have significantly changed since 1993 (Diagrams 1 and 2). Their impact must be taken into account, therefore we assess it on a simplified model.

### **3. Impact of Changes of the Income Tax and Interest Rates on the Capital Structure and on Company Development Projects**

By the example of the compromise theory, we are to present how the change (decline) of the income tax and interest rate from long-term credits determines decisions on the capital structure and company development projects. The authors of the compromise theory have linked the M-M access with the real market conditions (they took not only the influence of taxes into account but costs of financial difficulties of a potential bankruptcy as well), and showed the choice of the capital structure as a compromise between benefits of the interest tax shield and costs of financial difficulties.

Their pattern for the company value including debt is as follows:

$$V_Z = V_N + PVITS - PVCFDT$$

in which:  $V_Z$  – value of the company including debt

$V_N$  – value of the company financed by its own capital

$VITS$  – present value of the interest tax shield

$PVCFDT$  – present value of costs of financial difficulties

The optimum capital structure is determined by a mutual relation between the tax benefits and costs of financial difficulties. With the increase of the debt the present value of the interest tax shield increases. At a slight state of indebtedness, the probability of financial difficulties is insignificant and benefits of the interest tax shield prevail. However, at a certain point of debt, the probability of financial difficulties increases fast, and costs of financial difficulties start to reduce a significant part of the company's value. The company reaches the theoretical optimum at the moment when the present value of the tax savings from further debt is compensated by the increase of the present value of the costs of financial difficulties. The costs of financial difficulties caused by a high level of debt (mainly the company's insolvency to settle up interests and debt instalments to their creditors) can be divided between direct and indirect ones. Among direct costs there are various charges and fees to lawyers or specialists the company has to pay when it goes bankrupt. The indirect costs are related to the company's way of management and its consequences. When financial problems arise, managers must usually accept suboptimal decisions. When a company, for example, has to sell part of its assets at disadvantageous prices in order to get liquid money, it must waive carrying out of profitable projects that do not lead to the immediate cash flow. It has to use a less effective but short-term projects instead, and to decrease expenses on training of its staff, on research and development, and reduces stock (it can mean loss of part of sales). Suboptimal financial decisions forced by financial difficulties due to a high level of debt can include necessity to accept other loans even on disadvantageous conditions (e.g. at higher interest rates), to gain other equipment on leasing, although a direct purchase seems to be more economic, to reduce the amount of paid dividends (it gives the financial market unfavourable signals and leads to a decline of the company's prices of shares), etc.

It is very difficult to quantify direct, and especially indirect, costs of potential financial difficulties due to a high level of the corporate debt. In literature, we can find various recommendations. For example, the authors H. Levy and M. Sarnat give a particular example for calculation of the impact

of a company's financial difficulties, and they suppose that a company can insure against bankruptcy (in an insurance company), if they identify the annual amount of the insurance premium with costs of financial difficulties. The same philosophy is used in our example too.

Let us consider three variants of the company capital structure – A, B, C. The company achieves the profit before the interest of SKK 1,500 thousand out of the total capital of SKK 10,000 thousand. The market value of the company at 29 % income tax and 10 % interest rate are shown in the Table 1, line 11, and at 19 % income tax and 5.4 % interest rate in the Table 2, line 7.

**Table 1 Calculation of the Market Value of a Company with Debt and a 29 % Tax (in thousands SKK)**

Line		Variant A	Variant B	Variant C
1.	Own capital	10,000	7,000	4,000
2.	Foreign capital	-	3,000	6,000
3.	Profit (operating)	1,500	1,500	1,500
4.	Interests	-	300	600
5.	Profit before tax	1,500	1,200	900
6.	Tax 29 %	435	348	261
7.	Profit after tax	1,065	852	639
8.	Interest tax shield	x	87	174
9.	Interest tax shield capitalization	x	870	1 740
10.	Market value without debt	10,000	10,000	10,000
11.	Market value with debt	10,000	10,870	11,740

**Table 2 Calculation of the Market Value of a Company in Debt and a 19 % Tax (in thousands SKK)**

Line		Variant A	Variant B	Variant C
1.	Profit before tax	1,500	1,200	900
2.	Tax 19 %	285	228	171
3.	Profit after tax	1,215	972	729
4.	Interest tax shield	x	30.8	61.6
5.	Interest tax shield capitalization	x	308	616
6.	Market value without debt	10,000	10,000	10,000
7.	Market value with debt	10,000	10,308	10,616

The Tables 3 and 4 express the application of the compromise theory. Further to the Tables 1 and 2 we consider three variants of the capital structure – A, B, C, and two companies, X and Y, with a different level of the

economic risk (expressed by probability of financial difficulties in the lines 4 and 8 of the Tables). We also suppose that the company can insure against bankruptcy, and the amount of the annual premium is SKK 1,000 thousand (SKK 710 or 810 thousand after taxes) multiplied by probability of bankruptcy, i.e., the higher the probability the higher the premium required by the insurer. Other information, and the calculation of the present net value of the companies X and Y (lines 7 and 11 of the tables), having taken "costs of financial difficulties" into account, are presented in the Tables 3 and 4.

**Table 3 Application of the Compromise Theory at 29 % Income Tax (in thousands of SKK)**

L.		A	B	C
1.	Company value with capitalisation of the tax shield	10,000	10,870	11,740
2.	Value of debt	x	3,000	6,000
3.	Of own capital value	10,000	7,870	5,740

**Company X:**

L.		A	B	C
4.	Probability of financial difficulties	1	5	20
5.	Insurance after taxes (SKK 710 thousand x line 4)	7.1	35.5	142
6.	Present value of premium (at 10 % discount rate) <sup>2</sup>	71	355	1,420
7.	Company net value (lines 1 – 6)	9,929	10,515	10,320

**Company Y:**

L.		A	B	C
8.	Probability of financial difficulties	5	15	30
9.	Insurance after taxes (SKK 710 thousand x line 4)	35.5	106.5	213

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<sup>2</sup>Assumption of perpetuity

10.	Present value of premium (at 10 % discount rate) <sup>4</sup>	355	1,065	2,130
11.	Company net value (lines 1 – 10)	9,645	9,805	9,610

**Table 4 Application of the Compromise Theory at 19 % Income Tax (in thousands of SKK)**

L.		A	B	C
1.	Company value	10,000	10,308	10,616
2.	Debt value	x	3,000	6,000
3.	Own capital value	10,000	7,308	4,616

**Company X:**

L.		A	B	C
4.	Probability of financial difficulties	1	5	20
5.	Insurance after taxes (SKK 710 thousand x line 4)	8.1	40.5	162
6.	Present value of premium (at 10 % discount rate) <sup>2</sup>	81	405	1,620
7.	Company net value (lines 1 – 6)	9,919	9,903	8,996

**Company Y:**

L.		A	B	C
8.	Probability of financial difficulties	5	15	30
9.	Insurance after taxes (SKK 710 thousand x line 8)	40.5	121.5	243
10.	Present value of premium (at 10 % discount rate) <sup>2</sup>	405	1,215	2,430
11.	Company net value (lines 1 – 106)	9,595	9,093	8,186

From the results shown in the Tables 3 and 4 are evident the following significant conclusions:

1. The original M-M model adjusted by the income tax leads to an extreme debt policy – the higher the share of debt in the capital structure the higher the company value.
2. Taken costs of financial difficulties also in conditions of the 29 % income tax rate and 10 % interest rate into account, the mentioned extreme solution loses. The companies X and Y have the optimum capital structure at the variant B (lines 7 and 11, Table 3). The variant C, with a higher debt share than the variant B, has a lower net value in both companies.
3. The companies X and Y reach the optimum value when financed by the own capital at 19 % income tax, and 5.4 % interest rate. It is generally true that the decline of the tax and interest rates results in a decline of the interest tax shield, and the optimum shifts to a structure with a lower debt.
4. The decline of the tax rate together with the decline of the interest rate from long-term credits has a favourable impact on debt costs, and when shareholders do not change their requirements, also on the own capital (shareholder's equity) yield and on average costs of the corporate assets (capital), and it affects the growth of the company market value.

As far as decision making on company development projects is concerned, the decrease of the income tax and the interest rate (from 29 % to 19 %, from 10 to 5.4 %) brings the following conclusions (supported by calculations of particular projects):

1. Decrease of the income tax influences favourably decisions on projects, the number of acceptable projects increases, and more space for investments and development is created. The same goes for cases of financing from the company's own sources.
2. Decrease of the income tax and interest rate (if the project is financed from other sources) leads to a decline of the present value of the interest tax shield but this decline does not influence the assessment itself, it is covered by the growth of the net profit as the basic component of the cash flow project.
3. If the primary decision of a company is a decision on the capital
4. structure – the target debt ratio –, decline of the tax and interest rates diminishes space for financing projects through debt.

## 4. Conclusion

Changes in the business climate in the Slovak Republic after 2000, and their impact on the two above mentioned important factors (income tax rate and interest rate from long-term credits) have favourably affected two significant areas of corporate long-term financial decisions and those related to the capital budget – decisions on optimum capital structure and company development projects.

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# FINANCING OF SMALL AND MEDIUM SIZED ENTERPRISES IN TRANSITION ECONOMY: AN ESTONIAN CASE

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## **Abstract**

*The financial sector, and particularly the banking system played an important role in the process of transition and economic recovery in Central and Eastern European countries (CEECs). The main objective of this paper is to analyze main changes in financing decisions of Estonian companies in the period of economic transition from 1994 to 2004 before joining European Union. Empirical results of Estonian firms' interview study, undertaken annually during 1994-2003, are presented in the paper. The analyze concentrates on informal borrowing and lending in comparison of average interest rate being applicable on official lending from Estonian commercial banks. Firms can finance investment in two ways: with equity—which can be increased by issuing new shares or by reinvesting profits—and with debt. The financial frictions arise because of the following assumptions: (a) there is a cost or premium associated with increasing equity by issuing new shares, compared to reinvesting profits; (b) defaulting on the debt is costly. During the period of transition, availability of financing has changed dramatically. We can observe switch from informal borrowing and lending to the commercial banks and financial intermediaries. However, due to the protection of the shareholders' and creditors rights usage of direct borrowing from owners, including parent company, keeps large share in total financing of companies.*

**Keywords:** *firms' financial behaviour, transition, contractual obligations, payment terms, informal borrowing*

## **1. Introduction**

Restructuring the banking sector was part of the integration programme of the Central and East European transition economies with the European Union. Up to the end of 1980s the transition countries (including Estonia) had a centralised monobanking system. All the banks were owned by the state and through its branches the central bank just opened credit lines for state-owned enterprises. Transition to a market economy involved the introduction of commercial banking and competition. Today the transition period has lasted long enough to enable researchers to make profound analysis and draw conclusions, whereas few years ago the tendencies were for insiders (i.e. Estonians) somewhat politicized and not so easily interpretable.

## **2. Changes in the banking environment**

Together with development of overall economic environment the financing decisions in Estonian firms have changed significantly. These changes have been so quick that sometimes companies do not recognize their own actions to obtain financing, even if reminded now. The current article describes main changes in the financing activities. Estonia is a small country in which banks are the prevalent financial intermediaries, with total assets accounting over 70% of GDP (see Table 1).

In the beginning of 1990-s, Estonia has just become free of planning economy, what efficiently happened in 1989. Although the state has been declared free, the legislative environment and business practice remained comparable to those in other parts of former Soviet Union. Major initiatives from legislative body were related to establishment of monetary system (Law on Estonian Central Bank) and first rules to financial intermediaries. Credit Institutions Act has been approved in 1999, and it has later been modernized several times.

**Table 1. Growth indicators of commercial banks in Estonia**

<i>Year</i>	<i>Number of operating banks*</i>	<i>Total by the end of the year, bill. EEK</i>		<i>Per bank, bill. EEK</i>		<i>GDP (current prices, bill. EEK)</i>
		<i>assets</i>	<i>share capital</i>	<i>Assets</i>	<i>share capital</i>	
<i>1992</i>	<i>41</i>	<i>5.2</i>	<i>0.5</i>	<i>0.13</i>	<i>0.01</i>	<i>14.3</i>
<i>1993</i>	<i>22</i>	<i>6.4</i>	<i>0.4</i>	<i>0.29</i>	<i>0.02</i>	<i>21.8</i>
<i>1994</i>	<i>24</i>	<i>10.1</i>	<i>0.6</i>	<i>0.42</i>	<i>0.03</i>	<i>29.6</i>
<i>1995</i>	<i>18</i>	<i>14.9</i>	<i>1.1</i>	<i>0.83</i>	<i>0.06</i>	<i>40.7</i>
<i>1996</i>	<i>13</i>	<i>21.9</i>	<i>1.4</i>	<i>1.68</i>	<i>0.11</i>	<i>52.4</i>
<i>1997</i>	<i>11</i>	<i>38.8</i>	<i>2.4</i>	<i>3.53</i>	<i>0.22</i>	<i>64.3</i>
<i>1998</i>	<i>6</i>	<i>41.0</i>	<i>6.1</i>	<i>6.83</i>	<i>1.02</i>	<i>73.3</i>
<i>1999</i>	<i>7</i>	<i>47.1</i>	<i>6.3</i>	<i>6.73</i>	<i>0.90</i>	<i>91.8</i>
<i>2000</i>	<i>7</i>	<i>57.8</i>	<i>5.9</i>	<i>8.26</i>	<i>0.84</i>	<i>92.9</i>
<i>2001</i>	<i>7</i>	<i>68.4</i>	<i>9.0</i>	-	-	<i>104.4</i>
<i>2002</i>	<i>7</i>	<i>81.7</i>	<i>9.9</i>	-	-	<i>116.9</i>
<i>2003</i>	<i>7</i>	<i>98.6</i>	<i>11.2</i>	-	-	<i>127.3</i>
<i>2004</i>	<i>8</i>	<i>133.6</i>	<i>13.1</i>	-	-	<i>141.5</i>

\* incl. branches of foreign banks

Source: Bank of Estonia.

The role of other financial intermediaries is rather moderate. The four largest banks have more than 95% shares in Estonian banks' assets, with two of over 80%. Major shareholders in the four largest banks are Nordic financial conglomerates, which are also active in other Baltic countries. Estonian banking has experienced two system crises, which has significantly decreased the number of banks and has shifted Estonian banking under the control of foreign capital. Similar processes can be observed in all transition countries where in the end of 1999 foreign banks managed 53% of assets. In 1995, the respective number was remarkably lower – 20%. This has also pushed the development of banking regulations and supervision.

Estonia's domestic financial system remains largely dominated by banks, but other institutions are growing rapidly. Banks' domestic credit (excluding loans to other financial institutions—mainly leasing companies) remains by far the largest source of domestic financing, equivalent to almost two-thirds of GDP in 2003 (Figure I.5). The stock market's recent bullish behaviour has boosted market capitalization to 40 percent of GDP, and by a further 8 percentage points in the first quarter of this year, but four-fifths of this is foreign owned. Leasing activities (for real estate, autos, commercial

vehicles, and other items, provided by institutions almost wholly owned by Estonian banks), are unusually prominent in Estonia, and have grown rapidly in recent years. The bond market remains relatively dormant, and insurance premiums grew only somewhat faster than the overall economy. The assets of investment funds (again, largely owned by domestic banks), in contrast, while still relatively small, are surging, in part reflecting the creation of a fully funded second pension pillar. (IMF country report)

Researches on banking reconstruction in Estonia and other Baltic States show that the major banks of transition economy will reach the level of developed countries' banking in relation to the banks' trustworthiness, novelty of products and standards. This is also a claim of global economy for survival, which has been realized generally by the banking of transition economies. But the disadvantage of such development is the extreme concentration in banking, as a result of which competition, which is essential for ensuring stable development and stability of services and prices in the banking market, will gradually decrease.

The Estonian economy has been expanding rapidly, with per capita real incomes rising by 75 percent in the last decade. This was the result of high domestic investment rates; with the average investment share the highest among new EU members in recent years, and sizably above the shares in the old EU and in other large debtors, although recent shares have been temporarily inflated by a number of large, "one-off" projects. The saving rate, in contrast, has been average compared to those in other new EU members, but higher than then those in other high net external liability economies. (IMF country report)

### **3. Changes in financing activities of firms**

In that paper are used some results of the special interview study of Estonian manufacturing firms undertaken annually in 1994-1999 and in 2003. Tallinn Technical University research group, headed by prof. Vello Vensel, has monitored Estonian economical behaviour of enterprises in frames of Monitoring of Business Environment.

The study is one part of larger joint research project of analysis of reforms in financial sector in Central and Eastern Europe transition economies. The study was financed by EU Phare program and Estonian Science Foundation support. The sample has not been very large (being during the period of monitoring from 40 to 68 firms), but it is representative in means of composition from different firms.

The main changes are decreasing share of state-owned enterprises and corresponding increasing share of private ownership due to the successful and rapid privatization process, if we compare distribution of firms by the ownership structure in different years. Share of state-owned enterprises (SOE) decreased from 18.1% in 1994 to 4.1% in 2000 and correspondingly share of domestically owned private ownership increased from 59.2% in 1994 to 73.8% in 2000 we can mention also increase of the share of mixed domestic and foreign private ownership (at an average 16.8%). The average share of foreign ownership in the last group of firms (12 firms responded in 2000) was 68.3%. Most of the sample firms started their business after 1992 and obtained their start-up financing mostly from own savings (at an average 58.1%) because their access to the loan market was limited.

Most of sample firms were medium size firms (at an average 49.6%) with the number of permanent workers 21-200, share of small firms with the number of workers 1-20 was at an average 37.2%. Quite clear trend was increase of the share of small firms (from 20.6% in 1994 to 52.9% in 2000) and respective decrease of the share of large firms (from 23.5% in 1994 to 4.0% in 2000). This phenomenon is result of restructuring the whole economy and start-up of new private small businesses. Average number of permanent workers in sample firms was about 50 in 2000.

As a generalisation, the results show that the sample mostly consists of small (at an average 37.2%) and medium-size (49.6%) domestically owned private (73.8%) joint stock companies (70.4%) or limited liability enterprises (16.5%), which started their business on the basis of own savings (58.1%) after the year 1992 (64.1%), and which are operating in Tallinn (49.2%) and in North-Estonia (28.0%). Although the sample is not very big (at an average fifty firms responded every year) it is representative with respect to different distribution characteristics. As a feedback, more important results of the study and a short financial analysis results (for example, *Altman Z*-score and other financial ratios) on the basis of balance sheet and income statement information was given to responded firms. (Tearu and Vensel, 2001)

An enormously important source of private financing for start-ups and SMEs in both developed and developing countries is the venture capital industry. The availability of risk financing for new enterprises and SME expansion is organized around individuals and firms who seek such opportunities and market them to potential sources of capital. The venture capital industry is particularly important in countries where banks do not make equity investments. However, even under universal banking, banks

often prefer customers with proven track records and shun new enterprises and longer-term commitments and risks that are hard to judge. Thus, the role of venture capital as a source of finance for activities with high risk and potentially large impacts on economic development cannot be understated. (BOFIT discussion paper)

**Table 2. Sources of financing of Estonian Firms in 1994-2000 and 2003, percentage of total**

<i>Source of financing</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2003</i>
<i>Own savings</i>	57,9	63,6	51,6	57,4	50,3	56,3	69,7	60,1
<i>Loan from domestic bank</i>	10,5	11,4	10,9	1,0	6,2	5,7	3,5	10,1
<i>Loan from relatives, friends</i>	8,0	9,2	6,2	3,3	1,9	6,5	2,7	1,6
<i>Loan from foreign bank</i>	2,6	6,8	1,6	0,8	0,6	1,4	0,8	1,1
<i>Loan from money-lender</i>	10,5	4,5	4,7	3,7	1,5	2,2	1,1	1,0
<i>Other sources</i>	10,5	4,5	25,0	33,7	39,5	27,9	22,2	26,1

*Source: Authors' calculations*

Some of the results from the table 2 can be directly attributed to the tendencies in overall economy, e.g. increase of borrowing from relatives and friends in 1999, a year after financial sector has been hit by Russian crisis. Relatively big importance of “other sources” is indicative of increasing share of foreign investments to the Estonian companies.

Not surprisingly, getting a loan from an Estonian Commercial Bank depends on loan guarantees, total assets of the company and the time how long the company has been client of the bank. Because small companies do not have sufficient guarantees at starting the business, it is extremely difficult to access credit resources through bank loans. Many prefer to give direct loan instead of giving additional warranties. This is why the starting capital has been mainly collected from own savings, more than a half of resources of

starting capital every year. Borrowing from moneylenders is not typical and that service does not have significant influence on financial market.

Also, together with increase of availability of formal financing from banks, the importance of lending from moneylenders has decreased. One of the reasons is their higher interest margins; another is their reputation of informal way of debt collection, if the payments were delayed.

Interesting fact is, that despite of increase of availability of formal lending, importance of own savings (including owners' equity) has remained high. It may be related to the "long-term survival" goal of managers. Taking financial obligations is still seen as more risky strategy than having large owners' equity. Somewhat this indicates also confidence of Estonian owners and managements to the economic environment: only small percent of companies have distributed dividends, thus believing that keeping the earnings in the business is more profitable than taking it out.

#### **4. Possible causes of changes in financing decisions**

The current Estonian income tax law supports having more equity in business. Because the income in the company is not taxed, there does not be usual income tax effect on borrowing and the profit of Estonian subsidiary of international group, if consolidated into parents' result, makes groups average income tax level lower. From one side it is disadvantageous to the lenders in banks, but the effect on total economy probably outweighs this disadvantage. The same reason may be behind the aggressive lending by banks to private persons: there simply may not be enough business to whom to lend the funds.

Also, one must note that the improvement in creditor rights protection plays important role in the financing decisions of companies. In the Table 3 below is provided analysis of the creditor rights indices. If transition economies had LLSV index value of 1.4 in an early stage of transition in 1992, the same is increased to 3.23 for 1998. In Estonia, the introduction of the Estonian Commercial Code was the factor mostly changing shareholder and creditor rights.

In CEE/Baltics can trace the formal legal systems primarily to German Law and the countries of South-Eastern Europe to the Ottoman Empire, which in turn was influenced by French law (David and Brierly 1985, Knapp 1972). In contrast the countries of the CIS failed to develop a modern formal legal system prior to a revolution.

**Table 3. Creditor rights in comparison**

	Average of creditor rights (LLSV cr)
<i>World average</i>	2.3
<i>Common law family</i>	3.11
<i>French civil law family</i>	1.58
<i>German civil law family</i>	2.33
<i>Scandinavian civil law family</i>	2
<i>Transition economies 1992</i>	1.4
<i>Transition economies 1998</i>	3.23

Source: Pistor, Raiser and Gelfer

Parallel to the reduction of state financing, economic reforms in transition also fundamentally altered the structure of ownership rights through privatisation. Privatisation methods have varied greatly across the region with potentially powerful implications for the availability of external finance. In a few countries, Hungary, Estonia, Latvia and more recently and to a lesser extent Bulgaria and Kazakhstan strategic sales to foreign investors have dominated the large enterprises. In these countries FDI has been an important source of external finance and the catalyst for corporate restructuring albeit concentrated among the top tier of the corporate sector. However, most governments in the region were constrained in a design and implementation of privatisation by the power of incumbent managers who had accumulated implicit control rights as a result of weak state monitoring under central planning. Privatisation often simply led to the explicit recognition of these control rights through the allocation of ownership titles to insiders (EBRD 1997).

Entrepreneurial financing runs the gamut from start-up funds to support the launching of new companies to growth financing for successful small and medium size enterprises (SMEs). Such transactions have important demand and supply components that are hardly unique to transition economies. On the supply side, the riskiness of these ventures is thought to make them unattractive to banks and, hence, these activities will be credit constrained. On the demand side, the adverse selection argument indicates that firms that are successful have no need to access external credit markets so that the only borrowers left seeking outside financing will be 'lemons.' Creditors fearing adverse selection refuse to lend to the entire pool of borrowers and banks maintain below market clearing interest rates and ration credit according to other criteria. These problems are endemic to entrepreneurial finance and various institutions to surmount them have evolved in developed capital markets. In many instances, market imperfections for the financing of SMEs lead to government efforts to

provide subsidized programs for start-up financing and micro lending. Some of the literature on entrepreneurial finance in transition economies indicates that credit market imperfections are not serious impediments and that start-ups have succeeded without any apparent financing difficulties. For example, Czako and Vajda (1993) examined the sources of SME start-up and continuing financing in the early stage of the transition in Hungary and found that only about a quarter of the companies surveyed used either bank or concessionary loans for start-up financing. Furthermore, of the less than 20% of these Hungarian companies that reported the need for subsequent capital, only about 20% used concessionary financing while almost 45% attracted bank financing. (BOFIT discussion papers)

About half of the interviewed companies reported usage of overdraft facilities; most of them received overdrafts from one bank (81%) and others from 2 different banks (see Table 4).

We can not observe clear relationship between the actual average interest rate and the share of companies using bank financing. However, this can be explained by the large share of companies using parent company's or owners' financial support.

The share of "other" clearly indicates that the combination of well-protected shareholder and creditor rights together with the higher market interest rate than in developed countries is driving the tendency of financing companies through equity and owners' direct investment.

According to the IMF country report analysis, the share of FDI earnings reinvested in Estonia averaged 63 percent during 1996–2003, rising to 79 percent in 2003 (IMF report). This again proves that Estonia is exceptionally using large part of the earnings to enlarge the business. Recent data show that Estonia's foreign direct investments per capita are on a solid top 20 positions in the world, and as an indicator we can look at it as one more argument supporting good direct investment climate in Estonia.

**Table 4. Borrowing from Formal Institutions**

	1994	1995	1996	1997	1998	1999	2003
<i>Share of firms (%) using:</i>							
<i>Overdraft facilities</i>	41.9	42.9	45.5	56.3	43.3	45.7	42,7
<i>Granted loans</i>	33.3	38.7	47.9	55.1	50.7	63.8	65,5
<i>Leasing contracts</i>	22.2	32.6	47.5	60.0	68.7	61.4	62,3
<i>Share of bank loans (by number)</i>	76.9	74.3	75.2	74.8	73.3	65.0	73,1
<i>Average annual interest rate</i>	24.6	18.2	16.7	16.6	12.4	12.1	8,1
<i>Average annual interest rate for companies</i>	No data	No data	No data	16.29	17.01	9.49	8.78
<i>Share of firms applying for loans, %</i>	36.8	47.2	62.5	51.1	52.2	42.2	61.2
<i>Share of accepted loan applications, %</i>	92.9	89.1	76.6	88.0	82.9	89.5	94.3
<i>Reasons why the firm did not apply:</i>							
<i>High interest rates</i>	37.3	3.9	27.3	7.4	10.8	16.0	7.5
<i>Do not wish to fall into the debt</i>	20.8	19.2	27.3	18.5	10.8	4.0	4.1
<i>Do not need a loan</i>	16.7	42.3	36.4	40.7	56.7	48.0	52.2
<i>Complicated application procedure</i>	8.4	11.5	9.0	3.8	-	-	1.0
<i>Insufficient collateral, probably will not be approved for a loan</i>	8.4	23.1	-	29.6	5.5	12.0	10.1
<i>Other reasons (parent firm is helping, already has a large debt etc.)</i>	8.4	-	-	-	16.2	20.0	25,1

*Source: Authors' calculations*

The share of lease financing has had steady growth from 1994 to 1998. That can be explained with general legislation enabling to secure leases in better way than loans. Granted loans have been used more in late 90-s and were even more popular than financial leases in 1999. Lease financing has steadied after 2003 in Estonia, however, Estonian companies have started significant lease activities in CIS countries.

## 5. Informal borrowing and lending

Approximately an half of the companies have requested a loan from bank and nine tenths had received it. Firms, who received loans during the last year or during the last five years, reported more exact terms and conditions of loans. About 2/3 of institutional loans were bank loans, firms received loans also from non-bank financial institutions (for example, from credit unions), from government projects and foundations, from parent firms. The companies what did not apply the loan majority did not need financing outside the company. The second most important reason was lack of security to be pledged as collateral.

23.4% responded firms reported the usage of informal borrowing during last 3 years. The main reasons for informal borrowing (mainly fewer formalities and more favourable interest rate) are presented in the Table 5.

Relatives and friends, also owners and parent firm, were reported as main loan sources, moneylenders and suppliers or clients were also mentioned. To comment informal borrowing the most adequate conclusion is that personal relationship with the borrower is a reason why it is used.

**Table 5. Informal Borrowing and Lending**

<i>Reasons</i>	1994	1995	1996	1997	1998	1999	2003*
<b><i>1. Informal Borrowing:</i></b>							
<i>Share of firms using informal borrowing</i>	18.7	21.2	16.7	24.5	23.9	23.4	20.3
<i>Main reasons of informal borrowing:</i>							
<i>More favourable interest rate</i>	33.3	41.6	12.5	8.3	37.5	36.4	10.2
<i>More flexible repayment schedule</i>	16.7	25.0	25.0	58.4	-	-	-
<i>Less formalities</i>	33.3	-	25.0	-	31.3	54.5	63.9
<i>Collateral is not needed</i>	-	16.7	25.0	8.3	12.5	9.1	12.3
<i>Others (did not got a loan from a bank)</i>	16.7	16.7	12.5	25.0	18.7	-	3.1
<i>Main loan sources/lenders:</i>							
<i>Relatives and friends</i>	50.0	58.3	37.5	50.0	77.4	36.4	61.0
<i>Money-lenders</i>	16.7	16.7	25.0	16.7	12.9	18.2	15.2
<i>Informal groups</i>	-	16.7	25.0	16.7	3.2	-	-
<i>Suppliers or clients</i>	-	8.3	12.5	-	-	18.2	-
<i>Others (individuals, parent firm)</i>	33.3	-	-	16.6	6.5	27.2	5.7
<i>Average annual interest rate</i>	28.4	22.3	19.8	16.3	11.1	8.1	8.4
<i>Usage of collateral, %</i>	16.7	22.5	37.5	25.0	25.0	9.1	10.3

<b>2. Informal lending:</b>							
<i>Share of firms granted informal loans</i>	23.0	34.2	29.6	35.8	37.3	31.1	29.6
<i>Main loan recipients:</i>							
<i>Relatives and friends</i>	14.8	27.8	5.3	3.2	8.0	14.3	3.3
<i>Suppliers or clients</i>	14.8	-	-	17.4	12.0	14.3	14.4
<i>Employees</i>	48.2	55.6	73.7	76.7	60.0	57.1	69.8
<i>Other firms</i>	22.2	16.6	21.0	2.7	20.0	14.3	5.0
<i>Average annual interest rate</i>	23.5	18.6	15.4	11.3	9.9	8.8	8.2
<i>Usage of collateral, %</i>	33.3	28.4	47.4	21.7	38.1	46.1	55.2

*Source: Authors' calculations*

Largest share in money lending have employees. It is probably related to policy of retaining employees in the business when salaries are relatively low. Although loans from banks have become available to many persons, lending from a company is still popular.

An important component of a state's economic policy is its financial policy. The financial sector, and particularly the banking system played an important role in the process of transition and economic recovery in Central and Eastern European countries (CEECs). Banks and other financial institutions are a unique set of business firms which assets and liabilities, regulatory restrictions, economic functions and operations establish them as an important subject for the study, particularly in the conditions of emerging financial sectors in CEECs. Banks and other financial institutions performance monitoring, analysis and control need special analysis of their operating and activities results. It can be done from the viewpoint of different audiences, like investors/owners, regulators, customers/clients, and banking managers.

There are several obstacles hindering the transformation of former centrally-planned economies into well-functioning market economies. The business environment in transition countries is dynamic and dramatically changing.

All these transition activities, such as appropriate institution-building, political democratisation, changes in value appraisal and behaviour of individuals and economic agents, cause rapid changes in the business environment influencing, among others, financing and investment decisions made by firms.

## 6. Conclusion

Small and medium sized enterprises in Estonia have different approaches to the financing. We can notice that large share of financing is provided by either the owners or by the parent company despite availability of different financial products from banks and other financial intermediaries. This tendency may have several reasons: influence of the unusual corporate income tax law, good protection of shareholders and creditors rights, owners' faith to the economic growth in Estonia and relatively good effectiveness of legal enforcement mechanism.

For SME-s borrowing from owners with less transaction cost and less formality is only outweighed by the use of owners' equity, i.e. retained earnings, as a main financing source. Use of own savings, including the equity, is remaining popular for businesses. This can change together with the change in tax system, which is expected after the transition period agreed with EU before accession in 2004 ends.

More profound studies are needed to analyse the reasons behind using of the informal borrowing and lending and the relationship between the shareholders rights and use of owners' equity as a primary source of financing.

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# **SUPPORT OF THE DEVELOPMENT OF SMALL AND MEDIUM-SIZE ENTERPRISES IN EAST SLOVAKIA<sup>1</sup>**

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## **Abstract**

*The contribution deals with the institutional structure of the support of SMEs in Slovakia. It shows the situation in the field of support of the small and medium -size enterprises in East Slovakia. It also provides a picture of how the small and medium -size enterprises are informed about institutions of support, about using the services of these institutions, about the interest of SMEs to use the services of these institutions, about the interest of SMEs to cooperate with universities. The contribution is a part of the output from the solution of the Grant of the University of Economics in Bratislava, Project of Young Scientific Workers, No. 2330251/04 “Solution of Selected Problems of Regional Forms of Support of Small and Medium-Size Enterprises”.*

**Keywords:** *support of small and medium-size enterprises, support institutions of small and medium-size enterprises, using the services of the institutions for support of SMEs*

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## 1. Introduction

Small and medium-sized businesses are an important part of the economy. Their development has a positive trend in Slovakia in the recent years. The number of small and medium-size businesses is increasing, the share of employment in small and medium businesses on total employment is growing, the volume of gross production in small and medium-size businesses is increasing but the share of SMEs on total gross production is decreasing.

In spite of this fact the share of SMEs in the total number of companies in Slovakia is comparable with the countries in the European Union.

Joining the European Union means for the Slovak Republic an increasing competition pressure in the markets. In order to maintain the position of SMEs in the competitive markets, the Slovak Republic follows the policy of supporting the development of small and medium-size enterprises and in the effort of improving the entrepreneurial environment by programs of support to small and medium-size enterprise of Ministry of Economy of the Slovak Republic, other Ministries, financial and assistance institutions, interest societies and unions. An important role in this process is played by banks, which take part in co-financing of assistance projects of development of SMEs.

At present, attention to small and medium-sized businesses is given by institutions for support of the development of small and medium-size businesses as well as many scientific and research institutions, among them also universities.

The research project “Solution of Selected Problems of Regional Forms of Support to Small and Medium-Size Businesses” is aimed at examining the current state of SMEs in East Slovakia, analysis of current conditions and possibilities of the access of SMEs to capital for beginning and development of their entrepreneurial activities, determining and solving some of the main problems of supporting small and medium-size enterprises and designing a proposal of measures for improving the situation in this field in East Slovakia.

The aim of this contribution is to present the preliminary results of the research of young researchers and to show the situation in small and medium-sized businesses in East Slovakia.

## **2. Institutional Support of Small and Medium – Size Enterprises in Slovakia**

In spring 2000 at the Lisbon summit, the EU set a new strategic goal: to become the most competitive and most dynamic economy in the world which would be capable of constant economic growth. At the meeting of the European Council in Feira in June 2000, the European Charter for Small Enterprises was issued, which called upon the Member States and the European Commission to support the development of small enterprises. The Slovak Republic officially adopted the European Charter for Small Enterprises at the Conference of CC Best in Maribor on 23<sup>rd</sup> April 2002.

In compliance with the above mentioned Charter and further documents and recommendations of the EU, in Slovakia at present the following institutional framework for support of small and medium enterprises is built up. The guarantor and coordinator of all activities for the field of small and medium enterprising is the Ministry of Economy of the SR which in accordance with the Act of the Slovak Parliament No. 575/ 2001 on organizing the activities of the Government and organization of the central state administration, in the wording of later regulations, participates in the strategy of creating the entrepreneurial environment and supporting SMEs in the fields of industry, power engineering, mining, trade and tourism. The task of the Ministry is:

- creating the strategy of development of small and medium enterprising through state support programs which are carried out through
  - the National Agency for the Development of Small and Medium Enterprises,
  - the Slovak Guarantee and Development Bank, a.s.,
  - the Slovak Power Engineering Agency,
  - the Slovak Agency for the Development of Investments and Trade.
- providing support for establishing industrial parks.

The Ministry of Economy is the Directing body for the Sector operating program Industry and Services through which it is possible since the accession of the SR into the EU to get finances from the European Fund for Regional Development.

The National Agency for Development of Small and Medium Enterprises together with a network of Regional Counseling and Information Centers create the basic institutional tool for support and development of

SMEs which co-ordinate the activities to support them at international, national and local level.

The National Agency for Development of Small and Medium Enterprises was established in 1993 with the common initiative of the EU program PHARE and of the Government of the SR as a foundation. In 1997 it was transformed into an interest association of legal entities of non-profit character. The basic mission of the Agency is to support the development and growth of SMEs in Slovak Republic with regard to the state structural, industrial, technical, regional and social policy. The financial cover for support of SMEs is provided for from the state budget, from funds of PHARE and from funds of the EU.

The National Agency for Development of Small and Medium Enterprises with its financial programs enables:

- Support Loan Program which enables to gain loan funds for setting up or development of a small and medium enterprise, and whose aim is to strengthen the position of small and medium companies, to support their further development and to increase, or maintain employment.
- Micro-loan Program whose subject matter is making loan resources accessible for small entrepreneurs, and whose aim is:
  - to enable establishing/development of small businesses
  - to increase the survival rate of small businesses
  - to contribute to maintaining of employment and creating new jobs in single regions of the SR.
- Capital Starting Fund whose aim is to enable establishing and development of new companies, and to help develop the activities of existing ones in new fields of business by financial investments.

The program enables small and medium entrepreneurs access to capital for starting or development of their entrepreneurial activities through selected banks /Istrobanka, Unibanka, Slovenská sporiteľňa, Tatra banka, Ľudová banka, Všeobecná úverová banka/, Regional Counselling and Information Centers, Entrepreneurial Innovation Centers and Seed Capital Company, s r.o. /established by the National Agency for Development of Small and Medium Enterprises as one of the forms of supporting financial programs – financial investments/.

Besides financial support programs of loan character, the National Agency for Development of Small and Medium Enterprises provides support to small and medium entrepreneurs in the framework of other programs, too, for example:

- additional programs
- counseling and educational programs
- information and institutional programs
- in the framework of pre-accession help of the EU
  - Industry Development Grant Scheme - IDGS
  - Tourism Development Grant Scheme – TDGS
- in the framework of EU help through structural funds – Innovations and Technologies Development Grant Scheme – INTEG
- Sector Operational Program Industry and Services
- and others.

Regional Counseling and Information Centers were established on the basis of partnership of public and private sector as non-profit institutions in the form of association of legal entities with the aim to support economic development at regional level through development of small and medium enterprising. They provide complex counseling, information and educational services, especially for beginning entrepreneurs, or for existing SMEs.

Business Innovation Centers /BIC/ were established with the aim to actively support selected entrepreneurial plans in the region and provide them with long-term care. They are independent legal entities which work out business plans and marketing plans for entrepreneurs , loan applications, accounting, provide services at implementing quality systems, technological and patent counseling, etc.

The above mentioned network of institutions for support of SMESs at regional level is supplemented by:

- Entrepreneurial Incubators which represent places where newly established businesses are concentrated in a limited space, and whose aim is to enhance the survival chance of these businesses, and to support their growth through providing:
  - rent of business premises at the lowest prices in the given location
  - common technical infrastructure
  - specialist counseling services and education.

In Slovakia, Incubators work in Banská Bystrica, Bratislava, Košice, Martin, Prešov, Rožňava, Spišská Nová Ves.

- Centers of First Contact whose services' mission is to contribute to the improvement of the entrepreneurial climate, to support creating new jobs, to increase the competitiveness of target groups, to support cooperation in the framework of the EU, to present and make their regions visible.
- The Slovak Guarantee and Development Bank, a.s. was established by the Finance Ministry of the SR in 1991 as a state money institution, and in 2002 it was transformed into a stock company with 100% stake owned by the state with a special mission aimed at support of financing small and medium enterprises. It is carrying out its support programs for small and medium businesses in the form of providing guarantees, loans and non-returnable financial contributions. It also supports newly beginning small and medium entrepreneurs and self-employed businessmen who, as a rule, are not the target group of commercial banks. Since the end of the year 2000 it has been providing short-, medium- and long-term direct loans to entrepreneurs of operational and investment character. In cooperation with selected commercial banks, SZRB realizes loan products through loan programs.
- The Export-Import Bank supports export activities of exporters mainly into the EU and OECD countries with ensuring return on finances by minimization of risks which arise from insurance, loan, guarantee and financial operations. EXIMBANKA SR performs its functions and activities by financing and insuring export loans with the aim to increase the competitiveness of the domestic products, and support mutual economic exchange of Slovak Republic with foreign countries, especially EU and OECD countries.

Besides the Slovak Guarantee and Development Bank and Export-Import Bank SMEs are supported by the programs of further financial institutions and funds:

- Slovak-American Entrepreneurial Fund
- Fund for Support of Foreign Trade
- Micro-fund Integra
- Innovation Fund

as well as supporting institutions of SMEs :

- Slovak Chamber of Commerce and Industry
- Slovak Chamber of Entrepreneurs
- Slovak Agency for Development of Investments and Trade
- Slovak Agency for Tourism

- Agency for Support of Science and Technology, and many other institutions, associations and societies.

### **3. Research Methods of the State of Support to Small and Medium-Size Enterprises**

The research was carried out in September and first half of October 2005.

Questionnaires which were divided into six parts: Assistance to SMEs, Financing SMEs , Strategy of SMEs, Innovation activity of SMEs, Informatics and General information, were distributed in three ways:

- by sending e-mails with the request of participation in the research with the web site ([www.euke.sk/vyskum](http://www.euke.sk/vyskum)), where the web form was put, which enables anonymous filling in the questionnaire,
- distribution of printed questionnaires by students to small and medium-size businesses, followed by copying the completed questionnaires into the form on the web site,
- distribution of printed questionnaires to small and medium-size businesses through the Slovak Post.

From the database file of small and medium-size businesses provided by the Statistical Office of the Slovak Republic by the method of random selection, enterprises were chosen which sent questionnaires. Companies where e-mail addresses were available were addressed by e-mail, to other companies the questionnaire was sent by post. With both ways of distribution, a quarter of the letters came back because of unknown recipient.

## **4. Preliminary Evaluation of the Results of the Research**

### ***4.1 Legal form of small and medium-size enterprises***

The questionnaires were filled in by 129 companies. The following table 1 shows an overview of the legal form of companies participating in the research.

**Table 1 Legal form of small and medium-size enterprises**

Number of employees	Form of enterprises <sup>2</sup>					
	a.s.	v.o.s.	s. r.o.	š.p.	živnost'	Total
0 - 9	1	0	25	0	57	83
10 - 49	0	1	28	0	5	34
50 - 249	3	0	8	1	0	12
Total	4	1	61	1	62	129

Source: own research

#### 4.2 State of being informed about the assistance institutions helping the small and medium-size businesses

The question “Do you know the institutions which support the development of SMEs?” was answered as shown in Table 2. To answer the question “indicate which” respondents listed institutions: National Agency for the Development of SMEs, regional consulting and information centers, the Ministry of Economy, bureau of labor and others, from which follows that at least some of the companies know the institutions which support the development of SMEs.

**Table 2 Do you know the institutions which support the development of SMEs?**

Number of employees	Legal form <sup>2</sup>	no	yes	total
0-9	a. s.	1		1
	s. r. o.	14	11	25
	živnost'	32	25	57
10-49	s. r. o.	13	15	28
	v. o. s.	1		1
	živnost'	1	4	5
50-249	a. s.	0	3	3
	š. p.	1		1
	s. r. o.	1	7	8

Source: own research

<sup>2</sup> a.s. – stock company, s.r.o. - limited liability company, živnost' – self-employed, š.p. – state-owned company, v. o. s. - public trade company

To the question “Do you use the services of the institutions supporting SMEs?” only 9 respondent gave a positive answer. The question “indicate which” was answered by: the interest association PO Kézfogás, Regional Counseling and Information Centers, courses – counseling – subsidies, mediation of business, state subsidies, working out entrepreneurial plans and grants and information about product promotion counseling, financial contribution for establishing new jobs, grant programs.

The question “Has anybody from your company taken part in an information event on possibilities of supporting SMEs?” was answered positively by only 8 respondents. They stated the following organizers:

- the town Košice
- the town Rožňava
- town authority Veľké Kapušany
- the Ministry of Economy
- the Ministry of Agriculture – 2 respondents
- Regional counseling and information center – directing quality,
- Regional counseling and information center Prešov,
- Regional counseling and information center Košice,
- Integra – course.

From the above mentioned it results that small and medium size enterprises know the institutions which support the development of SMEs but they do not use their services /apart from some exceptions/, and they do not take part in information events about possibilities of assistance to SMEs. However they are interested in using the services of institutions which support SMEs. The interest to use the services of these institutions was expressed by 30 micro-companies with the number of employees from 1 to 9, 14 small companies with the number of employees from 10 to 49 and 5 medium-size companies with the number of employees from 50 to 249.

#### **4.2.1 Support of participation of small and medium size companies in the 6th Framework program of the EU**

The 6<sup>th</sup> Framework program for science and research is an activity by which the European Commission contributes to achieving the aim to create from the EU the strongest economy. The community program is designed to

ensure quick application of new information and technologies in the market especially through small and medium enterprises. For Slovak companies it is a way of gaining access to most progressive technologies and innovations of production.

Special attention is given to SMEs with the aim to support their participation in the activities in single thematic fields, especially in integrated projects. In excellence networks and in target oriented research, it is expected that small and medium size-enterprises will use this form to draw at least 15% of the budget of seven thematic priorities.

Further there are two specific schemes for small and medium size enterprises, which enable them to develop innovations actively without having their own research capacities. These are the “collective research” and the “cooperative research” schemes (CRAFT). Through these schemes can SMEs as well as entrepreneurial groups assign a research task to research institutions (research institutes, universities, etc.), and this way solve their own development and innovation problems.

We wanted to know if the companies know the possibilities offered to small and medium size enterprises by 6<sup>th</sup> skeleton program of the European Union. Only seven respondents answered positively, and they stated the following possibilities:

- support of selected entrepreneurial projects, also financial
- 15% of the budget of the skeleton program is devoted to the participation of SMEs in research, development and support activities from different countries
- micro-loan program
- support from the National Agency for Development of SMEs
- integrated projects
- creation of European research area.

It should be noted that the support from the National Agency for the Development of SMEs and the micro-loan program do not belong to the 6<sup>th</sup> skeleton program of the European Union.

#### **4.2.2 Cooperation with universities**

24 respondents expressed their interest to cooperate with universities in the fields of: research, tourism, quality management, service delivery, production technologies, optimal process directing, power engineering, construction industry, practical accounting, international accounting

standards, market research, marketing, counseling about the possibilities of gaining funds for doing business.

#### 4.2.3 Suitability of sources for gaining information

Our object of interest was also to find out to what extent are single sources of information about support suitable for small and medium size businesses /the more suitable, the higher grade/. Table 3 presents the average of suitability of single resources of gaining information about support to SMEs according to size and legal form of companies.

**Table 3 Suitability of sources for gaining information about support for SMEs**

Number of employees	Legal <sup>2</sup> form	Daily papers	Periodicals	Subject specific magazines	Specialized publications	Internet	Information events
0 - 9	<i>a. s.</i>	7,00	7,00	9,00	8,00	10,00	3,00
	<i>s. r. o.</i>	6,20	6,44	6,28	6,56	8,36	6,24
	<i>živnosť</i>	6,09	4,93	6,00	5,61	8,07	5,50
10 - 49	<i>s. r. o.</i>	5,44	5,70	7,61	6,84	8,89	7,27
	<i>v. o. s.</i>	4,00	2,00	6,00	6,00	7,00	5,00
	<i>živnosť</i>	7,00	4,00	5,40	3,80	8,80	3,40
50 - 249	<i>a. s.</i>	7,33	6,00	9,67	8,00	10,00	6,33
	<i>š. p.</i>	9,00	6,00	6,00	5,00	10,00	10,00
	<i>s. r. o.</i>	6,33	5,00	7,11	7,78	7,56	6,78
<i>Total</i>		6,49	5,23	7,01	6,40	8,74	5,95

*Source: own research and own calculation*

## 5. Conclusion

There are many institutions in Slovakia which support the development of small and medium size enterprises. Small and medium-size enterprises in East Slovakia have information about their existence but as preliminary results of research are showing they do not use their services and do not take part in information events about possibilities of support for SMEs. It will be necessary to look for possibilities of improving this situation in East Slovakia.

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# ROLE OF THE PROJECT MANAGEMENT IN SME'S FIELD AS A SUCCESSFUL WAY TO OBTAIN FINANCING BY THE EUROPEAN FUNDS<sup>1</sup>

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## **Abstract**

*Project management and its methods are intended for wide and complicated projects leadership. Useful procedures save time and preparation and primarily cut business costs. Typical way, where to practice project management, is company development by European funds supporting policy. Many people, especially in SME's sector, are specialized only on application form, not for organizing, leadership in time of project realization. In this area you could cut your business costs the best. Second section is dedicated to SWOT projects analysis with pointing out on reasons, why the project wasn't being successful in the competition. Research work was realized in two regions – Moravian-Silesian and Ústí region to be able to compare current situation in Regional Business Centres for SME's support and Employment Agencies. Research presented in this paper was supported by internal grant system of Silesian University, IGS SU Nr. 18/2005.*

**Key words:** *project management; business support; SME*

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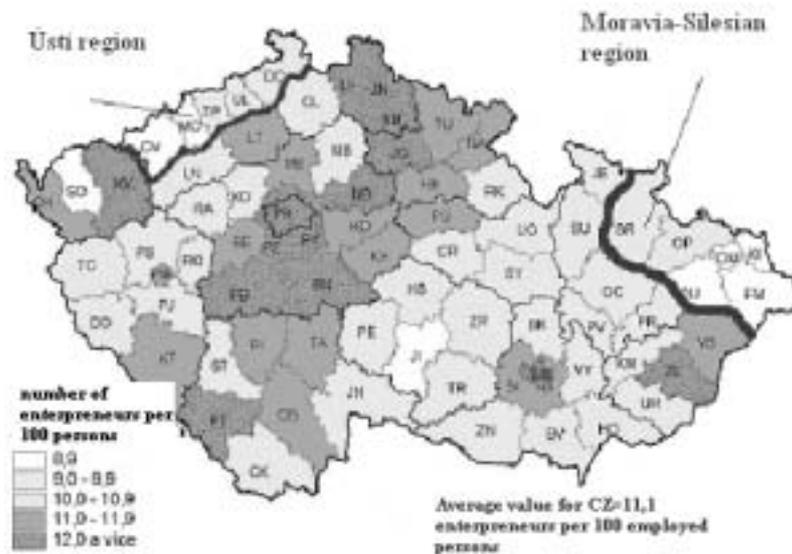
<sup>1</sup> Research presented in this paper was supported by Internal grant system of Silesian University, IGS SU Nr.18/2005

## 1. Introduction

Small and medium sized enterprise (SME) we could characterize as a dynamically growing section of the national economy, especially in number of enterprises. Their importance we could illustrate by the ratio on all subjects on the Czech market in 2004, it was 99.85%. This number says that number of large enterprises decreases strongly too. It means that SME's in the Czech Republic play a big role in regional labour market. Last year it had employed in these sector 61.5 % persons. Their contribution to the economy system is about 34.92 % of GDP; they made 52.15 % of total output and 52.9 % of added value in our republic. SME's are the most important subjects, who increase our foreign trade – 34.3 % of export operations and 52.5 % of import operations.

It was the main reason why is important to promote project management to be more successful in the project competition in Structural funds in the Czech Republic. The activity mainly depends on entrepreneurship intensity ratio. Both mentioned regions – Moravia-Silesian region and Ústí region suffered from high unemployment rate and the lowest entrepreneurship intensity ratio, which is illustrated on the map below.

**Figure 1 Entrepreneurship intensity ratio**



Source: <http://www.czso.cz/csu/edicniplan.nsf/tab/3800373D29>

Czech entrepreneurship is stable growing and developing, by the comparison – three or four subjects are established into one died. The trend you can observe many years. Absolute numbers are represented in Table 1.

**Table 1 Comparison of number of founded and died enterprises**

<b>Year</b>	<b>New founded</b>	<b>Cut-off</b>	<b>Absolute value</b>	<b>Ratio: New founded: cut-off</b>
<b>2000</b>	102 886	27 667	75 219	3.7:1
<b>2001</b>	92 322	30 694	61 628	3:1
<b>2002</b>	64 084	18 413	45 671	3.5:1
<b>2003</b>	99 915	26 781	73 134	3.7:1

Source: *www.czso.cz, own calculation*

Books define project management as an operation limited by time and finance sources, which needs wider cooperation between more departments. Simplified definition says that one team solves one complex object by the most effective way with minimum costs.

When we explain a definition in real life, it means two sides - project description and daily routine. We have to define clearly each work stage and operation sequences. They are existing basic team work rules to be successful. First of all you have to choose a team leader, who has two basic abilities – interpersonal and conceptual and technical skills, than you are able to prepare an implementation timetable and financial plan to be respected by all team members.

Finally all team members have to identify with the project and respect all rules in this time period. The best way to be successful is to support communication activities between all members to solve conflicts and problems during the project. After that you could say that you could the reap harvest the benefits of the project management.

## **2. Research methods and basic hypotheses**

- SME's Analysis in competence of The Ministry of industry and trade 2001-2004, [www.mpo.cz](http://www.mpo.cz),
- Own research, which take place from February to July 2005.

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<sup>2</sup> Analýza malého a středního podnikání ve Zlínském kraji, srovnání stavu MSP v ČR a EU, definování rozdílů v jeho různých segmentech <http://extranet.kr-zlinsky.cz/vismo/dokumenty2.php?ID=120205>

During above-mentioned period, we made a research between SME's in both regions Moravia-Silesian and Ústi, which was specialized on changes in business environment and main development barriers after the EU accession in 2004. Focus was on the local labour market. It was the reason why we use and compare SME's only from the number of employees view and we abstracted from total balance sheet or turnover, which was new defined by the European Commission from 1.1.2005. Another factor, who changed the research way was the fact, that entrepreneurs was not have a goodwill to write down these figures in questionnaire. It was tested on small entrepreneurship group and the main answer was blank questionnaire. It was the reason to modify main goals and the questionnaire type.

Main goals for the research were following:

- SME's structure in both regions, the capital and size of enterprises,
- Information sources about EU and their supporting policy programmes,
- Education opportunities for SME's,
- SME's Adaptability strategies.

### ***2.1 Hypothesis based on information sources***

Before questionnaire preparation, we have to formulate hypothesis based on previous projects and research, but with one change – now as a European Union member:

- “Micro” structure like self-employment person is dominating in regions mentioned above and in all the Czech republic as a way how to solve the unemployment problem,
- Main specialization is trade because of low request on capital, innovations and education,
- Entrepreneurs not use many supporting programs, they don't know about them and main information source is Internet web sites,
- Low rate of approved projects has influence in low rate of education, no counselling work of Business Centres,
- SME's have a high level of dynamics and adaptability to the new business environment; there is connections wit local labour market.

### ***2.2 Methods of own research***

We contacted 720 entrepreneurs in both regions to be able describe adequately characteristic attributes in their environment. We obtained only 172 responders, 122 from z Moravia- Silesian region (MSR) and 50 from Ústi region (ÚR).

Answers we record into spreadsheet program and we used standard statistical methods. Results of the research are explained into two ways – for each region separately followed by regional comparison, than as all results together by making a model of SME. Finally we use a standard research methods like self-induction and hypothetic deduction based on own secondary data analysis.

### **3. Comparative analysis, modelling project oriented SME**

#### ***3.1 Moravia-Silesian region (MSR)***

The Moravia-Silesia region is located in the north-eastern part of the Czech Republic, internally neighbouring the regions of Zlín and Olomouc. Externally, the outer boundary of Moravia-Silesia marks the Czech Republic's border with Polish Silesia and with Slovakia and the region of Žilina. Though it accounts for 7% (5 554 square km) of the country's area, it is home to 12.4% (1 262 660) of its population.

The region's territory is varied, with the Ostrava-Karviná conurbation at its core. This is a traditionally industrial area with a high proportion of heavy industries – primarily coal mining, metallurgy, heavy engineering and chemicals. Other major sectors include mechanical engineering, pharmaceuticals, electro technical manufacturing, paper, textiles and the food industry. Agricultural production is distributed throughout the region and is represented in the foothills of the Beskydy and Jeseníky mountains by forestry.

Since 1990, the region has undergone extensive economic restructuring, accompanied by lay-offs of tens of thousands of workers. From a nationwide perspective, Moravia-Silesia has been particularly hard-hit by the slump of heavy industry and by soaring unemployment. The region has ripe for the development of tourism; an advantageous geographical location in terms of transport routes; a relatively dense rail and bus transport network; an international airport close by the region's centre with huge development potential.

#### ***3.2 Ústí region (UR)***

The Ústí Region lies in the northwest of the Czech Republic along its northern border with Germany, particularly with the Free State of Saxony. The Region's neighbours are also the Liberecký Region in the northeast, the

Karlovarský and partly the Plzeňský Regions in the west, and the Středočeský Region in the southeast.

The Usti Region has 46 cities, where is living 80.7 % of its inhabitants, and 354 villages. The villages up 500 inhabitants are representing 54 % of all villages in Region, but there is living only 5.8 % of inhabitants.

This location predestines the region a significant position in the international economic and cultural co-operation and seems to be an outcome for a wide range of activities of cross-border co-operation between both these neighbouring regions. The position of the Region is, in terms of its gradual integration into European structures, along with the close vicinity and accessibility of Prague and other regional centres, a significant factor of its development. In addition, the main European roads and railway lines on the axis from **Berlin to Vienna via Prague**, together with the Labe waterway, go through this Region. The concentration of industry and population is representing, in terms of the Czech Republic, important market, good accessible from Prague and from neighbouring Saxony. The Ústí Region is varied as for natural conditions as well as from the point of view of its economic structure, density of settlement and condition of the environment. Historically, economic importance of the Region is based on its raw materials, especially large deposits of brown coal, which lie close to the surface. The brown coal basin stretches under the hillsides of the Ore Mountains from the town of Ústí nad Labem to Kadaň. There are also other important raw materials in the Region, e.g. quality glass and foundry sands and building stone. Industrial activity from the past had and still has an unfavourable influence on the quality of the environment. Strongly developed surface mining distinctively damaged the natural face of the landscape, which gradually recovers only thanks to a costly re-cultivation. Well-known are also problems with the emission situation in the Region and high unemployment rate for many years.

### ***3.3 Regional comparison***

The questionnaire was sent to 720 entrepreneurs, from which we get only 172 responds. The main reason for their cooperation was a “help to somebody to make some thesis research” not for better cooperation with the university.

**Table 2 Research sample in both regions**

	MSR		ÚR	
	Amount	Share per total	Amount	Share per total
<b>Fill-in Questionnaires</b>	<b>122</b>	<b>30.5%</b>	<b>50</b>	<b>15.6 %</b>
<b>Blank Questioners</b>	<b>46</b>	<b>11.5%</b>	<b>34</b>	<b>10.6 %</b>
<b>Without response</b>	<b>232</b>	<b>58%</b>	<b>236</b>	<b>73.8%</b>
<b>Total</b>	<b>400</b>	<b>100%</b>	<b>320</b>	<b>100%</b>

*Source: own research*

Regional contrasts are not deep full. By the table comparison, we could illustrate the current situation in the business environment.

Actual figures (30.6.2005) said, that average number of entrepreneurs is on the low level in the Czech republic, because average number is 190 subject per 1 000 citizens and both regions have about 150 per 1 000 citizens. In average, we could say, that one entrepreneur have registered two and more specializations – two licenses. However, from own research in “Moravia” is only 1.1 licenses per 1 entrepreneur and 1.12 in “Ústí”.

We made our research in Business centres too. We were able to make some simplified SME’s definition (which use project management) from questionnaire data. The successful SME, financed by supporting EU funds isn’t the same structure as “common SME” form second part of our research. You could compare it in two tables below.

**Table 3 “Common” SME’s model**

	Moravia-Silesian region	Ústí region
Year of founding	<b>1992</b>	<b>1990</b>
Type of SME	<b>1-10 employees</b>	<b>1-10 employees</b>
Main specialization	<b>Trading company</b>	<b>Trading company</b>
Structure	<b>58% man 42% woman</b>	<b>69% man 31% woman</b>
Education		
<b>Primary school</b>	<b>11.3%</b>	<b>34 %</b>
<b>Secondary education – practice schools, vocational schools without school leaving exam</b>	<b>36 %</b>	<b>38 %</b>

<b>Secondary education- colleges and other schools with the final exam</b>	<b>40.7%</b>	<b>21%</b>
<b>University degree</b>	<b>12%</b>	<b>7%</b>
Language skills	<b>English and Polish</b>	<b>English or German</b>
Capital dominating	<b>95% Czech</b>	<b>90% Czech</b>
Form of cooperation	<b>70% nothing, 30% trade chains</b>	<b>80% nothing, 20% trade chains</b>
Foreign trade	<b>As a third SME</b>	<b>As a fifth subject</b>
EU Funds		
Money utilization	<b>New technology</b>	<b>New technology, development</b>
Funds contribution	<b>increase on market position</b>	<b>increase on market position</b>
Information source	<b>Internet</b>	<b>Internet</b>
Projects preparation	<b>By their self</b>	<b>Consulting company</b>
Main reasons for cut off the business	<b>Lack of capital, competition growth</b>	<b>Lack of capital, competition growth</b>
IT and utilization		
Internet connection	<b>87%</b>	<b>86%</b>
E-learning agreement	<b>41%</b>	<b>62%</b>
Main sections for education	<b>Law, accounting, marketing</b>	<b>Law, accounting, languages</b>

*Source: own research*

**Table 4 „Innovative“SME’s Model**

	<b>MSR</b>	<b>ÚR</b>
Type of SME	<b>11-49 employees</b>	<b>11-49 employees</b>
Main specialization	<b>Industry</b>	<b>Building industry, industry</b>
Structure	<b>70% man 30% woman</b>	<b>82% man 18% woman</b>
Education		
<b>Primary school</b>	<b>10%</b>	<b>15%</b>
<b>Secondary education – practice schools, vocational schools without school leaving exam</b>	<b>10%</b>	<b>10%</b>
<b>Secondary education-</b>	<b>70%</b>	<b>50%</b>

**colleges and other schools  
with the final exam**

University degree	10%	25%
Age	26-50 years	26-50 years
Money utilization	New technology	New technology, development
Information source	Internet, consulting companies	Friends, Internet
Projects preparation	consulting companies	consulting companies
Main reasons why project isn't accepted	Many "similar" projects	Standing of a firm, many "similar" projects
Main barriers	Growth of administrative costs, minimum tax rate	Lack of capital, competition growth
How many projects are successful?	65%	90%

*Source: own research*

We could say that model of "common" Czech SME is not corresponding with "innovative" Czech SME, as being represented by Business Centres. Successful project is mainly prepared with cooperation of the consulting company. Finally, we could say, that main way to get financial support from EU funds is to take advantage of project making specialists, who knows more about program objectives, rules, logical framework, feasibility study and actual law and regulations on the each markets and specializations.

#### **4. Useful project management strategies**

All projects, mainly for developing and growing SME's need a lot of preparation work, which includes analysis of pre-conditions a problem analysis, logical framework and dependence on actual business environment. Useful strategy application includes adaptability on new European environment after the enlargement in May 2004. So, we could talk about as a main used tool called "Euro strategy".

##### ***4.1 Euro strategy Application***

Unified Euro strategy application needs more and more project management approach, which is a result of company department's

cooperation in wide business environment. “Survival problem” is spread into wider array of factors in *European problem format*. If you are a businessman and you want to or not, European globalization trend and changes in business environment could catch you in the most underdeveloped region.

First step to use and prepare Euro strategy is classical SWOT analysis of the common SME in the unified European market approach. We could say the main strongness in this analysis is good knowledge about new EU members, but Czech is still oriented on old EU members. New members have one big advantage – more dynamical harmonization of EU standards and rules.

**Table 5 SWOT analysis of the CZ business environment**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>✓ The Government approval of the <i>Industrial Policy Concept of the Czech Republic</i> including various support possibilities applicable to SME’s</li> <li>✓ Rapid adaptation to market demands</li> <li>✓ Introduction of new technologies</li> <li>✓ Creation of new jobs with low capital costs</li> <li>✓ Contribution to quicker development of towns and villages through entrepreneurial activities</li> <li>✓ Support to structurally affected and economically weak regions</li> <li>✓ Sound infrastructure network for SME’s promotion – 7 Euro Info Centres, 29 Regional and Information Centres, five Business Innovation and Science and Technology Centres.</li> </ul>	<ul style="list-style-type: none"> <li>× Bureaucratic legal and administrative procedure of registering enterprises</li> <li>× Lower economic power than large enterprises</li> <li>× Lack of legal, economic, technical and managerial capacities</li> <li>× Higher sensitiveness to law enforcement and to administrative problems and lengthy process of business disputes</li> <li>× Insufficient orientation at foreign market</li> <li>× Lower awareness of negative impacts of production on environment</li> </ul>

## OPPORTUNITIES

- ✓ Development of industrial production and industrial services
- ✓ Development of business relations with TNC's and wholesalers to become their suppliers
- ✓ Application of a innovative potential as a generator for added value production
- ✓ Creation of enterprise clusters
- ✓ Participation in the Multi-annual Programme for SME's could strengthen infrastructure of supporting capacity

## THREATS

- × Higher competition as a result of market globalization
- × Conservative approach of enterprise managers to introduction of certificated systems of management, including production quality management
- × Lack of capital for development of entrepreneurial activities

*Source: SMALL AND MEDIUM-SIZED ENTERPRISES IN COUNTRIES IN TRANSITION, UNITED NATIONS New York and Geneva, 2003, ISBN E.03.II.E.43, p.66*

Then you are able to analyze your own company situation, main specialization and competitiveness on the market. You have to find original idea, which makes you more different from others.

All components and factors we could illustrate on picture below to be able analyze all factors and identify main goals of our Euro strategy.

### Figure 2 Euro strategy components

**MAIN GOAL:** To increase SME's output by the growing profit from the turnover and growing market



**IMMEDIATE GOAL:** Maximalize chance and minimalize risks from the EU entrance

*Source: Vývoj průmyslu a podnikání, OHK Brno, available from [www.ohkbrno.cz](http://www.ohkbrno.cz)*

After factors description we could make next step in Euro strategy application – a strategy definition by step by step method. Each step covers inside factors which could make it unsuitable for the company, this factors in each group we could include into risk strategy components. We need a lot of adaptability and dynamics in making strategy changes.

**Table 6 Step by step Euro strategy formulation**

Implementation procedure	Strategy type , main problems to solve
<i>Step 1</i>	<ul style="list-style-type: none"> <li>• <b>Research in the new external business environment and conditions on the unified European market.</b></li> </ul>
<i>Step 2</i>	<ul style="list-style-type: none"> <li>• <b>Business sector analysis – analysis of the firm’s market (closer external environment),</b></li> </ul>
<i>Step 3</i>	<ul style="list-style-type: none"> <li>• <b>SWOT analysis from the point of unified EU market view,</b></li> <li>• <b>Firm’s Opportunities and strongness comparison adapted on the new conditions,</b></li> <li>• <b>Firm’s threats and weaknesses comparison adapted on the new condition,</b></li> <li>• <b>Find strategy opportunities,</b></li> <li>• <b>Validity test of strategy opportunities.</b></li> </ul>
<i>Step 4</i>	<ul style="list-style-type: none"> <li>• <b>Strategy choice – competitive strategy formulation</b></li> </ul>
<i>Another steps</i>	<ul style="list-style-type: none"> <li>• <b>Adaptability strategy implementation on the new conditions with standard methods.</b></li> </ul>

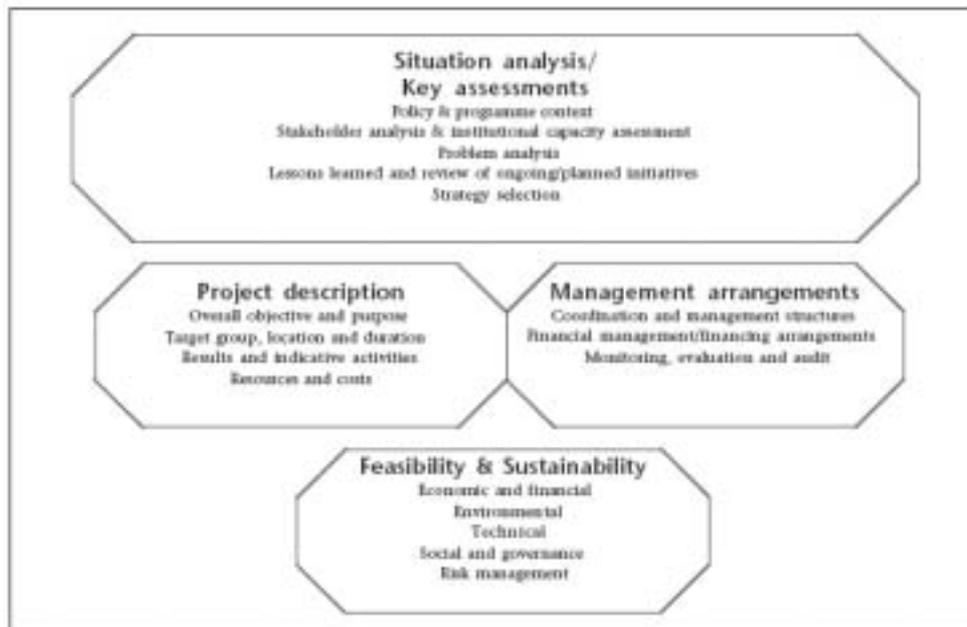
*Source : Vývoj průmyslu a podnikání, OHK Brno, available from [www.ohkbrno.cz](http://www.ohkbrno.cz)*

**4.2 Project management cycle**

The project cycle follows the life of a project from the initial idea through to its completion. It provides a structure to ensure that stakeholders are consulted, and defines the key decisions, information requirements and responsibilities at each phase so that informed decisions can be made at each phase in the life of a project. It draws on evaluation to build the lessons of experience into the design of future programs and projects.

**Project Cycle Management** we could define as a methodology for the preparation, implementation and evaluation of projects and programs based on the principles of the Logical Framework Approach.

**Figure 3 Formulating Project Elements**

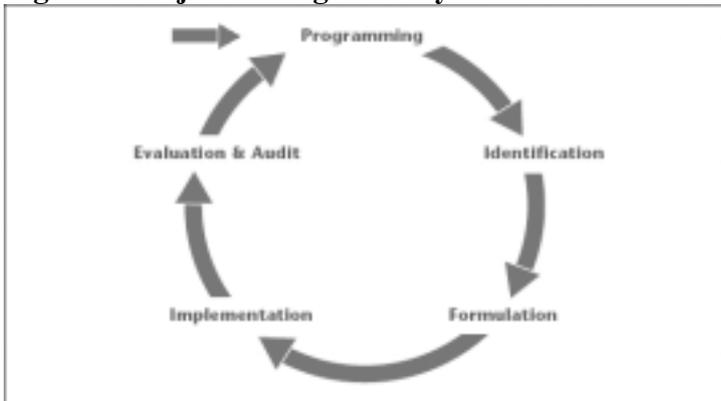


Source: *Project cycle management guidelines, available from <http://europa.eu.int/comm/europeaid>, page 38*

The idea of project cycle management is cooperating with Euro strategy implementation, which could improve SME's competitiveness on the big European market. We could say that this moment is another step to be successful in projects supported by EU.

Project management cycle procedures we could simplify into figure below.

**Figure 4 Project management cycle**



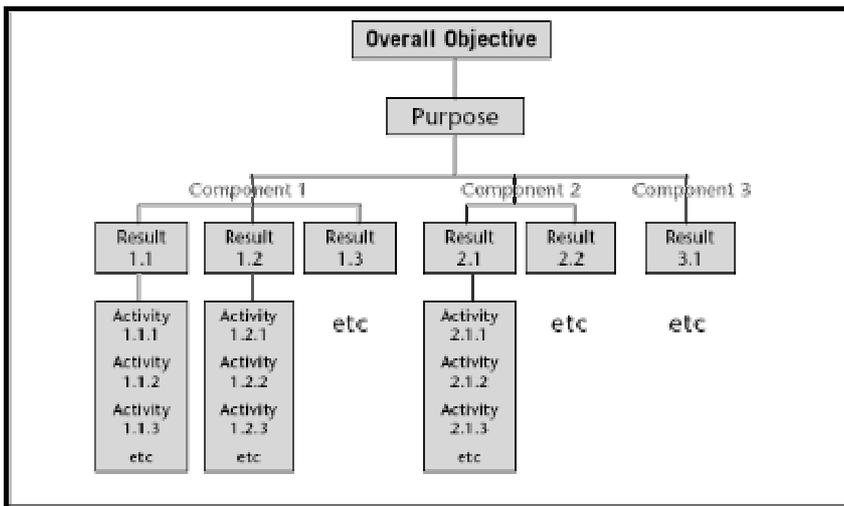
Source: *Project cycle management guidelines*, available from <http://europa.eu.int/comm/europeaid>, page 16

We could see five important stages in this approach. First of all we need to choose appropriate supporting program, which fits the best on our entrepreneurship conditions. Then we have to identify our strategy goals (what will be the benefit of this type of financing support), prepare implementation program step by step and prepare pre-financing study for first phase, because in many cases SME's obtain loans or guaranties after that.

Very important thing is time to do auditing our effectiveness in this project. Is recommended to plan doing project in 1 – 1,5 year and make some time “fund” to make changes and administrative tools for project evaluation. It is the result from EU funds statute, that one project is time limited by the rule “ $n+2$ ”, what means “*You have to complete your project into two years from the project confirmation*”.

The problem could be solved by another tool – objective tree, you could plan your goals and activities which you need to get the biggest effect. This method we call MBO (management by objectives).

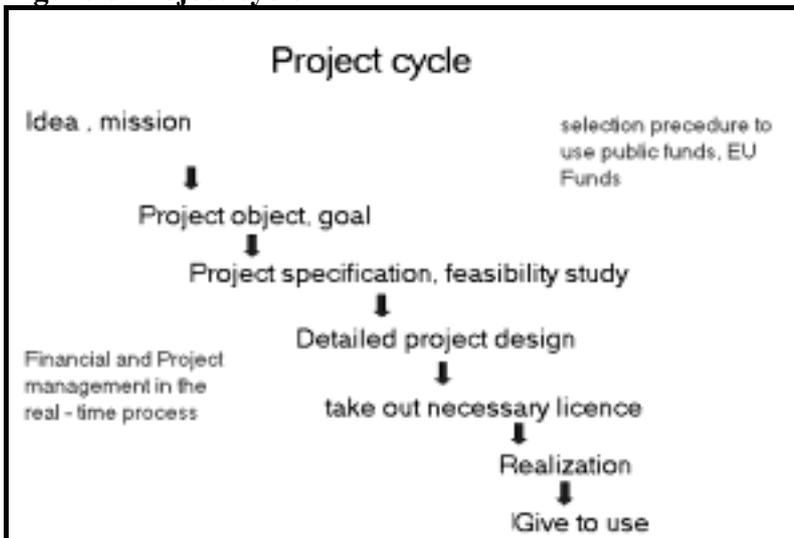
**Figure 5 Objective tree**



Source: *Project cycle management guidelines*, available from <http://europa.eu.int/comm/europeaid>, page 78

If we summarize our knowledge about preparing Euro strategy with project cycle management, we are able to define some “break points” on the way to our “project”. It is illustrated on the Figure 6.

**Figure 6 Project cycle**



Source: *Příležitosti veřejného financování ze strukturálních fondů EU*, PBA Group, Praha, [www.jzp.cz/PrezentaceSFEU012004.ppt](http://www.jzp.cz/PrezentaceSFEU012004.ppt)

It consists on external and internal procedures, which include many managerial skills as a project and financial management, influence of EU policy and development strategy. They are connected with each other and have big or small influence on our project. All the factors are in real time, so another factor which could make our project unsuccessful is “time lag”, when some new legislative regulations could change market conditions and we have to be dynamical to implicate it into project as a “business risk”.

## 5. Conclusion

Preparing a good project need to take a care about all document parts and choose a suitable supporting program not only for getting money, but the main reason must be a company development.

Successful project covers inside many types of analysis, the main points, which we could point out are:

- **Strategy, project goals** - we have to find answers for these following questions: Which is the main project goal and possibilities to fulfil it in the time? Is my project useful? (benefit analysis/ project’s profitability)
- **Financial management** – Which are our main costs? Which are the main cost items? Are we prepared for pre-financing project phase? (Considering *ex-post* EU funds financing) ? Which are the main risk sections?
- **Cooperation , project benefits** – Who is our project partner – does he help us or threaten us? Will be our project supported by the local government?

Finally, each project includes following sections:

- Financial and economical evaluation,
- Economical effectiveness analysis,
- Feasibility study (cost-revenues analysis, social-economic analysis of project benefit, marginal and risk analysis),
- Business plan,
- Environmental impact.

Projects prepared for EU financial support are very useful for SME’s development, but disadvantages are project parameters or program conditions, which could make our project work like lost labour on it.

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[http://extranet.kr\\_zlinsky.cz/vismo/dokumenty2.php?ID=120205](http://extranet.kr_zlinsky.cz/vismo/dokumenty2.php?ID=120205)
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# BUSINESS ANGELS AS A FINANCIAL RESOURCE FOR SMALL AND MEDIUM-SIZED ENTERPRISES <sup>1</sup>

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## **Abstract**

*An increasing number of new small and medium-sized enterprises uncovers a long-term problem concerned with their financing. According to a literature seed-up and start-up firms have many possibilities of raising capital from different external sources. Reverse is true. On the one hand, many innovative business ideas and quality business plans, but without any collaterals or experiences on the other hand, do not fulfill desired conditions and so they are doomed to failure. In this bearing is maybe more actual than anytime before a question of private informal investors. One kind of these investors represents business angels. They are private investors who provide both financing and managerial experience, which increase the likelihood of start-up enterprises to survive. The aim of this paper is represented the most interesting findings of research which we carried out with the aim to show an importance of the business angels as informal investors offered a venture capital with a higher added value for small and medium-sized enterprises in a country with a long-term history of the active business angels – in Germany. Findings of our research are very similar to the findings of other researches. In generally we can say that business angels can influence a next development of firms with a good combination of a monetary and a non-monetary investment.*

**Keywords:** *small and medium-sized enterprises; business angels*

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## **1. Introduction**

The latest survey notes that 18 % of European small and medium-sized enterprises (SMEs) regard the cost of finance, and 19 % the availability of long-term finance, as a barrier for their next expansion. This problem is worse particularly for seed-up and start-up firms. These young enterprises feel during early phases of their enterprising lack of the experiences, own capital and the collaterals. If a beginning firm cannot use any loans from the banks or other venture-capital associations due to these reasons, private investors in a form of business angels represent the perfect partners for them.

## **2. Business angels as a financial resource for small and medium – sized enterprises**

Business angels (BA) are individuals who invest capital in, and bring entrepreneurial know-how and experience to enterprises with growth potential. Business angels can overcome the information problem plaguing banks and venture capital funds. They can make investment decisions using their knowledge of the field, and their appreciation of the potential of the firm they are investing in. Business angels' investments can be both early stage and expansion, and they can have a leveraging effect for other sources of funding, including bank loans and formal venture capital. They come from experienced businessmen, managers and solvent bank clients.

A term - business angel was used for the first time in USA in first middle of 60.<sup>th</sup> years. It was connected with a movie industry. Its importance has increased together with an importance of an informal capital for last 25 years. The terms - private investors, informal investors and business angels were used as the synonyms at the beginning. It had a crucial impact on economists not only in USA but in the Great Britain and Europe as well. In German-spoken area a term business angel is used when we talk about the private investors offering an added value not only in a form of finance but in a form of business consulting as well.

### ***2.1 Types of business angels***

Due to an increased importance of this kind of private investors and their variety there are the efforts to classify them in a literature and in a practice too.

The business union from Germany (Neues Unternehmertum Rheinland e.V.) differentiate these three types of business angels:

- perfect business angels (offering capital, know-how and experiences),

- active business angels (offering more know-how, experiences and less capital),
- silent business angels (offering only capital).

According to the different sources we can business angels sort into these two groups:

- potential business angels:
  - virgin angels (complying with all conditions, but they still do not invest),
  - latent angels (have experiences with investments, but they are passive now),
- active business angels:
  - entrepreneurial angels (are business oriented and experienced),
  - income-seeking angels (seeking only a regular income),
  - corporate angels (through an investment they follow interests in own firms),
  - silent angels (offering only capital),
  - management angels (they are not really entrepreneurs but they offer managerial experiences and know-how)
  - consulting angels (offering only consulting services and contacts).

In practice it is often very difficult to sort business angels positively into mentioned groups. They mostly have characteristics of more type of them. Particularly according to these characteristics we should be able to recognize an original business angel from a false business angel / business devil.

## ***2.2 Business angels in Europe***

Informal investment has been around in Europe for a long time. These long-term experiences pointed out one problem. There was an information gap between private investors on one hand, and firms looking for potential financial resources on the other hand. A good solution to this problem represent a phenomenon - business angel networks. Business angel networks are organizations that are set up primarily to facilitate the matching of angels and entrepreneurs. Due to existing business angel networks the entrepreneurs find angels that would be interested in them, and the angels find enterprises

that would fulfill their criteria. Established business angel networks make the matching process more efficient.

The pioneer among European national networks has been the National Business Angels Network (NBAN) in the United Kingdom, which has been the model for several other national networks. The development of business angel networks in Europe has accelerated since the establishment of the European Business Angel Network (EBAN) in 1998. The number of active business angel networks in Europe has grown rapidly in the last few years. Most countries have a national network and several regional ones. Most business angel network activity in Europe is concentrated in the United Kingdom, Germany and France.

**Table 1 Business angel networks in Europe**

<i>Country</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>Mid 2004</i>
<i>Austria</i>	1	1	1	1	1	1
<i>Belgium</i>	2	6	6	7	7	5
<i>Czech Republic</i>	0	0	0	0	1	2
<i>Denmark</i>	0	1	4	6	8	8
<i>Finland</i>	1	1	1	1	1	1
<i>France</i>	3	13	32	48	48	40
<i>Germany</i>	1	43	36	40	40	40
<i>Greece</i>	0	0	0	0	0	1
<i>Hungary</i>	0	0	0	0	0	1
<i>Ireland</i>	1	1	1	1	3	1
<i>Italy</i>	0	5	12	11	10	12
<i>Luxembourg</i>	0	0	0	0	0	1
<i>Malta</i>	0	0	0	0	1	1
<i>Poland</i>	0	0	0	0	0	1
<i>Portugal</i>	0	0	1	1	1	1
<i>Spain</i>	0	1	1	2	3	11
<i>Sweden</i>	1	2	2	2	9	28
<i>The Netherlands</i>	1	1	2	2	3	3
<i>United Kingdom</i>	49	52	48	48	51	101
<i>Total</i>	60	127	147	170	184	258

*Source: European Business Angels Network (EBAN), Statistical compendium, October 2004.*

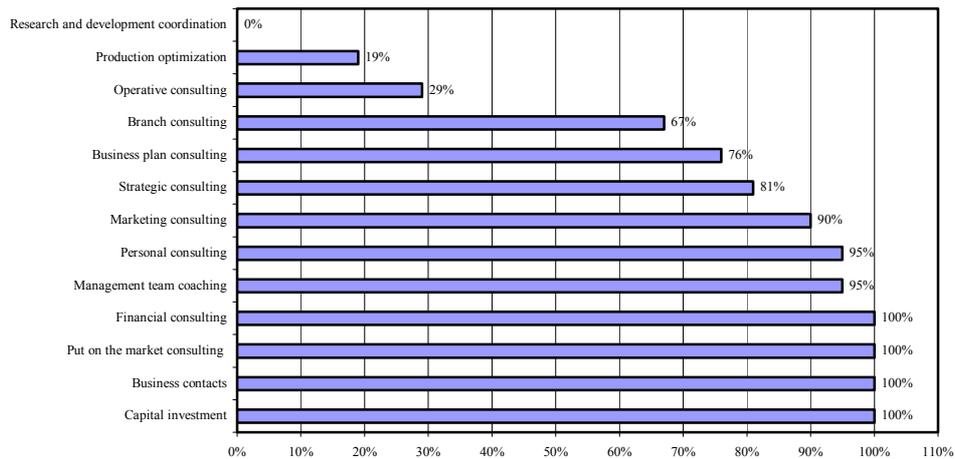
The sizes and methods of the national and regional networks vary between countries reflecting different local conditions. The rapid increase in the number of networks indicates that there has been a need for them, and that they are serving a purpose.

### **3. Business angels in Germany**

We carried out a research with the aim to show an importance of the business angels as informal investors offered a venture capital with a higher added value for small and medium-sized enterprises in a country with a long-term history of the active business angels – in Germany (Emscher-Lippe Region). It was conducted in a form of a questionnaire from January to March 2005 on a research sample of 21 business angels. The questionnaire consisted of 10 semi-opened, 1 opened and 3 closed questions divided into three parts: activities of business angels and their potential impact on economic prosperity of SMEs, a profile of target SMEs, a profile and a motivation of business angels. We present the most interesting findings from our research in this paper.

At the beginning, we were interested in the activities, which BA offered to help SMEs. Every from the questioned BA had some experience with a small-size beginning enterprise and at least once invest capital in. According to a literature, a financial investment does not present an unambiguous determinant indicating private investors - business angels. All the questioned BA (100 %) had experiences not only with a capital investment but with the non-monetary character activities such as business contacts, put on the market consulting, financial consulting (see Figure 1). They are followed by other activities such as management team coaching and personal consulting (95 %).

**Figure 1 Business Angels Activities**



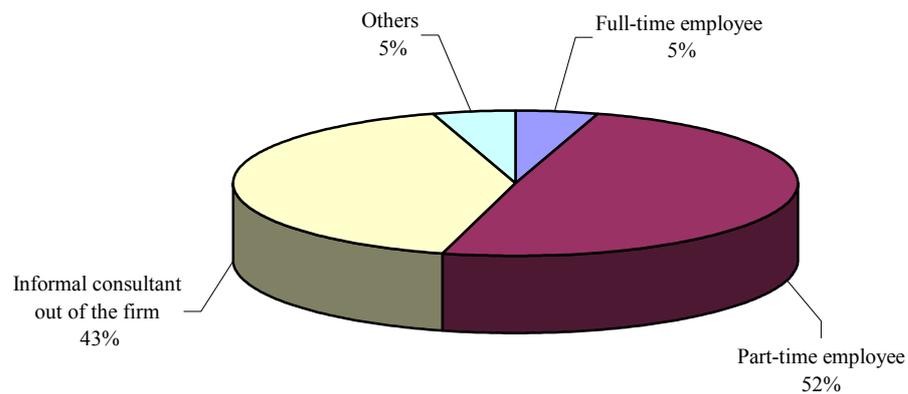
*Source : data from the own research*

As other important activities were mentioned marketing consulting (90 %), strategic consulting (81 %) and business plan consulting (76 %). These results are consequences of the fact that business angels come from a variety of the experienced businessmen and managers.

On the other hand, a relative small share of business angels' activities belonged to the activities such as research and development consulting (0 %), production optimization (29 %). This finding can be caused by a small number of production enterprises with which questioned BA had experience or a low intensity of their activities in that kind of firms. A marginal business angels' activity presents an operative consulting (29 %) too. It can indicate a trend that for business angels it is more significant to play a role as a consultant or coach for strategic management than for operative management who deals with every day problems and existing details of the firm.

Another interesting finding was a way of which business angels participate in the firm (See Figure 2).

**Figure 2 Business Angels Participation**

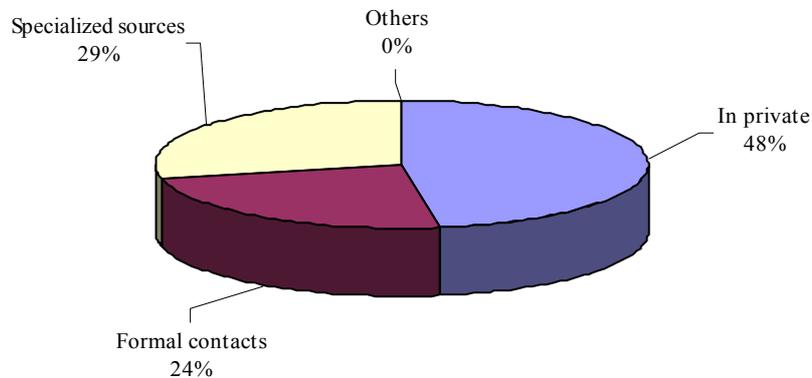


*Source : data from the own research*

Most of the questioned BA participate in the firm as a part-time employee (52 %). 43 % of them work as an informal consultant outside the firm. The reason for these results is predominate consulting character of these private investors' activities. Only one of the questioned BA participated in the firm as a full-time employee and one of them used a different way of participation, but he did not state it.

A particular form of making contact between the business angels and the firm varied (See Figure 3).

**Figure 3 Contact Between Business Angel and Firm**



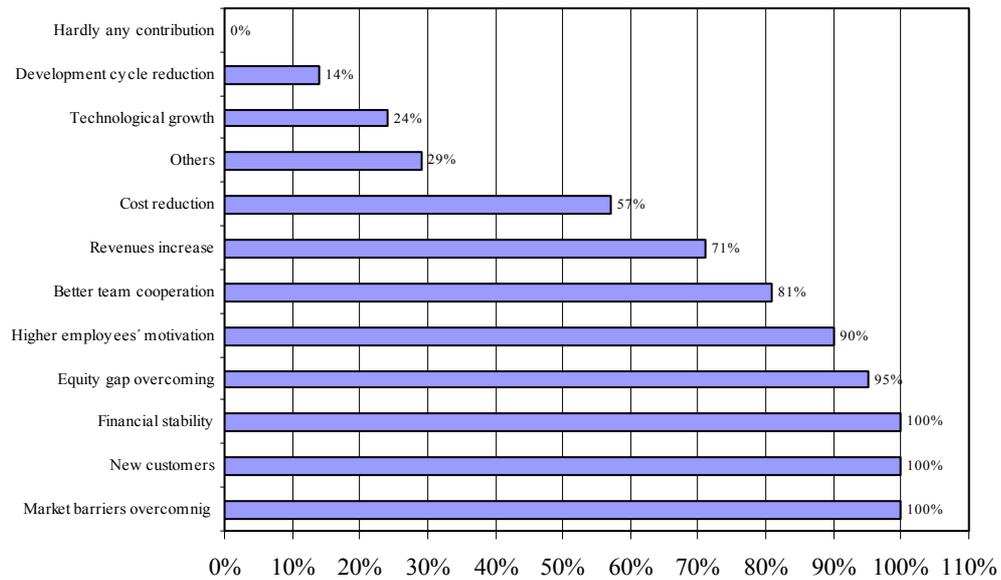
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*Source : data from the own research*

Almost in a half of all cases, the first contact between the business angel and the firm was made in private (48 %), it means by private contacts or acquaintance's recommends. 29 % of respondents used services of institutions specialized in an electronic or personal matching of the private investors on one hand and the resource finding beginning firms on the other hand. A form of these institutions differs in practice it can be BA stock market, BA organization, forum etc. In 24 % of all cases, the first contact was done by a way of formal contacts at banks, consulting, investment or business associations, universities etc. All of these institutions and centers represent places, where new enterprising ideas meet together with financial resources waiting for their relevant market opportunity.

Business angels activities developed in each firm can be considered to be potential sources of firms' success. Business angels contributions to firms should be something more than only finance, coming from passive private investors waiting for their profits. It is particularly a case of various non-monetary contributions of business angels working in firms (See Figure 4).

**Figure 4 Business Angels Contribution**



*Source : data from the own research*

All of the questioned BA highlighted among their biggest advantages for firms:

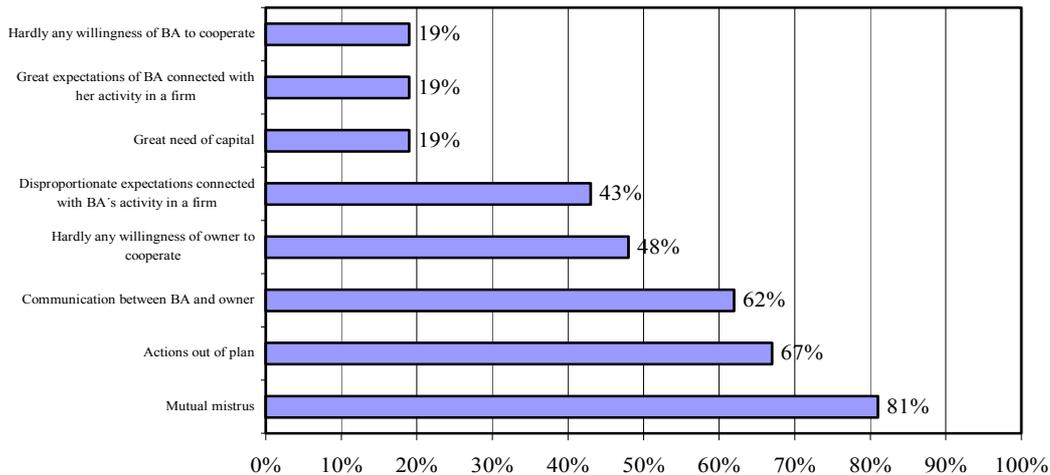
- overcoming early barriers connected with a market entrance,
- gaining new customers,
- increasing financial stability.

These contributions stem not only from their managerial and business experiences, but from their sector knowledge and large numbers of contacts as well.

To a frequent advantage belongs overcoming equity gap (95 %) using external resources in a form of formal venture capital, bank loans and another loans and grants.

A mutual cooperation between business angels and firms is equally as every human activity often connected with many problems, misunderstandings and barriers (See Figure 5).

**Figure 5 Cooperation Barriers Between BA and Firms**



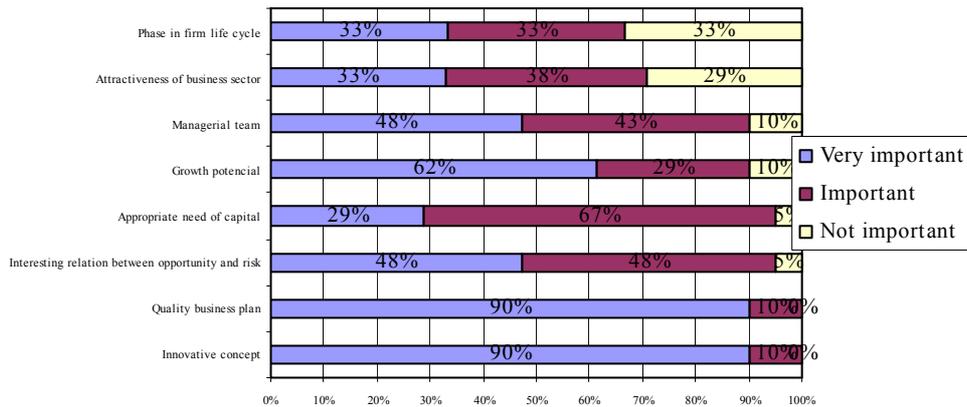
*Source : data from the own research“*

The biggest barrier is concerned with a lack of trust between involved sides (81 %). Every investment is a risk project that needs a mutual trust of both. This trust must last not only during an opening matching process but it must hold on during a whole cooperation as well. Other barriers are activities carried out of plan (67 %). A business plan plays a significant role in every firm as an instrument for controlling. Every activity out of it does this role impossible. Communication problems (62 %), hardly any willingness of interested firm's owner to cooperate (48 %) or disproportionate expectations connected with BA's activity in a firm (43 %) appeared as other barriers.

Among last but not least important barriers were mentioned a great need of capital, great expectations of BA connected with its activity in a firm and hardly any willingness of BA to cooperate (every 19 %). Particularly last one - hardly any willingness of BA to cooperate could represent potentially big problems connected with a new phenomenon – business devils. Business devils are private investors with a risk capital, which try to enforce their own opinions and ideas in the firm. These activities very often lead to a negative development of firm out of all plans.

In third part of our questionnaire we were interested in a motivation of business angels to help seed-up and start-up firms (See Figure 6).

**Figure 6: Motivation of BA**



*Source : data from the own research*

Innovative concept together with quality business plan belonged to the most important motivational criterions of BA to invest or not to invest. Another crucial criterions were an interesting relation between opportunity and risk, an appropriate need of capital and a growth potential. On the other hand, a phase in firm life cycle and an attractiveness of business sector were indicated as not important motivational criterions.

#### **4. Conclusion**

Findings of our research are very similar to the findings of other researches among active business angels. In generally we can say that business angels represent informal investors who can influence a next development of a seed-up or a start-up firm, with a good combination of a monetary and a non-monetary investment. They are very often the last and the only possibility of the firms to survive. To the most important forms of business angels' support belong a support by coming onto market, marketing and other consulting, establishing business contacts or raising additional external financial resources.

All these activities bring many contributions to small and medium-sized enterprises such as overcoming equity gap, easier coming onto market, gaining new customers, increasing financial stability etc. Their contributions are visible among employees and their motivation too.

These results can give with a wrong interpretation impression of the business angels as a cure-all for all problems existing and appearing in firms. The reverse is true. Their wide and various knowledge are consequences of their previous and long-term experiences in business. According to European Union particularly business angels with their experiences and expanding the financing opportunities of entrepreneurs business angels contribute to growth and employment, and make European culture more entrepreneurial.

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# VENTURE CAPITAL PRACTICES: A TURKISH PERSPECTIVE

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## **Abstract**

*Venture capital is a financing method to provide funds for entrepreneurs to establish new ventures. Venture capital firms and venture capitalists provide funds and consulting to entrepreneurs to develop new ideas, make innovations, establish new ventures and grow their ventures. Venture capital firms and venture capitalists receive the shares of these new ventures for financing and consulting that they provided. The fastest growing sector is high technology for venture capital financing in the world. This study first summarizes the concept, financing stages and global practices of the venture capital. Secondly, it explains venture capital practices in European Union member countries. Then, it focuses on venture capital practices in Turkey. It also provides recommendations for the future of venture capital funding in Turkey.*

**Keywords:** *Venture Capital, Venture Capital Firm, Venture Capital Practices in Turkey*

## 1. Introduction

Venture capital is a financing method to provide funds for entrepreneurs to establish new ventures. It is an important financing method for new ventures. Venture capital firms and venture capitalists provide funds and consulting to entrepreneurs to develop new ideas, make innovations, establish new ventures and grow their ventures. Venture capital firms and venture capitalists receive the shares of these new ventures for the financing and consulting that they provided. It is an investment to ventures that could have high growth potential.

Venture capital is defined as a professionally managed pool of money raised for making actively-managed direct equity investments in rapidly-growing companies with a well defined exit strategy. It has grown in most of the capital markets of the world. The fastest growing sector is high technology for a venture capital financing.<sup>1</sup> American National Venture Capital Association defines venture capital as a source of financing that is provided by professional who made investment to new and fast growing ventures.<sup>2</sup>

Venture capital is a partnership of entrepreneurs, venture capital firms and investors who provide financing for venture capital funds. Entrepreneurs are new business owners who get attention and expect high growth potential and profits for their ideas and products. Venture capital firms provide financing and expertise to entrepreneurs and ventures to get high profits. Investors can be rich people, large industrial enterprises, banks, institutional and foreign investors. They have financial expectations to get high profits.<sup>3</sup>

Venture capital firms are established as limited partnerships in which managers are unlimited responsible parties whereas investors are limited responsible parties. Most of the venture capital firms are management companies that represent different partnerships and have responsibility to manage different pools of funds. Unlimited responsible partners working as professional teams in these management companies, manage partnership

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<sup>1</sup> MEGGINSON, W. L. Toward a Global Model of Venture Capital? *Journal of Applied Corporate Finance*. 2004, vol. 16, issue 1, pp. 89-107.

<sup>2</sup> <http://www.nvca.org>

<sup>3</sup> BULUT, H. İ. Sermaye Piyasalarında Finansal Araçlar Olarak Risk Sermayesi Şirketlerinin Rolü, *İMKB Dergisi*, 2000, sayı 4, pp. 31.

funds provided by investors as their representatives to structure and manage the new investments for fees.<sup>4</sup>

Companies that are supported by venture capital firms are more prestigious in a IPO stage. Investors believe that they can trust the company and buy its shares. Venture capital firms share risks of entrepreneurs. They are experts in their areas and good at portfolio management. The following issues related the venture capital firms are important for the pricing of ventures in IPO stage: Investors trust ventures that convinced many venture capital firms to use their funds. These ventures are controlled by venture capital firms for a long time to be succesfull and they are more expensive for investors. Investors prefer ventures when venture capital firms are in their board of directors for a long time. They trust ventures inwhich venture capital firms have prior experiences in other ventures for IPO stage. Investors prefer ventures that used funds provided by large venture capital firms. They also trust ventures inwhich venture capital firms have big shares. It shows that venture is leaded for a long time and less risky for investment<sup>5</sup>

The quality of venture capital firm to observe and lead investments can be evaluated by following criterias: Venture capital firms need to focus on promising sectors that will offer the maximum values.<sup>6</sup> They provide financing to ventures based on their success to use the funds. They can motivate ventures to follow the milestone schedules and be succesfull while they are using funds.<sup>7</sup> They provide other services besides financing such as development of good image and business relationships with other companies, motivation and business training to ventures.<sup>8</sup> They need to establish investment consortiums with other venture capital firms to delegate risks, find more financing and get the advantage of their expertise.<sup>9</sup>

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<sup>4</sup> BYGRAVE, W.D. AND TIMMONS, J.A. *Venture Capital at The Crossroads*, Boston: Harvard Business School Press, 1992.

SAHLMAN, W.A. The Structure and Governance of Venture-Capital Organizations, *Journal of Financial Economics*, 1990, vol. 27, pp. 473-521.

<sup>5</sup> BULUT, H. İ. Sermaye Piyasalarında Finansal Araçlar Olarak Risk Sermayesi Şirketlerinin Rolü, *İMKB Dergisi*, 2000, sayı 4, pp. 47-50.

<sup>6</sup> BYGRAVE, W.D. *Venture Capital Investing: A Research Exchange Perspective*. Unpublished Phd Thesis. Boston University. 1989.

<sup>7</sup> GOMPERS, P.A. Optimal Investment, Monitoring and The Staging of Venture Capital. *The Journal of Finance*. L (5), 1995, pp. 1461-1489.

<sup>8</sup> FRIED V.H. AND HISRICH, R.D. The Venture Capitalist: A Relationship Investor. *California Management Review*. vol. 37, no. 2, 1995, pp. 101-113.

<sup>9</sup> LERNER, J. The Syndication of Venture Capital Investing. *Financial Management*. Autumn 1994, pp. 16-27.

The differences between venture capital and private equity are not very clear. Venture capital firms usually provide funds for new ventures that have high growth potential for seed capital, start-up capital and early stage financing. On the other hand, private equity firms usually provide funds for ventures for expansion investment, bridge financing, late stage financing, management buy-out and leveraged buy-out financing.<sup>10</sup> Private equity firms also provide management consultancy for formulating strategy, recruiting and developing relationships with stockholders such as financial institutions, customers and suppliers.<sup>11</sup>

Kuratko and Hodgetts define venture capitalists as valuable sources for equity funding for new ventures. Venture capitalists provide capital for ventures during start-up and expansion phases. Entrepreneurs can consult venture capitalists for market research, strategy formulation, management audit and risk management. Venture capitalists can contact with customers, suppliers and other stockholders of the company. They can provide assistance in negotiating technical agreements. They can also help establishing accounting and management controls.<sup>12</sup> Venture capitalists focus on large returns on their investments to provide capital to new ventures.

According to one study surveyed over 100 venture capitalists, 28 criterias were determined to evaluate new venture proposals and they were grouped in six categories: Entrepreneur's personality, entrepreneur's experience, characteristics of the product or service, characteristics of the market, financial considerations and nature of the venture team. Ten essential criterias to evaluate new venture proposals are as follows: capability of sustained intense effort, familiarity with market, at least ten times return in 5-10 years, demonstrated leadership in past, evaluating and reacting to risk well, investment can be made liquid, significant market growth, track record relevant to venture, articulating venture well and proprietary protection. According to the same study venture capitalists could reject proposals when two of the mentioned criterias were missing.<sup>13</sup>

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<sup>10</sup> BOSUT, L. Girişim Sermayesi/Direkt Öz Sermaye Yatırımları, *Finans Kulüp Toplantı Notu*, 29 Mayıs 2003.

<sup>11</sup> ÖVEK, P. *Risk Sermayesi Yatırım Ortaklıkları ve Muhasebe Sistemi*. Marmara Üniversitesi Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi, İstanbul, 2003, p. 12

<sup>12</sup> KURATKO, D. F. AND HODGETTS, R. M. *Entrepreneurship: A Contemporary Approach*. The Dryden Press Series in Entrepreneurship, 3rd Edition. ISBN 9-780030-987243, p. 412.

<sup>13</sup> MACMILLAN, I. C., SIEGEL, R. AND NARASIMHA, P. N. S. Criteria Used By Venture Capitalists to Evaluate Venture Proposals. *Journal of Business Venturing*. 1985, vol.1, issue 1, pp. 119-128.

According to another study, venture capitalists decide to make investment in 6 minutes on initial screening and 21 minutes on the overall proposal evaluation. The requirements of the venture capital firm, long-term growth and profitability of the proposed venture are the critical factors for initial screening. The background of the entrepreneur and the characteristics of the proposal are other critical factors for initial screening.<sup>14</sup>

According to one study, characteristics of the request (including business plan and amount), sources of advice (including technology, places to seek funding), characteristics of the enterprise (including location and industry) and characteristics of entrepreneurs (including experience and education) are factors that affect the success of entrepreneurs to acquire funds.<sup>15</sup>

The business plan need to include the following sections: summary, business description segment (includes description of the venture, industry, products and services), marketing segment (includes research and analysis related to market and marketing plan), research design and development segment (includes design and development plans, technical researches, research assistance needs, costs), manufacturing segment (includes location analysis, production requirements and costs, information related to labor supply, suppliers and transportation), management segment (includes information related to management team, board of directors, consultants and legal structure), critical risks segment (includes potential problems, risks and alternative solutions), financial segment (includes financial forecast, sources and use of funds, budgeting plans, stages of financing), milestone schedule segment (includes timing and objectives, deadlines and milestones, relationships of events), appendix and/or bibliography.<sup>16</sup>

The business plan is an important element to evaluate new ventures. Five aspects of the plan to be analyzed are the size of the proposal, financial projections, recovery of the investment, competitive advantage and management of the company.<sup>17</sup> The steps of venture capital financing are as follows: initial screening, evaluation of business plan, oral presentation, final evaluation (evaluation of the feasibility of the project and visiting suppliers,

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<sup>14</sup> HALL J. AND HOFER C. W. Venture Capitalist's Decision Criteria in New Venture Evaluation. *Journal of Business Venturing*. 1993, vol.8, issue 1, pp. 25-42.

<sup>15</sup> HUSTEDDE, R. J. AND PULVER, G. C. Factors Affecting Equity Capital Acquisition: The Demand Side. *Journal of Business Venturing*. 1992, vol. 7, issue 5, pp. 363-374.

<sup>16</sup> KURATKO, D. F. AND WELSCH, H.P. *Entrepreneurial Strategy: Text and Cases*. Fort Worth: Dryden Press, 1994. ISBN 9-780030-975790, pp. 111-114.

<sup>17</sup> Kuratko and Hodgetts, p. 421

customers and consultants), signing the investment contract, realisation of investment and exit from the investment.

Entrepreneurs need to evaluate venture capitalists as well. They need to choose the venture capitalist that will add value to the new venture beyond the financing especially for high-innovation ventures.<sup>18</sup>

Although, venture capital is also defined as a long term investment that is made by investors who have excess capital to SME's with high growth potential, investors prefer new ventures that could be profitable in short term to make investment. Venture capital investment can be risky because the investee company may not have enough experience and financing may not be sufficient for operations. Risk factors of venture capital are as follows: technological risk, management risk, financial risk, production risk, marketing risk and risk related to products and services be out of date before reaching to required profits.

## 2. History of Venture Capital

Venture capital is an important financial instrument for the effects of knowledge era on the financial system both in Anglo-American countries and in the countries of the European Union. Venture capital provides funding for the development of new technology oriented companies not to be restricted due to the lack of risk capital. Venture capital fund raising is growing fast in US and Western Europe compared to most developing countries. This growth is expected to continue in the near future as well.<sup>19</sup>

Venture capital became popular in US, U.K., France, Japan, Germany and Holland after the World War 2.<sup>20</sup> The first modern venture capital firm, "American Research and Development" was established in 1946. Digital was one of the firms that American Research and Development made investment. It received \$70.000 funds at the beginning. The market value of Digital reached \$10 billion after its merger with Compact in 1998.<sup>21</sup> Apple Computer, Federal Express, Intel, Sun Microsystems are other companies that received venture capital at the beginning and became global leaders.<sup>22</sup>

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<sup>18</sup> Ibid., p. 423.

<sup>19</sup> SCHOEFER, P AND LEITINGER, R. Framework for Venture Capital in the Accession Countries to the European Union, *This paper is based on a research study of the University of Applied Sciences "FH bfi Wien", Austria.*

<sup>20</sup> Övek, p.3.

<sup>21</sup> TTGV, Risk Sermayesi Semineri, *TTGV Teknoloji Yayınları Dizisi-1*, 2000, p.12.

<sup>22</sup> Övek, p. 10.

Venture capital funds help entrepreneurs to develop new and innovative ideas for technological improvements to be leaders in global markets.<sup>23</sup>

### **3. Types of Venture Capital Firms**

#### ***3.1. Private Venture Capital Firms***

They are institutionalized private partnerships to provide venture capital. They were family businesses in the past. Venture capitalists are in the board of these companies. Partners in the management get 2.5-3% of capital as a management fee and 20% share from profits. Vakıf Risk is a private venture capital firm in Turkey.

#### ***3.2. Venture Capital Firms as a Subsidiary of Financial Institutions***

They are established by commercial banks and insurance companies to provide financing to profitable companies that do not fit their credit requirements. Commercial banks and insurance companies are limited responsible partners of these venture capital firms that are not established in our country yet.

#### ***3.3. Venture Capital Firms as a Subsidiary of Nonfinancial Institutions***

They are established by large industrial enterprises. Their goal is to develop new products to be strong and competitive in the market.

#### ***3.4. Small Business Investment Companies (SBIC)***

There are almost 400 public and private SBIC in US. There are two types of SBIC: Lending Oriented and Equity Oriented. They are established with at least 1 million USD capital. Equity Oriented SBICs are established with 2 million USD capital. They use government resources intensively. SBICs can use 33% of their portfolio for real estate investments. They can't make investments abroad. They can take on debt 3 times of their equity from Small Business Administration (SBA) so they focus on giving credits instead of venture capital financing. SBICs are private capital institutions that provide credits to small businesses. Kobi Yatırım A.Ş. established by TOBB,

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<sup>23</sup> SARIASLAN, H. *Orta ve Küçük Ölçekli İşletmelerin Finansman Sorunları, Çözüm İçin Bir Finansal Paket Önerisi*. Ankara: Türmob Yayınları, 1994, p. 66.

TESK, Halk Bank, KOSGEB and 16 chambers of industry to provide financing to SMEs in Turkey is an example of SBIC in Turkey. Its goals are helping development and economic activities of SMEs, improving their contributions for industrialization, providing capital, consulting and training to SMEs, encouraging investment projects of SME'S by establishing partnerships.<sup>24</sup>

The fund resources of venture capital vary in different countries such as US, U.K. and Turkey because of different financial systems used. R&D applications that cause high uncertainty and risk affect venture capital investments of companies. Long term investments with negative cash inflows in the first years affect fund resources badly.

**Table 1. Comparisons of Organizations That Provide Venture Capital Funds in US, U.K. and Turkey**

US	U.K.	Turkey
<ul style="list-style-type: none"> <li>• Private venture capital partnerships</li> <li>• Subsidiaries of companies focusing venture capital</li> <li>• Business development companies</li> <li>• Small business investment companies</li> <li>• R&amp;D partnerships</li> <li>• Private funds and incubators</li> </ul>	<ul style="list-style-type: none"> <li>• Funds provided by banks</li> <li>• Funds supported by investment companies</li> <li>• Business Expansion Funds</li> <li>• Funds provided by companies and other organizations in private sector</li> <li>• Funds of semiofficial organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Private venture capital firms</li> <li>• Units of companies focusing venture capital</li> <li>• Companies making investment in SME's</li> <li>• Private R&amp;D partnerships</li> <li>• Units of banks focusing venture capital</li> </ul>

Source: <http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html> - 59, Risk Sermayesinin Dünya ve Türkiye'deki Uygulamaları

## 4. The Financing Stages of Venture Capital

### 4.1. Seed Capital

Venture capitalist provides funds for new venture projects after its feasibility study. The research and development of the project is usually financed by venture capital.<sup>25</sup> The idea of the new venture is developed but its business plans are not prepared at this stage. Professional venture capitalists do not usually prefer seed capital because it is a very risky

<sup>24</sup> <http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html>

<sup>25</sup> VERMA, J.C. *Venture Capital Financing in India*, New Delhi: Response Books, 1997, p. 28-29.

investment. Although, there is a high uncertainty related to the application of the project, high profits can be received. Seed capital usually starts 2-3 years before the start-up of the venture and it requires 10 years at average to liquidate the investment of the venture capitalist.

#### ***4.2. Start Up Capital***

It is a stage where an investment idea is started to be implemented, a firm is established and a venture capitalist tries to make the new venture successful. The business plan of the entrepreneur is scanned carefully by venture capitalist. The real information related to market, targeted market share, growth of business and management of new venture need to be gathered at this stage. The venture capitalist helps the entrepreneur with its knowledge and skills. The start up capital is usually 5 years in average.<sup>26</sup>

#### ***4.3. Early Stage Financing***

The firm reaches to a substantial size at this stage. It has some products and services but does not have a brand image and big market share. The venture develops its prototypes but it requires funds for production and marketing of its products. Ventures do not usually gather funds from banks because of not having enough caution money. Ventures do not usually gather funds from the capital market either at this stage. Ventures may have some managerial problems that can be solved with the financial and managerial support of the venture capitalist.<sup>27</sup>

#### ***4.4. Expansion Investment***

The venture can market its products and services at this stage successfully but it requires additional financial resources to develop new products, to have effective distribution channels and competitive strength.

#### ***4.5. Bridge Financing***

Ventures that plan to go public in 6 months and a year require the bridge financing.

#### ***4.6. Late Stage Financing***

It is a financing to save the unprofitable venture to be profitable again. It is also used to sell the shares of partners before going to public.

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<sup>26</sup> Övek, p. 38

<sup>27</sup> Ibid., p. 39.

#### 4.7. Management Buy-Out

It is a financing to help the managers buy out the company not to be bankrupted. It is profitable and less risky investment.

#### 4.8. Leveraged Buy-Out

The venture capital firm provides financing to entrepreneurs who do not have enough funds to buy a business. The venture capital firm prefers entrepreneurs who have required skills, education and work experience to be successful.

#### 4.9. Exiting From Investment/Divestment At Cost

It is the final step to end the venture capital investment. The purpose of the venture capital firm is to sell its shares in venture when they reach to the profitable level. The venture capital firm gets profits when the venture ends its technological and economical growth and reaches to a substantial size. The types for exiting business are as follows:

1. Going public (Selling stocks of the company to public)
2. Selling venture to another company
3. Selling the shares of the venture capital firm to the venture
4. Selling the shares of the venture capital firm to another company
5. Restructuring the venture
6. Liquidation of the venture<sup>28</sup>

**Table 2. Venture Capital Financing Model**

<i>Investment Type</i>	<i>Time (Year)</i>	<i>Risk</i>
<b>Early Financing:</b>		
• <i>Seed Financing</i>	7-10	<b>Very High</b>
• <i>Start up Capital</i>	5-10	<b>Very High</b>
• <i>Early Financing</i>	<i>Stage</i> 3-7	<b>High</b>
<b>Late Financing:</b>		
• <i>Expansion Investment</i>	1-3	<b>Medium</b>
• <i>Bridge Financing</i>	1-3	<b>Low</b>
<i>Buy-out/Buy-in</i>	1-3	<b>Low-High</b>
<i>Late Stage Financing:</i>	3-5	<b>Medium-High</b>

Source: Vefa Toroslu, "Risk Sermayesi Finansman Modeli", *Activeline*, Number 2, May 2000.

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<sup>28</sup> Ibid., p. 42.

Venture capital financing instruments are share certificates, founding share certificates, shares without voting rights and convertible bonds.<sup>29</sup>

## 5. Venture Capital Practices in US

Venture Capital financing model started in US in 1946 for the first time by establishment of American Research and Development Corporation of Boston.<sup>30</sup> U.S. government also encouraged venture capital financing. Small Business Investment Company (SBIC) established in 1958 is a venture capital firm. Its capital was provided by government. It is managed by private sector. It encourages investors to invest in small businesses. Its funds are used to give credits to small businesses. Venture capital firms can receive financing from the government and private sector. Government finances 1/3 of funds that are more than 15 million USD and 1/2 of funds that are higher than that amount. Government gets 2% fee for the funds used. Companies that purchase stocks from venture capital firms are tax free. The largest source of venture capital firms are pension funds and partnership shares. Small Business Administration (SBA) also guarantees 75% of credits of small businesses up to USD 500.000 to get from commercial banks. The credit term can be up to 25 years. Small businesses pay 2% of guarantee fee to SBA.<sup>31</sup>

SBIC (Small Business Investment Companies) that are public-private partnerships, provide venture capital financing in US. They provided long-term credits with interest rates to ventures at the beginning. Since, this financing method was not successful, SBIC focused on venture capital financing.

The growth of venture capital financing caused the growth of stock exchange markets in US. US Congress asked "US Securities and Exchange Commission" to start NASDAQ Stock Exchange Market and helped the growth of venture capital financing in US. Companies that received the venture capital financing start to trade their stocks in Stock Exchange Markets in the growth stage. Pension funds are also important to form venture capital funds in US. Nowadays, US venture capital firms acquire half of their funds from pension

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<sup>29</sup> Ibid., p. 46-47.

<sup>30</sup> ARK, A. H., Risk Sermayesi: Tarihsel Gelişim ve Türkiye Ekonomisinin Yeniden Yapılandırılmasında Potansiyel Rolü ve Önemi, *Active Bankacılık ve Finans Dergisi*, 2002, sayı 23.

<sup>31</sup> [http://www.evca.com/images/attachments/tmpl\\_8\\_art\\_166\\_att\\_795.pdf](http://www.evca.com/images/attachments/tmpl_8_art_166_att_795.pdf)

funds.<sup>32</sup> The pension funds can buy stocks of venture capital firms and this helps the growth of venture capital financing in US. The successful growth of venture capital financing in US led to implement it in other countries.<sup>33</sup> Small Business Investment Law, tax discounts and incentives caused the shift of private sector funds to venture capital financing. Modifications in FRSA laws in 1978 and usage of 2.5% of pension funds for venture capital supported the growth of venture capital financing.<sup>34</sup> Venture capital financing was structured in US. Almost 80% of venture capital investments were managed by venture capital firms that are limited partnerships.<sup>35</sup> Venture capital investments focus on software, biotechnology, telecommunications, networking and equipment, medical devices and equipment, semiconductor sectors.<sup>36</sup>

**Table 3. The Venture Capital Investments in US Companies**

<i>Year</i>	<i>Number of Deals</i>	<i>Investment Amount Million USD</i>
2000	7819	1005004
2001	4453	40811
2002	3046	21681
2003	2840	19396
2004	2910	21341
2005	1453	10646

*(First 2 Quarters)*

*Source: www.pwcmoneytree.com*

<sup>32</sup> ESER, S. *Küçük ve Orta Büyüklükteki İşletmelerin Sermaye Piyasasından Finansmanı ve Risk Sermayesi (Venture Capital)*. Ankara: SPK Yeterlilik Etüdü, 1990.

<sup>33</sup> Övek, p. 59.

<sup>34</sup> ARK, A. H., Risk Sermayesi: Tarihsel Gelişim ve Türkiye Ekonomisinin Yeniden Yapılandırılmasında Potansiyel Rolü ve Önemi, *Active Bankacılık ve Finans Dergisi*, 2002, sayı 23.

<sup>35</sup> ROBBIE K. AND WRIGHT M. Venture Capital and Private Equity: A Review and Syntheses. *Journal of Business Finance and Accounting*, 1988, vol. 25, issue 5, pp.521-570.

<sup>36</sup> <http://www.pwcmoneytree.com>

**Table 4. Stages of Venture Capital Financing in US Companies**

	<i>Startup/Seed Nb. Of Deals</i>	<i>Startup/Seed Inv. Amount (Million USD)</i>	<i>Early Stage Nb. Of Deals</i>	<i>Early Stage Inv. Amount (Million USD)</i>	<i>Expansion Nb. Of Deals</i>	<i>Expansion Inv. Amount (Million USD)</i>	<i>Later Stage Nb. Of Deals</i>	<i>Later Stage Inv. Amount (Million USD)</i>
2000	664	3103	2829	25616	3660	60107	664	16179
2001	254	711	1285	9099	2391	23022	523	7978
2002	157	278	855	4002	1592	12560	442	4842
2003	194	390	770	3411	1337	10264	538	5329
2004	173	370	844	3898	1219	9715	674	7358
2005	78	531	395	1611	567	4113	413	4392

First 2  
Quarters

Source: [www.pwcmoneytree.com](http://www.pwcmoneytree.com)

## 6. Venture Capital Practices in The World

Venture capital firms acquire funds from financial institutions, industrial enterprises and public. They provide management and marketing support besides capital to companies.<sup>37</sup> Venture capital investment partnerships are experts to make investments in most industries in the world. The establishment of stock exchange markets for SME's caused the success and widely usage of venture capital financing in the world. NASDAQ in US is the best example for stock exchange market for SMEs. The deals are made electronically for SMEs. ESDAQ in Europe, JASDAQ in Japan, Alternative Investment Market (AIM) in U.K., Neue Markt in Germany, Nouveau Marche in France and Vancouver Stock Exchange Market in Canada are other examples of stock exchange markets for SMEs.<sup>38</sup> There are tax discounts up to 100% for venture capital investors to encourage them to make investments in Australia.<sup>39</sup>

Japan was not as successful as Western countries and US about venture capital financing model at the beginning. There are larger companies instead of SME's in Japan and they provide financing for their technology improvement investments. Their work ethics encourage Japanese to work in their first job in the rest of their lives instead of starting their own business. Venture capital financing focus on companies that operate in electronic and

<sup>37</sup> <http://www.dto.org.tr/bilgi/kaynak/risksermayesi.html>

<sup>38</sup> <http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html>

<sup>39</sup> Övek, p. 71.

IT sectors in Japan.<sup>40</sup> The government gives guarantees to long term bank credits that are taken by new ventures during the start-up phase in Japan.<sup>41</sup> The secondary markets were established to trade stocks of companies to provide venture capital financing in 1985.<sup>42</sup> Venture capital firms were established with the support of government institutions at the beginning. Banks and stock broker companies started to establish venture capital firms afterwards.<sup>43</sup> Venture Enterprise Center was established in 1974 to encourage the establishment of small companies and provide financing to new ventures.<sup>44</sup> It goes bail for 80% of investment credits of SME's given by banks. Japanese venture capital firms focus on late financing whereas US venture capital firms focus on early financing.<sup>45</sup>

## 7. Venture Capital Practices in European Union Member Countries

U.K. has the most established venture capital practices in Europe. Holding companies, banks and local organizations are sources of venture capital in U.K. Banks become partners to SMEs with growth potential by buying their stocks to provide the required capital.<sup>46</sup> Private and government organizations support the growth of venture capital financing in U.K.. Investment in Industries was established by Bank of England after the World War 2 encourage industrial enterprises to improve their technology. Equity Capital for Industry is a private venture capital firm that provide funds to new ventures in U.K.. There are many private venture capital firms in U.K..<sup>47</sup> The legal format was prepared for "Stock Exchange of The Unlisted Securities Market" in 1980 in U.K. to ease the trade of stocks of small companies in the capital market.<sup>48</sup> The funds of venture capital consist of pension funds, foreign private companies, insurance companies, public, industrial enterprises and British Banks in U.K..<sup>49</sup> Business Start-up Scheme and Business Expansion Scheme are private venture capital funds established by British

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<sup>40</sup> Övek, pp. 70-71.

<sup>41</sup> KAYA, A. Genel Olarak Risk Sermayesi Yatırım Ortaklıkları Mevzuatı ve Değişiklik Önerileri, Ankara: SPK. Access from: <[www.turkvca.org/articles/AAbdullahKaya\\_20020924.doc](http://www.turkvca.org/articles/AAbdullahKaya_20020924.doc) >

<sup>42</sup> Övek, p. 70.

<sup>43</sup> [www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html-59](http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html-59)

<sup>44</sup> CLARK, R. *Venture Capital in Britain, America and Japan*. London: Croom Helm, 1987.

<sup>45</sup> <http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html>

<sup>46</sup> Ibid.

<sup>47</sup> Övek, p.67.

<sup>48</sup> Clark, 1987, pp.71-77.

<sup>49</sup> MILFORD, B. G. *Venture Capital International Comparisions*. New York: Billing- Sons Ltd., 1991.

Government. British Technology Group was established in 1981 to provide credits and support to small ventures that operate in high tech industries<sup>50</sup> British Venture Capital Association and a magazine called Venture Capital Reports act to improve venture capital in U.K. They publish promising business plans to attract venture capital firms and improve the venture capital model.<sup>51</sup> The investments made by British private equity companies increased 5% to 1566 in 2004 in the world. The total value of worldwide investments also increased 52% to £9,679 million. The number of companies financed increased 2% to 1301 in UK and investment in the UK increased by 31% to £5,336 million in 2004.<sup>52</sup>

Banks usually provide venture capital financing in France.<sup>53</sup> There is a tax discount up to 25% on revenues from investments in stocks in France. There are also tax discounts to public and companies for their revenues of stock investments in Belgium. Ventures in high-tech industries do not pay corporate taxes in Belgium. There are also tax discounts for investors who provide venture capital in Belgium. Revenues from investments in stocks are tax free in Denmark.<sup>54</sup>

Governments also encourage venture capital in European Union Member Countries. Investment Company Flanders established by Belgium government in 1980 is managed by private sector that has 25% share. It provides financing to high tech projects in Flaman region. Three funds were established to finance high tech projects in 1996 in Holland. The partners of the funds are Holland government (25% of shares) and regional development companies. SOFARIS that 42% of its capital belonged to French government was established in France to finance SME's. It guarantees 50% of credits that SMEs get from banks. The maximum credit guarantee limit is 5 million FF. TBG that makes technology investments is supported by German Government Bank in Germany. BTU was established in 1995 to provide financing to small businesses in high tech sector by German Government. It provides financing to companies that have more than 50 workers and have been established less than 10 years ago. German Development Bank provides long term credits with low interest rates. ERP that is a subsidiary of Federal Ministry for Education and Research also provides credits to small businesses in technology sector. German Economic Development Agency guarantees

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<sup>50</sup> Övek, p. 68.

<sup>51</sup> (Abdullah Kaya, Genel Olarak Risk Sermayesi Yatırım Ortaklıkları Mevzuatı ve Değişiklik Önerileri)

<sup>52</sup> [www.bvca.co.uk](http://www.bvca.co.uk)

<sup>53</sup> <http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html>

<sup>54</sup> Övek, p. 71.

90% of credits that venture capital firms get from commercial banks. Venture Capital Trust, Enterprise Investment and Business Expansion Scheme (BES) were established to provide financing to ventures in U.K. by the support of government. BES encourages investors to invest in small businesses. Enterprise Investment Fund (EIF) lets investors not pay taxes up to 20% of their investments. Revenues from investments to EIS stocks are tax free for 5 years. Bank of England also guarantees 70% of new credits that are more than £100.000 and taken by ventures. European Commission is responsible for credit programs of venture capital firms in European Union. European Seed Capital Fund Scheme (ESCF) gives credits to ventures for start up capital and early stage financing. Ventures get interest-free credits for 10 years up to 50% of their business costs for 5 years. The capital of European Investment Fund is provided by funds of European Commission, European Investment Bank and other banks. It encourages stock investments in small businesses. It also guarantees credits taken by small businesses from financial institutions. Credits can cover 50% of investment, portfolio credit insurance and late stage financing. Also, 10% of regional development bank resources are used to finance small businesses.<sup>55</sup>

Venture capital is also provided by banks in European Union member countries. Banks usually provide debt credits instead of receiving the stocks of the venture for not taking risks. Start-up investment increased 13% and reached €2.2 billion in 2004. The amount invested in high tech companies increased 6.5% and reached €7.4 billion. Funds allocated to funds increased 32% and reached €8.8 billion in 2004. In terms of total amount of invested, buyouts, expansion and start up investments all increased. Buyout is the largest proportion with 70% or €25,7 billion. Investment in expansion stage is second with 21% or €7.9 billion and start up investment is third with 6% or €2.2 billion. On the other hand, seed investment is 0,4% with €148 million. When looking at number of investments, expansion is first with 45%, start up investment is 30% and buy outs is 18% of total number of investments. The UK has the largest share of amount invested interms of country of management with 52%, France second at 14%, Germany third at 10% and Spain fourth at 5%.<sup>56</sup>

The UK accounted for 26% of the amount invested in terms of country of destination, with France and Germany achieving larger proportions of investments with 17% and 14% respectively. The Netharlands is fourth at 9%. Consumer related businesses is the highest proportion of

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<sup>55</sup> <http://www.tubitak.gov.tr/btpd/btspd/btyk/kararlar/karar11.html>

<sup>56</sup> [http://www.evca.com/images/attachments/tmpl\\_8\\_art\\_166\\_att\\_795.pdf](http://www.evca.com/images/attachments/tmpl_8_art_166_att_795.pdf)

amount invested at €8.5 billion (23%), followed by other services with €5.1 billion (14%) and communications with €4.9 billion (13%). The average investment size reached €3.6 million. The average size for buyout investments rose to €14 million, the expansion stage investments reached to €1.7 million and start-up investments rose to €733,871. On the other hand, the average size for replacement investment decreased to €2.5 million and seed investments to €364,867. The majority of investments, 86% by number and 65% by amount of investment, were made in local country. Cross border investments within Europe by number were down to 10%. The fundraising is between €25-28 billion. The funds for buyouts decreased to 65% whereas the funds for venture capital increases 32% of total funds raised. Exits were €19.6 billion with 5917 exits. Trade sales is one fourth of all divestments by amount at €4.6 billion. Divestments by public offering (IPO and sales of quoted equity) increased to €2.3 billion.<sup>57</sup>

## **8. Venture Capital Practices in Turkey**

Although there are efforts to accelerate venture capital practices in Turkey since 1980, these efforts are not enough for the time being. The legal arrangement for venture capital practices have been made concerning venture capital investment companies based on Capital Market Law since 1993. The last Communiqué on Amending the Communiqué Regarding The Principles About Venture Capital Investment Companies Serial: VI, No:16 was published in the Official Gazette dated 7 January 2004, numbered 25339. Its details are presented in Appendix 1. It sets principles regarding the founders and formation procedures of venture capital investment trusts, registration to the board and public offering of venture capital investment trusts' shares, management and the required qualifications of the managers, scope of activities, portfolio restrictions and disclosure requirements of venture capital investment trusts.

The requirements for foundation are as follows: Venture capital investment trusts should be formed in accordance with the foundation procedure. Besides, companies with different activities should be transformed into venture capital investment trusts by amending their Articles of Association pursuant to the provisions of the Law and this Communiqué. For the approval of foundation of or conversion to venture capital investment trusts by the Board the following requirements must be fulfilled: In case of immediate establishment: must be incorporated as a registered capital corporation, initial capital should not be less than TL 5 trillion, shares must

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<sup>57</sup> Ibid.

be issued in return for cash, the trade name of the company must contain the "Venture Capital Investment Trust" phrase, the Articles of Association must comply with the provisions of TCC, the Law and this Communiqué, board members of the legal entity shareholders which have more than 10% of the shares of the corporation shall meet the requirements specified under Article 5 of this Communiqué, application must be made to the Board for dealing with activities listed under portfolio operations specified in subparagraph (f) of first paragraph of Article 30 of the Law and at least one of the founders must be a leading shareholder.<sup>58</sup>

According to this Communiqué, the investments to be made in venture companies by corporations shall be made under the framework of an agreement to be executed by and between the parties. This agreement shall have provisions mainly about the management of the venture company and rights and obligations of the venture company. The venture companies must aim to manufacture or develop, vehicles, tools, material, services or new products, methods, systems and production techniques having industrial and agricultural application potential as well as marketing potential or have the capacity to realize the specified objectives with management, technical or capital support. The corporations can be shareholders of venture companies or may purchase debt bonds to be issued by venture companies. The corporations may make investment into securities issued by other venture capital corporations within the framework of the provisions in this article.<sup>59</sup>

Venture capital financing are provided in Turkey since 1991. Banker Trust and Turk Petrol made an agreement in 1991. Then, the financial politics of Banker Trust changed and 50 million USD was returned as a result of this agreement. Some banks established venture capital firms in 1993 because of the support of government. Vakıf Risk A.Ş. is the only company that survived in these companies. Sparx Asset Management invested 40 million USD in 7 ventures in agriculture, textile, packaging, banking, leasing, electronic and biotechnology sectors in 1995. It exited from 2 companies via IPO after two years. One of the investment was unsuccessful on the other hand. Fiba Holding established Girişim Holding as a private equity fund that made only one investment to Gima supermarkets by buying its majority shares from Dedeman Holding. Merrill Lynch made investment to Termo Teknik that was a steel radiator manufacturer. It then sold its shares to a double price to British Caradon Company. Lehman Brothers made 70 million USD investment to Superonline that was a ISP and online services provider.

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<sup>58</sup> <http://www.cmb.gov.tr>

<sup>59</sup> Ibid.

İşbank established İş Venture Capital to provide financing to medium size enterprises that had growth potential.<sup>60</sup> Venture capital firms focus on SME's and companies that operate in IT, software, biotechnology, medical technology, energy, telecommunication and service sectors to make investments.

There were 40 venture capital investments between 1996-2003 in Turkey. They provided 200 million USD funds to companies. There have been few private equity investments in Turkey. Some of the private equity investors were Sparx Asset Management, Merrill Lynch+Bank of America, Safron Capital, AIG Blue Voyage, EMEA, Citicorp and Lehman Brothers. Private equity investors are still partners in some of these investments. Some of the companies that used private equity are as follows: GSD Holding, Biomar, Rant Leasing, Eka Elektronik, Aba Ambalaj, Termo Teknik, BIM, Jumbo, Galatasaray Sportif, AFM Movie Theaters, Gorbon Işıl, Merko Gıda, Işıklar Ambalaj, Superonline.

Venture capital financing are provided by few Turkish venture capital firms in Turkey. Most of the entrepreneurs and owners of SMEs are not aware of and not using venture capital financing. Turkish SMEs focus on receiving credits from commercial banks, government incentives, credits and incentives provided by KOSGEB.

KOSGEB is a non-profit, semi-autonomous organisation responsible for the growth and development of SMEs in Turkey. KOSGEB's Board consists of more than fourty members from the Government of Turkey and half of them are from the private sector representative organizations. The primary objective of KOSGEB is to improve SMEs share and efficiency in Turkish economy and enhance their competitive capacity. In order to accomplish this objective KOSGEB has assumed responsibility for the following functions; developing SMEs' technological skills, improving their training and information level, providing appropriate financial mechanisms and improving their managerial infrastructure.<sup>61</sup>

Venture capital firms have limited funds and hesitate to take risks. They do not want to grow the venture capital market. They just evaluate ventures that applied to themselves. They prefer to invest in very promising projects. They do not try to attract entrepreneurs and owners of SMEs to provide venture capital financing. They do not have experts in their

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<sup>60</sup> <http://www.kobinet.org.tr/hizmetler/bilgibankasi/finans/003d.html>

<sup>61</sup> <http://www.kosgeb.gov.tr/KOSGEB/Index.asp>

organizations to evaluate the growth potential of ventures from different sectors. Some of the venture capital firms focus on corporate development projects not to take risks. As an overall evaluation, Turkish venture capital firms are behind of other venture capital firms in the developed countries. The venture capital firms in Turkey and their limited practices are as follows:

### ***8.1 İş Venture Capital***

İş Venture Capital was established in 2000 by İşbank Group with advisory support of World Bank. Current partnership capital of the company is as follows: 39,92% Public, 20,08% İş Investment, 16,89% TSKB, 11,11% TTGV, 6,67% Anadolu Insurance, 4,44% Milli Reassurance, 0,89% İş Factoring. Its goal is to support and help entrepreneurs build their companies into market leaders. İş Venture Capital seeks out companies from most promising sectors with the highest growth and return due to the dynamic nature of the Turkish economy. It has USD 60 million funds. It usually invests from \$1 million to \$6 million. It invests up to 10-15% of their investment assets in any one company. İş Venture Capital prefers to have a minority stake with shares having special rights on operational and strategic decisions. It requires to be represented on the Board of Directors of the investee company. The expected holding period for investments is 2-5 years. The preferred exit options of the company is a strategic sale, IPO or sale back to the original shareholders. İş Venture Capital is interested in equity and fixed income investments. It focuses early stage, expansion stage and privatization investments. Although bridge stage, management buyout and workout/turnaround investments are rare in Turkey, İş Venture Capital considers them as investment alternatives. İş Venture Capital evaluates new ventures based on their business plans. It invested in Probil, ITD, Nevotek, Cinemars, and Step companies. Probil is in a IT sector providing technology and business focused solutions to companies. ITD is in a IT sector focusing on voice and payment products and solutions with e-business in Middle and Eastern Europe. Nevotek conveys dynamic and value-added solutions for Cisco IPT infrastructure. Cinemars is a chain of movie theaters in Turkey. 3-D movies can be shown in its movie theaters. Step is a carpet, home textile and accesories retail company that has stores in Turkey and abroad.<sup>62</sup>

### ***8.2 Vakıf Venture Capital***

Vakıf Venture Capital was established in 1996 as a subsidiary of Vakıf Bank. It is the first venture capital firm in the sector. More than half of

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<sup>62</sup> [www.isrisk.com.tr/English](http://www.isrisk.com.tr/English)

its stocks are traded in İstanbul Stock Exchange. The objective of the company is proving venture capital financing to projects from different sectors to convert the technology based knowledge into a commercial product or service. It has provided financing to three companies: Teknoplazma, Inova Biotechnology and TR.Net. Teknoplazma locates in Technopolis in Ankara manufactures a coating reactor that is used to make high calibre coatings of cutting tools and moulds for the first time in Turkey. Inova Biotechnology produces metallic nanoparticles, antigens, antibodies and conjugation of them to manufacture rapid diagnostic tests for the determination of pregnancy and infectious diseases like HIV. TR.Net is the first internet service provider (ISP) set up in Turkey. It is still the biggest corporate service provider.

### **8.3 Esas Holding**

Esas Holding established in 2000 has strong financial structure, good market reputation, management and industrial experience to provide assistance to the investee companies. It provided venture capital financing to 6 companies in 3 industries namely food, transportation and health care. It evaluates feasibility, growth potential, competitive strengths, characteristics of entrepreneur and management team of investment projects to make investment decisions. It invests to ventures in a start up stage as well as other stages. It considers company size, financial structure, market position of the venture. It also considers capital requirements and usage to achieve goals for growth of the venture.<sup>63</sup>

### **8.4 İLAB**

İlab Holding is an investment company that focuses on providing financing to companies that make business via internet. It targets playing a major role in a digitalizing process in Turkey. It has made investments in 7 companies in chemical-plastic, iron-steel, insurance, human resource consulting, e-buiness consulting and software sectors. All of these companies use internet technologies to make business and provide value added services in their sectors. İlab Holding establishes new ventures in its holding group as well as it provides financing to other ventures out of its group that need venture capital. Sigortam.net (gives service as first Turkish insurance e-market), BesOnline.net (personal retirement system expert providing information and solutions about retirement ), Treda (expert on E-business

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<sup>63</sup> [www.esas.com.tr](http://www.esas.com.tr)

projects to provide solutions), Chem Orbis (chemical and plastic e-market for companies) and Steel Orbis (Iron steel e-market for companies) were established by İlab Holding. Kariyer.net (the most improved Turkish human resource web site) and Kariyerakademi.net (first Turkish reservation web site that helps the meeting of training companies with people and companies that want to get training). İlab Holding targets to be a reliable business partner that has the same rights with other co-partners instead of playing operational role in investee companies. It transfers its experiences in areas such as strategy formulation, management and marketing.<sup>64</sup>

### **8.5 Koç Information Group**

Koç Information Group has provided financing to 12 companies that are in Koç Holding. These are Koç Sistem, Ultra Kablo TV Koç.net, Bilkom, Koç Bryce, GVZ, Biletix, Promena, Kangurum, Kotonline and. Tanı. Koç Information Group focuses on corporate development instead of venture capital financing for the time being.<sup>65</sup>

## **9. The Financial Problems of SMEs in Turkey**

The source of capital is usually savings in SME's and they are added to equity. SMEs hesitate debt financing. They prefer deferred payments provided by their suppliers or customers. They can not use the banking system efficiently because the current system can not provide financing urgently. The lack of financing is the main problem of manufacturing companies. Finding short term early financing is a problem for entrepreneurs that provide their own capital for their ventures. There are problems to get credits from banks. Costs of long term credits are high. Banks require caution money from entrepreneurs as the same amount of credits they provide. Most of SMEs are not institutionalized to receive financing from capital markets.

İstanbul Stock Exchange Market established The Regional Market and The New Companies Market for SMEs. It is important to attract investors to these markets by improving their trusts. Venture capital financing is an important financial instrument to develop new financial stock exchange markets for SMEs. The growth of venture capital financing in Turkey will help the growth of new stock exchange markets.<sup>66</sup> The Regional Market was designed for SMEs to find financing in capital market. SMEs

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<sup>64</sup> [www.ilab.com.tr](http://www.ilab.com.tr)

<sup>65</sup> [www.kocbilgi.com](http://www.kocbilgi.com)

<sup>66</sup> Bulut, pp. 53-54.

need to have profits in the last two years and paid capital of €470.000 to be traded in The Regional Market. The New Companies Market was designed for technology companies in information technology, computers, internet, high technology and telecommunication and related sectors to find financing in capital market.<sup>67</sup>

## **10. Conclusion and Recommendations**

Private equity is an industry that attracts professional risk takers. They invest directly rather than lend money and target privately owned companies. As a result, these transactions are privately negotiated and they receive an equity stake for their investments. Of the different types of private equity, the most publicized is that of venture capital. Venture capital firms tend to focus on technology related companies, with some specializing in biotechnology.

Venture funds are usually set up as limited partnerships that use money from corporations and from traditional institutional investors such as insurance companies and pension funds to fund start-ups. The VCs who run these funds are the general partners who receive a management fee based on the size of the fund. Venture capital clearly serves as an important source for economic development, wealth job creation, and innovation. Venture-backed companies grow more quickly and create far more value than nonventure-backed companies. Similarly, venture capital generates a tremendous number of jobs and boosts corporate profits, earnings, and workforce quality. Finally, venture capital exerts a powerful effect on innovation

Good investment strategies should utilize; detailed due diligence and deal screening based on intensive industry knowledge, syndication of investments to gather more information and diversity risk, equity ownership and incentive compensation for senior management to directly link the interests of investors and the entrepreneur, carefully thought out boards of directors that provide oversight, strategic advice, and credibility to the company. Venture capitalists help entrepreneurs start businesses and then sell those businesses to the public market in an initial public offering or to more established companies wishing to buy the start-up.

Exit possibilities for investors is a critical issue. Sufficient exit opportunities are fundamental for private and institutional investors prior to investing in new companies. In Turkey, although the national stock market in Istanbul offers some exit possibilities, the impact has generally been limited.

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<sup>67</sup> <http://www.imkb.gov.tr/halkaarz/bolum10.htm>

The exit market is immature, and the industry has experienced only few successful exits, where most of the trading takes place in very large issues. Similar to other emerging markets, IPO has hardly been the most likely exit route in Turkey.

The most important obstacles for Turkey in the previous years were the lack of capital and high interest rates. Due to the political instability and lack of confidence, the government was borrowing short-term and at high interest rates. In this environment, domestic capital invested in high interest government bonds or transferred their capital to international markets. Turkey has always attracted very low inflows of FDI relative to other comparable countries. Several reasons for this low performance can be listed as structural barriers, heavy bureaucratic requirements, macroeconomic and political instability.

Turkish Government has made reforms since 2002 to attract foreign investors, improve investment environment and provisions for foreign and domestic investors. Subjects handled within the reform framework include Company Establishment, Employment, Sectoral Permits, Investment Location, Taxes and Incentives, Customs and Standards, Intellectual Property Rights, Investment Regulation, Investment Promotion and SMEs. During next few years with the wind of the EU membership, Turkey should reach the level of venture capital funding seen in Eastern European countries. More ambitious target could be pursued if Turkey decides to adopt a program to develop the industry.

SME's constitute 99,5% of total companies in Turkey. They have financial problems. They are lack of capital for their equity. Being lack of capital cause not to get the advantage of leverage affect for SME's. There are investment instruments for SME's such as leasing, short and long term bank credits. On the other hand, venture capital is an alternative investment instrument especially for Turkish SME's. It helps entrepreneurs to share their financial risks with venture capital firms and investors. Venture capital financing need to be used extensively in Turkey. Entrepreneurs need to be aware of it and do not hesitate to get the advantage of it. New venture capital firms need to be established and investors need to be encouraged to make investments in ventures in every stage. Our study is important to emphasize the importance of venture capital financing for Turkish SME's. The new stock exchange markets need to be developed for Turkish SME's. They will help legal arrangements for venture capital financing that will expand financial markets and cause financial deepening in Turkey.

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## Appendix 1

### **COMMUNIQUÉ REGARDING THE PRINCIPLES ABOUT VENTURE CAPITAL INVESTMENT COMPANIES**

1) (Communiqué on Amending the Communiqué Regarding The Principles About Venture Capital Investment Companies Serial: VI, No: 16 was published in the Official Gazette dated 7 January 2004 numbered 25339.)

#### **Repealed Communiqué**

(Communiqué No: 10 Serial: VI published in the Official Gazette dated 6 November 1998 numbered 23515 is overruled by a new Communiqué Serial: VI, No: 15 carrying the same name.)

**Serial : VI**

**No : 15**

#### **SECTION ONE**

#### **PURPOSE, SCOPE, LEGAL BASIS AND DEFINITIONS**

##### **Purpose and Scope**

ARTICLE 1 - The purpose of this Communiqué is to set the principles regarding the founders and formation procedures of venture capital investment trusts, registration to the board and public offering of venture capital investment trusts' shares, management and the required qualifications of the managers, scope of activities, portfolio restrictions and disclosure requirements of venture capital investment trusts.

##### **Legal Basis**

ARTICLE 2 - This Communiqué has been based on Article 22/(o), Article 36, and Article 39 of the Capital Market Law numbered 2499.

##### **Definitions**

ARTICLE 3 - For the purposeS of this Communiqué, the following definitions shall apply;

- a) Board: Capital Markets Board,
- b) Ministry: Ministry of Industry and Trade,
- c) Law: Capital Market Law numbered 2499,
- d) TCC: Turkish Commercial Code,
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- e) TTRG: Turkish Trade Registry Gazette,
- f) Corporation: Venture capital investment trust,
- g) Venture capital investment: The investments which comply with the principles explained in Article 20 of this Communiqué,
- h) Venture capital investment trust: The corporation which is incorporated as a registered capital company and directs its capital to venture capital investments,
- i) Venture firm: The firm established or will be established in Turkey, which has potential for growth and needs resources.
- j) Portfolio value: The total market value of venture capital investments, other securities traded at secondary markets and reverse repo contracts that the corporation has in its assets.
- k) Leading shareholder: The shareholder/s who has %25 of the venture capital investment trust's shares and fulfils the requirements listed at Article 5, and 6 of this Communiqué,
- l) Sophisticated investor: Mutual funds, pension funds, investment

companies (securities / venture capital / real estate), brokerage houses, banks, insurance companies, special finance institutions, portfolio management companies, pension and aid funds, foundations, institutions founded based on Provisional Article 20 of Law Numbered 506, associations, other investors which will be considered by the Board as similar to these mentioned ones, and the investors that have at least 1 trillion Turkish Liras of securities at the time of public offering of venture capital investment trust's shares.

## **SECTION TWO**

### **PRINCIPLES REGARDING FOUNDATION AND CONVERSION**

#### **Requirements for Foundation**

ARTICLE 4- Venture capital investment trusts should be formed in accordance with the foundation procedure. Besides, companies with different activities should be transformed into venture capital investment trusts by amending their Articles of Association pursuant to the provisions of the Law and this Communiqué. For the approval of foundation of or conversion to venture capital investment trusts by the Board the following requirements must be fulfilled;

A- In case of immediate establishment,

- 1) Must be incorporated as a registered capital corporation,
- 2) Initial capital should not be less than TL 5 trillion,
- 3) Shares must be issued in return for cash,
- 4) The trade name of the company must contain the "Venture

Capital Investment Trust" phrase,

5) The Articles of Association must comply with the provisions of TCC, the Law and this Communiqué,

6) Board members of the legal entity shareholders which have more than 10% of the shares of the corporation shall meet the requirements specified under Article 5 of this Communiqué,

7) Application must be made to the Board for dealing with activities listed under portfolio operations specified in subparagraph (f) of first paragraph of Article 30 of the Law,

8) At least one of the founders must be a leading shareholder,

B- In case of conversion,

1) Must have adopted the registered capital system or have applied to the Board for this purpose,

2) Paid-in (or initial) capital must be at least 5 trillion TL,

3) Application must be made to the Board for amending the trade name of the company so that it contains the "Venture Capital Investment Trust" phrase,

4) Application must be made to the Board for amendment of the Articles of Association according to provisions of TTK, the Law and this Communiqué,

5) Board members of the legal entity shareholders which have more than 10% of shares of the corporation shall meet the requirements specified under Article 5 of this Communiqué,

6) Application to the Board for dealing with activities listed under portfolio operations specified in subparagraph (f) of first paragraph of Article 30 of the Law,

7) At least one of the current shareholders must be leading

shareholder,

The requirements listed in sub article (a)/6 and sub article (b)/5 shall not be relevant for public institutions and other institutions which are considered to be like public institutions. (This provision is added by the Communiqué numbered Serial: VI, No: 16)

All amendments in the Articles of Association after foundation or transformation of the company will also be also subject to the Board's approval.

#### **Qualifications of The Founders**

ARTICLE 5 - At venture capital investment trusts;

a) Founders, and other shareholders who directly or indirectly hold 10% or more of the corporation's shares shall not have due debts to the taxation authority and the public pension system.

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b) Founders who will have 10% or more of the corporation's shares, shall obtain the required financial resources through their own commercial, industrial or other legal activities without any disputes.

c) Shareholders who are natural persons;

1. and the institutions of which they are general partners must not be insolvent,

2. must fulfil the requirements listed at sub article (d) of first paragraph of Article 9 of the Communiqué Regarding Intermediary Activities and Intermediary Institutions.

#### **Special Requirements for the Leading Shareholder**

ARTICLE 6 - Leading shareholders shall have the financial strength, reputation and experience necessary to be founder and shareholder of a venture capital investment trust.

If the trade name of the corporation contains the name or trade name of natural or legal persons or if it contains a phrase which denotes that the corporation has a relation with those natural or legal persons, then those natural or legal persons are required to be leading shareholders.

Leading shareholder shall have at least 25% of the total shares of the corporation and those shares shall be registered to the name of the leading shareholder.

#### **Foundation and Conversion Procedures**

ARTICLE 7-The corporation requesting foundation or conversion shall apply to the Board with the foundation/conversion application form and the documents mentioned at the form.

The application package shall include a feasibility report which contains information on the target industries, the planned periods when the capital will be increased and shares will be offered to public, amount of planned capital increases, consultancy services which will be provided by or for the corporation, the investors targeted for public offering of shares.

The Board inspects the application in terms of compliance to provisions of the Law and this Communiqué and in case no contrary matter is found out, foundation or conversion request shall be approved.

In case the Board approves the application, then an application for approval of foundation or approval of the amendments at the Articles of Association and the certificates proving that the capital has been paid in accordance with the provisions of this Communiqué and other required documents shall be submitted to the Ministry.

The corporation established according to immediate foundation, shall be incorporated upon registration to trade registry pursuant to related provisions of TTK following foundation approval of the Ministry.

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The companies to be converted into venture capital investment trusts shall convene general assembly of shareholders or if required, general assembly of preferred shareholders pursuant to provision of Article 389 of TCC in order to obtain approval of general assembly for amendment of the Articles of Association following approval of the Ministry. Upon approval of the amendments and registration to trade registry, conversion procedures shall be completed.

#### **License for Portfolio Management Activity**

ARTICLE 8 - While licensing the corporation for engaging in portfolio management activities, the Board evaluates the existence of sufficient physical space, hardware, employees, organization and managers, and finally if it becomes sure that the corporation can successfully engage in portfolio management activities, the Board gives the license to the corporation.

Within fifteen days, licenses shall be registered to Trade Registry and disclosed at TTSG. Any amendment related to the license shall also be registered and disclosed in the same way.

The corporations that didn't submit the application for portfolio management license within six months after the registry of foundation or amendments to the Articles of Association of the corporation, and the corporations of which the Board rejected the application, shall not operate as a venture capital investment trust anymore.

Following the end of the six month period or the date when the corporation is informed about the Board's rejection decision, the corporation shall apply to the Board to amend its Articles of Association so that it can not operate as a venture capital investment trust and to exit the registered capital system within three months. In case the corporations do not apply for these amendments, they will be considered annulled as stated in the second and sixth sub articles of first paragraph of Article 434 of TCC.

### **SECTION THREE**

#### **Principles Regarding Registration of The Shares By The Board Application for Registration**

ARTICLE 9 - Within three years from the registry of portfolio management license to Trade Registry, a corporation that is founded as a venture capital investment trust or converted into a venture capital trust shall compose its portfolio and apply to the Board with the request of having its shares registered so that they can be offered to public.

The corporation that didn't submit the application for registration of its shares to the Board within three years after the registry of portfolio

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management license to the Trade Registry, and the corporations of which the Board rejected the application, shall not operate as a venture capital investment trust anymore.

Following the end of the three year period or the date when the corporation is informed about the Board's rejection decision, the corporation shall apply to the Board to amend its Articles of Association so that it can not operate as a venture capital investment trust and to exit the registered

capital system within three months. In case the corporations do not apply for these amendments, they will be considered annulled as stated in the second and sixth sub articles of first paragraph of Article 434 of TTK. On the other hand, upon the request of the corporation, the Board can grant a one year extension for the three year period in case of significant problems that occurred in the market where the shares of the corporation are supposed to be offered to public.

#### **Public Offering**

ARTICLE 10 - In public offering of shares, the Board's general regulations on public offering and sale of shares shall be applied, where there is no relevant provision in this Communiqué.

#### **Registration by the Board**

ARTICLE 11- The Board shall evaluate application for registry of shares in terms of public disclosure, in particular whether the offering documents contain the information required under the regulations about the corporation and the shares.

In case the Board gets the opinion that the offering documents are not sufficient and do not reflect the truths and therefore cause abuse of the public, then the registry of the shares to the Board may be rejected. Registry of the shares to the Board does not mean that issued shares and the trust will have been guaranteed by the Board and cannot be used for advertisement purposes.

#### **Quotation to The Stock Exchange Market**

ARTICLE 12 - The corporations shall apply to the Board for issuance of certificates required for quotation of issued shares to Stock Exchange Market within 15 days from end of sale period. Within 15 days following the date of these certificates, corporation is obliged to apply to stock exchange market with the request of quotation of the shares.

#### **Notification to The Board**

ARTICLE 13 - The corporations shall be obliged to notify the following to the Board within six business days subsequent to:

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- a) the announcement date of Articles of Association of the Foundation, one copy of TTSG,
- b) the publishing date, statement, circular, announcement regarding sales and advertisements about public offering,
- c) the end of sale period, the information about new shareholders structure and sale results occurred after sale,
- d) the signing date, one copy of agreement about investment to venture firms,
- e) end of the quarter, quarterly portfolio table containing investments in trust portfolio.

In addition, the resolution of the board of directors about investment to venture firms shall be notified to the Board and the Stock Exchange Market where the shares are under transactions through the fastest communication means until 9:00 of the next business day.

#### **Transfer of Shares**

ARTICLE 14 - Before public offering, transfer of shares shall be subject to the permission of the Board regardless of any ratio. Transfer of shares within the framework of the provisions in this article the new shareholders must fulfil the restrictions of the founders.

**Issue of Preferred Shares**

ARTICLE 15 - The corporations cannot issue any securities providing privileges other than privilege to nominate 2/3 of candidates for members of the board of directors or privilege for dividend. If the number of 2/3 of board of directors is not an integer, the closest integer will be taken into account. After public offering, no privilege, including nominating members for the board of directors and dividend, can be created.

**SECTION FOUR****Principles Regarding the Management of the Corporation****Member of the Board of Directors and General Director**

ARTICLE 16 - The members of the board of directors and the general director must have the qualifications specified under article 5, paragraph (a) and (c) of this Communiqué.

**Scope of Activities**

ARTICLE 17- The corporations,

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- a) can be shareholders of venture firms within the framework of the provisions in this Communiqué,
- b) may take part in the management of venture firms, may offer consulting service for the mentioned firms,
- c) may make investments in securities being transacted in secondary markets in order to have varieties in their portfolio,
- d) may use short term credit, which have a maturity of less than 1 year, in the amount of half of their equity capital, long term credit, which have a maturity of more than 1 year, in the amount of two times of their equity capital.

**Investment Restrictions**

ARTICLE 18 - The corporations,

- a) can not make investment into firms where the shareholders with more than %10 of the capital or the voting rights, members of board of directors and general director separately or collectively have more than 10% of the capital or the voting rights of corporation,
- b) can not invest more than 50% of its portfolio value on securities other than the ones issued by venture firm and the being operated at secondary markets, investment to venture firms are considered as this kind of investment after ten years since the investment date,
- c) can not invest more than 10% of its portfolio value on securities issued by one firm specified under subparagraph (b) above.
- d) can not have more than 5% of voting rights or capital of one single firm specified under subparagraph (b)
- e) can invest in securities appropriate with their investment objectives with the purpose of hedging of portfolio against currency, market and interest rate risks provided that their articles of association have a provision in this line, this issue mentioned in disclosure documents, and approved by the Board, for hedging purposes invest in forward, options and futures contracts.

**Obtaining Consulting Services**

ARTICLE 19 - The corporations can obtain consulting services from specialized persons and foundations in connection with the matters related to their activities provided that their articles of association have a provision in this line and a resolution for this purpose has been taken by the board of

directors.

One copy of contract with specialized persons and foundations must be notified to the Board within six business days following the signing date. If no staff will be assigned to the related departments within the period of contract, the contract must be approved by the Board.

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#### **Investment in Venture Firms**

ARTICLE 20 - The investments to be made in venture firms by corporations shall be made under the framework of an agreement to be executed by and between the parties. This agreement shall have provisions mainly about the management of the venture firm and rights and obligations of the venture firm.

The venture firms must aim to manufacture or develop, vehicles, tools, material, services or new products, methods, systems and production techniques having industrial and agricultural application potential as well as marketing potential or have the capacity to realize the specified objectives with management, technical or capital support

The corporations can be shareholders of venture firms or may purchase debt bonds to be issued by venture firms.

The corporations may make investment into securities issued by other venture capital corporations within the framework of the provisions in this article.

The corporations can make;

- a) Contracts that give to the corporations the option to sell the shares of venture firms to the shareholders or the employees of venture firms,
- b) Contracts that give the option to the shareholders or the employees of venture firms to buy the shares of venture firms,
- c) Contracts that give the shareholders the option to buy the shares of venture firms,
- d) Futures contracts regarding the sale of shares of venture firms to the shareholders or the employees of venture firms,
- e) Futures contracts regarding the sale of shares of venture firms to the corporations by the shareholders or the employees of venture firms, and other options and futures contracts regarding the investment activities of the corporations.

These kinds of contracts are considered as venture capital investments.

For these kinds of contracts corporations must obey the rules determined by the Board regarding the obligations of the parties, valuation principles of investment on venture firms, the scope of public disclosure, investment amount and etc.

Sufficient information about options and futures contracts must be disclosed in the disclosure documents.

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#### **SECTION FIVE**

##### **OTHER PROVISIONS**

##### **Principles Regarding The Sale of Shares To Sophisticated Investors**

ARTICLE 21 - If the shares of corporations will be sold only to sophisticated investors provided that their articles of association have a

provision in this line and this issue mentioned in disclosure documents, the following principles would be valid.

- a) Corporations have to obtain and keep regularly persuasive data and documents about the investors proving that they meet the sophisticated investor criteria within the framework of this Communiqué.
- b) All the shares must be written down on its behalf. These shares can only be sold to the sophisticated investors. Corporations must obtain persuasive data and documents about the investors proving that they meet the sophisticated investor criteria. The sale of shares to the investors that does not meet the sophisticated investor criteria can not be registered to the share register.
- c) In case of foundation and conversion the paid-in or initial capital must not be less than 1 trillion TL.
- d) Corporations are not obliged to have a leading shareholder and the provisions regarding the leading shareholder are not valid for these corporations.
- e) There is no need to have an investment portfolio prior to registration to The Board however the corporations that does not meet the specified criteria under article 18, paragraph (b) of this Communiqué within one year following the registration can not operate as a venture capital investment trust. Following the end of the one-year period, the corporation shall apply to the Board to amend its Articles of Association so that it can not operate as a venture capital investment trust within three months. In case the corporations do not apply for these amendments, they will be considered dissolved as second and sixth sub articles of first paragraph of Article 434 of TTK.
- f) Article 12 and the last paragraph of article 13 of this Communiqué are not valid for these corporations.
- g) In case of public offering paragraph (b) of article 5 and third subparagraph of article 6 of Communiqué On Principles Regarding Registration With The Capital Markets Board And Sale Of Shares Serial: I, No:26 published in Official Gazette dated 15/11/1998 and numbered 23524, second subparagraph of first paragraph of article 3 of Communiqué on Principles Regarding the Sales Methods of Capital Market Instruments Through Public Offering, Serial: VIII, No: 22 published in Official Gazette dated 27/10/1993 and numbered 21741 are not valid for these corporations.
- h) There is no need of auditing, notification to the Board and disclosure for the six-month results of the corporations. However, year end financial statements and audit report must be submitted to the Board and disclosed at TTSG within one month following the date of annual general assembly.

Board can differentiate the public disclosure requirements of these corporations.

#### **Being Subject to Related Regulation**

ARTICLE 22 - The corporations shall be subject to regulations of the Board in connection with the matters such as financial tables and reports, profit distributions, announcements and advertisements. In case this Communiqué does not have any provisions about a specific matter, then the regulations of the Board about publicly-held firms and other regulation provisions shall be applied.

**The Fee to Be Deposited to The Fund**

ARTICLE 23 - Before the registry of the shares of corporation, the registry fee under Article 28 of the Law shall be deposited to the account of the Board in advance.

**Documents Determined By The Board**

ARTICLE 24 - Board can determine the format, scope and principles of notification to the Board of prospectus, articles of association, application forms and portfolio tables mentioned in this Communiqué.

**Amounts Determined By The Board**

ARTICLE 25 - Board can determine the amounts mentioned in the articles 3,4 and 21 of this Communiqué.

**Evaluation of The Applications By The Board**

ARTICLE 26 - Documents regarding the application must be submitted fully to the Board in order to evaluate the application. Other documents and information to be requested must be submitted within the period determined by the Board.

**Repealed Provisions**

ARTICLE 27 - "Communiqué Regarding the Principles About Venture Capital Investment Corporations" Serial: VI, No: 10, published in Official Gazette dated 6/11/1998 and numbered 23515, being in effect before this 12

Communiqué has been terminated.

Temporary Article - The principles regarding the leading shareholder and minimum paid-in capital will not be valid for the corporations founded before publishing date of this Communiqué.

**Entry into Force**

ARTICLE 28 - This Communiqué shall enter into force on the day of its publication.

**Execution**

ARTICLE 29 - The provisions of this Communiqué shall be executed by the Board.

# PRIVATE EQUITY AND VENTURE CAPITAL – THE NEW IDEA FOR GAINING CAPITAL IN CENTRAL AND EASTERN EUROPE<sup>1</sup>

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## **Abstract**

*In the contemporary world, the capital market in Central and Eastern Europe (CEE) is spreading further and further. Young and emerging enterprises not only need but also acquire capital for developing themselves and entering new markets. Following this path the assets class grows and matures, and at the same time the number of transactions on the secondary market obviously keeps increasing. Due to this reason, we should take into consideration the subject of private equity and venture capital. Private equity and venture capital are the forms of investing in unquoted securities of new, small or medium-sized enterprises. After a certain period of investing equity the shareholders could sell back their shares in order to maximise yield or minimise losses. The goal of this working paper is to present the market of private equity and venture capital in Central and Eastern Europe countries (especially in Poland, the Czech Republic) as well as its possibility for the future development in Europe.*

**Keywords:** *Private equity; venture capital; Central and Eastern Europe*

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## 1. Introduction

When we look at companies such as Euronet, Computerlan, Google, or Hewlett Packard, it is usually easy to indicate in what market sector they operate or what their main product is. However, it is not commonly known just how they managed to gain the leader position in their fields. The key to their success was the intriguing way of acquiring external capital in the form of Venture Capital (VC). The form that focused on the human factor, his creativity and will to take up risk. Unfortunately, this does not mean yet that the mentioned source of financing is available for everyone, at least not yet in the CEE countries.

The beginning of VC dates back to the '80, when the USA faced an extreme increase in the financing of investments in infrastructure using this method. The value of VC investments in the USA has risen since 1980 from USD 5 billion to USD 180 billion in 2000.

This study acquaints the reader with the main definitions of PE/VC as well as presents the development of PE/VC in Europe. However, the most interesting part is about the changes being introduced in this field in the CEE countries. Surely, the accession into the EU will cause the VC market in the CEE countries to be regulated, and therefore will give a chance to develop and become competitive to many small and medium-sized enterprises.

## 2. Main aspects of private equity and venture capital

### *2.1 The nature of PE/VC funds*

Today, private equity and venture capital funds are one of the specific forms of financing the development of enterprises. The idea of private equity and venture capital is very simple. There are always two sides of a transaction: wealthy investors (a sponsor or moneylender, who finances a new idea or project) and originators (who know how to improve the financial state of the company to acquire a huge profit). Nowadays, even very expensive projects or ideas can find a moneylender willing to take a risk in return for a high reward – the future profit. This is the reason why such forms of financing are very often called high risk capital. However, not only does the moneylender contribute his money to the company, but also his know – how, high –tech, low – tech and no- tech as far as the management of the company is concerned. This transfer of capital helps investors to manage the company as well as to enter the market with a specific product. This kind of private investor, who not only provides the company with capital, but also with business expertise, is known as **business angel**. [TAMOWICZ P.,

*Venture Capital – Kapital na Start*, PARP Publishing, Gdańsk 2004, pp. 66 – 67. ISBN 83-88802-90-9]

**Private equity (PE)** is a medium or long-term form of financing investments. This form is provided to an unquoted company in return for an equity stake in potentially high growth of such company. Moreover, the term “private equity” is used to describe the industry as a whole that is “venture capital” (the seed to expansion stages of investment) as well as management buy-outs and buy-ins.

Private equity backed companies usually grow faster than other types of companies. The private equity firms will seek to increase a company’s value to its owners, without taking day-to-day management control. Although the company may have a smaller “slice of cake”, within a few years the same „slice” should be worth considerably more than the whole “cake” was before

As far as the idea of **venture capital (VC)** is concerned, it should be stressed that this is the same form of financing as private equity. However, venture capital is provided to a company, which is very new and is just starting to position itself on the market. Due to this fact, the risk of putting up capital to such an enterprise is higher. Following this path, there is a popular belief that the future profit from such companies is also higher, but this is not a rule. Moreover, venture capital provides capital to companies, which are not listed on the stock market. Venture capital refers mainly to management buyouts, management buy-ins, replacement capital as well as venture purchase of quoted shares.

Investments are usually carried out by acquiring shares, but their amount depends on individual agreements between originators and investors. Thus the investor becomes the company co-owner. After financing the proper project the investor withdraws his capital and sells his stocks and shares. This is also a very important feature of venture capital (VC), which concerns companies that are not listed on the stock exchange. Therefore, VC is recognized as a part of the nonpublic or private capital market. [The Polish Private Equity Association, Yearbook 2003, pp. 41 – 45]

In fact, venture capital (VC) is an element of private equity, which is contributed to the company by an external investor to a small or middle-sized enterprise for the period from five to ten or even fifteen years. This period depends on the time, which is necessary to obtain appropriate development in the early stage of the venture (speed and start-up phases) or expansion of the business.

Taking the PE/VC structure into account, it seems to be very interesting that some collaterals (like mortgages), which are usually required

in the credit procedure, are not needed in this form of financing. According to this statement, the only collateral in the PE/VC form is only the share of the company's equity as well as the rights, which results from this share.

These are:

- Voting rights;
- Access to financial information;
- Control system.

In most cases, the investor resigns from taking the monthly profit margin in order not to charge the budget of the enterprise. Actually, PE/VC is an award itself for the company and a proof of its success. Hence the more company is worth, the more investors earn from shares.

As far as the idea of PE/VC is concerned, there are two kinds of investments in this structure. They differ from each other in legal requirements as well as in their structure. These are:

- **Direct investment in PE/VC**
- **Indirect investment in PE/VC**

Direct investment in PE/VC takes place when an investor buys shares of a company. The investor is a private person or group of people, who might come from among a circle of families or the entrepreneur's friends. However, it should be taken into account that the financial possibilities of friends or family are limited, and can not bankroll all phases of production. Therefore, the possibility of direct investment runs out, when the company starts to produce goods on a large scale. Overall, the direct form of investment was once very popular in the private equity structure, but now it is not as popular as the indirect form.

The second form of investment is indirect investment in PE/VC. Such a form of financing the process of investment is by far much more complicated as well as profitable than the direct form. The idea of indirect investments relies on using specialized institutions -private equity investment funds. This is a special legal structure, which symbolizes the accumulated capital managed by experts, called **fund managers** or **investment managers**. The fund manager is responsible for researching and selecting markets, sectors and industries to invest in, deciding how much to invest in each sector, when to buy or sell etc. In other words, the private equity investment fund is a vehicle that enables raising capital from several investors, and then invest this capital in equity-related securities of companies - **investee companies**. These are usually private companies not listed on any stock exchange. Nevertheless, the fund could also take a form of a company or an unincorporated entity such as a limited partnership. [CIEJPA-ZNAMIROWSKI, K., *Zagrożenia i perspektywy rozwoju polskiego rynku*

*kapitałowego*, KUL Publishing, Lublin 2002, pp. 14 – 16. ISBN 83-228-0821-6]

The legal structures needed to establish these funds might be different in various countries due to the differences in tax systems or legal regulations.

Entities that are mostly interested in setting up venture capital funds are:

- Pension funds,
- Banks,
- Insurance companies,
- Huge corporations.

The above mentioned entities have large capital resources. For this reason, they want to invest their capital in the fund and at the same time achieve better profits from this transaction. On the one hand, the type of investors in a fund is not significant, but on the other hand it truly could be. For example funds, which are established by banks, might be much more aware of investing in better-positioned and more secure companies. Obviously, investments in such companies will take less time, than in companies in the speed stage.

## ***2.2 The idea of fund of funds***

As the idea of private equity and venture capital develops, the case of the fund of funds should not be avoided.

In the developed financial markets, local institutional investors are typically providers of private equity capital. In most European Union countries (like the UK, France, Hungary, Austria) more than half of all private equity capital is provided by banks, pension funds etc. However, not all counties in Europe are so lucky...for example Poland. In comparison with European countries, the Polish private equity (PE) market is characterized by a low level of financing from local, domestic sources. Despite this fact, the Polish institutional investment market is rising quickly. Polish pension funds currently control a capital of PLN 58 billion. Moreover, the value of the assets of insurance companies in 2004 exceeded PLN 61 billion and market investment funds accounted for a further PLN 32 billion.

Unfortunately, in spite of such a considerable capital, Polish financial institutions are not allowed to invest in the local private equity market. In fact, the local private equity market is effectively cut off from sources of local financing. The reason of this situation is quite simple – the Polish law system. Due to the regulatory constraints, pension funds can not invest

directly into non-listed foreign investment entities. Under these circumstances, this form of investment includes private equity funds, which use the non-listed foreign investment entities to maximize their tax efficiency. Actually, foreign pension funds, banks as well as insurance companies are still one of the leading PE investors in Poland.

However, there is a solution to this problem in the Polish legal regulation. This solution is called the **fund of funds**.

Today, funds of funds are quite a popular form of investment vehicles on the private equity market. At the end of 2003, there were approximately 125 funds of private equity that managed around USD 130 billion all over the world. In other words, globally, funds of funds account for about one fifth of the overall private equity capital. Taking into consideration the European market, this ratio is slightly lower and reached around 14% in 2003. This situation makes funds of funds the fourth biggest provider of private equity capital on the European market.

The idea of the fund of funds is really simple to explain. A fund of funds is an investment vehicle that pools money from investors to invest in a selected portfolio of private equity funds. Particularly, a fund of funds usually acquires a portfolio including from 10 to 20 selected PE funds. When the life of these selected funds ends or if the funds expire, cash from divestments is transferred to the fund of funds and returned to its investors. Therefore, a **divestment** is a point at which the private equity fund ends its involvement in a business and takes its profit. [The European Private Equity and Venture Capital Association (EVCA), Yearbook 2005, pp. 202 – 203]

There are many advantages of the fund of funds:

- **Access to the best funds (top-tier funds)** – funds of funds want to generate the best return from the selected best private equity funds (e.g. funds from the top-quartile funds like these, which have a return on investment at the level of 25%). The demand for these top-performing funds is very high on the market, and may even exceed supply. As a result, not all investors can take part in such profitable funds. However, due to the power of funds of funds, for example its management skills or market expertise, it may provide access to the leading private equity funds.
- **Cost effectiveness** - An institutional investor, who would like to allocate for example 10% of his assets to private equity as well as wants to reduce his risk by investing that capital in a number of funds, should bear the costs of employing a team of private equity professionals, to construct and manage a portfolio of private equity funds. Investing into a fund of funds allows the investor to outsource

all mentioned tasks, and at the same time save time as well as money. In fact, a selection of investment opportunities or tasks to be performed, which are connected with monitoring and reporting the portfolio, requires both the investor's knowledge and constant monitoring of the investments. Therefore, the choice of a fund of funds is the best solution for an institutional investor.

- **Diversification** – investment risk in the fund of funds substantially goes down through portfolio diversification. Thus the fund of funds diversifies its portfolio across:
  - Funds,
  - Sectors,
  - Strategies

The reason of this solution is to diversify portfolio risk. As a recent research of the PE shows, funds of funds are the least risky form of allocation in private equity. Whereas the risk of capital loss in the case of a direct PE investment in a business is 42%, the risk of a loss going up from an investment in a single private equity fund (whose portfolio may consist of shareholdings in 10 – 20 companies) is substantially reduced, but still significant at around 30%. When investing through a fund of funds the risk of capital loss is just 1%. Moreover, the risk of total loss of capital during investing through a funds structure was found to be zero.

- **The possibility of investments with limited capital** – a potential investor in a private equity fund should provide a substantial threshold. Consequently, if the investor wants to build his own portfolio of PE funds, he must have a significant sum of money to enter into several funds. Investing via a fund of funds has the advantage of allowing an investor with relatively limited capital to gain access to a large spectrum of private equity funds. An institutional investor who allocates less than EURO 500 million for investments in private equity will participate only through funds of funds vehicles.

### ***2.3 Stages of financing investments***

The financial quotation of a venture capital fund is very diverse. In practice, VC funds could finance all phases of business development as well as some specific situations, that may exist in the enterprise e.g. a turnaround (restructuring), or a buyout (a transaction, in which a business unit or company is acquired from the current investors).

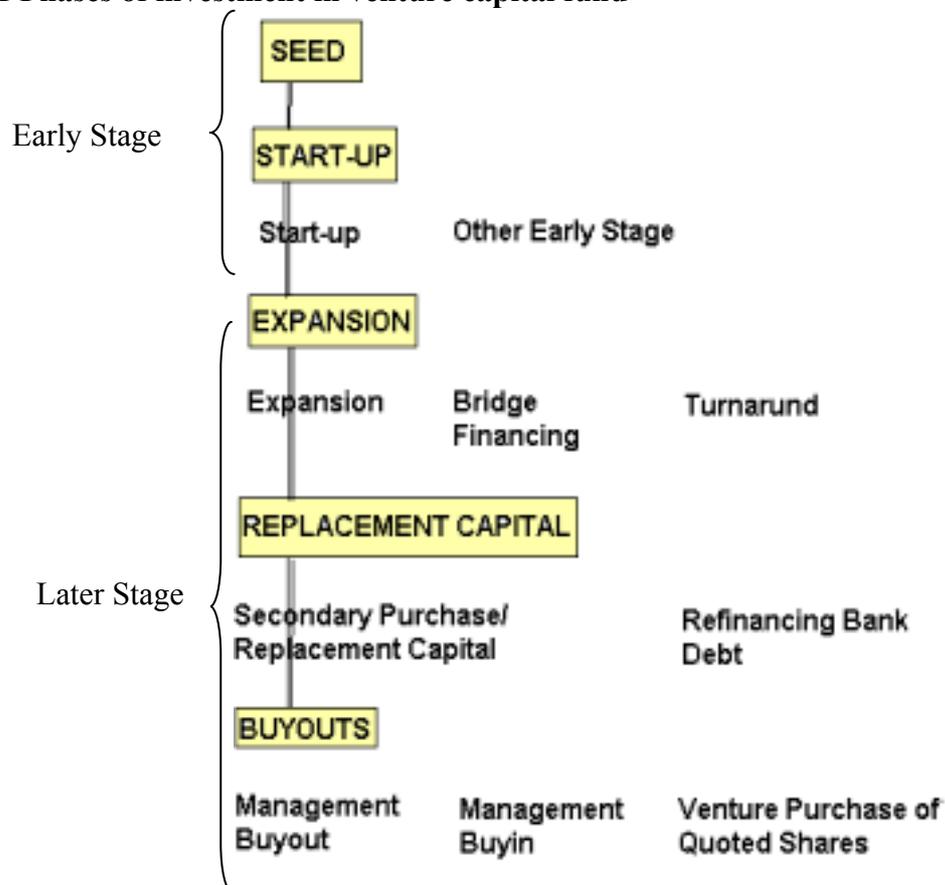
In fact, there can be distinguished many phases in the financial offer of VC funds. Seed and start up phases should be diversified according to the

business, which will be operating in the future. Therefore, both of these phases are used to finance the early stages of the investment project's development. Clearly, this advance financing involves projects from several to several tens of dollars.

The seed stage includes financing, which is important to investing in promising and profitable ideas, research or concepts, before a business has reached the start-up phase.

The start-up stage should take into account companies, which are in the process of being set up or have been in a business for a short time, but have not sold their product commercially yet. In fact, this stage of financing should be acquired by enterprises that must invest in product development as well as in initial marketing. [COMPERS P., LERNER J., *The Venture Capital Cycle*, MIT press, London 2000, pp. 33 – 45. ISBN 0-262-07194-0]

**Figure 1 Phases of investment in venture capital fund**



*Source: Personal elaboration*

Because of the experience of the company and the position on the market, the investment risk as well as financial return from investment is playing an important role for the fund. In practice, financing ideas and entering the market are by far the most risky as well as expensive investments for the VC funds. This is the reason why funds expect very high rates of return. Unfortunately, there are few companies, which could accept such conditions and provide so profitable rates of return. In fact, the VC funds are not very interested in financing seed and start-up phases. However, the initiative of governments can be a good solution for this problem. In some countries, for example Great Britain, Netherlands, Slovakia or Poland, governments aid the developing funds that invest in seed or start-up stages.

In practice, there are much more early stages. These stages focus on companies that have completed the product development stage and require further funds to initiate commercial manufacturing and sales.

**The expansion capital stage** is also called the development capital phase. In this phase all funds are allocated into the growth and expansion of the company. The capital may be used to finance increased production capacity, develop and market the product as well as provide additional working capital. An interesting phase in this stage is bridge financing. Such form of financing could be a good solution for companies in the period of transition from being privately owned to being publicly quoted. Another interesting phase that belongs to the expansion stage is turnaround. The turnaround is one of the forms of PE/VC financing, which helps companies to exist within a branch, while financial problems or insolvency start to occur. Due to this solution, enterprises have a new chance to re-establish prosperity.

The replacement capital stage (secondary purchase) concerns the purchasing of existing shares in the company from another private equity investment organization, or from another shareholder or shareholders. Another phase, which is called refinancing bank debt, rarely takes place. This phase is used, when the company's level of gearing must be reduced.

The last stage of investment includes management **buyout, management buy-in and venture purchase of quoted shares**. The management buyout (MBO) is a buyout in which the target company's management team acquires the business from the current shareholders, with the support of private equity investors. The management buy-in (MBI) is a buyout in which external managers take over the company. However, the group of managers or a manager could not have enough money to carry out such a target. In fact, financing from PE/VC investors enables them to reach this point and buy the company. The last phase is connected with de-listing

the company, which could go bankrupt or which one of the products was withdraw from the list of production. It is a purchase of quoted shares with the purpose of rebuilding or de-listing the company.

#### ***2.4 How to choose the best fund***

To explain the below case, it could be a good idea to assume that the form of financing of a new investment has just been chosen, but not a concrete venture capital fund. Moreover, the situation is much more complicated, because there are many available VC funds in a country.

However, the investor should take into consideration five features:

- Branch specialization,
- Financing specification,
- Investor's requirements for investment limits,
- Localization of a fund,
- Reputation of a fund

The first criterion is by far the most important. Most of the funds describe themselves as universal, which operate in all branches. However, there is a group of branches, which are avoided by venture capital funds. These branches are usually regarded as dangerous, because of political, social as well as economical reasons. To the most crucial branches belong sectors, which produce and trade arms, tobacco, high percentage alcohol, means of abortion or drugs. Furthermore, due to the fact that VC funds admit responsibility for the activities they invest in, they do not invest in companies that destroy or poison the environment. That is why there are many funds, which invest only in the internet technology, communication or commodity food processing industry.

**Table 1 The most popular Polish investment offer of PE/VC funds in 2004, regarding brands.**

<b>PE/VC fund</b>	<b>Sectors</b>	<b>Amount of investment (million PLN)</b>
<b>3TS Venture Partners</b>	Electronics, IT, Internet, media, telecommunication,	9 - 27
<b>Advent International</b>	Media, IT, telecommunication, chemistry, food processing industry	40 – 120
<b>Argus Capital International</b>	No preferences	20 - 100
<b>Dresdner Kleinwort Capital</b>	Telecommunication, media, IT, logistics, medical services	12 - 100
<b>Enterprise Investors</b>	Production and services for industry, IT, telecommunication, health care, environment protection	12 – 120
<b>DBG Eastern Europe</b>	Consumer goods, media, IT, services, telecommunication, transport	13 - 54

*Source: The Polish Association of Capital Investors, <http://www.psik.org.pl>*

Another important feature, which has a huge influence on choosing a PE/VC fund is its financial specification. It means that the investor should check first, whether the VC fund specializes in financing projects that are in the early stages of investment development. There is a possibility that the VC fund majors in management buys-in or turnarounds. In fact, if the fund does not finance the seed stage, sending documents about the project is just a waste of time.

Speaking about the selection of funds, the case of investment limits must be taken into consideration. The limits of investment are strictly connected with the size of the PE/VC fund. The larger the fund, the higher value of investment is required by such a fund. In other words, if we have a project, which is worth PLN 2 million, we should only choose funds that finance projects from approximately PLN 1 to PLN 5 million. As it is, the value of investment as well as investment limits required by PE/VC funds must be known in detail.

The last two features are much easier to understand. The localization of the fund is not a very influential matter in the contemporary times, in

which telecommunications are so well developed and keep expanding even more. In practice, the cooperation between the fund and originator, even at a long distance, is currently unimportant. However, if the entrepreneur wants to realize a small and locally situated project, this factor could be meaningful

The reputation of a VC fund is a quite interesting case, when the originator wants to eliminate unfortunate surprises. Reputation means both experience as well as knowledge how to manage a fund and cooperate with the originator. Such cooperation may last even several years. As a matter of fact, it is better to gather information about the chosen fund e.g. on web sites.

## ***2.5 The structure of investment process***

The whole process of investment, which begins from the first contact with the project and ends when the shares of the company are sold, is called the investment cycle. This cycle may be divided into three parts:

- Preparation of investment, when the capital is contributed,
- Cooperation with the company to increase of investment's value,
- Completion of investment and the withdrawal of involved capital.

These phases consist of specific operations and objectives, which are taken up in both the VC fund (its managers, financial advisers etc.) as well as originator of the project.

First phase focuses on a detailed analysis of the prepared project. When the project is be acceptable and viable to perform, the stages of negotiating and settling the conditions of the agreement are sign. However, to the most significant and influential factors of this phase belong the in-depth analysis due diligence. This kind of analysis makes a detailed and careful assessment of the financial, commercial, legal and technical fundamentals of the business targeted for investment. After that, the VC managers prepare a term sheet and finally establish such terms of the transaction, which will satisfy both parties. In this phase the originator is obliged to present the project, business plan as well as all negotiation or problem areas. At the same time, the VC fund has to prepare an in-depth analysis of the company and law records.

The time of preparation of all conditions depends on the size of the project as well as its level of problematic areas. Usually, the time needed to finish the first phase of the investment process takes from 3 weeks to even 5 months. By far the most time-consuming and at the same time most expensive is the due diligence process. [TAMOWICZ P., *Venture Capital – Kapital na Start*, PARP Publishing, Gdańsk 2004, pp. 9 – 10. ISBN 83-88802-90-9]

Another stage concentrates on the effective process of carrying out of the project. It is the longest process among all the mentioned phases, which can last from three to seven years. Considering this stage, it is very hard to separate concrete phases or activities. Nevertheless, there occur special sequences of cooperation between the fund and entrepreneur in order to reach a high rate of return from invested capital.

The last stage starts, when the VC managers feel that the company is close to reaching its agreed ceiling of value. This stage lasts from 2 to 11 months. To the most important functions belong:

- Preparing the company to withdraw from the fund,
- Searching a purchaser,
- Implementation of the transaction.

This stage is as expensive as the first stage of financing the investment, because the VC specialists have to prepare an assessment of the company as well as its informational memorandum for future investors or clients.

### **3. The world of PE/VC funds in Europe**

#### ***3.1 The region of changes***

Over the last decade Central and Eastern Europe (CEE) has undergone major structural changes. Due to this process, especially new EU members have become an attractive source of private equity investment opportunities. The rate of improvement as well as the level to which opportunities for investment have increased is surprising and striking. Under any circumstances, CEE is exceptionally positioned to reach significant returns for investors in private equity that may outshine performance in the more mature markets of the old EU members.

As far as the private equity is concerned, the roots of PE development in CEE have a lot in common with the development of Western Europe. Twenty years ago, the private equity industry in most of Western Europe countries was still in its infancy. However, thanks to the meaningful changes in taxes, business climate or other regulations in the west, the PE forms could be established. The situation in CEE countries was similar; the process of harmonization with the European Union has provided structural changes that have in turn improved private equity opportunities.

Structural changes, reforms as well as willingness to develop the PE industry since the early 1990s in Western Europe have accelerated the development of the PE industry in the CEE region.

According to the Baring Corilius Private Equity report, investments in Europe have reached the record level of EUR 36.9 billion in the end of 2004 in comparison to EUR 29.1 billion in 2003. Moreover, that was an even better result than in 2000, when the level of investments reached the point of EUR 35 billion. Experts predict that in the end of 2005 the level of investments in Europe will go up to approximately EUR 42 billion. The largest amount of funds was in the UK in 2004 with EUR 10.1 billion, or 37% of the European total, although this was down a third from 2003, when UK funds represented 55% of total European funds. The second position was taken by Sweden with EUR 3.7 billion and the third by The Netherlands with EUR 3.2 billion. It is a very interesting fact that the amounts increased, in each individual country, very significantly from year to year. This was especially easy to observe in some smaller markets, where only a few new independent funds may be raised each year. [SOBIŃSKA K., *Nasz Rynek Kapitałowy, Coraz bliżej unijnego poziomu*, vol. 6, no. 174, pp.40 – 43]

The most influential deterrent of PE development in Europe (in the last 20 years) was the process of privatization as well as law changes. Considering only the CEE market, the privatization process has played also a meaningful role in building up roots of a stable economy. The financing of turnaround processes was for a long time one of the most typical activity carried out by private equity funds. On the one hand such process were a strong catalyst for PE funds, and on the other hand could aid privatized companies to come into the reality of free market economy.

In any case, in the beginning of 1990s privatization has played the most important role for the establishment of the private equity market in the CEE region. However, this impulse did not overheat in the end of decade, because new factors, which support growth and development of PE funds, have appeared

To present all structural or legal changes in Europe that have influenced the contemporary situation of PE/VC funds, another written assignment should be taken. However, the table on the next page can help understand the most influential points.

**Table 2 Comparison of factors affecting PE development in Western Europe and CEE**

<b>Countries</b>	<b>UK</b>	<b>France</b>	<b>Germany</b>	<b>Central Europe (CE)</b>
<b>SUPPLY OF OPPORTUNITIES</b>				
<b>Need to solve the problem of family succession</b>	Moderate need	High need	High need	Low need
<b>Need to restructure diversified groups</b>	Established patterns throughout period	Became established in 1990s	Becoming established from mid-1990s	Increasing established in early 2000s
<b>Need to privatize state-owned companies</b>	Well established program from 1980s; now complete	Less extensive than in UK	Former GDR apart, relatively little	Bulk of privatizations completed
<b>Scope for going-private transaction</b>	Large stock market; few initial deals, now significant	Steady flow but often complicated by family control issues	Relatively small number of quoted companies	Many candidates; specific opportunities must grow
<b>Development stage of merges and acquisitions (M&amp;A) markets</b>	Highly developed	Relatively active	Becoming active	Relatively active
<b>DEMAND FOR PRIVATE EQUITY</b>				
<b>Attitude to entrepreneurial risk</b>	Became very positive from early 1980s	Moderate	Traditionally cautious, changing slowly	Positive and growing
<b>Willingness of managers to buy</b>	High	Moderate	Starting to develop	High, but lacking financial means
<b>INFRASTRUCTURE TO COMPLETE DEALS</b>				
<b>VC market</b>	Grew rapidly from early 1980s	Grew from late 1980s but many small players	Traditionally small & not MBO-oriented	Small but developing
<b>Supply of debt</b>	High	Moderate	Tradition of high leverage	Low but growing
<b>Favorability of legal framework</b>	Favorable	Favorable	Moderately favorable	Favorable
<b>Favorability of taxation regime</b>	Favorable	Favorable	Reforms in progress	Moving to favorable with EU reforms
<b>Intermediaries</b>	Highly developed	Moderately developed	Fragmented	Highly developed

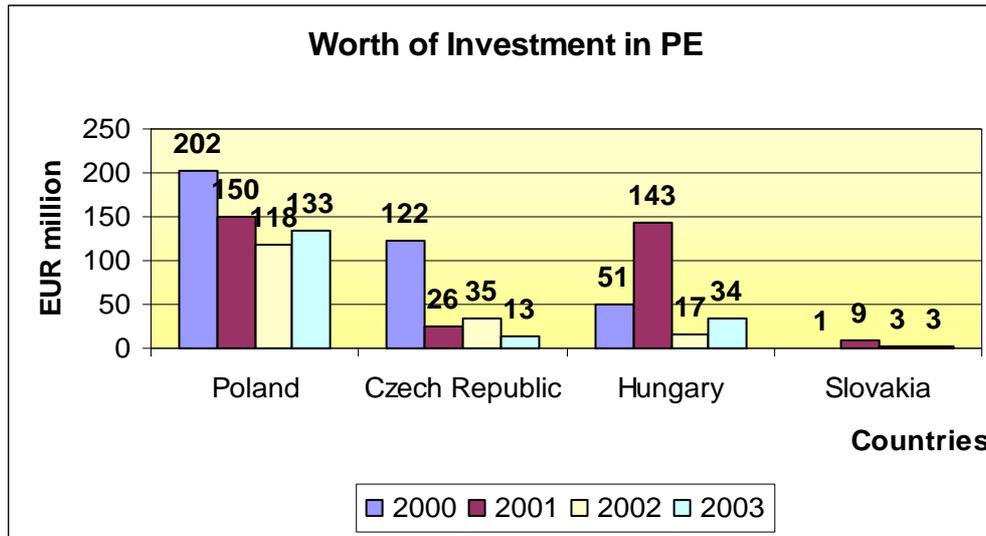
<b>REALIZATION OF GAINS</b>				
<b>Stock markets</b>	Receptive to PE companies from mid-1980s; now more difficult	Development of second market	New issues sparse	Growing domestic capital pool and appetite(demand)
<b>Trade sales</b>	Highly active	Becoming more active, especially for partial sales	M&A market developing	Highly active
<b>Secondary buyouts/turnaround</b>	Increasing interest	Favored exit route	Possible exit route	Possible exit route

*Source: SOBONSKA K., Nasz Rynek Kapitałowy, Coraz bliżej unijnego poziomu 2005, pp. 44*

Nowadays the possibility to access the European Union has played the main role in developing the PE/VC market in Central and Eastern European Countries. Due to the harmonisation and implementation of the EU law to the CEE region, the new EU members could develop conditions to enter the PE/VC market. To the most influential features, which helped to open and intensify the development of private equity in CEE belong:

- Deal flow that is adequate to the size of PE funds,
- Supply of educated as well as capable managers, who understand the motivation of establishing PE funds,
- Access to professional legal and consulting services,
- Infrastructure, which support the development of capital market,
- Expansion and diversification of the PE fund divestment (exit) from a business

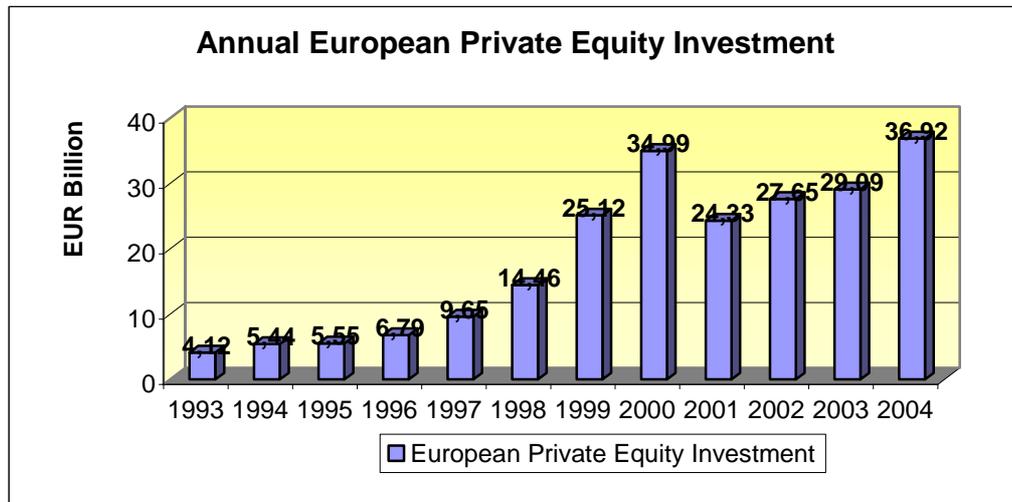
**Figure 2 The worth of investment in private equity in CEE**



Source: *The Polish Private Equity Association, Yearbook 2003, pp. 57 - 59*

The view of CEE countries as a real market of possibilities for PE funds has developed in 2004s. The accession to the EU has opened great opportunities for new members to become not only an emerging market for PE, but to approach, in the short run, the average level of the old EU members. The eight new members from CEE are populated by 73 million people. Their total Gross Domestic Product (GDP) is approximately EUR 420 billion and their average GDP growth rate is 4%. It is much higher than the average growth rate in the old EU members (1.6%). According to A.Sormani from *European Venture Capital Journal*, new countries that accessed EU in 2004s have markets, which could be classified in the low-and medium category. However, such markets have so huge and dynamic financial potential that may push away countries like: Greece, Portugal or Spain. The accession made the CEE markets much more mature, no more exotic for potential investors.

**Figure 3 Annual European Private Equity Investments**



Source: *EVCA 2004, pp. 43*

Total amounts invested by European private equity firms reached a record number of EUR 36.9 billion in 2004. This result reflects a 27% increase compared to the amounts invested in 2003, when the amount of investment reached EUR 29.1 billion. This is a surprising new record, which was at first set in 2000 when the level of PE investment boom reached EUR 35 billion. The number of investments declined slightly to 10,236 from 10,375 in 2003. The average investment size therefore increased to EUR 3.6 million from EUR 2.8 million in 2003. These investments were made in 6,985 portfolio companies so that the average financing per company grew to EUR 5.3 million (comparing to EUR 3.9 million in 2003).

### ***3.2 Previous and future tendency for the PE/VC development in Europe***

The CEE region is by far the fastest growing and developing area in Europe. Moreover, most analysts are sure that the level of growth in this region will outperform the rest of Europe. Considering the matter of PE/VC funds, the situation seems to be similar. As a rule, economy growth as well as the communists' heritage cause capital scarcity. Following this path, a big demand for PE/VC will be generated in the following years

The fall of the Berlin Wall has unleashed a boom in entrepreneurship's development as well as established a new generation of

managers, which are very often much more open to new ideas for businesses than their colleagues from the west. Furthermore, teams are currently much more valued in supporting private equity than individuals. For example in Poland, foreign direct investment exceeded USD 65 billion between 1990 and 2002. Leading investors include GE, Volkswagen, GATX, Tesco, France Telecom, Citibank, Deutsche Bank and Rodamco. Investments generated by these entrepreneurs have been backed by training management teams, which operating today and represent both a vibrant exit route as well as source of new deals.

To meet such a big demand, the mature private equity industry is evolving. Thus local banks (foreign-owned) start to offer specialized leveraged finance capabilities for mid-market deals. Team work gives better possibilities to activate mezzanine debt for a larger part of investors. Mezzanine finance is a quite new element in CEE markets. Its procedure consists of loan finance, but includes elements of both equity and secured debt. However, generally, it is usually unsecured and requires a higher interest rate than secured loans. Moreover, it often carries an option to give the lender a stake of equity.

In fact, the development of debt market (especially mezzanine finance and junk bonds) in the CEE region has begun the buyout activity not only in such region, but also in Western Europe. Moreover, the continuing harmonization with EU regulations is creating an increasingly positive environment for investment, and at the same time for private equity.

As it was earlier mentioned, banks are still the largest single source of capital in Europe, at approximately EUR 5.1 billion in 2004. Pension funds contributed an amount of EUR 4.5 billion in 2004, down by 8% at 19% of total funds raised. Funds of funds reached the value of EUR 3.2 billion, which was 14% of all funds, down by 24%. The fourth largest source were funds from insurance companies at 12%, up by 27% from EUR 2.2 billion in 2003.

Some 57% of the funds raised in 2004 came from domestic sources, at EUR 15.7 billion. Funds raised from other European countries represented 19% of funds raised at EUR 5.2 billion. Funds from non-European countries also went up in 2004 and contributed 24% at EUR 6.6 billion.

Table 3 shows that banks are the largest group, which provides capital in the CEE region. In 2004, banks reached the level of EUR 180.7 million, compared with approximately EUR 114.3 million in 2003 in this region. In fact, this tendency is strengthening in the CEE countries, contrary to the Western countries. The second position in 2004 was taken by pension funds, which contributed the amount of EUR 162.5 million, in relation to EUR 6

million a year earlier. The situation of the fund of funds seems to be very surprising. In 2003, the fund of funds reached the level of EUR 11.2 million, while in 2004 it did not provide any such capital in the CEE region.

**Table 3 Private equity raised by type of investors**

	CEE		European Union (15)		CEE/EU(15)	
	2003	2004	2003	2004	2003	2004
	Amount*		Amount		%	
Corporate Investors	9,17	2,91	1204,65	1645,98	0,761	0,177
Private Individuals	21,67	1,70	804,17	1778,47	2,695	0,096
Government Agencies	85,98	35,82	1727,46	1442,34	4,977	2,483
<b>Banks</b>	<b>114,34</b>	<b>180,66</b>	<b>5435,52</b>	<b>5090,88</b>	<b>2,104</b>	<b>3,549</b>
<b>Pension Funds</b>	<b>5,98</b>	<b>162,55</b>	<b>4922,15</b>	<b>4534,19</b>	<b>0,121</b>	<b>3,585</b>
Insurance Companies	0,00	28,47	2214,31	2812,11	0,000	1,012
<b>Fund of Funds</b>	<b>11,20</b>	<b>0,00</b>	<b>4153,69</b>	<b>3163,84</b>	<b>0,270</b>	<b>0,000</b>
Academic Institutions	0,00	0,00	384,84	345,866	0,000	0,000
Capital Markets	0,00	0,00	85,2	506,32	0,000	0,000
Not Available	11,67	3,79	4378,67	2165,81	0,267	0,175
<b>Subtotal New Funds Raised</b>	<b>260,01</b>	<b>415,89</b>	<b>25310,66</b>	<b>23485,81</b>	<b>1,027</b>	<b>1,771</b>
Raised Capital Gains	8,18	14,10	1709,06	3965,4	0,479	0,356
<b>Total Funds Raised</b>	<b>268,19</b>	<b>429,99</b>	<b>27019,72</b>	<b>27451,21</b>	<b>0,993</b>	<b>1,566</b>

\*Amount in EURO x 1,000

Source: Author's calculation, using EVCA and CMBOR Reports from 2004

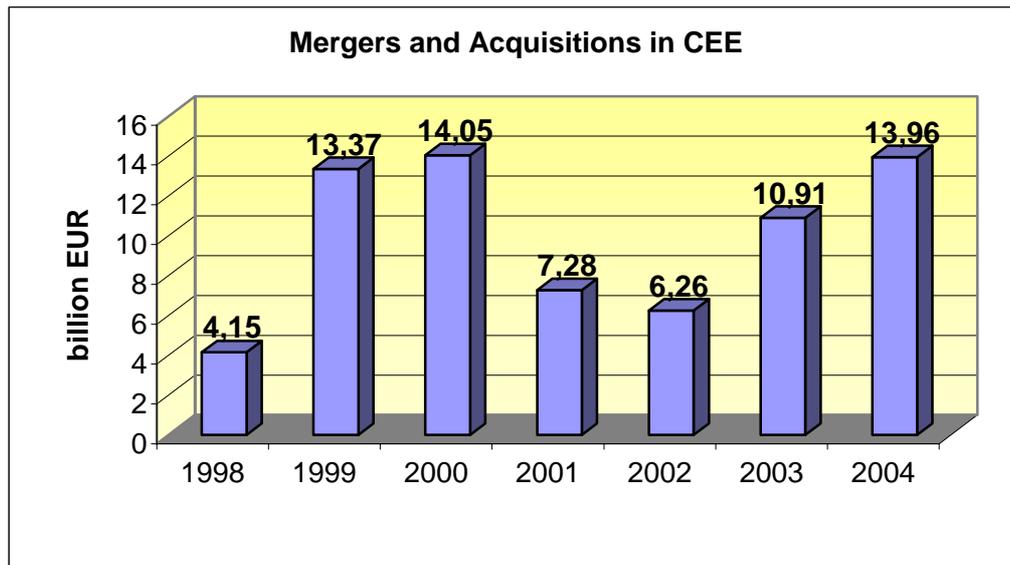
As it results from the above shown table, the share of CEE pension funds in the pension EU funds total is increasing. In 2003 it was only 0.121%, while in 2004 – 3.585%. The role of CEE banks is also rising, from 2.104 % of the total amount contributed by the European Union banks in 2003 to 3.549% in 2004. The third greatest player on this market were the insurance companies of the CEE region. Although in 2003 they have not generated any capital for private equity, in 2004 they covered 1.012% of the total value for European Union insurance companies.

Speaking about tendencies in CEE, the subject of mergers and acquisitions (M&A) must be mentioned, due to the fact that it represents the side of deal opportunities, which are by far the most important factor of the PE/VC development. In the last two years, M&A activity has shown stronger

resilience in CEE than in many other Western European markets. Moreover, it a slowdown in the world trend can be observed in this sector. In 2004, there occurred steep falls of even 30% worldwide and 40% in the USA. This is additionally a reason, why CEE may be proud.

As the figure 4 shows, there is an upswing in M&A operations. In 2004, M&A generated approximately EUR 14 billion, which was 22% more than in 2003. Nevertheless, this result did not exceed the level reached in 2000, when there was a boom on the M&A market.

**Figure 4 M&A in Central and Eastern Europe**



*Source: SOBIŃSKA K., Nasz Rynek Kapitałowy, Coraz bliżej unijnego poziomu, vol. 6, no. 174, pp. 43*

According to the CMBOR prediction, this level, however, should be outperforming in the end of 2005. Clearly, the activity growth for the M&A market is significant especially in Poland, the Czech Republic and Hungary, and could reach approximately USD 22.5 billion in the medium term, based on US levels of activity. Besides, countries like Poland and the Czech Republic are poised to enjoy further significant economic forecasts in PE investment as they will catch up with Western Europe. If, for instance, Poland reaches the levels in PE investment comparable to Italy or Spain, the value of M&A activity will double the recent level. Let's go further, if Poland achieves a PE investment matching the EU average, such activity will perhaps triple... Such optimistic forecasts can be made as the EU accession

increases opportunities for buy- as well as build-strategies. Moreover, companies and management teams have established proven track records, in which investment risk in the CEE markets is sharply going down. At the same time, opportunities to realize gains in the CEE region are developing. The amount of exits is increasing. As the M&A market grows, **trade sales** remain the dominant exit route. It should be taken into account that regulatory, logistical as well as administrative problems are solved much faster than e.g. five years ago, this contributes also to increasing the rate of realizing gains and transactions.

As far as **local strategic buyers** are concerned, they become more and more active. Due to the fact that PE exits can be strictly local affairs, which is the new way of exits opportunities in this region. Today it amounts to the highest value among all PE/VC exits. However, as far as domestic capital bases grow and the liquidity of the institutional investor base expands the **public market** begins to play the main role in exits. As it is predicted, this market can generate the highest capital from PE/VC exits.

### ***3.3 The Polish Private Equity market***

Today Poland has one of the most developed PE/VC markets in the CEE. There are 34 fund managers active on the Polish market. Most of the capital is managed by regional funds with investments involved in (almost only) large transactions.

The crucial point for the Polish PE market, as well as the ones of the other seven CEE countries, was the day of 1<sup>st</sup> May 2004. Thanks to the accession to the European Union, Polish legal and regulatory environments could be harmonised. Following this path, new established rules have improved conditions for investments as well as exits in the Polish PE market.

Everything has started to focus on the number of 19%...The overall business and investment climate has improved significantly, because of reducing the corporate income tax from 27% to 19%. The same 19% flat tax rate is also applied to personal tax of small business owners. Moreover, profits from investments are taxed with the same 19% flat rate. On the whole, this rate is used for the capital gains tax, tax from dividends and interest income.

Furthermore, all new law regulations have made the overall business environment much more attractive for foreign investors. The most meaningful changes include:

- The establishment of the one-stop-shop facility (the first professional contact point for small and medium sized businesses), which simplifies the process of setting up a company, reducing the annual number and duration of tax inspections etc.,
- The Polish government initiative to support venture capital that will be able to finance the seed and start-up companies, by offering the establishment of a government-supported investment vehicle, which is called **the National Capital Fund**. However, the initiative of setting up the NCF is still in a beginning phase.

The focus of attention on larger investments is visible throughout Europe and Poland is following this trend. Unfortunately, only large and profitable investments...The early stage transactions, which are signed by young companies, are not able to attract private equity investment because of a lack of credit liability or adequate means. A young company may have a great project to introduce a new technology in order to improve management of the enterprise, increase production, and at the same time achieve better profits. However, a bank does not have permission to finance such projects because of banking law, which guards the bank from the possible entrepreneur's insolvency. According to this statement, the bank is not able to grant a credit or bank loan, due to the high rate of risk from such a transaction. In fact, a capital gap appears on the market. In rich countries, the business angels (capital angels) are one of the best solutions for this situation. These are private investors with a large capital that can be invested directly into the company even if the project seems to be risky e.g. Bill Gates is one of the most powerful business angels. Actually, there are fewer business angels in Poland and that is the reason why VC funds are much more popular from placing capital. Nevertheless, Polish VC funds invest only in operations over EUR 10 million. Obviously, young enterprises do not have any possibility to develop and become competitive on the Polish market.

Due to this reason, the government wants to establish a fund of funds, called the National Capital Fund (NCF). The works on setting up the NCF are just in the beginning phase. Recently, the government is putting forward a bill to enact the NCF. A mission of the Polish fund of funds is to improve the situation and image of small- and middle-sized enterprises (S&M). Today, approximately 3.5 million S&M Polish firms have been established, half of them are very active on the market, and generate 49% of the GDP. Moreover, these enterprises employ 67% of all people in working age. However, according to the Lisbon strategy this situation must be improved and incentives should be made for S&M companies to generate a higher rate of

return as well as invest into know-how and some innovating financial or technical solutions. As some of analytical experts have estimated, the preparation of an investment of PLN 1 million requires the same costs as the preparation of a project worth PLN 9 or even PLN 10 million. Consequently, VC funds are more interested in financing bigger enterprises. [The Act dated on 4th March 2005 about the National Capital Fund, which is available on: [http://ks.sejm.gov.pl/prock/ustawy/3226\\_u.htm](http://ks.sejm.gov.pl/prock/ustawy/3226_u.htm)]

According to the bill about the NCF, the NCF is to be set up by the Bank Gospodarstwa Krajowego, which is the main shareholder and operates in agreement with commercial law. The authorized share capital of this fund is set on the level of PLN 20 million. The role of an advisory board will be held by the Investment Committee. The NCF is going to secure VC funds by putting a project out to tender. As it is assumed in the bill, the country's budget as well as structural funds will be the main sources of supporting the NCF. However, contributions from the budget are going to include only the period from 2005 to 2008. In 2005, the Polish government has invested PLN 23.300 million into establishing this fund of funds. Till the end of 2008 the NCF should accumulate a total amount of PLN 450 million. This will be PLN 370 million from the budget and PLN 80 million from the structural funds.

However, many economists are against the fact that the budget will be giving subsidies only till the end of 2008. They argue that the accelerated sum of capital is not enough to make this fund profitable. On the other hand, opponents of this view are convinced that the NCF should generate PLN 2.400 billion from investments into S&M enterprises to the end of 2013. Moreover, they add that all simulations as well as economical forecasts have been carried out using the most pessimistic calculations. They have also calculated that one zloty from the budget gives 28.50 zloty of return. In fact, this is a very high as well as profitable financial leverage. Following this path, thanks to the NCF and new investments the amount of new workplaces should fluctuate from 18.000 to 50.000.

All small- and medium-sized enterprises, which are situated in Poland and settle their incomes no matter where they were acquired, may receive aid from the NCF. However, firms, which intend to invest into new solutions, technologies, and then implement them, have the biggest possibility to use the NCF.

Fund-raising activity in Poland is still being maintained at a high level. Total funds raised reached the amount of EUR 303.88 million in 2004, compared to EUR 25.74 million in the previous year. This situation resulted from investments made by both Polish- and foreign-based private equity investors.

Polish-based private equity firms invested EUR 130 million in 2004, which is 2,4% less than in 2003 (EUR 133,2 million). Foreign-based private equity investors located EUR 48.27 million in 2004. The average value of transactions was on the level of EUR 3 million in 2004, in relation to EUR 2.1 million in 2003.

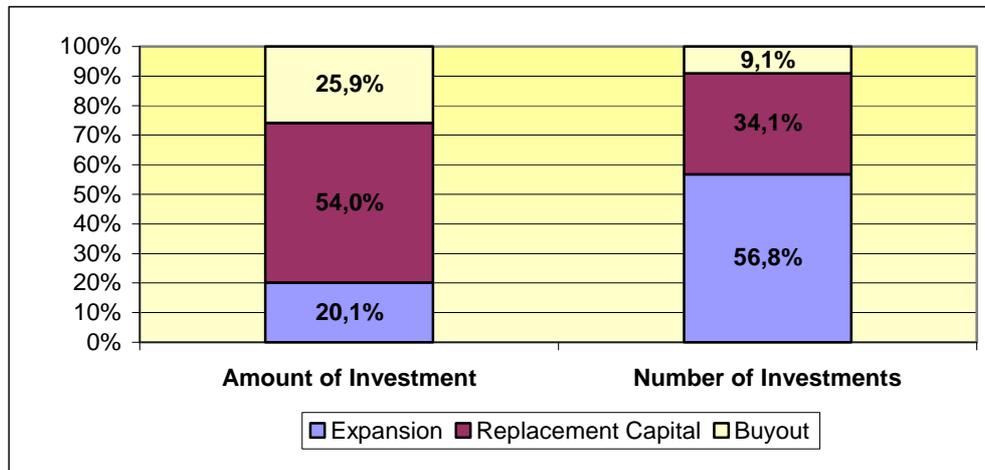
Initial investments generated EUR 93.8 million in 2004, which was 72.1% of the total investment amount (that was EUR130.03 million), compared to EUR 122.4 million (91.9%) in 2003. [*Krajowy Fundusz Kapitałowy – jako uzupełnienie systemu wspierania rozwoju sektora MSP*, Published by Ministry of Economic Affairs and Labour, <http://www.nsrr.gov.pl>]

The largest volume of investment in Poland was made in the later stages of their development. According to this statement, buy-out and replacement capital transactions generated the greatest amount of capital. These later stage investments increased in total investments and achieved 79.9% in 2004, compared to 68% in 2003. There was a decline in seed and start-up investments, and in the end of 2004 there were no VC shares in this area. In fact there were two results of this situation:

- The lack of seed transactions assigned to the limited number of funds, which were focused on this segment;
- The limited supply of seed capital investment opportunities.

However, this situation may change, because of the setting up of the National Capital Fund (NCF), which will perhaps reduce this equity gap.

**Figure 5 Stage distribution of investments in Poland in 2004**



Source: EVCA, Yearbook 2005, pp.2004

In 2004, the most popular group that invested in PE were pension funds. These funds generated EUR 159.24 million in 2004, which was the first year of making profits by these entities. The second position was taken by banks, which invested an amount of EUR 109,49 million in 2004, up by 1262% compared to 2003 (EUR 8.04 million). Next position was dominated by insurance companies, which invested 9.5% (EUR 28.47million) of total investments by amount in PE in 2004.

As far as the patterns of sectoral investment is concerned, the Polish-based PE fund managers invested approximately EUR 43.96 million in 2004, which was 11.2% more than in 2003 (EUR 39.51 million). Another attractive investment sector in 2004 was the construction branch, at EUR 22.73 million, in relation to EUR 1.99 million in 2003. In fact, the amount of investment in this sector was 11.4 times more than in 2003. The third position in the sectoral distribution of investments was taken by financial services with an amount of EUR 21.56 million in 2004, compared to EUR 31.53 million in the previous year. The high-tech sector attracted 33.8% of total investment in 2004, which was 9.4% more than in the previous year.

**Table 4 Sectoral distribution of investments in year**

<b>Sectors</b>	<b>Amount of Investment in 2003 (EUR million)</b>	<b>%</b>	<b>Amount of Investment in 2004 (EUR million)</b>	<b>%</b>
Communications	39,51	29.7	<b>43,96</b>	<b>33.8</b>
Consumer Related	33,88	25.4	5,26	4.0
Financial Services	31,53	23.7	<b>21,56</b>	<b>16.6</b>
Energy	6,92	5.2	3,67	2.8
Medical/Health Related	6,16	4.6	1,05	0.8
Construction	1,99	1.5	<b>22,73</b>	<b>17.6</b>
Chemicals and Materials	1,78	1.3	2,25	1.7
Other	11,412	8.6	29,55	22.7
<b>Total Investment</b>	<b>133,182</b>	<b>100.0</b>	<b>130,03</b>	<b>100.0</b>
<b>Subtotal High - Tech</b>	<b>41,19</b>	<b>30.9</b>	<b>43,96</b>	<b>33.8</b>

*Source: International Investment Position – annual data, the National Bank of Poland, Warsaw 2005, <http://www.nbp.pl>*

The subject of exiting from business should also be mentioned. There is a decreasing tendency of divestment in Poland. The amount of total divestment reached the value of EUR 88.69 million in 2004, which was approximately 23% less than in 2003, when divestment amounted to EUR 115.16 million. The most popular form of divestment in 2004 was trade sale, which accounted for 30.8% of the total divestments. Divestment through buy-back reached EUR 8.7 million (9.9%) in 2004. The level of write-offs went up by 21%, from EUR 14.12 million to EUR 17.10 million in 2004. The role of public equity market has also increased significantly. Actually, exit through IPO (Initial Public Offering) is the new idea on the Polish private equity market. As a consequence, the role of the Warsaw Stock Exchange for local IPOs is increasing. Moreover, due to a steady inflow of foreign capital, the liquidity of the Warsaw Stock Exchange can be strengthened. Considering the number of IPOs, the Warsaw Stock Exchange was ranked on the second position in Europe, after the London Stock Exchange.

Overall, the markets of many sectors in Poland are fragmented. It may be predicted that as their structure is currently different to the one of the old EU countries, in the future strong consolidation trends may be observed (after taking the local development conditions into consideration). Due to these trends, the Polish market may be able to catch up with the old EU countries. Even now, the beginning of the foreseen consolidation trend is visible in the CEE countries.

### ***3.4 Some aspects of the Czech Republic private equity market***

Due to the fact, the Czech Republic joined the European Union on 1 May 2004, the new Act on Collective Investment has been signed on this date. The new Act has regulated the activities of VC funds in the Czech Republic. According to this Act, VC funds are represented by special funds, which may be set up as closed- (open-) end unit funds or closed-end investment funds.

An open-end fund is a fund, which is operated by an investment company. Such a company raises money from shareholders and invests in a group of assets, in accordance with a stated set of objectives. Open-end funds raise money by selling shares of the fund to the public. Then the funds take the money they receive from the sale of their shares (along with any money made from previous investments) and use it to purchase various investment vehicles, such as stocks, bonds and money market instruments. In return for the money, they give to the fund (during purchasing shares), shareholders receive an equity position in the fund and, in effect, in each of its underlying securities. For most open-end funds, shareholders are free to sell their shares

at any time, although the price of a share in an open-end fund will fluctuate daily. This depends on the performance of the securities held by the fund. Benefits of open-end funds include diversification and professional money management. Open-end funds offer choice, liquidity, and convenience, but charge fees and often require a minimum investment

Closed-end funds generally do not continuously offer their shares for sale. Funds sell a fixed number of shares at one time (in the initial public offering), after which the shares typically trade on a secondary market. Actually, funds are not obligated to issue new shares or redeem outstanding shares as open-end funds are. The price of closed-end fund shares is determined by the market and may be greater or less than the shares' net asset value (NAV). Moreover, close-end funds are those whose portfolios are still owned by earlier investors and are still actively managed as always, but they no longer sell shares at NAV rates to new investors.

A difference between an investment fund and unit funds, is that the first manages its own assets, while the unit funds assets are managed by a separate Czech management company or by a management company with a European Union passport.

The Act on Collective Investment has assumed that the minimum share value of a VC fund should be CZK 1 million at the issue date as well as the minimum investment of the entity should amount CZK 2 million. . [The American Chamber of Commerce in the Czech Republic, the Czech Republic Report 2005, pp.5-8, <http://www.amcham.cz>]

Dividends, profit distribution, the sale of funds' share in companies or liquidation of companies are the parts, from which VC funds realize their income. It is an interesting fact, that Czech VC funds are not visibly used in fiscal policy. For instance, revenues achieved by funds are subject to tax at the level of the fund, (not the level of revenue). Furthermore, dividend income from a Czech company is excluded from the tax base of funds. Additionally, there is no separate capital gains tax in the Czech Republic. In fact, the capital gains from the sale of shares are subject to 5% tax rate, which is the standard corporate tax rate for funds.

Due to these mentioned legal and fiscal facilities, the Czech Republic is one of the most attractive and active PE markets in the CEE region. However much must be still done to develop this emerging market. There was a significant decline of total fund raised in 2004. The total funds raised amounted to EUR 4.84 million in 2004, which was 19.4 times less than in the previous year. Investment made by Czech PE/VC companies went up by 51% from EUR 13.3 million in 2003 to EUR 20.1 million in 2004, while the number of investments dropped from 13 to 10 in the same period. At the

same time the number of firms investing in PE/VC funds decreased by 20%, which was from 10 to 8.

**Table 5 Sectoral Distribution of Investments in year**

Sectors	Amount of Investment	%	Amount of Investment	%
	2003		2004	
Communications	5,63	42,2	12,84	63,8
Biotechnology	0,62	4,6	0	0
Consumer Related	6,5	48,7	7,27	36,2
Financial Services	0,59	4,5	0	0
<b>Total Investment</b>	<b>13,34</b>	<b>100</b>	<b>20,11</b>	<b>100</b>
<b>Subtotal High-Tech</b>	<b>6,24</b>	<b>46,8</b>	<b>12,84</b>	<b>63,8</b>

*Source: EVCA, Yearbook 2004*

As table 5 presents, communication and consumer related companies were ranked as the best position in all sectors. The situation in biotechnology as well as financial services also seems to be interesting. Almost 4.6% of all investment went into biotechnology companies in 2003, while there were no investments in this area in 2004. A similar situation occurred in financial services, which generated 4.5% of total investment in 2003, and 0% in the next year.

#### **4. Conclusion**

Due to deep and dynamic structural changes, CEE has become an attractive place for PE/VC investments. This refers mainly to countries, which have recently entered the EU. Despite a certain level of risk, PE investments in CEE have a great chance to give better results than investments in the old EU. The possibility to utilize means from structural funds opens an enormous chance for development for these countries. The question is, whether they will be able to effectively use this help.

The data presented in the study allows to come to some basic conclusions concerning the future development of PE/VC funds in CEE:

- The increase in the number of CEE managers with international experience, which positively influences the demand factors of VC funds;
- The higher experience in running privatized and new companies during the last 10 years;
- The development in the field of investment risk management, which has an impact on the ability of effectively locating capital;

- The prediction of the future increase of the PE/VC market in Hungary and Poland.
- The outlook for the increase of the M&A market

During the recent years, several CEE countries noted a considerable rise of their GDP. The prospect of a GDP increase makes the country more attractive for investors. It was particularly high in Poland, 4.7% in 2003 and 5.8% in 2004. The EU membership may bring a further increase of this indicator. Investors are also drawn due to the prospect of acquiring cheap and increasingly better educated labor force, not only to Poland, but to the whole CEE region.

The bill about enacting the NCF in Poland seems to be a very interesting idea to not only multiply the value of VC funds, but also to develop the investments in small and medium-sized companies. The fund will be aided by structural funds as well as the country's budget.

Currently there is a trend in the CEE countries that favors the rise of PE/VC funds. In spite of this fact, many questions about PE stay unanswered. The most important seem to be: How long will this tendency be maintained in the CEE countries? Can the statement wrote by W. Shakespeare "Men that hazard all, do it in hope of fair advantages." be true?

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# **BARRIERS TO MAKING USE OF VENTURE CAPITAL FUNDS IN POLAND.**

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## **Abstract**

*The paper presents the pace of venture capital market development and barriers for its further growth. Venture capital funds exhibit much higher dynamics in Poland than in other CEE countries. However, when venture capital investments are expressed as the GDP percentage, Poland is still lagging behind other European countries. The main impediments for venture capital market development are: low quality of management, low innovativeness of Polish economy, administrative and legal barriers, taxation of capital gains, supply barriers and no support from the government.*

**Keywords:** *venture capital, venture capital market in Poland, development financing*

## **1. Introduction**

Choosing the financing sources always gives rise to the enterprise's problems and is dependent on many factors, like - among other things – a type of goals to be achieved (operational, investment ones), the enterprise development level, its financial status, capital costs. Big enterprises have more freedom in choosing their financing sources and are able to issue stocks and bonds, to use credits, loans or leasing. For small companies only starting their operation, getting the capital is not easy. The capital suppliers are not convinced by a good business philosophy and growth prospects. Such companies burdened with a greater risk have no credit reliability; thus, the banks either are not eager to credit them or the credit offered is expensive and substantial securities are required. Furthermore, the current service of credits within the initial period of the company operation may be difficult. A good financing source for such companies can be the venture capital fund.

Such funds have a long standing history in the United States and in the developed EU countries. In Poland, the funds appeared after 1990 only. Although the development level is higher than in other Central and Eastern Europe countries, they still face various barriers to their growth.

The paper shows the rate of and the barriers to the growth of venture capital funds in Poland.

## **2. Venture Capital nature and features.**

Venture Capital is invested in the companies at the early stage of their growth or just starting their market operations.

J. Węclawski (1997) describes VC as the own capital to be - for a limited duration – contributed by outside investors to small and medium-size enterprises having an innovative product, manufacturing method or service, such companies not having yet been verified by the market and thus bearing risk of the investment failure. The high risk is in contrast to the expected higher than average profits to be gained by selling the company shares.

The investments described as VC are for the companies just being set up or at the early stage of their growth, very innovative ones, but risky, which - with the manager and capital support – promise a high return rate on the invested capital (Schofer, Leitinger 2002).

VC is one of private equity investments, i.e. a medium- or long-term investment, based on shares, usually on a non-public market. The above definitions are in compliance with the American Venture Capital standard

suggested by the National Venture Capital Association (NVCA) wherein VC function is to finance the early stages of enterprise operation and growth, and the funds called Venture Capital are involved in the business concepts being commercialized and in supporting the growth of new companies, specially in the highly innovative areas (Sobańska, Sieradzan 2004) .

In Europe, there is no clear differentiation between the Venture Capital and the Private Equity financing. By the definition of the European Private Equity and Venture Capital Association (EVCA) it is assumed that VC funds are to supply the start-up capital to start business operation, to finance the early stage of enterprise development, its further expansion, or even to finance the projects related to the enterprise restructuring or ownership transformations. This might include financing a new product, technology, working capital increase or labour reduction (EVCA 1995). Actually, the funds are sometimes involved in financing the mature enterprises too. In the statistics, VC/PE funds are presented together.

In order to understand better the nature of VC, the characteristic features of such investment process are worth showing. These include:

- investment risk high
- medium– and long-term investments, 3-7 years
- funded project highly innovative
- return rate on the investment expected 36-60 per cent
- investments in companies with big growth potential, non-listed on the stock-exchange
- investor (VC fund) being a participant in the company management, not only the capital supplier
- capital contributed being of proprietary nature
- current capital costs non-existing, the funds waiving their dividends and re-investing the profits.

VC are being directed mainly to companies with a chance for higher than average growth and a dynamics increase in their value. Frequently, these are high-tech companies initiating new solutions in various areas of industry and economy, but also companies which are not related to the area but have an innovative solution, product or service. Such companies are flexible enough to be able to implement even the most unconventional projects in an effective way. VC funds support such companies in the management, supply financial, organization or marketing know-hows. VC have wide contacts with business and with financial institutions, they know consulting companies and lawyers, and thus are able to provide full assistance and to add to the company's reliability. Moreover, they are monitoring the company operation

financially, which enables to identify the problems just in time and to look for their solutions together.

### **3. Venture capital market in Poland.**

Venture capital funds appeared after 1990. The Polish economy opening and the system transformations resulted in the inflow of both the government capitals and aid capitals from other countries.

According to the history of their growth and to the ways the VC funds are set up, three main market segments can be singled out (Tamowicz 2001):

- 1) funds based on the aid institutions' capitals or on the government resources (foreign ones mainly);
- 2) funds based on the domestic and international private institutions' capitals:
  - a) funds set up by the banks
  - b) funds based on the general privatization program
  - c) funds continuing the ones operating since 1994 – Enterprise Investors Group, Renaissance Capital, Innovo,
  - d) funds arisen in the wake of interest in Internet: MCI Management, Internet Investment Fund
- 3) transregional funds investing all over Eastern Europe, Poland included.

In VC market arising and growth in Poland, the key part was played by foreign resources, both public and private ones. Due to them, many investments have been implemented, both on local and on national level.

VC and Private Equity sector in Poland and in the neighbor countries (Czech Republic, Slovakia, Hungary and Baltic countries) is now growing very fast. According to EVCA estimation, within the period of 1990-2004 there was an inflow of nearly 7 billion Euro to the countries of Central and Eastern Europe, and over 60 equity type funds have been set up, while out of the 900 investments funded over 400 have been completed (EVCA 2002).

In 2004, the said funds' investments in Poland reached 9000 million PLN which is 15 per cent more than in the preceding year. As shown by Table 1, in 2001 the investments amounted to 386 million PLN (105 million EUR).

**Table 1. Amount of VC/PE investments in Poland within 2001 – 2004.**

Specification	2000	2001	2002	2003
Investment volume, million PLN	386	529	779	900
million EUR	105	137	177	213
Dynamics, per cent	100,0	130,4	201,8	233,2

Source: EFCA & Polish Association of Foreign Investors, Yearbooks 2004, p.24

Within the subsequent years, the commitment of funds in the Polish economy was quite strong. In 2003, there was a growth in the funds' investments by 47,2 per cent as compared to the preceding year, while in 2004 the increase was over 15 per cent as compared to 2003.

As compared to other East European countries, the VC market in Poland is best developed. The capital inflow to this market is higher than to other EU regions. It is illustrated by Table 2.

**Table 2. VC/PE investments in the Central and Eastern Europe countries within 2002 – 2003 (million EUR)**

Countries	2002	2003
Czech Republik	27,4	39,4
Hungary	75,7	110,8
Poland	137,2	177,2
Roumania	18,0	82,0
Slovakia	4,7	4,5
Baltic countries	2,9	10,0
Other countries*	7,7	24,6
Whole region	273,7	478,4

\* Bulgaria, Croatia, Slovenia

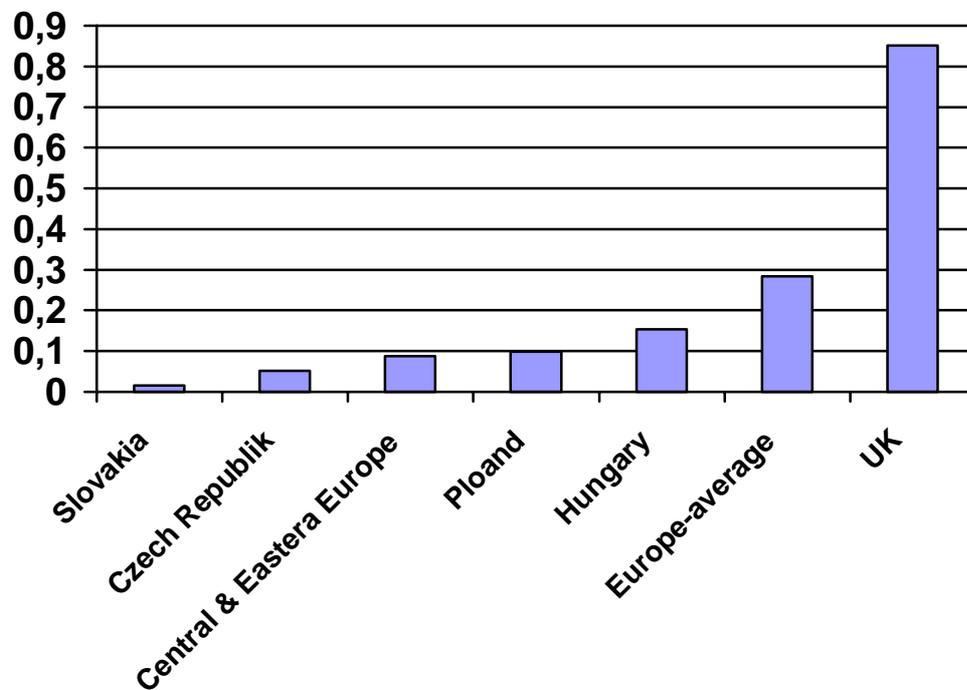
Sources: EVCA Special Paper 2004, Central and Eastern Europe Success Stories, [www.evca.com](http://www.evca.com), p.7

The total volume of investments was in 2003 increased by 75 per cent as compared to the preceding year. The biggest – by as much as 4.5 times – increase was in Romania. The highest value of investments was in Poland. However, the comparison of amounts of funds made use of is not a complete illustration of their commitment in the economy. They have to be referred either to GNP or per capita. (Graph 1).

In Poland, the correlation of venture capital funds to GNP is much lower than the European average, but higher than in other Central and Eastern Europe countries which followed the transformation path similar to Polish economy. The higher ratio is in Hungary. It is emphasized by the

bibliography that the direct reasons for this are a lack of legal solutions suited to the specifics of high risk investments, the complex administration procedures, as well as tax incentives missing.

**Graph 1. PE/VC investments referred to GNP in the selected European countries, in 2003.**



*Source: EVCA Special Paper 2004, Central and Eastern Europe Stories. [www.evca.com](http://www.evca.com)*

One reason seems to be the specifics of projects to be funded. In Poland, the VC/PE investments are in privatization, in restructuring and in reform projects, and only next in the most up-to-date projects in the area of telecommunication or internet. In the developed countries, the VC/PE funds are oriented on new technological and biotechnological solutions at the early project stages.

#### **4. Company financing stages.**

The bibliography differentiates between several stages of company financing, depending on the company development level. Most often, they are:

- Seed capital.
- Start-up capital.
- Development stage, initial growth.
- Expansion stage.
- other VC investments.

Seed capital are the resources needed to finance the very early development stage of a new project. Frequently it happens that scientists or technologists with a good idea of an innovative product or service are unable to get funds from conventional financial institutions because of a high risk related to such project. However, such risk is acceptable for specialized investors who manage a Venture Capital. Such investors' operations are described as "incubation", i.e. reducing the time needed for the product to enter the market. A Venture Capital is a supplier of resources for the activities prior to set up the company, i.e. to study the market potential, the legal solutions and restrictions, the competition level in the relevant area, acquisition of patents, licenses, etc. Within this stage, a probability is determined of the specific business to be accepted by the market, while the resources spent are reasonable.

The start-up capital is used to break the barriers faced by the company when entering the market. Within this stage, the expenses are related to a test batch of goods and services being prepared, to the trade mark recognisability being created. Venture Capital makes the resources needed at this stage available only when the project is attractive and high rate of return from the invested capital can be anticipated. The investor is striving to participate in the management so that his risk is limited.

Within the Company development stage, the VC funds enable it to create a solid basis for expansion or to get the market share as big as possible, to diversify its production pattern, to get contracting parties, to strengthen the managing staff. It is all very capital consuming. The staff tries to get VC funds even on the expense of losing some of their shares to the benefit of such funds. Using credits within this stage could result in the loss of financial liquidity.

Within the expansion stage, companies search for VC capital to fund their key action for further development. Included in such actions are (Sobańska, Sieradzan 2004):

- to outdistance the competition, and to maintain the position of market leader or one of the leaders in the relevant line.
- to extend the range of products or services offered, as well as the distribution network and the geographically new sales markets,
- to strengthen the managing staff, to create a solid executive level and to delegate specific functions to them
- to raise efficiency of the company employers through a proper motivating system.

It has to be emphasized that within the expansion stage VC funds are obtained by such companies which either are profitable or reach the break-even point, while their main goal is to outrun the competition.

VC funds are involved also in other investment types. Usually, these are, projects related to ownership and organization restructuring of the companies, etc.; and particularly:

- Management Buy-Out
- Management Buy-In, MBI
- bridge financing
- restructuring of enterprises facing financial problems (turnaround, recovery)
- Venture Management
- enterprise financing by means of hybrid securities, mezzanine capital.

The structure of company financing, by VC/PE funds at various stages is illustrated by Table 3.

**Table 3. Value of investments at various stages of the company development in Poland, within 2003-2004, millions PLN.**

Company development stages	2002	2003
Seed capital	38	1,0
Start-up	38	12,0
Dynamic development	244	176
Refinancing (Buy-out)	209	590
Total:	529	779

*Source: based on the Yearbooks of Polish Association of Capital Investors, 2003 & 2004.*

In 2003, the highest percentage of funds (46%) was committed in the companies at their dynamic growth stage, and in the mature companies

(nearly 40%). The widest interest of the funds in 2003 was in the mature companies needing capitals for their further market expansion. 76 per cent of the total resources were spent for such companies, while 23 per cent for the companies at the stage of their dynamic growth. By such way of financing, the risk is reduced with the rate of return being relatively high and the resources being recovered sooner. The share of VC/PE funds in financing companies at their initial growth stage fell from 38 down to 1,0 million PLN, while for the ones at their start-up stage from 38 down 12 million PLN. It shows an obvious drop of interest in the young companies to the benefit of fund investments in mature companies. According to A. Kornasiewicz (2004), there are several reasons for such trend:

- VC funds, specially the big foreign ones, are involved in the process of enterprise privatizations and restructuring, where great chances of fast and higher profits are existing, with the risk being lower,
- at the big, well-known and successfully restructured companies, the disinvestment process is more efficient than with small companies of no renown and with chances to establish their market position after years only.
- low qualifications of the management staff at small companies, their mistrust towards outside investors and reluctance to share their profit do not add to the aura which would foster popularization of VC funds at such group of enterprises.

VC type financing is of strategic importance at the initial stages, when a company is starting to grow, when capital and manager's support are needed. Later on, it is easier to get financing from the conventional financing institutions, i.e. banks.

## **5. Barriers to the Venture Capital development in Poland.**

Despite the relatively high increase in VC/PE funds investments as discussed earlier, many barriers restraining their development can be identified in the Polish economy. The factors directly affecting the Venture Capital market growth in Poland and restraining it are mostly considered to be institutional, supply, legal and tax factors, as well as the ones related to the investing aura. The Funds' top managers, when asked about the barriers, most often state the following impediments:

- poor quality of the manager staff
- low innovativeness of the Polish economy
- separate legal regulations on high risk funds missing
- legal and administration barriers
- tax system solutions

- supply limitations
- poor support from the national authorities.

Apart from the above restraints, what the funds miss on the Polish market is an aura fostering VC funds popularization; what they are hindered with is a poor information and difficult access to technical solutions which might be interesting for VC fund, as well as the problems with backing out of the investments.

The main barrier to the growth of the Venture Capital market in Poland is the poor quality of the manager staff at the enterprises looking for financial support. The entrepreneurs willing to make use of new technical solutions commercially are usually not prepared to get the resources from Venture Capital Funds. Frequently, they do not understand the principles being the basis of the funds' operations; only rarely they have experience in operating their business in the way which would be expected by the funds. After a certain stage of the company growth is reached, ownership should be separated from management; the company owner having to search for a professional manager. Such manager will be more than the owner himself eager to finance by means of a share capital; he would understand that the funds expect a particular return rate on the capital and are willing to supervise its getting.

Another barrier restraining the growth of Venture Capital funds is low innovativeness of the Polish economy. Usually, VC funds are involved in the initial stages of the enterprise development – in creating its project, solid operation basis, gaining the market position. Thus, the investors search for innovative companies wherein the risk will be compensated by the return rate being high enough. In Poland, the main problem is that there is no supply of such projects, the expenditures on research and development which would result in such project arising being too low. Thus, the country innovativeness and economic competitiveness are adversely affected. In Poland, the expenditures on R&D are as low as less than 1 per cent (0.7) of GNP, while in OECD countries the average accounts for 2.3 per cent. Higher expenditures for research and development are in Czech Republic (1.3%) and in Hungary (1.0%).

The developed countries assign relatively much for R&D; thus, in reference to GNP it is: 4.3% in Sweden, 3.4% in Finland, 3.1% in Japan, 3.0% in South Korea. The biggest amounts to this purpose are assigned in the United States; in 2002, 285 billion US \$ were spent (2.8%GNP); and in Japan – 104 billion US \$ (OECD 2003).

The structure of expenditures on research and development works in Poland is very unfortunate. The majority, ca two thirds, are the expenditures

from the national budget, while in the developed countries a big percentage of funds is from the enterprises (e.g. 90% in Luxembourg, 70% in Sweden, c. 65% in Ireland, Germany, Belgium and the USA). Due to such structure of R&D financing, what is prevailing in Poland is basic research, not related to enterprises and not usable practically. Even such projects which would be possible to be introduced are not initiated in practice, because of the managing persons' marked reluctance to any risk. In the developed countries, the research and development projects financially supported by the companies are better suited to their needs, and they are sooner introduced at the enterprises raising their competitiveness. It is noteworthy that a substantial portion of scientific and research organizations is owned by the State.

In Poland, we have no separate legal regulations on high risk funds, which would contain stipulations on – among other things – the conditions to set up various types of PE/VC funds, the requirements on the structure of their share portfolio, or on the criteria of access to the public resources. Such solutions appear worldwide, their goal being a better transparency and security of the fund operations (Rogoziński 2003).

Along with the financial market growth, the situation in this area is changing too. In 2004, the new law on investment funds has come into force (Journal of Laws of 2004) ; however, it provides no solution for the problems of high risk subject functioning. Now types are introduced, like the non-public capital fund and the fund of funds (FoF). FoF's are a popular form of investing resources in the West Europe countries. Their difference from the ordinary funds is that the main portion of their portfolio are not shares, bonds or bills, but participation units of other funds. The Private Equity fund of funds collects capital from the investors and is then investing it in the private equity funds of choice. Due to this, a client – despite of having purchased a single fund only – becomes a shareholder of many, thus limiting his risk. Most often, the FoF portfolio is composed of 10-20 PE funds. When any of them cease to operate, the resources got from the portfolio of companies being disposed are transferred by them to the fund of funds, which returns them to its investors.

The inhibitor to the growth of the Venture Capital market in Poland are considered to be the existing legal solutions. They incorporate the regulations of the commercial partnership code, of the bankruptcy law and of the civil code. Among other items, the regulations are on the limitations in granting the shareholders rights in connection with the preference shares, share redemptions on request, raising target capital, or regulations of the stockholders' share in the event a company is liquidated. The limitations on the preference shares prevent the share preference construction which would

entitle the holder to get a specific amount of dividend to the company status notwithstanding, which is frequently done by private equity funds abroad. An important limitation of leverage (debt supported) transactions are the regulations of commercial partnerships code barring the stock companies from financing acquisition or from assuming the stock issued by them (Sieradzan 2004).

An indispensable condition to be met in order that funds are willing to be committed in the investments on VC market is the law enforceability, specially the enforceability of ownership titles or debtor's claims. Now in Poland, the time needed to recover the receivables is c. 1000 days which is the lengthiest in Europe. Quite often, an outcome of ambiguous, hardly enforceable legal solutions are the administration barriers from the conduct of administration workers who delay the administrative decisions.

Legal restraints to VC/PE fund operations in Poland are closely related to the tax barriers. A lack of incentives and the current fiscal solutions are the reason that some funds operating in Poland are registered abroad. This is due to a lack of explicit regulations making possible that the income is taxable only once. When this would be the case, a private equity fund would be exempt of income tax, taxation taking place at the investors. This is the case with investment funds, but only with those buying into securities in public circulation and getting their resources from individual investors. Because of strict information duties and of the supervision by Securities & Exchange Commission, such solution is unacceptable by the VC/PE funds.

The funds expect such legal solutions with tax exemptions and write offs or high risk investments taken into account in order to avoid dual taxation. Privileges might be enjoyed both by the fund itself as well as by the investors depositing their assets therein.

One important limitation of the growth of VC/PE funds market are the supply limitations. Worldwide, the Venture Capital funds are a significant part of the asset portfolio of many investors. Those are pension funds, investment funds, banks, financial institutions. In Poland, capital supplies from the pension and the investment funds are actually nonexistent. The major portion of domestic capital is from banks and financial institutions, as well as from manufacturing companies. It has to be noted here that the domestic capital accounts for as little as 3 per cent only of the Venture Capital funds' resources.

The bibliography shows three groups of reasons restraining the share of the Open Pension Funds (OPF) in the high risk capital, and namely:

- investment quotas,
- - reference index,

- information policy – track record.

The range of allowable OPE deposits is strictly regulated by Polish law, and it is very different as compared to the way such funds are functioning on the European or American market. Pension funds can deposit their assets only in the stock partnership stocks in public circulation, in the National Investment Funds' (NIF) stocks, in participation certificates and in the investment certificates of investment funds. There are, however, some restrictions. Thus, for example, they can possess in their portfolios 40% max of stock-exchange listed stocks and NIF shares, 40% max of municipal bonds not in public circulation, 10% max of deposit receipts or investment certificates. Such restrictions do not allow any meaningful involvement of pension funds in the private equity market.

An important factor discouraging the pension funds from investing on the private equity market is the measuring method of their investment results and the mechanics of the bonus for results. Such techniques enable to compare and – to some extent – to control the results of various OPF's. The techniques accentuate good results to be achieved within a short time. Thus, the managers tend to avoid the risky – but in long-term more effective – investments, the ones related to Venture Capital included.

Till 1<sup>st</sup> April 2004, the funds were obliged to calculate the return rate for the last 24 months by the end of each quarter and to report it to the Supervision Committee for Insurance and Pension Funds, as well as to make it public. Now, the benchmark of pension funds is the 36-month weighted average return rate to be calculated twice per year. The rate is an average rate of return achieved by various funds, a weighted arithmetic mean of the given fund share in the market as of the day preceding the 36-month period and as of the day the said period is ended. The focus on good results to be achieved within short period is enhanced also by the method of rewarding for the results. The managers are given resources from the bonus account as of the moment the ranking prepared according to the return rate is constructed. Hence, they are not motivated to diversify the risk. They are rather interested in presenting good results as of the moment the examination is made.

The growth of Polish private equity market is also obstructed by the information policy of many funds. The managing companies are quite reluctant to show their results achieved. They do not make available at all any information on their investments, even the ones successfully completed. By the lack of information, the potential capital suppliers are deterred. The potential investors would like to be sure their resources entrusted to the managers will generate a return rate higher than average. Confidence can be gained provided the information is complete.

Supply restraints as a barrier to the Venture Capital market growth are also related to poor commitment of banks. In the countries with a developed equity market, the important capital suppliers for VC/PE funds are – apart from the pension and the investment funds – the banks. In Poland, their share of the market is marginal. There are many reasons for it. Nearly all banks in Poland are listed on the stock-exchange, which means a pressure on short-term results. On the other hand, commitment in VC/PE funds means that in short-term there is a drop in the investment portfolio value, by which the bank's result is directly affected.

In Poland, restricted supplies of the high risk capital is best perceivable at the sector of small and medium-size enterprises, where the venture capital is to finance the “sowing” and the start-up phases mainly. The high risk of committing the resources into such phases results in the funds being involved in the initial phases of the companies' growth to small extent only. The source of insufficient financing of small subjects by the high risk capital is the limited role of the State in supporting such funds.

In the developed countries, the tremendous role of VC/PE sector as a driving force of the economic growth, of raising the innovativeness level and of export stimulation had been understood long ago; also, the venture capital funds are an important instrument for old enterprises restructuring. Therefore, the growth of VC/PE market in those countries was stimulated by the legal, the tax and the promotion solutions. In Poland, due to the existing barriers to the Venture Capital market growth, active involvement of the State is absolutely needed as well as, support of such growth through due initiatives by the Government.

In conclusion, it has to be emphasized that within the recent years the growth of VC/PE investments is fairly strong as measured both in the absolute values and in reference to GNP. However, the gap between the equity funds market in Poland and in the developed countries still remains wide. This is for various reasons. The most important one seems to be the low innovativeness and competitiveness of Polish economy against the Western countries, the managing staff not being prepared as appropriate, and a lack of special regulations on the equity market operation in Poland. Many barriers inhibiting the enterprise growth are still existing (red tape, corruption, instability of the law, etc.). There are no motivation systems, no relieves or preferences which would encourage a risk of having an own company.

However, along with the economic growth, the barriers will be removed and they will less and less concern the investors on VC/PE market.

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# FINANCING OPPORTUNITIES AND CONSTRAINTS FOR ROMANIAN SMALL AND MEDIUM ENTERPRISES

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## **Abstract**

*The development of SMEs is essential for the future of Romania despite the background of economic, social and political changes. This sector is needed to ensure continued economic growth and thereby to enable economic development, employment and improvement of living standards. Romania has made considerable progress over the past decade in setting up an extensive policy framework to support the SME sector. A range of institutions, policy instruments, regional tools and resources exist, all of these assisting Romanian SME development. In fact, Romania is involved in discussions concerning fundamental problems and coherent strategies, emphasizing the support that European Union gives to Romanian SMEs, but also the self-efforts that have to be done. One of the main problem for Romania is the foundation of entrepreneurial abilities specialized on SME sector definitely, measured by the growth in input ratios and output ratios of firms on the market. But these rates should face the birocracy and the conservativeness which can be associated with a state of inadaptability. The most important accomplishments are in the legislative domain, and the hardest problem remains the problem of enterprising, financing, fiscality and training population in order to do small business.*

**Keywords:** *SME's, financing, globalization, opportunities, constraints*

# 1. Revitalization of SME Sector after 1990 in Romania

## 1.1. Macroeconomic trends

Romania's transition, starting in 1990, was in many respects more difficult than in the other countries of Central and Eastern Europe. This was partly because by the late 1980s, the country's economy was on the verge of collapse after 40 years of rigid central planning that emphasized self reliance, an excessive focus on heavy industry and large, uneconomic infrastructure projects. Over the past ten years, the Romanian economy has been characterized by a series of stop-and-go reform attempts that have resulted in a highly cyclical growth pattern. Like most transition countries, Romania experienced a sharp recession during the early 1990s, followed by a period of steady growth and declining inflation from 1993 to 1996. Against all expectations, the Romanian authorities averted a liquidity crisis in mid-1999 and adopted a new set of economic policy measures to stabilize the economy as part of a three-year, Stand-by Loan Arrangement (SBA) with the IMF.

After three years of negative growth and rising unemployment, the policy corrections resulted in GDP growth of 1.6% in 2000 (Figure-1). The recovery was led by high industrial output growth (up 8.7% in 2000 compared to 1999) and exports, stimulated by a large devaluation of the ROL. GDP growth accelerated in 2001 (to 5.3%), thanks to a rebound in domestic demand. Real GDP growth slowed to 3.5% in 2002 from an estimated 5.3% in 2001, as a result of a more severe global slowdown post-September 11th and a domestic policy correction.

**Figure 1. GDP Growth (percent)**



*Source: National bank of Romania, Yearly Report 2003*

In an attempt to minimize the social costs of transition the Romanian government initially hesitated to impose tight fiscal constraints and privatize

large loss-making enterprises. In the late 1990s, attempts to impose macroeconomic stability without full structural support led to negative economic growth, and poverty increased sharply, doubling from 20 percent in 1996 to 41 percent in 1999.

Since 2000, the Government has implemented macroeconomic policies which are supportive of growth. A disciplined fiscal policy, which complemented a tight monetary policy and was augmented by strong advances in structural reform, led to improved financial discipline in the enterprise sector and has placed public finances and the financial system on much firmer footing.

This resulted in GDP growth for three consecutive years. In addition, inflation and interest rates declined steadily, the fiscal deficit was brought under control, foreign exchange reserves increased to historic highs, and the external balance was held to comfortable levels. Export growth remained vigorous, fuelled by private investment and the initial competitive depreciation of the currency. The competitiveness of the enterprise sector was boosted by productivity gains. Romania is now a visible and attractive destination for international investors as a result of better sovereign ratings and improved access to international capital markets.

The country is comprehensively reforming and restructuring its economy with a view to joining the EU in 2007. As part of this, the Government seeks to build institutions and design and implement public policies to fundamentally transform Romania's economy and society. This requires strong political commitment, considerable expertise and resources, as well as popular and external support.

Despite economic growth in the past three years, important challenges remain. Further structural reforms are crucial to build a competitive market economy capable of withstanding the pressures of EU integration.

### ***1.2. Trends in Private Sector Development***

Romania, like most transition economies, inherited from the communist regime an industrial sector dominated by large state-owned enterprises, in particular in the petrochemical and mining sectors. The trade and service sectors were underdeveloped and the financial sector was unable to respond to the needs of the enterprise sector.

A central issue of importance during the transition process has been the restructuring of the large, unprofitable and uncompetitive state-owned enterprises. Since the start of the transition, various administrations have taken a cautious approach with respect to restructuring because of the fiscal

and social costs that this process would entail. To offset the social costs, these governments have followed the strategy of fostering the development of the private sector by accelerating privatization and promoting FDI and entrepreneurship, in particular new SMEs. Under the guidance and with the support of the IMF and the World Bank, the Romanian Government has taken a new approach to industrial and financial restructuring. The State Ownership Fund was dissolved and replaced by the new Authority for Capitalization the State Assets (AVAS) in 2000. An agreement with the World Bank was reached on a second Private Sector Adjustment Loan program targeting the restructuring and privatization of 18 State-Owned Enterprises.

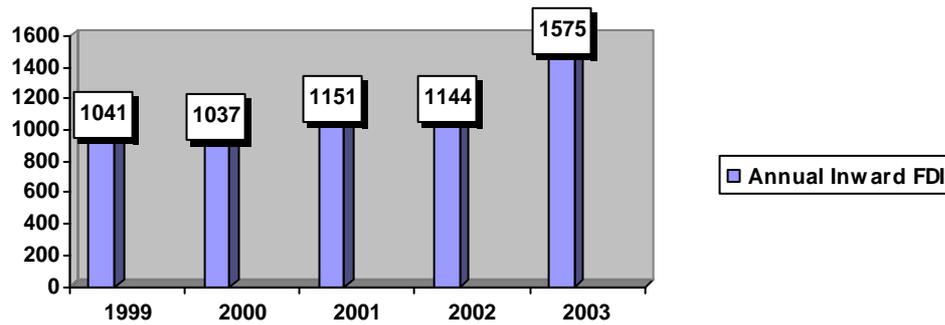
The privatization process has encountered setbacks in the past. The subsidies to loss-making enterprises have acted as a drag on national finances and hampered the development of the SME sector. The vast majority of privatizations completed have involved smaller enterprises and the process has been complex. Some contracts have had to be cancelled due to the low quality of the strategic investor and, in some cases, the process has not been entirely transparent. There is a very large number of disputes associated with past privatizations, with about 15,000 court cases still pending.

Starting with 2000, the government renewed its commitment to the privatization process. So, it tried to improve the transparency and speed of the privatization process, together with the monitoring of the post-privatization developments. Also, the government, transferred the responsibility of selling state shares in large utilities and key public companies to the relevant ministries.

Over the last years Romania has made significant progress towards macro-economic stabilization and has achieved high rates of economic growth. As a result of greater political and economic stability and of the implementation of economic reforms, the investment climate has started to improve and international investors are looking at the region with a much more positive attitude, seeing Romania as a possibility for increasing their trade on the regional market.

According to the statistical data provided by the National Bank of Romania, in 2003 the inward FDI reached USD 1575 million, compared to the same period last year, when the inward FDI registered the value of USD 1141 million (Figure -2). The figures reveal an increase of 37.6 % of FDI inflows in 2003 against the value reached in 2002, practically 2003 being the first year since 1999 when the FDI inflow registered a significant increase.

**Figure 2. Annual Inward FDI in Romania**



*Source: Romanian Statistical Yearbook 2003*

FDI evolution in Romanian economy emphasizes the positive trend Romania is on, the improvement of Romanian business climate, as well as our country attractiveness to foreign investors. In addition, it's worth mentioning finalizing land restitution process supporting Greenfield projects development, solving utilities network legal situation, developing industrial parks, granting incentives to foreign investors, elaborating policies for local authorities aiming at attracting and encouraging foreign investment, as well as developing domestic capital as a significant element in attracting new investment through economic relations development.

Due to all favorable shifts, the foreign investors started to change their position towards Romania, perceiving it as a more friendly business environment and becoming more confident in the Government's investment policy. The increased interest of foreign partners towards Romania as a destination for foreign investments is revealed as well by the number of commercial companies registered during 2003 (6594), according to the data provided by the National Trade Register Office - Ministry of Justice.

Romania has been relatively successful in attracting small and medium-sized foreign investments, particularly in labour intensive sectors located in the north-western part of the country. These investments are driven mainly by location and relative labour cost considerations. They have contributed to the rebalancing of the industrial structure and to the reorientation of trade flows towards the European Union.

### ***1.3. Small and Medium-Sized Enterprises***

The main impediments to business development in Romania are considered to be as follows: inflation, taxes and regulations, political instability and access to financing. These are the conclusions of a survey conducted by the European Bank for Reconstruction and Development (EBRD) and World Bank, which confirm the results of similar surveys and studies.

The conclusions of the survey of Romanian enterprises, consisting mainly of SMEs, are basically accordingly with those of other SEE countries. Overall, Romanian enterprises appear to be more concerned about inflation and policy instability compared to the overall SEE average. Also, lack of financing is marginally less important than the tax and regulatory constraints.

**Table 1. Main impediments to business development in Romania**

Micro Environment	Macro Environment	Law and order
Finance	Political Instability	Functioning of the Judiciary
Taxes and Regulations	Inflation	Corruption
Anti-competitive Practices	Exchange Rate	Organized Crime
Infrastructure		Street Crime

*Source: EBRD (1999) and <http://www.worldbank.org/ru/survey/front2.htm>*

The emerging private sector is responsible for a significant share of the economy. Its contribution to GDP has increased annually from 15% in 1989 to 65% in 2001, according to the EBRD studies.

The SME sector has grown very rapidly during the years of transition. The period 1990-1995 can be characterized as having witnessed rapid increases in the number of registered companies. The recession of 1997 to 1999 affected the SME sector (Table 2). In 2000, the SME sector accounted for 57% of the number of employees within the private sector and 46.9% of the total number of employees within the national economy.

**Table 2. Evolution of Private SMEs (1992-2002)**

Years	Active SME	Weight of staff in active SME	Weight of SME turnover in the turnover of total enterprises
1992	126549	12.3	30.9
1993	214349	17.8	33.8
1994	283697	20.1	41.3
1995	301781	23.9	46.7
1996	309454	29.1	48.3
1997	314183	32.9	45.2
1998	315970	37.8	52.8
1999	316593	42.5	54.0
2000	306073	46.9	55.9
2001	309303	48.5	57.2
2002	313159	50.7	55.9

*Source: Romanian Statistical Yearbook 2003*

At the end of 2002 the total number of small and medium enterprisers was of 313159 with 1.,1% more than the previous year (309303). The birth ratio of SMEs was 5.6% in 2000, 5.6% in 2001 and 7.5% in 2002, and the mortality ratio dropped from 1.2% in 2000 to 1% in 2001; in 2002 it was registered a spectacular growth of the mortality ratio to a value of 19%, due to the great number of SMEs erased in 2002, which didn't increase the social capital within the limits of legal term. The trends are dropping for the mortality ratio and increasing for the birth ratio.

At the beginning of the year 2004, statistic data show that other many SMEs should be erased due to not presenting on time the annual financial situations. This shows the difficulties that Romanian SMEs still confront with.

In general, the micro-enterprises dominate the SME sector. This is not dissimilar to other countries. Ninety-three per cent of all firms in the EU are micro-enterprises, and 99.8% of all firms are SMEs, accounting for 90% of all employment.

The high concentration of SMEs in the trade sector (65.7%) reflects the fragmentation of the distribution and retailing industry in Romania (see Table 3). The data also suggest that the service sector, although still relatively underdeveloped, has a good deal of potential for development.

**Table 3: SME Industries and Size Categories (2002)**

Sector	SME distribution	Micro	Small	Medium
Industry	11.2	79.8	16.1	0.4
Agriculture	1.7	82.5	14.1	3.3
Construction	2.9	71.7	20.9	7.4
Trade	65.7	95.6	4.0	0.3
Tourism	0.5	83.5	11.7	4.9
Transport	2.9	92.4	5.7	1.9
Services	15.1	94.0	5.1	1.0
Total SMEs	100	92.5	6.3	1.2

*Source: Romanian Statistical Yearbook 2003*

Regarding the SMEs distribution on domain of activity; the situation is:

- trade is the area in which most SME are involved 65.7 % in 2002;
- the second area was the one of services, with 15.1% in 2002;
- industry is area in which 11.2 % in 2002.

These three sectors concentrate more than 90% of total SMEs, situation resembling with the one in EU countries.

Concerning the form of ownership, the next data were registered:

- most of SMEs (99.3%) have integral private capital;
- SME with public capital and mixed capital represent less than 1%, thus SME are based on private capital in great majority.

***Analysis on the territorial distribution of SMEs brings more new information about their development; the statistic data presented are focused on the eight Romanian regions of development.***

Firm's development distinguishes significant disparities between the eight regions of development in Romania concerning density, turn over, profitability and economic results.

**Table 4. The repartition of private capital SMEs on regions of development - %-**

	<i>Regions of development</i>	2000	2001	2002
1	North-East	11.6	11.7	11.7
2	South-East	13.2	13.3	13.0
3	South-Muntenia	11.8	11.4	11.5
4	South-West Oltenia	9.5	9.0	8.3
5	West	8.4	8.7	9.0
6	North-West	13.6	13.7	14.0
7	Center	11.8	12.1	12.6
8	Bucharest-Ilfov	20.1	20.0	20.0
9	Total sector SMEs	100.0	100.0	100.0

*Source: Processed by the Romanian Statistical Yearbook 2002, page 353-355 and data offered by www.mimmc.ro*

It is observed that the highest density of SMEs is registered in Bucharest-Ilfov region, and the lowest in South-West Oltenia region (where the firms' density is 170% lower than in Bucharest-Ilfov region). Approximate 18% of medium firms spotted in Bucharest-Ilfov region, while in South-West region their number represents 6,7% of the total.

The statistic situation registered in 2002 indicates a relented economy, being also the positive evolution in the dynamic of private sector. Thus:

- the growth of working places in SMEs sector from 1797206 in 2000 (38% of the total number of employees in Romania) to 1844312 in 2001 (40% of the total number of employees in Romania), respectively 1876938 in 2002 (50.48% of the total number of employees in Romania);
- the growth of SMEs in the service field; in the industrial sector and in the construction field;
- SMEs generate around 60% of the gross internal product of Romania.

#### ***1.4. Results Obtained by SME's in Romania***

##### **1.4.1. Turnover**

Regarding the turn over the greatest number of SME's with a turn over higher then 2000 billion lei is registered in Bucharest Ilfov region, 35%

of the total, the South West region gain a percentage of 5.7% (the lowest value at national level).

The statistic situation registered in 2002 shows the growth of SME's turnover from 634250.4 billion lei in 2000 to 916014.3 billion lei in 2001 (44%), respectively 1513528.6 billion lei in 2002 (65%).

**Table 5: The structure of turnover achieved by SMEs sector with private capital by size and development regions - %**

Development regions	2001				2002			
	Total	Micro	Small	Medium-sized	Total	Micro	Small	Medium-sized
North-East	10.2	9.9	9.7	11.4	10.0	9.7	9.8	11.0
South-East	11.0	11.9	10.3	10.5	10.8	11.7	10.2	10.3
South	10.4	10.2	9.8	11.5	10.3	10.3	9.7	11.1
South-West	6.0	6.9	5.6	5.0	6.0	6.6	5.7	5.3
West	8.3	7.4	8.7	8.9	9.0	8.0	9.5	9.7
North-West	12.0	11.1	13.0	11.9	12.6	11.6	13.6	12.8
Centre	11.5	10.5	12.2	12.2	11.4	10.5	11.7	12.5
Bucharest-Ilfov	30.7	32.1	30.8	28.4	29.9	31.7	29.8	27.1

*Source: Processed by the Romanian Statistical Yearbook 2001-2002 and data provided by [www.mimmc.ro](http://www.mimmc.ro), National Agency for SMEs and Cooperatives*

Also as regards turnover, Bucharest-Ilfov scores the highest number of SMEs with turnover higher than ROL 2.000 billion – 20% in total, with South West region scoring for a modest 6.75% (the lowest value at national level).

#### **1.4.2. Profitability indicators obtained by SME's in Romania**

Profitability indicators obtained by SME's in Romania are presented on regions of development in Table 6.

**Table 6. Profitability indexes at SME on regions of development**

	Regions of development	Commercial profitability ratio		Economic profitability ratio		Financial profitability ratio	
		2000	2001	2000	2001	2000	2001
1	North-East	0.92	2.01	3.35	4.68	6.74	14.70
2	South-East	2.14	2.01	6.22	5.44	27.79	27.29
3	South-Muntenia	1.85	3.04	5.52	7.28	14.02	23.57
4	South-West Oltenia	0.44	1.93	2.69	4.78	4.49	15.00
5	West	1.94	1.47	4.85	3.63	14.08	12.31
6	North-West	2.11	3.39	5.90	7.48	18.45	28.93
7	Center	2.09	3.13	5.22	6.53	15.39	24.18
8	Bucharest-Ilfov	-0.37	2.56	1.24	4.89	-5.00	35.81
9	Total SMEs	1.09	2.53	3.45	5.47	10.33	24.26

Source: Processed based on data provided by [www.mimmc.ro](http://www.mimmc.ro)

It is noticed the commercial profitability ratio (Profit/Turnover), economic profitability ratio (Profit/Assets) and financial profitability ratio (Profit/Equity Capital) have registered upwards evolutions along the two years, and as regions, South-Muntenia, North-West and Center regions stand out. Higher profitableness rates registered SMEs from services and constructions sectors.

Economic profitability of micro-enterprises is 9 times higher than national average in South Muntenia region and 162 higher than in South West. While Bucharest-Ilfov accounts for the largest number of companies in retail trade, construction and research, North East is strong in the textile sector. South West in tourism and waste recycling. North West region scores the relative highest number of companies in transport and metallic production. South in agriculture, Centre region for wood processing.

### ***1.5. The financing of SMEs in Romania***

In the most cases, Romanian enterprises perceive financing as an important compulsion concerning the start or development of their business. To fight-back this situation, a series of measures and financing instruments, like communitary programs and credit access, were elaborated.

For the growth of the SMEs access at financing, financial-banking and administrative institutions have to actively cooperate for identifying and promoting the most adequate actions at microeconomic level. Also, a higher priority has to be given to the needs of new and small firms through traditional means, reducing interest rates and securities, and encouraging the micro-credit.

New instruments of improving access to financing were proposed, like *capital grant scheme*- that takes into analysis the following issues:

- the lack of bank credit due to the lack of securities or to the incapacity of getting more than one credit at once;
- the necessity of taking rapid decisions concerning financing;
- the necessity of finding means of control for the grey market, especially concerning turnover and occupation.

The scheme of capital granting will represent, partly, at the same time, a *pilot scheme for future accessing of Structural Funds*. Thus, it will have the following characteristics: specific co-financing from the beneficiary; transparent selection criteria; clear and countable objectives; relatively short period paying capacity; a clear auditing process and capacity of avoiding fraud.

### **1.5.1. Financing Through Communitary Programs**

In the 2000-2006 period, 16 billion Euro of structural funds were allocated for the financing of SMEs oriented projects. Approximate a third of this amount was allocated for a consulting and a business services, like incubators, networks and clusters. In the candidate countries also, an important part of the pre-aderation funds was oriented toward SMEs. Many other programs, such as LIFE (the financial instrument for environment) and Eco-label, are mostly addressed to small firms.

In 2001, the Phare contribution for all candidate countries was 104 million Euro and 54.7 million Euro in 2002, going through more than 19 programs. The overall of communitary programs had a number of 29, which weren't all opened to the participation of candidate countries. National co-financing is different from country to country, being determinate by the effective moment of entering these communitary programs.

It is noticed that Romania has been the beneficiary of many communitary programs, but its participation at these programs is varied. thus, for frame programs specific to certain domains, the sums allocated by the EC are smaller, as compared to Research and Development Frame Programs and Leonardo da Vinci and Socrates Programs, at which allocated amounts are a lot bigger, considering the scope of the actions taking place in these programs.

Table 7 presents Romania's participation in communitary programs, which reveals that in the year 2001, the national contribution represented

more than half of total allocated budget, and in 2002, the national contribution reduced at less than half.

**Table 7. Participation of Romania in communitary programs** mil. Euro

	Participation of Romania in communitary programs	Total Budget	National Contribution
1	2001 - 8 programs	35,6	20
2	2002 – 16 programs	38,5	16,7
3	2003 – 15 programs	in progress	in progress

*Source: Processed based on data provided by www.mimmc.ro*

Romania concentrated its effort for sustain the SMEs sector through the specific programs which are financed by the budget and external funds.

- In order to support this sector, in 2002-2003, the state budget allocated over 3158 billion lei and brought a contribution of 24.02 millions Euro, representing the co-financing from the Romanian state of a Phare component with a budget of 75.07 millions Euro (for investment, the access to the consulting and training services, for the export promotion);

- Increase the efforts to gather external financing sources for the SMEs which represent over 100 million Euro, in the period 2002-2003, from BERD, BEI;

- The development of the component „SME facility” in Romania gathered over 1050 millions EURO;

- The diversify of the multiyear national programs financed by the state budget.

### **1.5.2. Financing through credit**

There is a significant and hard to satisfy demand for financing SMES trough credit. Thus, is necessary to continue and supplementary extend the present credit lines at which SMEs are aiming, by using the example of different financing schemes implemented so far, (especially through MIROBANK, BERD credit line, USAID help for credit and KfW credit line).

In order to support the SME’s for demanding credits, it is recommended the possibility of practicing attractive interests credits granted from the unemployment insurance budget, by the National Agency of Work Force Occupation (Ministry of Work, Social Solidarity and Family) as well as granting such credits for other categories of potential enterprisers that could initiate and develop business, as, for example, students.

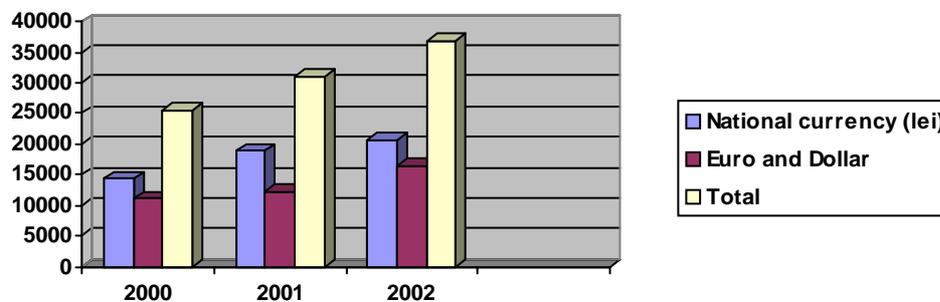
From the banking sector view, the SMEs represent a strategic sector towards should be focused, from the following reasons:

- the SMEs insure a good risk dispersion;
- the SMEs accept the standard costs (interests, banking fee and commissions) insuring a high efficiency in this sector.

Even the SMEs represent an attractive market with a high potential for the banks, there are some factors which act against the SMEs credit, such as: the low offer of the banks for this kind of credit, the lack of the SMEs training regarding the credit documentation, the lack of the customer (SMEs) financial information for the banks; the lack of a regional network for the banks.

In this circumstances, the credits for SMEs got in 2002 just to up 36.51% from the total corporate credits.

**Figure-3. The credits granted to SMEs (2000-2002)**

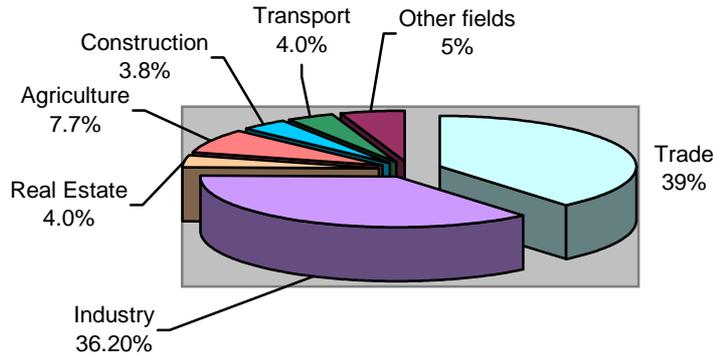


*Sursa: Study National Bank of Romania, "Creation of the necessary frame for development of some banking product and services" (2003), pg. 67*

Even in the analyzed period, there was registered an increase of the SMEs credits from 26743.2 mil. lei in 2000 to 36966 mil. lei in 2002, this increase did not satisfy the market demand. Regarding the credit distributions in function of the enterprises size, there was a reorientation of the banks towards the medium firms, and the micro-firms.

Concerning the destination of the credits granted to the SMEs the situation in 2003 is presented in the figure-4.

**Figure-4. The destination of the credits granted to the SMEs (economic fields)**



*Source: Romanian Statistical Yearbook 2003*

The weight of the credits for SMEs are directed towards the trade (39%) and industry (36,2%) from the total credits for SMEs.

The distribution of the credits granted to the SMEs by regions of development reveals the credit concentration at the Bucharest area where in 2002 were placed 37% from the beneficiary firms, which is much higher than the other counties (with an average of 4% from the credits). The main reason which determined this situation is the low level of development for the banking infrastructure the regional level.

**Table 8. The distributions of credits granted to private capital SME's by size classes and regions of development**

	Regions of development	2001			2002				
		Total SMEs	Micro	Small	Medium	Total SMEs	Micro	Small	Medium
1	North-East	6,7	5,9	6,8	7,1	7,5	5,4	8,5	9,1
2	South-East	8,3	9,0	8,0	7,9	8,4	9,7	6,9	8,2
3	South-Muntenia	7,8	7,3	8,4	7,7	8,1	5,9	10,0	8,9
4	South-West Oltenia	4,5	4,7	4,4	4,5	4,6	4,2	4,4	5,2
5	West	7,7	5,9	6,7	10,0	11,1	10,9	9,1	13,1
6	North-West	8,0	6,9	10,4	6,8	9,2	6,5	12,2	9,8
7	Center	11,8	6,7	10,4	16,8	11,0	6,9	13,6	13,7
8	Bucharest-Ilfov	45,3	53,6	44,9	39,3	40,1	50,4	35,4	32,0
9	Total SMEs	100	100	100	100	100	100	100	100

*Source: Processed based on data provided by www.mimmc.ro*

Concerning the distribution of credits granted to SMEs on regions of development, the SMES in Bucharest-Ilfov region have obtained an average of credits four times bigger than SMEs in other regions.

Considering the high present level of interest rates on credits, it will also be considered the possibility of interest subsidizing for certain domains of activity.

For the improvement of SMEs's access to financing, the following *actions* will be taken:

- the continuance of obtaining financial allowances for SMESs, from the state budget and external sources, for the development and implementation of multi-annual financing instrument of the SMES sector at national level (credit and granting schemes for supporting the investments of start-up firms and of the existing ones, promotion of export, investments in priority economic sectors, innovation, transfer of technology and Know-how, sub-contracting);
- promotion of Multi-annual Program, with national applicability which corresponds to the firms development stage, by: implementing multi-granting schemes; implementing scheme of granting associated with; promoting schemes of micro-credit;
- the continuing of apply the credit program for SMEs and its monitoring;
- promotion of setting-up and developing risk capital funds;
- the development of a permanent system of monitoring and periodic evaluation of the way of finance use and fiscal facilities received by SMEs;
- the efficient promotion of present financing programs;
- the assurance of Romania's participation - in the community programs, - within Financial Instruments component of the Multi-annual Program (2001-2005) for Firms and Enterprises, especially for SMEs, with the support of EC;
- creating a database with information on financing opportunities for SMEs, unrepayable financially, guarantee funds; commercial banks, risk capital funds;
- the elaboration of the action plan for improving the SME's access to financial services, as a part of the Technical Assistance - Institutional Construction program, financed through Phare 2001 program;
- the elaboration of banking settlements due to encourage SMEs financing by the financial-banking institutions, the opening of special departments within banks which can offer such services.

## **2. European integration and the Romanian SME sector**

One of the main economic policies within European Union is to develop as rapidly as possible the SMEs sector, because it is considered that small enterprises are the “back-bone” of the future integrated economy. It is emphasized the idea that united Europe’s efforts will reach success only if small business will be brought to number one within theory and economic practice.

EU shows a special attention to small and medium firms, in present member states of EU, as well as in the rest of the European countries that sooner or later will be integrated within the union.

At the EU executive level there were already adopted a series of documents establishing key domains for supporting and encouraging small business. The most important is The European Charter of Small Firms, adopted at the European Council in Santa Maria Feira in June 2000, establishing 10 key domains.

Romania is involved in discussions concerning fundamental problems and coherent strategies with impact on SMEs sector, starting from the support that EU gives to Romanian SMEs.

### ***2.1. Theoretical Fundaments***

I. The European Charter for Small Enterprises calls upon Member States and the Commission to support small enterprises in ten key areas:

- Education and training for entrepreneurship;
- Cheaper and faster start-up;
- Better legislation and regulation;
- Availability of skills;
- Improving online access;
- Getting more out of the Single Market;
- Taxation and financial matters;
- Strengthening the technological capacity of small enterprises;
- Making use of successful e-business models and developing top-class small business support;
- Developing stronger, more effective representation of small enterprises’ interests at Union and national level.

These ten key areas demonstrate the difficulties for SMEs to take many political measures and full advantages for economy

We consider that these domains are connected with the rethinking of the optimal dimension concept of all business, on the founding of present phenomenon which cannot be ignored anymore, such as:

- the stressed dynamic of all economic activities;
- the danger of some natural resources' exhaustion;
- the necessity of quick finding some innovative solutions for humanity, in terms of decision transparency, without subjective interventions which can distortion normal evolutions.

Experience has proved that only in states with a great mobility and diversification of small business (the best example are still the US) can be reached the selection and affirmation in maximum objectivity conditions of truly useful and efficient activities for human society. Because of that, above the appreciations that SMESs are the locomotive of present society or very sensitive barometers of economic, social or political evolutions, we consider that it will far more correct the idea according to which the small firms' high "birth rate and mortality" phenomenon represents a true economic test of objective selection for enterprisers. This test is less expensive, talking about low resources, but has essential effects on identifying and expanding some efficient activities.

SMEs development is closely in connection with enterprising problems, starting from the premises that enterprising is the engine of economic growth, of competitively and of the creation working places, as well as from the discrepancy which still exists in the field of enterprising between Europe and the United States. In this context, European Union has decided to support the force of enterprising in a most efficient way, identifying those priorities that can affirm the enterprising initiative. The European Commission has published in January 2003 The Green Book of Enterprising in Europe, discussing people's attitudes concerning enterprisers or the actual number of enterprisers, dynamism within enterprising activity and enterprisers' performance.

The analysis of the SMEs sector has to emphasize the advantages, as well as the disadvantages, especially through a comparison with advantages and disadvantages of big firms.

The advantages of SMEs sector are connected to present trends of globalization, hard competition and mobility within the economic process, thus:

- SMEs have a great flexibility and adaptability, practically under all aspects (financing, production, marketing, human resources), when

economic circumstances modify rapidly, especially when these become unfavorable;

- SMEs need more reduced financing resources (based mostly on equity capital), using more efficiently the resources that they can rely on;
- SMEs are much more active on the work market, creating very rapidly working places, often in new areas, the costs connected to creating a working place being much more reduced than the ones registered by big firms;
- SMEs influence the efficiency of internal markets, these finding or creating quicker or easier or market shares for certain products or services;
- SMEs are perceived as an element of economic growth and stability, through the assertion of the trends of a healthy long term economic growth.

The disadvantages or week points of SMEs sector appear in front of big firms, as well as because of extra economical reasons, like:

- SMEs have a reduced access to local and international capital markets, involving a vicious circle, meaning that small enterprisers are often excluded because they are small, but cannot become bigger and they disappear, because they can't cover the high costs of making their projects;
- SMEs are strongly affected by the incidence of institutional and settlements compulsions, especially if they want to enter the external market;
- SMEs are sensitive to any type of "barriers" (national or international, economic or extra economic), transposed in several high costs of transaction;
- SMEs are characterized by a weak representation of their own interests, including through access to advertising or representation in different organisms, making them vulnerable, especially in competing whit big firms.

In reality, in a modern economy coexist firms of different sizes, but it is noticed that their start-up and their development have the next evolution: usually, it starts from a small firm, and if this one is viable and efficient, than it develops to a middle dimension, big or very big. In modern economies are working networks of enterprises (clusters), in which the competitive position of the firm mostly depends on the suppliers' efficiency. That is why, the competitiveness of SMEs affects the competitiveness level of the overall economy.

## 2.2. Methods and Results

### 2.2.1. Comparative Elements of SME in Romania Against SME in Member and Candidate States of the European Union

An enterprise is registered in the SME category (it can be micro, small or medium sized) if it fulfils all the conditions regarding: employed personnel, turn over and right to vote.

Observing the definition of the SME in Romania and in the European Union, as table no.9 shows, the next comparative elements are distinguished:

- concerning the number of personnel, there are no differences;
- from turnover point of view, the Romanian definition is more restrictive, its maximum level being of 8 mil. Euros compared to the similar condition in the EU, which establishes a maximum level of 7 mil. Euros for small firms and 40 mil. Euros for the medium ones;
- in Romania, there are no restrictions regarding maximum capital of SMES. In EU there are restrictions, but these are progressive: 5 mil. Euros for small firms and 27 mil. for medium size firms.

**Table 9. The definition of the SMEs in Romania and in the European Union**

Conditions for SMEs	Micro	Small	Medium
1 ROMANIA			
2 Number of employees	<10	<50	<250
3 Turnover	<8	<8	<8
4 Other conditions (owners equity/ voting power of other firms)		25%	25%
5 EUROPEAN UNION			
6 Number of employees	<10	<50	<250
7 Turnover (mil. Euros)	n/a	7	40
8 Current Liabilities (mil. Euros)	n/a	5	27
9 Other conditions (owners equity / voting power of other firms)	n/a	25%	25%

*Source: Processed based on data provided by [www.mimmc.ro](http://www.mimmc.ro)*

It is observed that the Romanian definition is in accordance with the one recommended within European Union.

Most of the SME in Romania, as well as in candidate countries, are micro-firms. In Romania, of the total number of SMES, 91,2% have been micro-firms. In Romania, of the total number of SME, 91,2% have been micro-firms at 2001 level.

From the point of view of the *employed working-force weight* in the SME sector in the total working force employed in economy, the situation is the following:

- in EU countries, including EFTA, the weight of the personnel registered in SME is of 66% of the total;
- in candidate states, it weight is of 72%;
- in Romania, 40%.

*The average of employees in small and medium firms* is 5,5 employees in EU, including EFTA, 6,9 in candidate states and 4,8 employees in Romania, a level under the European average. There is a difference between SMES average in candidate states and member states. In Malta, Cyprus and Turkey – 3 candidate states which don't have a command state economy, the no of SMES is situated at the same level as countries within the EU. The South part of the continent represented by Greece, Italy, Spain and Portugal is characterized through a higher weight oh micro-firms.

The situation of *the distribution of SME on areas of activity* is presented in Table no. 10.

**Table 10. The distribution of SME on areas of activity**

Areas of activity	Romania	Candidate States	Europe-19 (EU+EFTA)
1 Industry	11.6%	12%	10%
2 Agriculture	2.0%	-	-
3 Construction	3.3%	16%	13%
4 Trade	63.0%	19%	25%
5 Tourism	0.5%	5%	6%
6 Transport	3.6%	12%	6%
7 Services	16.1%	36%	30%

*Source: Processed based on data provided by [www.mSMEc.ro](http://www.mSMEc.ro)*

The percentage of SMEs in service area within candidate states and those in Europa-19, also includes small and medium firms activating in financial services domain (banking services, insurance and securities).

Comparatively the weight of Romanian SMEs compared to SMEs in candidate states and SMEs in Europe-19, the next particularities of SMEs in Romania appear:

- the percentage of SMEs in industry is 11,6%, compared to the one registered in Europe-19 (10%) and in candidate states (12%);

- tourism is weakly represented, by only 0,5% compared to 5%, respectively 6%, which means 10 times weaker;
- SMEs percentage in constructions is over 4 times lower than the European average registered in candidate states and in the Europe of 19;
- most of SMEs in Romania are involved in commerce activities, the percentage at European level being lower more than 2,5 times.

### 2.2.2. Work Productivity

The work productivity obtained by SME's in Romania compared to countries in the European Union at 2001 level is presented in table 11.

**Table 11. Average Value of Work productivity on types of SME's, in 2001**

	very small	small	medium	TOTAL
<b>1 Europe – 19</b>	<b>40000</b>	<b>75000</b>	<b>105000</b>	<b>65000</b>
<b>2 Romania</b>	<b>2688</b>	<b>3688</b>	<b>3542</b>	<b>3278</b>

*Source: Processed based on data provided by [www.mimmc.ro](http://www.mimmc.ro)*

It is noticed that average value of work productivity registered by small and medium firms in Romania, overall, as well as on size classes, is over 19 times lower the one registered at European level. When evaluating these results it has to be considered the fact that the definition of small and medium firms in Romania is not identical to the one in EU, considering the turnover. From this point of view, the Romanian definition is more restrictive, establishing a maximum level of 8 mil. Euros for turnover, compared to the similar condition in EU, establishing a maximum level of 7 mil. Euros for small firms and of 40 mil. Euros for medium firms.

### 2.3. Constraints on business formation and growth

The SME sector is still small and weak relative to the EU as well as to other transition economies.

This might be explained by a number of constraints:

- The entrepreneurial culture is generally weak;
- The regulatory and tax environment is burdensome. There is a confusing array of taxes and regulations with which SMEs must comply. The enforcement of regulations is often patchy leading to allegations of corruption;
- Banks in general do not address start-up businesses and infant companies, and make demand on collateral to the other businesses which is

often hard to met by undercapitalized SMEs who owners also lack sufficient personal assets to collateralize bank loans. Other forms of financial support (venture capital and leasing) are in their infancy;

- Sources of advice, training and information are inadequate, though there is a real need and demand for support services for SMEs. These are services that would be publicly subsidized in EU countries;

- Long-life learning is not yet a popular concept among Romanian companies and individuals. As a result, there is a growing mismatch between labour skills and market requirements;

- Both ownership and actual availability of premises is a problem. A total of 40 industrial / business parks were identified in early 2003, totaling 1,246 hectares of business infrastructure space equipped for enterprise establishment. The amount of space devoted in Romania to industrial / business park development is very small when compared with Poland, Hungary, or the Czech Republic;

- Little support is available for early stage innovation activities, due to lack of contact with universities, special premises, ability in technology transfer. Most SMEs remain in conventional sectors where competition is more intense;

- Supplier linkages between large enterprises and SMEs remain weak, due to insufficient technological endowment of SMEs as well as high risk for SMEs to deal with large state-owned enterprises affected by financial problems. Largest foreign investment could have a very positive effect on the development of Romanian enterprises.

#### ***2.4. Priorities of the SME Strategy in the context of European Integration***

Romania's long-term plan is to achieve a stable economic growth faster than the EU average, within the context of a balanced development of its territory, and especially the reduction of rural versus urban disparities. Therefore, the long term National Development Strategy was formulated to support investment in sectors with growth potential, thus also supporting employment creation and safeguard.

As this National Development Plan 2004-2006 covers a three-year scale, this period of time shall not be sufficient to implement a comprehensive national development policy. The purpose of this Plan is therefore to target the major issues raised in the socio-economic analysis, in order to progressively reduce the current gaps between Romania and the EU countries.

From SMEs' point of view, the strategy aims to support growth in both qualitative and quantitative terms and to further diversify its productive basis in order to provide further developing opportunities to the productive system. It was composed a loan guarantee scheme to support SMEs' capital investment and of grant programs to promote investment in new technologies and know-how and to assist internationalisation. Preference is given to SMEs entering in activities unexplored before in Romania, with a strong technological component and subject to international competition. *Ad hoc* promotion of FDI-led supply-related clusters will also be possible. These schemes is complemented by an initiative capitalising on existing labour-intensive handicraft traditions with a view to better exploit their potential in the international and local markets. All schemes are directly targeted at entrepreneurs and are managed at the national level, in one case with the assistance and direct involvement of the banking system. The different schemes differently contribute to the different intermediate objectives. While the loan guarantee scheme and support to craftsmanship are mainly a tool to expand the entrepreneurial basis, technological grants are expected to have a more direct impact on the added value and diversification of the productive basis, while internationalisation-related measures are directly linked to SME global competitiveness.

The SME Strategy highlights the priorities:

1. Improvement of the Business Environment for the Stimulation of the SME Sector by:

- Improving the institutional framework and public-private dialogue;

- Simplifying and improving the legislative framework;
- Reducing bureaucratic barriers to SMEs;

2. Development of Economic Activities and Increase in the Competitiveness of SMEs by:

- Improving access to financing for SMEs;
- Creating a friendly tax system, aimed at stimulating investment;
- Developing business infrastructure and a national market for consulting services for entrepreneurs;

- Improving access to business information;

- Facilitating access to public procurement;

3.Improvement of he SME Access to External Markets by:

- Elaborating a strategy to support SMEs with export potential;

- Supporting regional collaboration;

- Supporting SMEs via international fairs and exhibitions;

- Providing training on marketing techniques for external markets;

- Supporting access to information on external markets;
- 4. Promotion of an Entrepreneurial Culture and Stimulation of New SMEs by:
  - Supporting training programs focused on entrepreneurship;
  - Supporting entrepreneurs' access to consulting services;
  - Improving managerial education in secondary schools and universities;
  - Involving mass media in generating a positive image of entrepreneurs.

All these kinds of action will require a combination of improvements in the regulatory and administrative environments and the provision of an adequate mix of “soft” incentives accordingly with the European acquis. The SME sector should be greatly expanded in both size and scope, as well as better integrated into the international economy and technologically enhanced.

The problems SMEs currently face in accessing medium-long term credit for investment must be adequately addressed, and this is even more so in the light of the possible consequences of the Basel banking regulations on the SME sector. Direct support measures will have to be targeted accordingly. Finally while the development levels of the manufacturing and business-service sectors can be broadly assumed to progress in parallel and to be mutually supportive of each other, there are a few areas where a more proactive stance is needed to provide the necessary “size effects” and foster the start of an autonomous growth process. This is especially the case for the opportunities opened by Romania's endowment of potential tourism attraction currently heavily underexploited and by the e-revolution that, if properly supported, could capitalise on the existing flourishing Romanian IT service industry.

SMEs are expected to remain the larger suppliers of jobs in the future. Together with a general purpose SME guarantee scheme aimed at easing the well-known problems SME have in accessing medium-long term credit for investment purposes a number of grant programs will be devised for SMEs specifically investing in hi-tech or entering the international markets. Technological priorities will reflect trends in the world markets and include, among others, biotechnology, new materials, environmentally friendly techniques and products, micro-technologies. In order to diversify the country's productive basis and foster possible imitation phenomena, a preference will be given to enterprises entering into new sectors.

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# **SMEs AND THEIR FINANCIAL SOURCES IN ZLÍN AREA ACCORDING TO THEIR NEW POSSIBILITIES IN EU**

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## **Abstract**

*Strong saving tendency, preference to some traditional and financial instruments and distribution flows, mainly in some bank branches – these are the main specific features of a typical Czech customer and also are connected and closed to the small and medium enterprises (SMEs). One of the most important business problem in the Czech Republic is the existence of some „elephant socialist“ enterprises unable to survive without the government help. There are SMEs support programmes in contrast to them. There have been announced many discussions about some help activities before 2000. For example education development and maybe also a sort of financial help from EU. Zlín area is a specific business area with many SMEs. They cope also with financial problems as other SMEs in the Czech Republic. Talking about their support after the year 2000 we have to mention the support of their competitiveness. There was provided the research between them to realize SMEs positives and negatives and their financial problems. The results can recognize SMEs weak and strong sides in financial questions and also can show the direction of their business future.*

**Key words:** *small and medium enterprises (SMEs), financial sources, support, competitiveness, Europe union (EU).*

## 1. Introduction

The liberalization of economic activities is the world trend. The integration of economic and financial activities, too. All these developments indicate freer flows of goods and services. During the past 15 years or so, academics as well policymakers have turned their attention to the internationalization of small firms, especially SMEs (small and medium enterprises). There are changes in the institutional framework governing world trade and production, combined with rapid advances in communication and information processing technologies. The inability to control prices because of lack of market power, a dependency upon a relatively small customer base – there are some typical features for Czech SMEs. The financial resources available to SMEs can act as a considerable constraint in developing an international orientation.

This can take two forms:

- Lack of finance may hinder the firm's ability to identify opportunities arising from the opening up of national markets while.
- Inadequate financial resources may restrict the exploitation of opportunities already identified.

Additional constraints derive from the management time and expertise may be in very short supply. As a consequence, there are significant problems in the acquisition of market information, in the coordination of the actual management effort. The lack of SMEs financial sources was the reason of the SMEs survey. This survey was proceeded in Zlín area to show up the SMEs world common features with an emphasis to financial problems.

SMEs cope with plenty of problems. This article should take out all their most important especially financial problems and go through the part of their financial management also with a note about their personal questions. The aim of the survey is to specify the SMEs financial sources in area Zlín. The article is gradually proceeded in the following steps:

- the recent SMEs situation and their definition
- SMEs financial sources in Zlín area
- strong saving tendency
- personal influence in SMEs management
- competitiveness
- survey results – positives and negatives
- discussion
- conclusion

There was proved by the questionnaire also the hypothesis from financial management area and personal influence. *The first hypothesis* expresses the idea that SMEs do not effectively use external financial sources. *The second hypothesis* is directed to personal influence and expresses the idea that SMEs do not follow carefully all necessary information directed to SMEs and their personal influence could improve SMEs competitiveness. SMEs cope with a lack of financial sources, that's why with a lack of employees and consequently with problems in personal influence.

There has been used some economic and statistics methods – as induction, deduction, analysis, synthesis including the SMEs survey. The survey was provided at VOŠE Zlín in area Zlín [8] and its surrounding. It started in 2001 and finished in 2004.

## 2. SMEs, their definition and specific features

### 2.1 The recent SMEs situation and their definition

In all the short history of modern business there is well known that larger companies have the traditional belief in the rightness and power of size. Rationalisation, standardisation and concentration are the watchwords. In 1969 a Committee of Inquiry on Small Firms was set up (The „Bolton“ Committee). Another „Wilson“ Committee on the Financing of Small Firms, in 1979, updated the Bolton turnover requirements. [1] This brought the definitions temporarily in line. In the EEC small firms [3] are usually categorised by employees, but there is no general agreement on the number that is covered by the term „small“. Businesses were split into medium-sized and small (though) in practical terms both would normally be regarded as small. (see table No.1).

**Table 1: SMEs definition**

Types of enterprise	Number of employees	Turnover	Balance sheet total
micro	Less than 10	to 250 mil. CZK	to 180 mil. CZK
small	10-49	to 7 mil. EURO to 1 450 mil. CZK	to 5 mil. EURO to 980 mil. CZK
medium	50-250	to 40 mil. EURO to 250 mil. CZK	to 27 mil. EURO to 180 mil. CZK

Source: European Commission definition (7.2.1996) [8]

There are given many *SMEs definitions*. The table 1 shows one of them. The economic definitions make a great of sense. It has three parts:

- market share
- independence
- personal management

The characteristic of a small firms *share of the market* is that it is not large enough to enable to influence the prices or national quantities of goods sold to any significant extent.

*Independence* means that the owner has control of the business himself. It therefore rules out those small subsidiaries which, though in many ways fairly autonomous, nevertheless have to refer major decisions (e.g. on capital investment) to a higher level of authority.

*Personalised management* [4] is the most characteristic factor of all. It implies that the owner actively participates in all aspects of the management of the business, and in all major decision-making processes. There is little devolution or delegation of authority. One person is involved when anything material is concerned.

One owner – manager has to manage everything. Unlike the chief executive of a large corporation who can employ a secretary, a financial director, a treasurer, a solicitor and an accountant, all well informed in their own professional fields, and all willing and able to advise him, the small business proprietor has to be himself, a „man for all season“. It is obvious that this has been the case for many years. SMEs cope every day with personal, economic and mainly with financial problems.

## **2.2 *SMEs financial sources in Zlín area***

Trying to sort out a part of SMEs especially financial problems, there has been started the SMEs research at VOŠE Zlín in 2001. This project has taken till 2004. The main achievement was to realize what is the reason of SMEs problems and go through all parts of SMEs financial management to their personal influence. The questionnaire for SMEs was spread in Zlín area. The main aim of the questionnaire were the SMEs financial sources.

Every year was spread 300 questionnaires to SMEs in Zlín area. The best returnability was in 2001 – 54 per cent. The questionnaire has been given to SMEs in region Zlín every year since 2001. In 2002 the returnability was only 32 per cent and in 2003 only 27 per cent. The research finished in 2004 with the returnability 29 per cent.

**Table 2: Financial sources (in per cent)**

<b>Internal sources (the owners)</b>	33
<b>Profit</b>	21
<b>Leasing</b>	19
<b>Loan</b>	17
<b>From friends, family</b>	3
<b>Silent Partner</b>	2
<b>Grants</b>	1

Source: research at VOŠE Zlín [8]

It was proved that SMEs in Zlín area prefer internal financial sources to external by the research at VOŠE Zlín. (see the table No. 2). The respondents used grants only a little (1 per cent). From external sources is the most favourite leasing (19 per cent) and then loans from the bank (17 per cent). At the beginning of this research was said, that *SMEs do not use effectively external sources*, especially bank products and services.

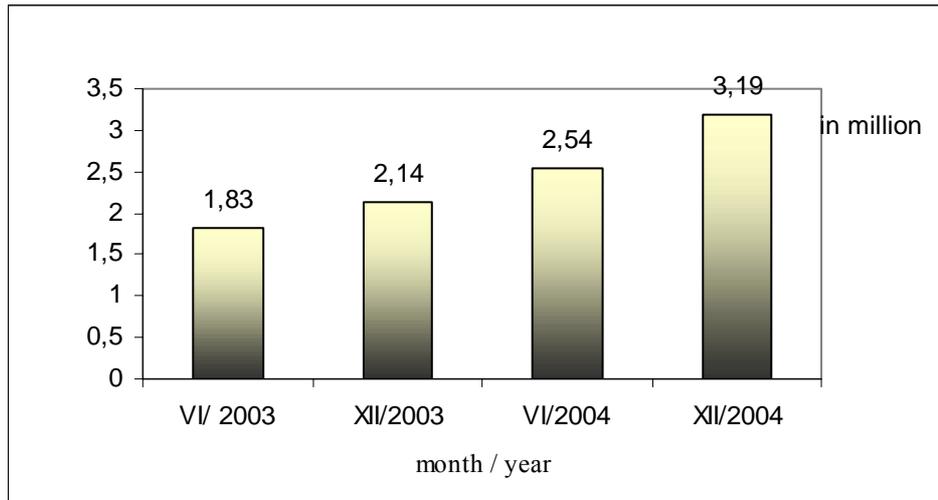
### **2.3 Strong saving tendency and growing number of loans**

But there is the fact – the amount of Czech crowns is growing up in Czech banks. It is in an absolute agreement that SMEs prefer internal financial sources to external ones. As was proved by the research. SMEs prefer internal financial sources – „own“ sources. They like „to keep“ cash. That's why they prefer to operate with their accounts.

The following discussion should help SMEs to believe that bank products and services are for SMEs helpful and useful and effectively used also can improve SMEs effectiveness and competitiveness.

For example the number of loans in the Czech Republic is growing up as seen in graph No.2.

**Graph No.2 The development of bank loans in the Czech Republic**



Source: CCB [12]

Discussing external financial sources Czech SMEs prefer leasing and loans when using bank products and services. As was also proved by the financial sources research. The reason is in a very good rate conditions. The discount rate is falling down. The economists do not expect its rising yet. Banks offer every day loans. They push their clients to use loans for their activities. The economists also refer to very good loan conditions as seen at the graph No.1. [12]

The research proved the hypothesis that SMEs do not effectively use external sources, as bank products and services. They did not understand the necessity of external sources in their cash flow, they did not believe in fact, they could *improve their effectiveness* and put up their competitiveness. Even Czech economists trust all Czech SMEs.

#### **2.4 SMEs and the information**

The most important problem in this research was the *information* spread. The respondents were not interested in further information. It was proved the the lack of information is also the reason of financial problems in SMEs. We can say it is an absence of personal influence. The questioning [8] was provided with 300 respondents every year from 2001 - 2004. The absence of information could be also the reason of SMEs problems. That is the „whole“ in their personal influence, which should be filled up. With all

necessary information for their production and other activities SMEs could rise their effectiveness and competitiveness. Czech SMEs do not survive on the remote island. They work a cope with „everyday“ problems. Good managers should look after a good running. They run their business and try to make their profit by using all necessities as financial, producers' or personal. There are shown some personal advices for SMEs managers bellow.

## **2.5 Personal influence in SMEs management**

The research at VOŠE Zlín [8] proved that SMEs in Zlín area do not effectively work with information. There is a lack of personal influence in SMEs management. This is the space that has to be filled up. SMEs managers should improve their personal attitudes. While improving them that is the way of rising up SMEs competitiveness at the SMEs market.

What kind of attitudes do the managers and employees in SMEs need to have, what kind of management system would encourage such attitudes? Mr. Masaaki Imai in his book, „Kaizen“, very simply but eloquently explains that there are three categories [6] of work. The first is maintenance work, meaning doing the prescribed work very well, following the standards and procedures. The next is improvement based on the past experience. You should not be doing your job the same way year and year out. And the last and final category is „innovation.“ While improvement is based on past work doing it better, innovating is something entirely new. You should be thinking of new ideas and new methods for future growth. And as you go up the managerial ladder, more time and effort should be devoted to the second and the third category of work.

There are five important attitudes by Etsu Inaba [2] that the successful manager in the 21st century should possess:

- Search for problems - „problem should be a key word to describe what you must seek
- „Steal“ knowledge - Do not wait for others to teach you
- Apply ideas - Learn how to use unrelated ideas for your organizational benefits
- Report for credibility - Remember, Report, Inform and Consult, without being asked
- Be at the center of communication - Be close to your subordinates. Let knowledge flow up as well as down.

Some people think that it is not difficult to recognize a good manager. The personal influence [5] seemed to be important even at the first interview

asking for a new job. But there are many modern methods for managers' and successful workmen's choice. They were used since the first world war. At these days were first used the psychological tests for american soldiers. Using of this method was widered also in many american companies as Ford. Also in Czech conditions have been started these choice methods with Tomáš Baťa company in Zlín. It was even established The Masaryk Labour Research Institute. These methods highly improved better probability of good decisions in personnel questions.

A good manager [11] should obtain confidence not only by his hard-working, outlook, calm and peace, firm decisions in difficult situations, his character features but also by his appreciation. There could be answered the question, if there is any difference between a good manager of a large company and of a small or medium enterprise. The theory usually gives many advices and management methods with no differences.

## **2.6 Competitiveness for SMEs**

Competitiveness is the important aspect of all industrial producers and all business companies not only in Zlín but also in all other regions in the Czech Republic. The approaches to competitiveness of industrial producers were not presented in the Czech Republic till 1990. Considering creation and strengthening of stability of regional policy, including other influences, tendencies and typical regional aspects of macro and micro economic tools, competitiveness could stay side by side those factors. [9]

### **Definition of competitiveness**

The economists in the Czech Republic did not find a convenient definition of the expression „competitiveness“ yet.

- producers' competitiveness and its definition does not exist yet
- competitiveness is a part of trade market
- competitiveness is also a possibility of some business undertaking advantage
- as a tool of competitiveness can be used for example low cost, product differentiation and funktion differentiation
- producers shall be able to use their competitiveness in their economic and product growth

Competitiveness is made by using best approaches from all business areas and processes as organization, new product methods, marketing, research, production, service and others.

Considering competitiveness and its sources we can talk about two factors: external and internal.

- External factors:
- sources, price and access
  - trade area
  - law and administrative regulators
- Internal factors:
- production processes
  - production instruments
  - production programme
  - management
  - employees
  - information systems

As the important part of small and middle-sized companies competitiveness is their place and part at the market. Region Zlín has quated a luck of businessmen at recent time. Zlín was a model of business development 10 years ago. Company and business closing can show that region Zlín as former model of Czech business activities rapidly got down. Zlín was considered as the richest business centre in the Czech Republic 10 years ago. This fact was influenced mostly by the agriculture cooperative Slušovice and its position at the trade market in the communist Czechoslovakia. There were many important business experiences which have been probably already all forgotten for ever. Unfortunately.

### **3. Survey results**

By using all methods mentioned above there have been proved by the SMEs survey in Zlín area two hypothesis [8]:

- SMEs do not effectively use external financial sources
- SMEs do not follow carefully all necessary information directed to SMEs and their personal influence could improve SMEs competitiveness.

It was proved that the SMEs financial and personal management is identical for SMEs and also large enterprises with some exceptions. SMEs should work more with all information. They are not interested in new technologies, new equipments because of their financial problems. They prefer in financial management internal sources to external ones (see table No.2). They are not aware of the fact that external sources could improve their effectiveness and competitiveness. SMEs should take care more about personal management which is the space for their improvement. Their personal influence could help them for example to find out white places in the market or to be more flexible.

### 3.1 Discussion

Considering competitiveness and its sources we can talk about two factors: external and internal. *External factors*: sources, price and access (trade area, law and administrative regulators). *Internal factors*: production processes (production instruments, production programme, management, employees, information systems).

As the important part of small and medium enterprises competitiveness is their place and part at the market. Region Zlín has quated a luck of businessmen at recent time. Zlín was a model of business development 10 years ago. Company and business closing can show that region Zlín as former model of Czech business activities rapidly got down. Zlín was considered as the richest business centre in the Czech Republic 10 years ago. This fact was influenced mostly by the agriculture cooperative Slušovice and its position at the trade market in the communist Czechoslovakia. There were many important business experiences which have been probably already all forgotten for ever.

The unemployment in Zlín is growing up. The unemployment extent is about 0,3% higher in Zlín than the republic average with 9,28 per cent. Businessmen in Zlín realized some important approaches [5] which could be useful in looking for the conclusions:

- first they think that the cooperation between them and universities or other school could help for looking for financial sources for small and middle-sized companies
- secondly there should be built „a new transport channel“ to the Slovak Republic because it could help in business cooperation increase
- thirdly there could be wider cooperation in goods and service exchange with our east neighbours.

There could be mentioned also some entrance steps towards these activities for business support, but not only in the area Zlín [7]:

- region economy
- region policy
- region development with all producers' activities with their strategies and aims. They are made by their long period achievements and strategies and by business development purposes and projects.

Also the Czech Republic came with the support for the small and medium enterprises. There was established Českomoravská záruční a

rozvojová banka in 1992 as an institution for financial support for small and medium enterprises. Unfortunately the businessmen say that to get subsidies or grants takes a long time and usually is not very successful. But there is appearing another new possibility for all areas in the Czech Republic – new information centres for small and medium enterprises (RPIC). They are called The regional information centres. They seem to be very useful and fortunate. [10]

Another help came from EU funds. Business could follow web pages with information about EU funds. This financial help is usually specified to direct business positions, to special business activities. While using these funds SMEs can obtain new external financial sources. They could also support their competitiveness. It is necessary to choose a convenient programme for their business activities. Recently the most popular area is the nature, environment support and the education support.

#### **4. Conclusion**

The SMEs survey proved two hypotheses. SMEs prefer internal sources to external ones. That's why they have problems with improving their effectiveness and competitiveness. SMEs do not effectively use all necessary information and the personal influence is not the main part of the SMEs management. There were shown some steps for improving SMEs management, especially in personal influence. Even the size of SMEs could be their advantage. For example because of their elasticity or their quick reaction on market demands.

In order to create a favourable environment for the small and medium enterprises the government could lay down certain policies. In education and training, savings and investment in primary resources, foreign trade, or others, etc. For example investors are missing not only in Zlín. All these factors (including macro and microeconomic influences) have been considered and have been considering since the Czech Republic entrance to the Europe Union.

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# *Insurance*

# REINSURANCE OF THE CATASTROPHICAL RISKS

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## **Abstract**

*The article discusses particular forms of reinsurance treaties that are used within activities of insurance companies. Each of the treaties in question offers different possibilities of protecting an insurance company's portfolio by providing different ways of the risk transfer. Reinsurance is necessary to perform correct financial economy of an insurance company. Hence, appropriate selection of a scope and methods of reinsurance in the context of insuring risks of catastrophic nature gains in particular importance. Catastrophical risk are more and more frequently observed and they are more and more expensive. The paper suggests application of a decision tree as a tool that supports an optimal selection of the scope of reinsurance for a given structure of the insurance portfolio.*

**Keywords:** *reinsurance; catastrophic risk ; decisions tree*

## **1. Introduction**

Risk is a phenomenon that is directly connected with carrying out any insurance activities. Moreover, risk is an inherent element that accompanies all insurance and reinsurance decisions. The notion of 'risk' is of cardinal importance for both theory and practice of insurance. The latter classifies insurance risks according to sectors and groups, and divides them while determining premium tariffs and selecting forms and scope of reinsurance. Nowadays risk functions as an ambiguous term in insurance. Such multi-aspectual nature of understanding risk – and at the same time searching for different methods of decreasing its effects and related burdens – results in the increased attention paid to an issue of the insurance risk transfer. It particularly concerns reinsurance of catastrophic risk whose effects and consequences are more and more frequently to be faced by insurance companies these days (the World Trade Center attack in September 2001, earthquake and tsunami in the South-East Asia in December 2004, hurricane Katrina in the USA in September 2005, earthquake in Pakistan in October 2005 or a series of aviation crashes in 2005).

Each insurance company is obliged to run sound financial economy that would make it possible to satisfy all claims resulting from already concluded insurance contracts.

Therefore, a problem of making optimal decisions that are related with carrying out activities of a non-life insurance company may be presented in the following way:

- meeting statutory financial requirements that are connected with covering
  - by own means - a solvency margin, amount of guarantee capital and covering an insurance fund by means of deposits,
- carrying out a deposit policy that complies with statutory constraints,
- creating technical insurance reserves that would be adequate to the size and scope of undertaken insurance activities,
- acquiring right structure of the insurance portfolio,
- reaching a planned level of the loss ratio in the insurance portfolio, and
- carrying out an optimal reinsurance policy.

## **2. Reinsurance**

Reinsurance is a specific form of insurance where an insurer transfers some part of all liabilities that result from already concluded insurance contracts to a reinsurer. Reinsurance companies usually do not cover individual risks. Covers provided are to make sure insurance companies enjoy financial security. Reinsurance is sometimes referred to as insurance of insurance in

order to highlight a fact that reinsurance is supposed to secure or strengthen meeting all insurance companies' liabilities to the benefit of the insured. However, it is necessary to underline the fact that a reinsurer has no obligations or rights that result from insurance contracts that are concluded by an insurance company that is reinsured. Therefore, reinsurance does not affect the insured or insurer directly.

Wishing to demonstrate all formal and legal aspects of reinsurance thoroughly, it is necessary to quote its definition coined by Montalbetti: 'reinsurance is a contract by virtue of which one insurance company that is called a ceding company cedes all or part of the risk insured or a group of risks insured of a particular sort together with an appropriate part of premiums to some other insurance company that is called a reinsurer. The reinsurer then commits itself to pay its ceding company an appropriate part of benefits that are to be paid to the insured'.<sup>1</sup>

Reinsurance is a specific extension of insurance. Insurance companies accepting some risk in their portfolios demand some premiums that together with incomes generated while depositing insurance funds should be sufficient to cover compensations and benefits, and other costs born while carrying out insurance activities. The means in question should also allow for generating some profit. However, it sometimes turns out that insurers' incomes obtained are insufficient.

Such a situation may result from:

- fierce competition on the insurance market that makes insurance companies reduce insurance premiums;
- disadvantageous loss distribution that results in some increase in the loss ratio;
- accumulation of great damages or emergence of catastrophe damages;
- decrease of incomes generated by means of insurance deposits; and
- exceeding of planned volume of insurance activity costs.

Reinsurance is one of the means that provides some cover against events that might prove disadvantageous for any insurance company, and it makes up a major factor that supports insurance companies' activities allowing them, inter alia, for:

- risk distribution together with a possibility to apply a principle of mutuality;
- stabilization of the loss ratio level;
- increase in insurance capacity;
- protection of insurance company' balance surplus; and
- additional financial cover against effects of catastrophe damages.

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<sup>1</sup> See Montalbetti [1970], PWE Warszawa, p. 13.

Hence, reinsurance fulfils two fundamental functions: a technical function and a financial one.

As quoted from E. Montalbetti: ‘a technical function of reinsurance protects insurance companies from excessive increase in the loss ratio in a given period incurred as a result of occasional great damages or unusual accumulation of normal damages in time resulting in significant deviation from the average loss ratio’<sup>2</sup>.

On the other hand, a financial function is mainly manifested in accepting a large part of compensations paid to the insured by insurance companies. It allows ceding companies to save some means in form of reserves of premiums and reserves for non paid losses.

Reinsurance may be carried out in different forms. A form of reinsurance should be understood as a way of sharing risk between a ceding company and a reinsurer. Reinsurance contracts are most frequently divided into two basic groups:

- Proportional reinsurance contracts that are to be divided into quota share treaty, surplus treaty and quota and surplus treaty share; and
- Non-proportional reinsurance treaty that include excess of loss treaty (with a further division into reinsurance excess of loss treaty for risk and for event ) and stop loss ratio (aggregate excess of loss ratio treaty)

Proportional reinsurance is characterised by the fact that a reinsurer’s share in each market is determined in the agreed relation to a ceding company i.e. the reinsured. The reinsurer takes over a determined part of an insurance premium that is decreased by the reinsurance commission and then participates in covering all damages that are reported in the reinsured portfolio to the same extent. In proportional reinsurance the reinsurer unequivocally shares their lot with the reinsured.<sup>3</sup>

Conversely, unproportional reinsurance is characterised by the fact that while sharing risk between the reinsured and reinsurer there are no pre-arranged proportions.<sup>4</sup> Reinsurer will be obliged to cover damage or equalise value of the loss ratio only in the very case when their pre-set volume is exceeded.

### ***2.1 Quota share reinsurance***

Quota share treaty are the simplest form of reinsurance. They involve providing reinsurers with a given part of the whole risk portfolio included in the contract. The major advantage of the quota share treaty is to be found in its simplicity. In order to administer such a contract neither particular

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<sup>2</sup> See Montalbetti [1970], PWE Warszawa, pp. 28-29.

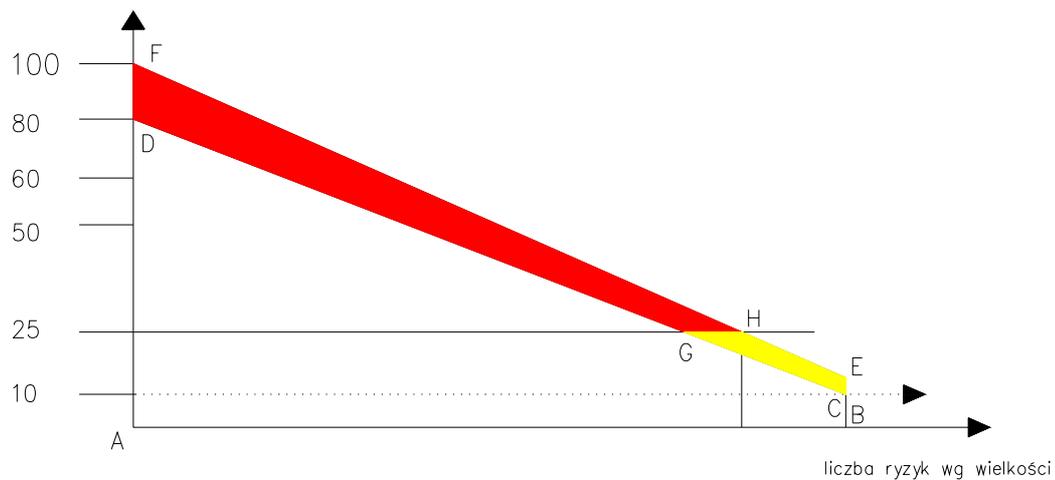
<sup>3</sup> Banasiński: [1993], pp. 68-169.

<sup>4</sup> Montalbetti: [1970], p. 89.

qualifications of the insurer's personnel nor specialist information technology assistance are required because – as a general rule – risks subject to contracts are automatically subject to reinsurance in their determined part.

In the quota share treaty cession refers to a specific amount or share in each ceded risk. The same proportion will be applied with reference to the sum of insurance, premium and possible damage. The Figure 1 presents a mechanism of quota share reinsurance.

**Figure 1 Quota share reinsurance**



Where: liczba ryzyk wg wielkości – a number of risks according to their size  
 Source: Monkiewicz. [2000], p. 142.

In the Figure 1 a vertical axis shows volume of risks measured by sums of insurance. Horizontal axis illustrates a number of risks. Total volume of risks subject to insurance protection is manifested by the ABEF quadrangle field. Applying 20% of quota share reinsurance a ceding company's participation in risks will be decreased, and manifested by the ABCD quadrangle field. Field of a CEFD figure, on the other hand, manifests reinsurer's 20% share in risks.

Quota share reinsurance disadvantage is observed when an insurance company changes its decisions. For instance, the insurer may conclude that they accept higher deductible (PLN 25 million) CEHG field is unnecessarily reinsured. Quota share reinsurance is always on the same level and it covers small and great risks and good and bad risks

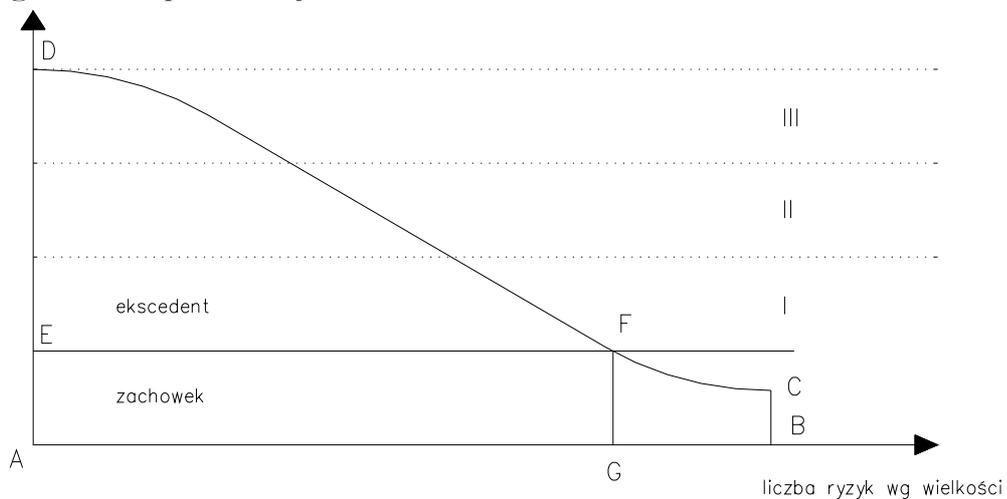
## 2.2 Surplus treaty reinsurance

Quota share treaty disadvantage may be – to some extent – eliminated by surplus treaty reinsurance that allows for complete equalisation of volumes of risks that are observed in the insurance portfolio. In surplus treaty insurers – utilising statistical information and actuarial tools – firstly determine volume of maximal deductibles in particular risk sectors. Such shares are called , line or maximum. Other than these shares of some part of risk (excedents) are ceded to reinsurer by the insurance company.<sup>5</sup>

Mechanism of surplus reinsurance treaty is presented in Figure 2. Risk field is shown by the field of ABCD. Field of risks that are not subject to reinsurance is a field of GFBC. The other part of the ABCD figure i.e. AGFD is a field of risks that are subject to reinsurance. EFD represents an excedent and AEFG shows insuring company's.

In practice excedent is determined to the value of line. In case of greater risks a few excedents may be set. The Figure 2 presents the situation when three excedents are observed.

**Figure 2 Surplus treaty reinsurance**



Where: zachówek – maximum, ekscedent- line  
 liczba ryzyk wg wielkości – a number of risks according to their size

Source: Monkiewicz , [ 2000], p. 142.

<sup>5</sup> Ciuman: [1996], p. 27.

In business practice there are also quota share and surplus treaties.

### ***2.3 Excess of loss treaty***

As a result of such reinsurance contracts the whole portfolio of particular insurance is reinsured quotatively, and selected determined risks that are higher than the insurer's accepted level are reinsured by means of excess of loss treaty insurance.

Essence of the excess of loss treaty lies in reinsurer's commitment to cover this part of a loss that is higher than a ceding company's share in the loss, and lower than the sum that is a limit of reinsurer's liability. The amount of loss that makes a reinsurer take over ceding company's liability is called a priority or excess point.

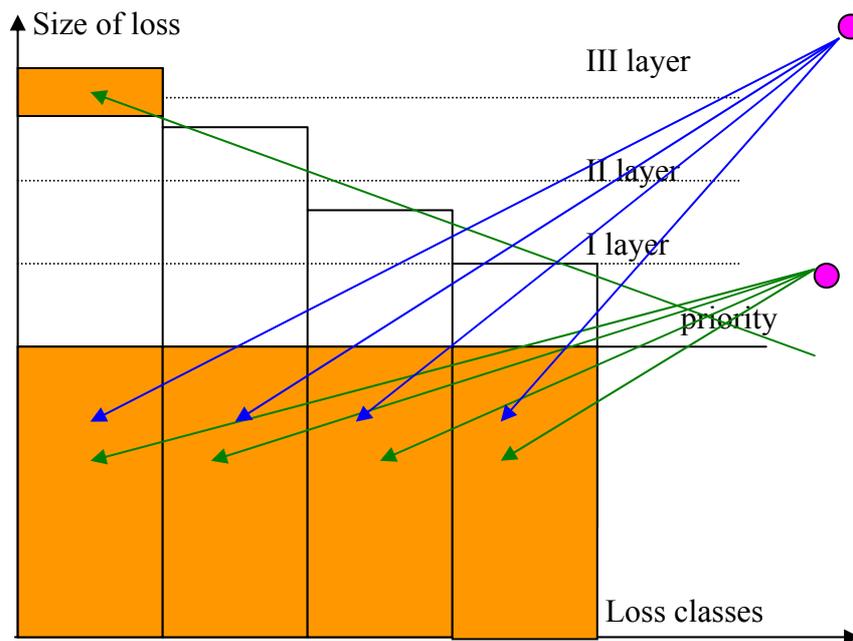
A limit of reinsurer's liability taken as a result of one fortuitous event is called loss ratio working layer.

Excess of loss treaty is applied in order to secure financial equilibrium of insurance transactions that might be disturbed by emergence of particularly high losses in the portfolio. Excess of loss may take two forms:

- a surplus that is calculated in the relation with risk; and
- a surplus that is calculated in the relation with an event.

In case of a surplus that is calculated in the relation with risk, a loss that concerns the whole single risk is involved. In case of a surplus that is calculated in the relation with an event, a sum of losses that result from a single event is involved. Excess of loss treaty is shown by the Figure 3.

**Figure 3 Excess of loss treaty**



Source: Monkiewicz , [ 2000], p. 145.

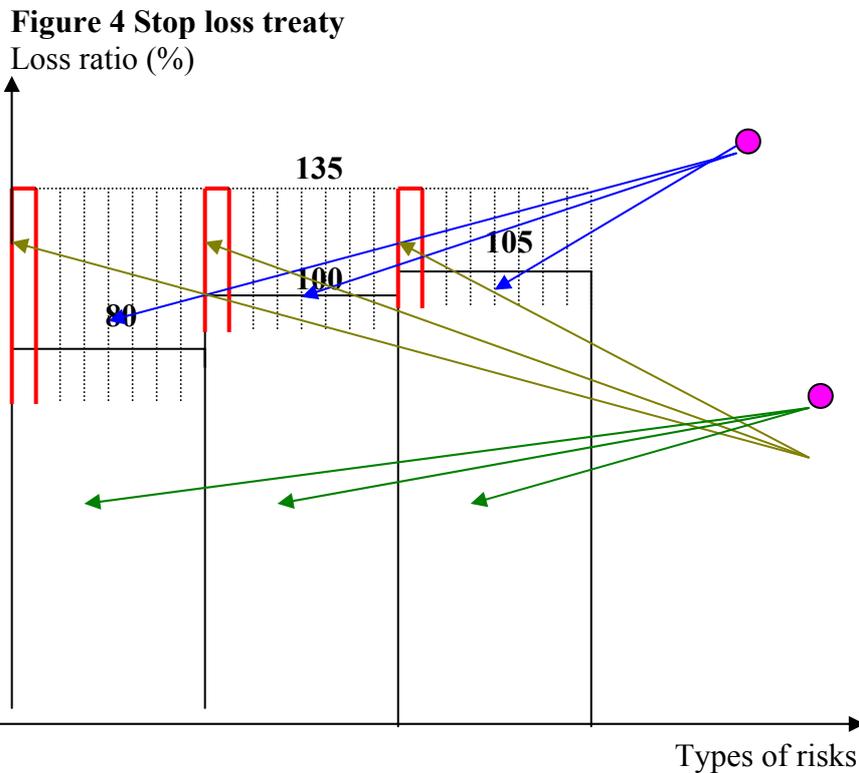
In the Figure 3 particular losses were placed on the horizontal axis. The vertical axis illustrates the amount of losses in question. A ceding company's liability concerns losses up to priority (deductible) and losses that exceed the last loss ratio working layer. Losses below priority and above loss ratio working layer are covered by the reinsurer. Loss layer field is usually divided into some number of limits reinsured by different re-insurers (the Figure 3 presents three of them). Such diversification of liabilities among different reinsurers is particularly important in the situation of a complex cover whose priority is set on a very low level.

Aggregate excess of loss treaty (stop loss) is another form of non-proportional reinsurance. In this type of reinsurance reinsurer's liability concerns a situation when value of reported losses in a given year results in either exceeding of a determined loss ratio or a determined quota level. This type of a reinsurance contract concerns the whole insurance portfolio of a given kind or even the whole portfolio of insurance of an insurance company. In aggregate loss treaties three basic principles are followed:

- generally, reinsurer's liability commences only when an insurer enters the zone of a technical loss or exceeds a calculation level of rates;
- a ceding company participates in re-insurer's losses i.e. reinsurance cannot cover the whole excess of loss; and

- reinsurance cover has upper limits exceeding of which results in the complete liability of the ceding company<sup>6</sup>.

Aggregate excess of loss is shown by the Figure 4.



Source: Monkiewicz , [ 2000], p. 147.

Assuming that a concluded contract stipulates a reinsurance cover of excess of loss in the situation when loss ratio exceeds 80%, 105% and 110% depending on the kind of risk Simultaneously assuming the cover in question finishes at the moment when the loss ratio exceeds a level of 135%. In the 80%-135% loss ratio range depending on the kind of risk a determined reinsurer's liability amounts to 80%. In case of a ceding company it is 20%.

To conclude, it is necessary to state clearly that insurance activities are always accompanied by the reinsurance ones. The only thing that changes is the form and scope of reinsurance since technological development results in emergence of new risks and in the increase of those already existing.

<sup>6</sup> Compare Monkiewicz, [2000], pp. 143- 148.

Reinsurance market development is a natural consequence of the increase observed on the market of insurance services. The problem to be solved by insurers is to select the most beneficial combination of reinsurance forms. In principle, all presented above forms of reinsurance may be applied by insurers to different extent and in various combinations. Each of the variants to be applied will differently influence the kind and amount of loss recovered by insurers. Quote share treaties and surplus treaties together with excess of loss treaty based on single risks will decrease a size of losses incurred as a result of single events. On the other hand, excess of loss treaty as a result of a single event will decrease insurance company's exposure to catastrophe events or accumulation of events in a given year. In contrast, aggregate loss treaty is the most suitable to avoid adverse effects of mass events that are observed in a given year.

Forms and methods of reinsurance that is applied by reinsurers will depend on numerous factors including:

- a level of reinsurance market development;
- a form of risks to be reinsured;
- a size of insurance company's portfolio;
- current insurance company's financial standing;
- their experience in reinsuring insurance; and
- skills of managerial staff<sup>7</sup> and threats posed by catastrophe risks.

An insurance company should carry out an optimal reinsurance policy. In order to do this and to foresee changes in its environment effectively, such a company does need to know the market well and it has to be flexible.

In their portfolios, reinsurers do not always retain all risk ceded by insurance companies. They may carry out secondary distribution of already underwritten risks by means of further reinsurance, i.e. retrocession. A necessity for retrocession arises when reinsurers have already underwritten in their portfolios risks that are excessively high and potential coverage of such risks exceeds reinsurers' financial capacities.

### **3. Optimal reinsurance**

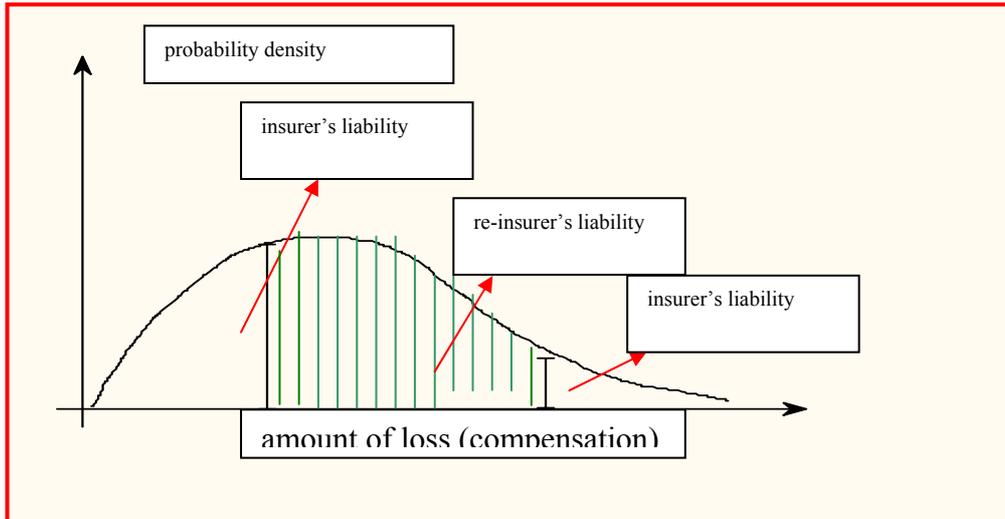
A reinsurance contract is concluded between an insurance company and a reinsurer who makes a charge in form of a part of premiums collected by an insurance company in return for appropriate protection of a part of insurance company's portfolio. However, it is not the last stage of risk distribution. A reinsurer may also transfer some part of its portfolio to a

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<sup>7</sup> Ciuman: [1996], pp. 35-36.

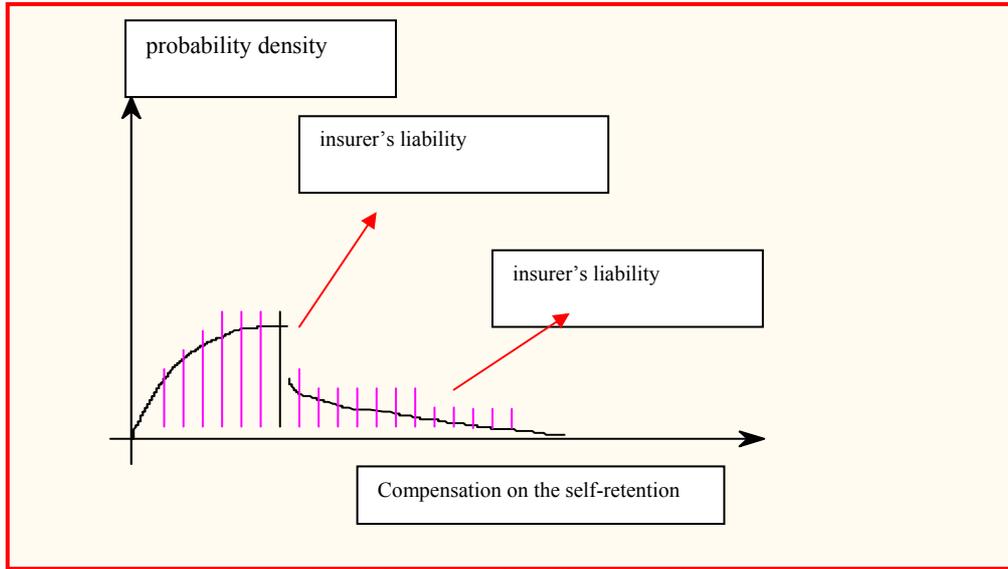
retrocesionaire who will then reinsure it. Such a process may consists of many stages and, as a result, some part of insurance company's own risks together with parts of other insurance companies' portfolios may return to the portfolio of the insurance company in question. Risk sharing by means of self retention, different forms of reinsurance contracts or setting limits of reinsurer's liability leads to some change in the shape of the very distribution. This way two distributions are obtained: a retained part of risk and a transferred part of risk (meant for reinsurance). Figures 5, 6 and 7 present these distributions graphically.

**Figure 6 Distribution of loss probability**



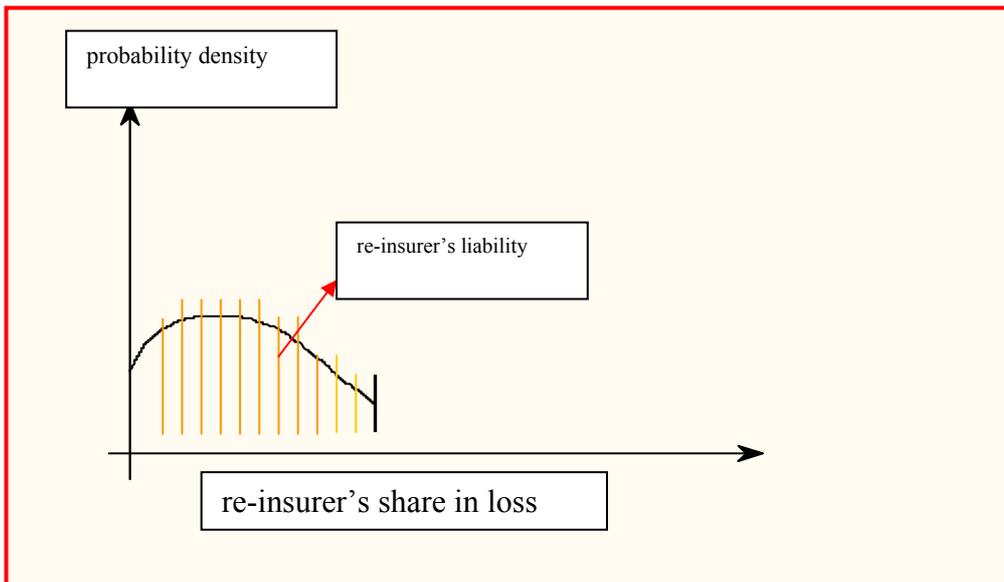
*Source: own on the basis of: Samson, D., Thomas, H.,*

**Figure 6 Scope of insurance company's liability in the distribution of loss**



*Source: own on the basis of: Samson, D., Thomas, H.,*

**Figure 7 Scope of insurance company' liability in the distribution of loss**



*Source: own on the basis of: Samson, D., Thomas, H.,*

From the perspective of an insurance company, it is important to find optimal proportions of the very distribution taking insurance company's

portfolio structure into consideration, i.e. to choose a scope and forms of reinsurance that would bring the insurance company in question the highest possible financial benefits. A very good and effective tool that might help while solving this type of problems may be provided by decision trees.

As it has already been mentioned, a method of equality of collected premiums and expected amount of paid compensations is a basic method that is used in insurance to calculate premiums. An insurance company has to match a scope and forms of reinsurance with its insurance portfolio size and structure correctly. A problem of insurance risk transfer that is a prerequisite for a reinsurance contract arises here. Because of their construction, proportional reinsurance contracts naturally ensure risk transfer. There is only one exception when a re-insurer determines an upper limit of its liability. A similar situation takes place in case of a disproportional reinsurance contract of an excess of loss type.

There is a different situation in case of reinsurance of aggregate excess of loss. For this type of reinsurance, it is not possible to point out elements of risk transfer evidently. Since risk transfer is one of the elements of the reinsurance contract, there is a clear necessity to determine constraints that will facilitate transferring some part of ceding company's liabilities adequate to the costs borne to a re-insurer in order to comply with reinsurance contract provisions. The fact that both in Poland and in the world such constraints have not been determined yet is a major problem that generates additional risk for activities of insurance companies.

As Seweryn<sup>8</sup> writes, a standard number 113 ('Accounting and Reporting for Reinsurance of Short – Duration and Long Duration Contracts') was published in 1992. This document determines the following conditions for reinsurance contracts:

- reinsurer underwrites a large part of insurance risk; and
- there is a real probability that a reinsurer will incur major financial loss as a result of a transaction made.

To meet all conditions stipulated in the re-insurance contract it is necessary to meet the above conditions simultaneously. Hence, with reference to the above statements, a contract between a reinsurer and an insurance company may be deemed a reinsurance contract only in the situation when there is a real probability that a reinsurer will incur major financial losses. However, there are some problems to be discussed here:

- firstly, how to understand a notion of 'a major financial loss?';
- secondly, how to assess a level of such probability?; and

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<sup>8</sup> Compare: Seweryn [2002], pp.3-6.

- thirdly; are there sufficiently exact and historically complete statistical data that will allow for estimation that would be precise enough?

As far as the major loss is concerned, such loss is thought to be incurred when there is at least 10 per cent loss in relation to the price of reinsurance. However, this statement is not explicit. After a one year period such understanding is clear for an insurance company. Before a reinsurance contract is concluded – it is not. Theoretically, a good measure of a loss incurred by a reinsurer may be provided by a traditional loss ratio of a premium written to a contract. Such ratio is defined in the following way:

$$\text{LR} = \frac{\text{total amount of compensation paid}}{\text{premium earned}} \quad (1)$$

However, this ratio does not include costs of loss liquidation borne by insurance companies<sup>9</sup>. As a result, an important question if a value of a loss ratio that will allow for assessing effectiveness of a concluded reinsurance contract is known emerges. To follow FASB 113 standard properly, it is necessary to know exact probability distribution of a loss ratio on the basis of historical data. Nevertheless, even the most accurate statistical data do not guarantee that a forecast to be obtained will come true. Therefore, a decision tree is a tool that may effectively support decision made by an insurance company in the discussed area. A decision tree enables to analyse consequences of all decisions that are made in the conditions of uncertainty and risk. Such a situation is to be dealt with by an insurance company while it decides about a form and scope of reinsurance.

#### 4. Decision tree

An insurance company in its activities aims at reaching certain objectives of a pre-determined hierarchy. The hierarchy in question determines preferences and selection criteria of decisional variants. Decisional variants determine possible actions that meet pre-set constraints and are to help the insurance company in question realise its objectives. Such a mechanism leads to a necessity for making decision in conditions of uncertainty and risk. In conditions of uncertainty and risk typical elements that compose a decisional situation include:

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<sup>9</sup> See: Seweryn [2002] pp. 3-6.

- a decision maker (an insurance company);
- a set of acceptable decisions (variants of forms and scope of reinsurance);
- a set of the external world states (a set of possible realisations of value of a random variable);
- a utility function that presents profits or losses that result from making certain decision; and
- a level of uncertainty about realisation of states of the external world<sup>10</sup>.

State of the external world – sometimes referred to as the states of Nature – directly influence effectiveness of realisation of objectives set. They are of random nature and are characterised by a possibility to realise only one state in the analysed period. They result from the effect of external factors that are out of a decision maker's (an insurance company's) control.

Making decisions in conditions of risk and uncertainty is always accompanied by the selection of the utility function form. This function determines utility (amount of payment) that accompanies each decision made (each selected strategy) for each of the states of nature.

Realisation of the specific state of nature is characterised by uncertainty that is expressed by the probability that some particular event will take place. If the probability is known, decisions are made in the conditions of risk. However, if it is unknown - decisions are made in the conditions of uncertainty.

While determining a specific set of states of Nature the following conditions have to be met:

- states of nature must be events that are mutually exclusive;
- probabilities of realisation of all states must sum to 1;
- it is necessary to include all possible states of nature;
- probability of realisation of each state must be within an interval (0;1);
- probability of a sum of two states is equal to the sum of probabilities of emergence of each of those states.

A decision tree is a graphic method to present and solve a specific decision problem. Such a tree consists of decision and chance nodes. A decision node signifies an event that is related with a selection of one decisional variant. A chance node means a random event that involves realisation of one of possible states of nature. Arrows that come out of decision nodes indicate possible decisional variants. Arrows that come out of chance node show possible states of nature. Above a chance node an expected amount of payment is given.

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<sup>10</sup> Compare Nowak [1999] p.10

In order to construct a decision tree for any problem, it is necessary to form a matrix that presents utility of particular decisions for a decision maker. Insurance company's decisions that concern an optimal selection of a sort of methods and scope of reinsurance may be very well modelled by means of a decision tree, as it is illustrated by the following example. To solve a problem of an optimal selection of reinsurance by means of a decision tree an insurance company must have two pieces of information:

- probability of realisation of a particular state; and
- expected utility or benefit that results from realisation of a specific state.

Let us consider the following decisional problem of an insurance company. An insurance company has its insurance portfolio that does not require reinsurance or may be reinsured by a surplus reinsurance treaty with one or two surpluses. Cost of purchase of the first surplus for the loss 25-50 million PLN amounts to 20 million PLN. Cost of purchase of the second surplus for the loss 50-75 million PLN amounts to 15 million PLN.

With the above assumptions, the following matrix of payments for the problem in question is obtained:

**Table 1 . Matrix of payments for reinsurance decisions**

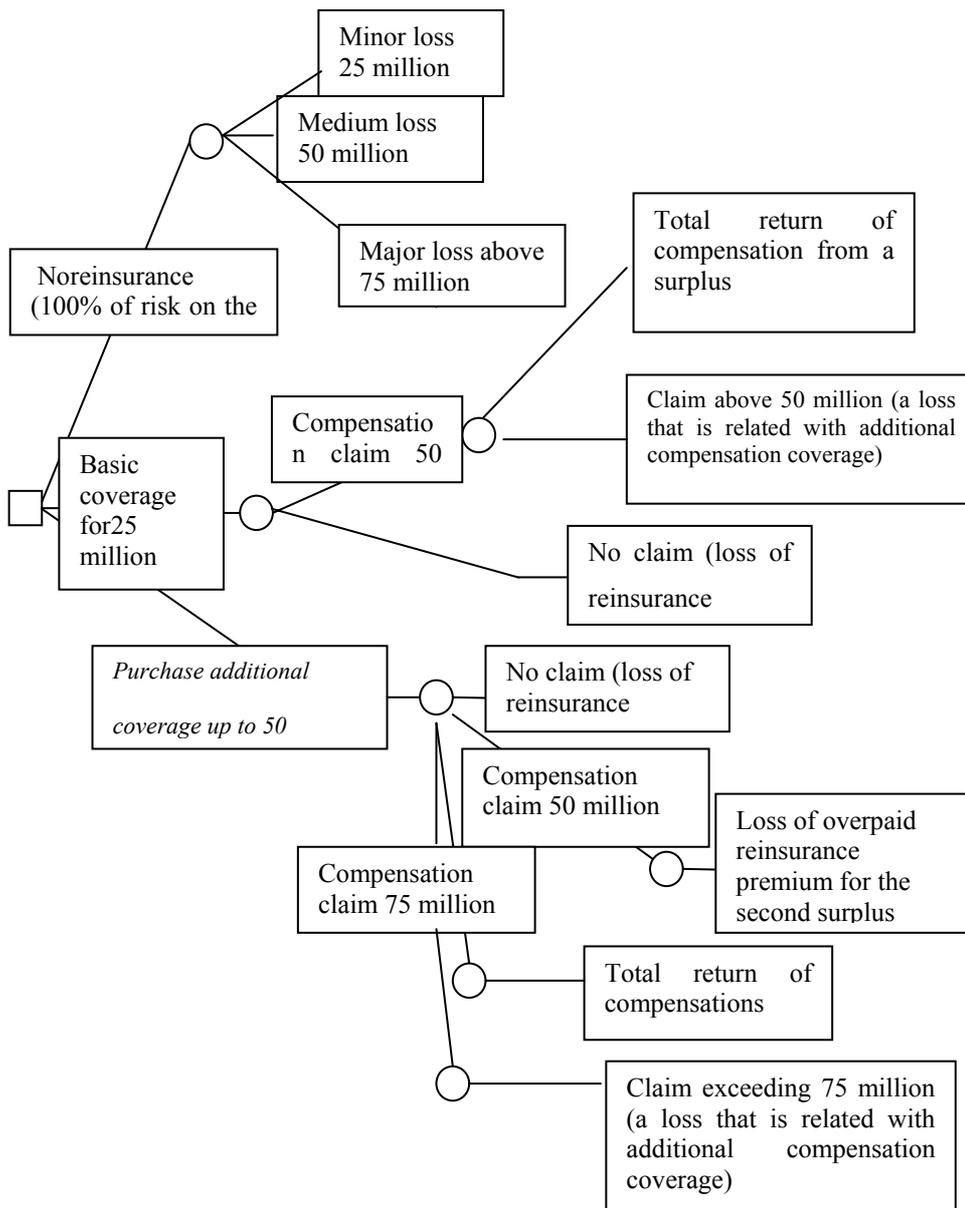
Decision of an insurance company	Cost of compensation		
	loss of 25 million	loss of 50 million	loss of 75 million
No reinsurance	25	50	75
Reinsurance with one surplus	45	20	70
Reinsurance with two surpluses	60	50	60

*Source: own based on pre-arranged data*

On the basis of this information it is possible to construct a decision tree that allows for making the most beneficial reinsurance decision for an insurance company.

Below, The Figure 1 presents a decision tree for the quote reinsurance treaty in a non-life insurance company.

**Figure 1 Decision tree for the optimal selection of the quote reinsurance**



Source: Author's calculation on the basis: Samson, D., Thomas, H.,

## 5. Conclusion

While selecting a decision it is possible to use a principle of benefit maximisation. This principle may be characterised in the following way:

Using a probability distribution of emergence of subsequent states of nature, expected benefits for particular decisions are calculated. A recommended decision is a decision for which an expected benefit is maximal. In case of ambiguity, all decisions for which the above condition is met are recommended.

The approach suggested above allows an insurance company to analyse all decisional situations exactly and select a scope and forms of reinsurance in the optimal way.

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# THE NEW APPROACH OF THE BEST SOLVABILITY SYSTEMS FOR INSURANCE COMPANIES' SURVEILLANCE

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## **Abstract**

*The last years events on the international insurance market point out that, the financial market volatility and the dynamics (more and more emphasized) of the business environment influenced in a high measure the financial security of the insurance companies. In this way, International Association of Insurance Supervisors – IAIS – has elaborated some principles, which have to represent the base for the solvability regime. The systems utilized by the surveillance institutions to evaluate the solvability insurance companies differ from one country to another. Regarding the IAIS opinion, the objective of surveillance institution is to maintain an efficient, fair, sure and stabile insurance market in order to protect the interest of the insured persons. As well, the solvability and the adequated capital regime represent one of the most important elements for the surveillance activity of the insurance companies. The solvency causes discussions permanently and, as a recent proof, in the European Union, it has been started the so-called Solvency II project which will run on a few years period and it will have as purpose to determine whether fundamental changes of the solvency system and a risk orientated approach are necessary.*

**Keywords:** *insurance activity, risks, solvency system, surveillance institution, models of solvency*

## 1. The importance of the solvency in the insurance activity

The solvency reflects the capacity of an insurance company to achieve all obligations resulting from the contracts in any moment, even some obligations related to the current activity will be closed after few years.

The international law in the insurance field forecast the existence and the maintenance of a minimum amount of the net asset of a company, that is a solvency margin.

*The International Association of the Insurance Surveillance Institutions – IAIS* – defines the **solvency margin** as been represented by the positive difference between the assets and liabilities of the insurer, in the conditions which are determined in accordance with some standards that refers to their evaluation process. This difference should be higher than the value established by the standards regarding the minimum limit of the solvency margin of the insurers.

The settle up of the solvability supposes *the knowing of the risks* the insurer is confronted with and the *necessity of capital in order to face these risks*. The future activities of the insurer are uncertain, and the role of the solvability margin is *to guarantee the fact that insurer has sufficient assets in order to pay the future damages*, with the purpose of insured person's protection.

In the directives of the European Union is underlined the necessity to settle up a solvency margin which should take into consideration the whole activity of the insurers and which is represented by “ the free obligation assets”.

In the condition of the free circulation of the services, *the protection of the insured person interests supplied by the insurers should be the same*, which means that the solvency requests – as main protection instrument – should be the same for all insurance companies from the European Union.

## 2. Solvency Margin Types

There are several notions regarding the solvency margins, as following:

**1. The commercial solvency margin** reflects the net asset of an organization and is determined on the base of the current reports established by the normative. The drawback consist on the fact that in the determination of the commercial solvency margin are taken in the consideration the assets from the balance sheet, even some of these should not be included because

prudential considerations, as well, all obligations, with no adjustment in function of their underevaluation risk.

**2. The statutory solvency margin** represents the surplus of the assets over the liabilities, both being evaluated on the base of strict relementation. These relementation regards the accounting statements, imposing special prudential principles and rules, as well, the limits of the margin necessary in a context. In the category of the assets which were not taken into account are included the assets with a high risk, eventually the tax exemption offered as a result of a accumulated losses and some investment of the company in the affiliated societies. The level of the statutory solvency margin will be always less than the commercial solvency. The difference between these will be as higher as is the weight of the excluded assets in the total assets.

For the difference between the assets and the liabilities of the insurer determined and evaluated in conformity with the law it is used the name of **disposable solvency margin**.

**3. The minimum required solvency margin** represent the minimum level of the statutory solvency margin, calculated in conformity with a methodology established by law or methodological standards. The surplus over the compulsory minimum solvency margin is named **the surplus of the minimum margin**.

Considering the minimum solvency margin as an expression of the insurer's capacity to accomplish all his liabilities against the insured persons in an extreme situation, it should not be understood that an insurer does not have the paying ability if the margin is under a admitted minimum level.

The role of the minimum solvency margin is to take over the effects of the unquantifiable risks, as well, the impact of underestimation the quantifiable assumed risks or the risk of unusual variation of those, in order to offer to the insurer and to the surveillance authorities enough time to correct the situation generated by the materialization of the respective risks.

### **3. Regulation systems of the solvency used on the international level**

The modalities used by the surveillance institutions for controlling the financial security of the insurance companies are different from a country to another. In many countries, for the insurers are imposed minim values for the solvency margin and in some of them are imposed the constituting of deposits as a form of protection for the insured person interests. We can mention the main regulation system for the solvency used on the international level, as they are defined in note sent to the Subcommittee for Solvency of

the Insurance Commission from the European Commission, document issued in March 2001 and in the OECD Report regarding the supervision of the solvency in the member countries (Insurance Solvency Supervision, OECD Country Profiles, 2002):

***1. Solvency systems which are based on the models adapted to the specific of each company (ruin models, resilience tests).***

This approach comes from The United States and is less familiar to the European supervision institutions, being used just in Canada, Australia and some of the North American states. In conformity with these methods, the insurance companies should pass a test which simulate the possible financial consequences, starting from the hypothesis of some negative changes of the assets or liabilities' values. The difficulty, and in the same time, the major deficiency of this model consist, in principal, on the selection of the test scenario: the risk factors taken into consideration should be chosen and dimensioned with a lot of attention in order to get a correct image on the solvency of the tested company. The subjective nature of these working hypothesis selection, as well the choose of the type of test used determine this model to be less popular.

***2. RBC Systems (Risk - Based Capital)***

The RBC system, used on large scale in US was adopted by NAIC (National Association of Insurance Commissioners), for the life and health insurance industry, with the purpose to answer to the necessity of a standard regarding the capital adjustment which should take into consideration all risks which each insurer is confronted with: technical, investment, commercial, management and so on. The weight amount of the adequate values for each risk represents the minimum capital requested to that insurer. New versions of this model are used in Canada and Japan.

The most objections raised by this model are related to the difficulty and accuracy of the calculation, as well to the lack of transparency for the public.

***3. The three pillars system (solo solvency)***, used mostly exclusively in the European countries, this system is based on three requests imposed to the insurers: adequate reserves, assets and the minimum solvency margin imposed, calculated with the method of fixed ratio. The limits of this approach have the origin in its own quality, simplicity. The most objections mentioned in the specialty literature refers to the narrow profile taken into consideration and to the incapacity of the capital requests formulated in order to reflect the risks specific to every company, as well to the capital or the reserves report to the gross or net premium, gross or net reinsurance, which

do not take into consideration the variation of the premium, which, in the case of a soft market, have no advantages for the insured persons, the level of the guaranteed protection being reduced.

The system has not being contested by the European supervision authorities so far, and need some improvements in the scope of harmonize and reciprocal validation of the supervision activity in the European Union countries.

#### **4. The standardize of the solvency requests for the insurance companies from European Union**

When talking about the free movement of services, the protection by the insurers of the interests of those insured must be the same, this meaning that the solvency requirements – as a major protection instrument – must be the same for all the insurance companies in the European Union.

The establishing of the solvency means to know the risks to which an insurer is exposed and a necessary capital to overcome those risks. The insurer's future activities are uncertain, and the part of the minimum m.s. is to guarantee that the insurer has sufficient assets to pay the future damages, with the purpose of protecting the insured.

The present system of solvency was created in the '70s, being actualized relatively recently throughout two Directives issued in 2002, as part of the *Solvency I project*. The solvency permanently causes discussions and, as a recent proof in the European Union, it has been started the so called *Solvency II project* which will run on a few years period and will have as a purpose to determine whether fundamental changes of the solvency system are necessary, a risk orientated approach.

In the two directives, the following **concepts** are used:

- *compulsory solvency margin*, representing the amount by which the assets value overcome the bonds' value, imposed to an insurance company which is going to practice the authorized activity;

- *the solvency margin available*, representing elements by the nature of capital, which can be taken into account for the estimation of the compulsory solvency margin;

- *the guarantee or safety fund*, representing 1/3 of the compulsory solvency margin, which can't be lower than a minimum level.

One of the **new elements** introduced by the 2 directives from 2002 refer to the existence of the safety fund, its volume being different for the two

types of insurance, respectively: 2 million EUR for non-life insurance and 3 million EUR for life-insurance.

The two directives through which the solvency margin are actualized ensure minimum conditions for the harmonization of the legislation of the member states, and, in turn, the states can impose even more restrictive conditions through their national legislation, thus maintaining their freedom of adapting the compulsory solvency margin to the specific conditions of their markets.

## **5. The solvency regime for the Romanian insurance companies**

### ***5.1 Results obtained on the Romanian insurance market compared to the European Union States***

*The international insurance market* has shown fluctuating evolutions from one period to another. Thus, at the end of 2003, some economically developed countries dominated the insurance market, like USA with a market share of 36% of the world market total, Japan with 16% and Great Britain with around 9%, together having 61% of the total gross premiums received on the whole insurance activity. Referring to the structure of the insurance, in the life insurance domain, on the first three ranks worldwide there are the same countries with a market share of 29%, 22% and 10%, but in the non-life insurance domain, the rank of Great Britain is undertaken by Germany, closely followed by the latter. So, the weight of the gross premium in the non-life insurance domain by the first three countries is of 60.51% as it is shown in Table 1.

These countries together with France, Italy and Canada, meaning the great seven industrialized powers of the world, known as the G7, obtained around 78% of the amount of insurance premiums from total market, life insurance and non-life insurance.

**Table 1 Worldwide market share regarding gross premium level on total insurance activity and on structure in 2003**

<i>Country</i>	<i>% Total insurance</i>	<i>% Life insurance</i>	<i>% Non-life insurance</i>
<i>United States of America</i>	<b>35.90</b>	<b>28.79</b>	<b>45.23</b>
<i>Japan</i>	<b>16.04</b>	<b>22.23</b>	<b>7.92</b>
<i>Great Britain</i>	<b>8.63</b>	<b>9.64</b>	<b>7.31</b>
<i>Germany</i>	<b>5.77</b>	<b>4.56</b>	7.36
<i>France</i>	5.48	6.22	4.51
<i>Italy</i>	3.75	4.29	3.05
<i>Canada</i>	2.03	1.43	2.81
<b>G7</b>	<b>77.60</b>	<b>77.16</b>	<b>78.19</b>
<b>EU 15</b>	<b>31.71</b>	<b>32.70</b>	<b>30.41</b>
<i>EU 25</i>	32.27	33.06	31.23
<i>Total worldwide</i>	100	100	100

*Source: Swiss Re, Sigma, No 3 (2004), update February 2005, processing page 3-9*

*The European insurance market* registers quick and consolidating changes, mainly due to the plans and strategies made by the European Union, which refer to the extending of the insurance transactions. However, the differences between the organizational and the national cultures have hindered the creation of the required financial mechanisms. The best results have been obtained on the life insurance market, which have promoted the efficiency of the activity by cost reduction.

The evolution of the main indicators registered on the **Romanian market compared to the results of the European countries** and to the worldwide results, in 2003, shown in Table 2, emphasizes the development of the insurance activity in these countries and the capacity of absorption of the insurance market.

Despite the fact that the effective gross premium volume is higher in some states than in others, **the indicators of the insurance market**, meaning the insurance density and insurance penetration, do not show the same situation. So, as it concerns the gross premium, on the first three ranks there are situated Great Britain, Germany and France, while from the insurance penetration in GDP, on the first three ranks there are situated Great Britain with 13.37%, Switzerland with 12.74% and both Holland and Belgium with 9.77%. If we consider the insurance density, in the hierarchy are placed

Switzerland, Ireland and Great Britain with 5 010 EUR/capita, 3 932 EUR/capita and 3 689 EUR/capita.

**Table 2 Romanian insurance market compared to the results registered in the European countries in 2003**

Country	GP* (mill EUR)		Insurance density** (EUR/capita)		Insurance penetration*** *	
	Total insurance	Life insurance	Total insurance	Life insurance	Total insurance	Life insurance
Great Britain	218 359	137 035	3 689	2 315	13.37	8.62
Germany	151 168	67 913	1 837	825	7	3.17
France	144 857	93 311	2 430	1 566	9.15	6
Italy	98 908	63 449	1 720	1 104	7.45	4.86
Holland	44 485	22 453	2 746	1 386	9.77	4.93
Spain	41 607	17 737	1 015	433	5.58	2.38
Switzerland	36 073	21 871	5 010	3 038	12.74	7.72
Belgium	29 925	18 589	2 905	1 805	9.77	6.91
Sweden	18 620	12 653	2 092	1 422	6.97	4.73
Ireland	15 335	7 998	3 932	2 050	9.59	6.02
<b>Romania</b>	<b>704</b>	<b>165</b>	<b>31.7</b>	<b>7.5</b>	<b>1.45</b>	<b>0.34</b>
<b>EU 15</b>	<b>808 016</b>	<b>479 612</b>	<b>2 111</b>	<b>1 248</b>	<b>8.58</b>	<b>5.09</b>
EU25	838 545	484 976	1 797	1 055	8.35	4.83
Worldwide level	2 602 493	1 480 175	416	236	8.06	4.58

Source: Swiss Re, Sigma No 3/2004, processing page 9-12

\*Gross premium

\*\*Insurance density shows the level of gross premiums per inhabitant

\*\*\*Insurance penetration shows the weight of gross premiums in GDP

In Europe, **Romania** ranks as the 26<sup>th</sup> regarding the amount of the gross premium, among the 34 countries, as the 33<sup>rd</sup> regarding the insurance

density and the insurance penetration – Ukraine, respective Turkey, being on the last places.

Concerning the **structure of insurance**, the highest premiums volume per capita is bigger for life insurance than for non-life insurance, respective of 60% in the countries of Europe - 15, and of 57% worldwide. In Romania, the structure of life insurance is in favor of general insurance, respective of 76.5%.

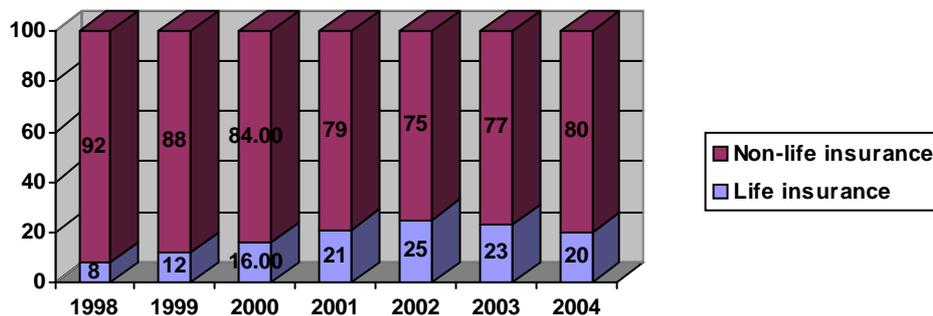
**Table 3 The evolution of gross premium on total insurance activity and on structure, in Romania, in the period 1998-2004**

<i>Year</i>	<i>Life insurance gross premium (%)</i>	<i>Non-life insurance gross premium (%)</i>
1998	8	92
1999	12	88
2000	16	84
2001	21	79
2002	25	75
2003	23	77
<b>2004</b>	<b>20</b>	<b>80</b>

Source: processing from the ISC Annual Report for 2001, 2002, 2003, adding data from a specialized magazine "PROFIL Insurance", March the 30<sup>th</sup>, 2005.

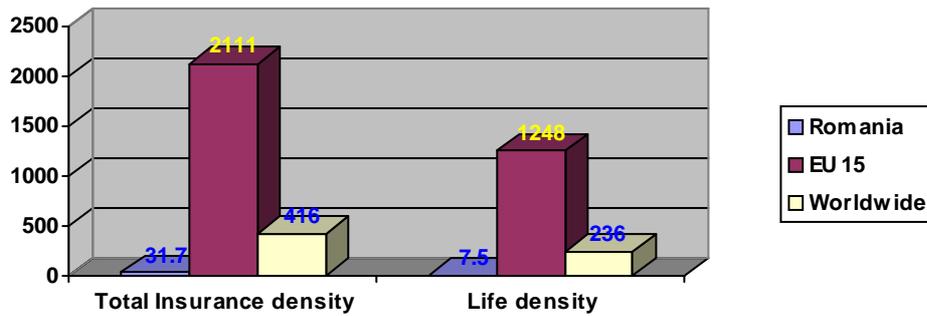
From Table 3 and Figure 1, it can be seen that the highest percentage on total insurance market in Romania, of 80%, still belongs to non-life insurance, increasing from 2003 and with fluctuating evolutions in the analyzed period.

**Figure 1 Structure of gross premium on life insurance and non-life insurance, in Romania, in the period 1998-2004**



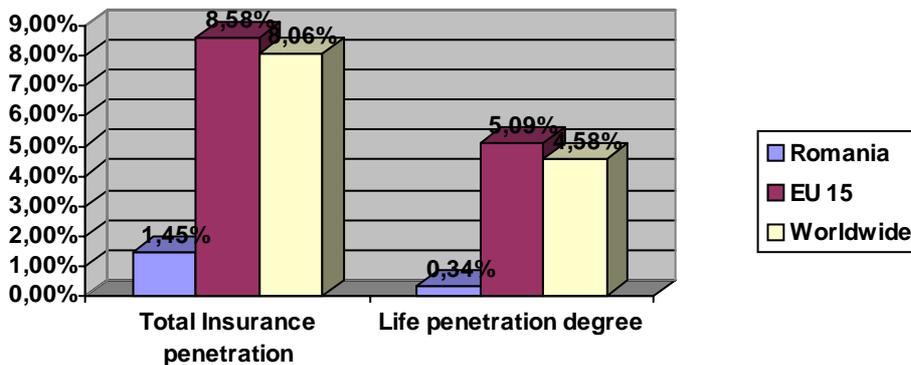
*The insurance density* in Romania has achieved a level of 31.7 EUR/capita, of which gross premium from life insurance – 7.5 EUR/capita, and from non-life insurance – 24.2 EUR/capita, while in the European Union states, the insurance density represents 2 111 EUR/capita, and on worldwide a level 416 EUR/capita, shown in Figure 2.

**Figure 2 Insurance density on the whole insurance market and the life insurance, in Romania, EU 15 and Worldwide in 2003**



For a level of the GDP per capita of 2 193 EUR<sup>1</sup>, in Romania, *the penetration degree* registers a level of 1.45%, shown in Figure 3. Even though increasing from previous years, the insurance penetration in Romania remains low compared with the ones registered in Central and Eastern European countries – which are between 3% and 5%, with the European Union average of 8.6% or with the worldwide average of 8.06%.

**Figure 3 Insurance penetration on the whole insurance market and the life insurance, in Romania, EU 15 and Worldwide in 2003**



<sup>1</sup> Xprimm Magazine, Insurance Profile, year II, no. 4 (2004), page 3: <http://www.lasig.ro>

*The insurance gross premium by the first ten insurance companies from Romania*<sup>2</sup>, at the end of 2004, represent 83% of gross premiums received on the whole market, situation that reveals the insurance market's level of concentration. On the first three ranks are situated the following insurance companies: Allianz-Tiriac, Asirom and Omniasig, with a total market share of 46%.

*The gross premium by the first ten insurance companies providing life insurance* in the same period (from the 23 insurance companies that had activity in life insurance domain) represent 93% of the total insurance gross premium received on this insurance industry. ING Life Insurance remains the leader of life insurance, with a market share of 40,5%. The first three insurance companies (ING Life Insurance, Asirom, AIG Life) hold together a share of 64% of life insurance market.

The number of societies that provided *non-life insurance*<sup>3</sup> has been of 34, and the percentage of gross premium for the first 10 insurance companies has represented 86% of the total gross premium in the non-life insurance domain. Also, more than half (53%) of the gross premium was made by the first three insurance companies, and those are: Allianz-Tiriac, Asirom and Omniasig.

Regarding *the preferences of individuals for financial investments*, in *the European Union*, insurance rank on the 2-nd place, with a percentage of 24.5% in the investment portfolio structure, followed by pension funds with 13% and mutual funds, with 10.6%. *In Romania*, the investment portfolio structure of individuals, according with a study made by an Italian group UniCredit at 22.10.2004, was: banking deposits, 63.3%; cash, 14.9%; listed stocks, 9.6%; other commercial papers, 8.3%; savings insurance, 3.8%; mutual funds, 0.2%.

The explanation given to this evolution is based on the connection between the modest performances registered on a global level by the insurance market and the unfavorable economic conditions, a high inflation rate, the depreciation of the local currency, the excessive taxation and the reduction of purchasing power of population. Along with these general inconveniences, there can be added the specific ones of the insurance domain, like the legislation

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<sup>2</sup> Insurance market in 2004 – Top 10, 31.03.2005: <http://www.lasig.ro>

<sup>3</sup> Top 10 – non-life insurance, 30.03.2005: <http://www.lasig.ro>

## **5.2. The calculation methodology for the solvency margin in Romania**

Romania has adopted the European Union Directives by submitting the insurance companies to estimate **solvability margin** at the end of every year and to transmitting the report application about the solvency margin to the insurance supervision commission. Solvency margin represents the value by which the assets of an insurer are higher than the value of his bonds and which has to be higher than the value established throughout regulations related to the minimum limit of the solvency margin of the insurers.

The solvency margin settle up by the insurer will be compared with the minimum solvency margin, recommended by the standards issued by the Insurance Supervisory Commission<sup>4</sup>.

For each insurance category, non-life and life insurance, there are established particular methods of calculation the solvency margin, the criteria regarding the assets and liabilities evaluation and the category of the assets and liabilities which can not be taken into consideration for the calculation of the solvency margin for the insurer or which will be taken into consideration just in a certain proportion.

The evaluation of the insurers' assets and liabilities for determining the solvency margin is based on their values and they are underlined in the balance sheet.

The authorized insurers to practice **non-life insurance** has the obligation to have permanently a **available solvency margin**, in concordance with their activity, at least equal with the minimum solvency margin calculated in conformity with the present standards.

To the available solvency margin corresponds the total of **the free obligation assets**, excepting the immaterial assets.

For determination of the available solvency margin, the following elements are taken into consideration:

a) the share capital subscribed and paid or, in some cases, if it is about mutual societies, the free reserve fund at which will be added all members' accounts;

b) all reserves, others than the technical reserves, as followings: the reserves of capital premium, the reevaluation reserves, legal, statutory, conversion or other reserves;

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<sup>4</sup> The standards from 12. 27 . 2001 regarding the minimum limit of the solvency margin of the insurers which practice non-life insurance and the its calculation methodology, MO no 43 from 01. 22 . 2002

c) the net profit resulted from the deduction of the dividends which should be paid or, in some cases, the loss registered by the insurer.

The available solvency margin is diminished with the value of the shares owned by the insurer.

Besides these, in the calculation of the available solvency margin *can be included* the following components:

a) the cumulative preferential shares and the liabilities subordinated till 50% from the least value resulted from the comparison between the available solvency margin and the minimum solvency margin. From these maximum 25% should be constituted from the debts subordinated with fixed deadline and/or cumulative preferential shares with a determined term of payment.

b) the securities with undetermined term and other securities, including the cumulative preferential shares, till a level which can not overtake 50% from the least value resulted from the comparison between the available solvency margin and the minimum solvency margin.

**The determination of the minimum solvency margin** is different for the general insurance and for the life insurance, following a calculation algorithm presented in the Insurance Supervisory Commission standards in that sense.

The minimum solvency margin for the general insurance can be determined by two methods:

- a) the report to the yearly premium or the contributions;
- b) the report to the average gross damages paid in the last fiscal years.

If an insurance company take in the insurance one or more risks: the credit risks, the storms, the freeze, the reference period for the calculation of the average gross losses paid will correspond to the last 7 fiscal years.

The minimum solvency margin is equal with the highest value between the two results got through the application of the methods presented above.

A third from the minimum solvency margin of the insurer **form the security fund**. The minimum value of the security fund for the general insurance is the lei equivalent for 2 million Euros at the report date, as results from the table 4.

The Euro value of the security fund will be revised yearly in function of the changes of the European consumer price index, published by Eurostat.

*The determination of the minimum solvency margin for the life insurance* will be achieved taking into consideration the specific of the life insurance' products, respectively insurance classes which cover the survival risk, the demise risk, accident risk, which represents an investment component.

The insurer is forced to determine permanently the available solvency margin, the minimum solvency margin, as well, the security fund based on the financial statements and to transmit to the Insurance Supervisory Commission, a report at the end of every fiscal year.

The introduction of the safety fund in the calculation of the solvency margin, at this moment, would have a negative impact for almost 60% of the insurance companies. New regulations regarding the method of establishing the solvency margin for the insurance companies in Romania will be introduced, considering the fact that for 2005 the level of minimum capital will be taken into consideration, this being replaced in 2006 by the safety fund. Under these circumstances, there have been issued regulations regarding the gradual annual increase of the minimum capital of the insurance companies, up to the levels required by the EU, the last increase ending at 30 of June 2006. A process in two steps regarding the establishment of the solvency margin according to the EU regulations offers the time needed by the companies with a lower level of capital in order to act for adapting to these new requirements.

**Table 4 The actualization of the owners equity by the insurance companies in Romania, according to the EU regulations – mill. EUR**

	<i>Until June 30<sup>th</sup>, 2005</i>	<i>Until Dec 31<sup>st</sup>, 2005</i>	<i>Until June 30<sup>th</sup>, 2006</i>
<i>a) Non-life insurance, except for compulsory insurance</i>	0.8	1.3	2
<i>b) Non-life insurance</i>	1.3	2	3
<i>c) Life- insurance</i>	1.2	2	3

*Source: Press release regarding the actualization of the minimum levels of owners equity for the insurer, 24.03.2005, www.csa-isc.ro.*

The models used for establishing the credit worthiness status are those existing in the present directives. There are some options that say that the model of National Bank of Romania should be used, but insurance companies have not yet fulfilled the process of aligning the capital of credit institutions, because they first have to financially consolidate the insurance capital, i.e.

capital increase, and after this step Solvency II model can be successfully applied.

An extremely interesting source is the Basel Accord on regulations of capital alignment in the banking field. Based on the conclusions of the study, elaborated in May 2002, on European Commission request, a model of credit worthiness surveillance for insurance companies, inspired by the solutions adopted through the Basel Accord, should comprise of the following 3 pillars:

1. Financial resources – minimum requests on capital, elaborated based on a risk profile estimated in direct connection to the subscription data, assets and liabilities gathered in financial reports; companies can be the beneficiaries of elaborating their own model of risk profile;

2. Surveillance – the evaluation of the risk management system through checking on exposures, risk profiles elaborated on internal level, stress tests on technical reserves and assets, managerial performances;

3. Market discipline – the compulsory communication of information, fully transparent, which allows for the other operators to evaluate the financial stability of the company.

*In conclusion, the solvency margin represents the amount with which the assets value overtake the liabilities value, which should be higher than the value settled by the standards regarding the minimum limit for the solvency margin of the insurers. .*

For the insurance companies is compulsory to determine the solvency margin at the end of every year and to transmit to the Insurance Supervisory Commission, together with the balance sheet, a report regarding the solvency margin. The first report regarding the solvency margin will be transmitted to the Insurance Supervisory Commission together with the yearly reports for 2002, and in 2003, Insurance Supervisory Commission will analyze its values and will take the necessary measures in order to prevent the insurers' insolvency.

**The solvency ratio for the insurance companies (S)**, can be determined by the report between the solvency margin of the insurers and the minimum solvency margin, as follows:

$$S = \frac{M_s}{M_{s\min}}$$

In order to prevent the insolvency for the insurer, as well for its recover, the Insurance Supervisory Commission will do, at least once a year, a control regarding the financial situation of the insured persons, in order to

check the observance of the legal rules regarding the solvency margin and the maintenance of the share capital.

In function of the **result got from the determination of the solvency margin of the insurer**, the insurers are appreciated as following<sup>5</sup>:

- a) **the insolvency** insurers, in the case the report's result is less than 1;
- b) the insurers being at the **insolvency limit**, in the case the report's result is equal with 1;
- c) the insurers for which exist a **high insolvency risk** , in the case the report result is between 1 and 5;
- d) the insurers for which exist a **low insolvency risk** , in the case the report result is between 1.5 and 2;
- e) the insurers for which do not exist a **insolvency risk** , in the case the report result is higher than 2.

These evaluations are synthesized in the table 5.

**Table 5 The evaluation of the insurers in function of the results of the insolvency level**

	<b>Results regarding the solvency level</b>				
	<b>&lt;1</b>	<b>=1</b>	<b>1-1.5</b>	<b>1.5-2</b>	<b>&gt;2</b>
<i>The evaluation of the insurers</i>	insolvency	at the insolvency limit	high insolvency risk	low insolvency risk	no insolvency risk

If as a result of the financial report and the controls, the Insurance Supervisory Commission find out that the insurers is at the *limit of the insolvency or has a high insolvency level*, which threaten the payment of the assumed obligations to the insured persons, this will request the elaboration and application of a **financial recovering plan**, which should forecast the following aspects:

- a) the limitation of the gross or net premiums subscribed for a period, thus these should not overtake certain values;

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<sup>5</sup> The standards from 12. 27. 2001 regarding the insolvency of the insurer and the special administrator, MO no. 43 from 22 January 2002

- b) the interdiction of the selling and renewing the insurance contracts of a certain type;
- c) the interdiction of some investments;
- d) the increasing of the paid share capital or of the paid reserve fund;
- e) any measures which are considered necessary for the recovering.

If the insurer, as a result of the determination of the solvency level, realize that is at the insolvency level or has a high insolvency level has to fill and send to the Insurance Surveillance Commission the financial recovering plan, which being approved by the Insurance Supervisory Commission, will include the deadlines for achieving the objectives.

Till the complete recovering of the insurer, as well in the case in which the Insurance Supervisory Commission consider that the financial situation of the insurer will get worse, this can narrow or forbidden the insurer to use a part or all assets and can take any other measures in order to protect the insured persons.

The Insurance Supervisory Commission can withdraw the authorization for the a part or all insurance classes used by an insurer, if this can not recover till the settled deadline.

In the case that *measures of financial recovering did not get the expected results*, the Insurance Supervisory Commission can ask the Low Court from Bucharest for an appointment of a **special administrator** for that insurer.

The special administrator will administrate the insurer's activity, setting up the optimum conditions for assets' conservation and for the debt payment in the interest of the insured persons and other creditors. He will present monthly or any time it is solicited to the Insurance Supervisory Commission an evaluation of the financial situation of the insurer.

If, based on the received reports, Insurance Supervisory Commission will consider that the insurer is recovered financially and correspond to the prudential parameters, this will ask to The Low Court the revocation of the disposal concerning the financial recovering plan.

The Insurance Supervisory Commission takes into consideration the possibility to simplify the solvency classification, which divide the insurance companies in insolvency ones, low solvency level ones, high solvency level ones and no insolvency risk ones. As well, the Insurance Supervisory Commission intends to not make public the solvency level of each company, just the solvency category: solvency company (with a solvency level higher than 1) and insolvency company (with a solvency level less than 1).

**The liquidity ratio** represents the report between the liquid assets and the certain liabilities on short term of the insurer against the insured persons.

In the category of the *liquid assets* are included : the state certificates; the bank deposits of which placement do not overtake 50% at a bank, but not more than 20% in a bank from the same financial group or which is main shareholder at the insurer ; the cash and current accounts.

In the category of the *certain liabilities on short term* of the insurer against the insured persons are included the damage reserve and the unexpected damage reserve.

The minimum request regarding the liquidity ratio is fulfilled if the liquid assets of the insurer will represent at least 50% from the certain liabilities on short term.

## **6. Conclusion**

For the elaboration of a new solvency system, the first step was represented by the definition of the requests which this should get answers, as followings:

- to protect the beneficiaries, insuring for the supervision institutions a period of time necessary to identify and recover the negative phenomenon registered in a company;

- to offer comparability, transparency and continuity, thus creating an uniform action environment;

- to establish a set of requests regarding the solvency margin in conformity with the real risks. The methodology of calculation of the minimum solvency margin should permit the transmission of a correct signal toward the management, without encouraging the imprudent behavior;

- to avoid the useless complications – a simple system, easy to understand and to be applied, which should not generate supplementary costs. The purpose of monitorizing the solvency is that to notice from the beginning the negative trends, not to supply a guarantee against the bankruptcy;

- to reflect properly the market evolutions;

- to avoid, as it is possible, to generate supplementary financial reports, valorizing thus the information from the financial statements;

- to avoid the excessive capital requests which could lead to the decrease of the competitiveness of the European insurance market.

In general, the using of a sophisticated solvency system on a such wide and diversified industry as the insurance one is suppose to surpass some substantial practical problems, especially because these are going to be taken at the international level.

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# ON USING ECONOMETRICS IN PRICING AUTOMOBILE INSURANCE

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## **Abstract**

*In this paper we add some remarks on using econometrics theory in ratemaking the automobile insurance. The tariff system studied in the paper has the objective to incorporate a priori and a posteriori information in the premium, mainly according to the bonus-malus system proposed by Dionne & Vanasse (1989). For an important car insurance portfolio, within an empirical study, the explanatory variables related to the number of accidents, respectively the claim size are selected. The econometric count model for the number of accidents, respectively the log-linear econometric model for claim size are estimated. We also point out the necessity of including in the premium the explanatory variables of the claim size and a bonus-malus system that incorporates the individual past experience of claim size.*

**Keywords:** *ratemaking, a priori classification, count models, loss distributions, bonus-malus system.*

## 1. Introduction

Automobile insurance portfolios are heterogeneous because there are a series of characteristics that influence the damage frequency, respectively the severity. The insurers usually combine a priori and a posteriori tariffication systems (Lemaire, 1985). The equity of insurance pricing means that the policyholders pay rates according to their level of risk. In a priori rating, it is used a series of characteristics referring to policyholders, vehicles and territory to estimate a policyholder's risk. Some of the commonly characteristics used by the policyholders are: driving record, territory, vehicle use, the country where the vehicle was made in, the model of vehicle, gender, age and marital status of policyholders, type of coverage etc. Risk classes might prove heterogeneous even after an a priori rating, as there are a series of directly unobservable variables (prudence, personality, the driver's health etc). An a posteriori bonus-malus system is used to revise the a priori rating; the individual premiums are adjusted according to accident record of the policyholder. Generally, the a posteriori rating system suits the non-homogeneous portfolios where the individual characteristics are difficult to be measured a priori.

The objective of this study is to use multivariate regression models in selecting the main explanatory variables for the number of claims respectively the claim size dependent variables. The results are used for a priori rating, but a bonus-malus system is also retained in order to improve the insurance rating.

The univariate Poisson model is a plausible model for the distribution of the number of claims inside a homogeneous portfolio. The negative binomial distribution is more adequate for the distribution of the number of claims in heterogeneous portfolios. When the parameter  $\lambda$ , that represents the mean and the variance of the Poisson variable, varies across the portfolio being a random variable that follows the gamma distribution, the number of claims follows a negative binomial distribution (Petauton, 2000).

The most common distributions used in the study of claim size, called the loss distributions, suit the lognormal distribution, the Pareto distribution, Weibull distribution or a mixture distribution.

The univariate models for the number of claims are often rejected from empirical studies as a consequence of the heterogeneity of risk. The count models are used here in order to estimate the distribution of the number of claims and to select the significant variables that explain the variance of the number of claims; the linear regression models are not adequate for discrete variables (Greene, 1997). The Poisson respectively the negative

binomial models with a regression component are used in rating automobile insurance and a bonus-malus system is proposed in order to integrate a priori and a posteriori information in the tariff by Dionne and Vanasse (1989). Premium tables are obtained for liability automobile insurance.

The linear regression model is proposed to be used for the logarithm of claim size in order to select the significant explanatory variables for claim size.

A private insurance company provided the database for which we intend to analyse the distribution of the number of claims and respectively of the claim size; this insurer holds a significant part of the market. We use a sample of 38770 policies. The policies cover damages of the private automobile, caused by accidents produced by the policyholder. Therefore, the automobile insurance taken in view in this empirical study covers only the costs in case of physical damage to own car caused by accidents.

## 2. Probability distributions and econometric models

The simplest model for the number of claims  $y_i$  made by the policyholder  $i$  during a given period of time (one year) is the univariate Poisson distribution:

$$P(y_i = k) = e^{-\lambda} \frac{\lambda^k}{k!}, \quad k=0, 1, 2, \dots \quad (1)$$

where  $\lambda$  is the Poisson parameter, which equals the mean and the variance of the variable. We assume here that the Poisson parameter is constant across the portfolio. Consequently, this model is suited only for a homogenous portfolio.

If the number of claim  $y_i$  follows a Poisson distribution and the mean  $\lambda_i$  follows a gamma distribution, with parameters  $\alpha$  and  $\beta$ , then the marginal distribution of the number of claims is negative binomial:

$$P(y_i = k) = \frac{\Gamma(\alpha + k)}{\Gamma(\alpha)k!} p^\alpha q^k, \quad k=0, 1, 2, \dots \quad (2)$$

where  $p = \frac{\beta}{\beta+1}$  and  $q = 1 - p$ . The mean and variance of negative binomial distribution are:

$$E(y_i) = \frac{\alpha q}{p} = \bar{\lambda} \quad (3)$$

$$Var(y_i) = \frac{\alpha q}{p^2} = \bar{\lambda} \left[ 1 + \frac{\bar{\lambda}}{\alpha} \right] \quad (4)$$

The parameters of these two distributions can be estimated by the maximum likelihood method or the method of moments.

Let us begin with the count model for the dependent variable the number of claims  $y_i$ . The explanatory variables  $x_1, x_2, \dots, x_k$  represent a priori classification variables, which explain the variance of the number of claims. The vector of explanatory variables specifies a model for the conditional mean of the dependent variable:

$$E(y_i/x_i) = \exp(x_i\beta) \quad (5)$$

where  $\beta$  is a vector of parameters ( $k \times 1$ ) and  $x_i = (x_1, x_2, \dots, x_k)$  the vector of explanatory variables. For the Poisson model, the conditional density of  $y_i$  given  $x_i$  is

$$f(y_i/x_i) = \frac{e^{-\exp(x_i\beta)} [\exp(x_i\beta)]^{y_i}}{y_i!} \quad (6)$$

and

$$E(y_i/x_i) = \lambda_i = \exp(x_i\beta) \quad (7)$$

The probability that the policyholder to be involved in  $k$  accidents is:

$$P(y_i = k/x_i) = \frac{e^{-\exp(x_i\beta)} [\exp(x_i\beta)]^k}{k!} \quad (8)$$

By maximizing the log likelihood function

$$l(\beta) = \sum_{i=1}^n [k(x_i\beta) - \exp(x_i\beta) - \ln(k!)] \quad (9)$$

the maximum likelihood estimator of the parameter  $\beta$  is obtained (Greene, 1997). It has been supposed that the variables  $y_i$  are independent.

An alternative to the Poisson regression model is to estimate the parameters of the negative binomial specification. The negative binomial distribution is more adequate when the variance in the data is bigger than the mean and arises from a natural formulation of cross-section heterogeneity (Greene, 1997).

The lognormal distribution is often used as a model for the claim size distribution. A random variable  $Y$  has a lognormal distribution with parameters  $\mu$  and  $\sigma$  if the variable  $\ln Y$  has a normal distribution with mean  $\mu$  and standard deviation  $\sigma$ . The probability density function is:

$$f(x) = \frac{1}{\sigma x \sqrt{2\pi}} \exp\left[-\frac{1}{2}\left(\frac{\ln x - \mu}{\sigma}\right)^2\right], \quad x > 0 \quad (10)$$

This is positively skewed; there are a lot of small claims.

The linear regression models are based on normal distribution. Therefore, for the dependent variable  $m_i$ , the claim size, we propose a log-linear multivariate regression model

$$\ln m_i = b_1 z_{i1} + b_2 z_{i2} + \dots + b_r z_{ir} + \varepsilon_i, \quad i = 1, 2, \dots, n \quad (11)$$

The  $\beta$  parameters are estimated by ordinary least squares. This model is used to select the significant explanatory variables for the claim size.

Dionne and Vanasse (1989) proposed a bonus-malus system which integrates a priori and a posteriori information. The premium tables take account of time, accidents record and the individual characteristics. The expected number of accidents is estimated from a Poisson and negative binomial model with a regression component. Let us take  $y_i^j$  the number of accidents for the policyholder  $i$  during the period  $j$  and  $x_i^j = (x_{i1}^j, \dots, x_{ik}^j)$  the vector of explanatory variable observed at period  $j$ . The expected number of accidents of policyholder  $i$  during the period  $j$  is a function  $\lambda_i^j(x_i^j, \varepsilon_i)$ , where  $\varepsilon_i$  is a random variable. The best estimator of the expected number of accidents for the next period,  $\hat{\lambda}_i^{t+1}(y_i^1, \dots, y_i^t; x_i^1, \dots, x_i^{t+1})$ , depending on the past experience and on the  $k$  characteristics known a priori should be determined. Applying the negative binomial distribution to the model, Bayes's optimal estimator of the expected number of accidents for policyholder  $i$  is (Dionne and Vanasse, 1989):

$$\hat{\lambda}_i^{t+1}(y_i^1, \dots, y_i^t; x_i^1, \dots, x_i^{t+1}) = \hat{\lambda}_i^{t+1} \left[ \frac{\alpha + \bar{Y}_i}{\alpha + \bar{\lambda}_i} \right] \quad (12)$$

where  $\lambda_i^j = \exp(x_i^j \beta) \varepsilon_i = (\lambda_i^j) \varepsilon_i$ ,  $\bar{\lambda}_i = \sum_{j=1}^t \lambda_i^j$  and  $\bar{y}_i = \sum_{i=1}^t y_i^j$  the total number of accidents over  $t$  periods for the policyholder  $i$ .

For a new policyholder when  $t=0$ ,  $\hat{\lambda}_i^1 = \lambda_i^1 = \exp(x_i^1 \beta)$  the only a priori rating is used. When the regression is reduced to a constant, one obtains:

$$\hat{\lambda}_i^{t+1}(y_i^1, \dots, y_i^t) = \bar{\lambda} \left[ \frac{\alpha + \bar{y}_i}{\alpha + t \bar{\lambda}} \right] \quad (13)$$

which is the Bayes's estimator of an individual's expected number of accident based only on past accidents  $\bar{y}_i = \sum_{j=1}^t y_i^j$ .

In order to calculate the premium for the policyholder  $i$  we propose to take account of the significant characteristics for the number of claims and for the claim size respectively of the accidents record

$$\hat{m}_i^{t+1} \cdot \hat{\lambda}_i^{t+1} \cdot \left[ \frac{\hat{\alpha} + \bar{Y}_i}{\hat{\alpha} + \lambda_i} \right] \quad (14)$$

where

$$\hat{\lambda}_i^{t+1} = \exp(x_i^{t+1} \hat{\beta}) \quad (15)$$

$$\hat{m}_i^{t+1} = \exp(z_i^{t+1} \hat{b}) \quad (16)$$

### 3. An empirical study

An important Romanian insurance company provided the database used in this empirical study and it includes a considerable number of policies (38770 policies). The policies cover damages of the policyholder's car, caused by accidents produced by the policyholder. For each policyholder, we observe the following variables:

- the dependent variable: the number of accidents produced over a period of time of one year and the individual claim size.
- the explanatory variables: the cylindrical capacity of the engine, the age of the car, a variable explaining the country where the car was manufactured, the legal status of the policyholder, the number of seats in the automobile, the gender of the policyholder.

First, we are looking for a probability distribution that describes adequately the number of accidents that actually occurred. Observed and fitted numbers of accidents for the Poisson distribution are presented in table 1 from appendix. The Kolmogorov-Smirnov test enables us to reject the Poisson distribution hypothesis, as the statistics  $Z= 12,9$  is significantly different from zero for a significance level of  $\alpha = 1\%$ . We observe a poor fit of the univariate Poisson model for the distribution of number of accidents. Also in table 2 from appendix we present the observed distributions for claim size.

For the explanatory variables we have introduced indicative variables:

- the age of the car (A)

$A_1 = 1$ , if  $A \leq 1$  (reference class), otherwise it is 0

$A_i = 1$ , if  $A = i$ , otherwise it is 0, for  $i = 2, 3, \dots, 10$

$A_{11} = 1$ , if  $A \geq 11$ , otherwise it is 0;

- the cylindrical capacity of the engine (C)

$C_1 = 1$ , if  $C \leq 1200 \text{ cm}^3$  (reference class), otherwise it is 0

$C_2 = 1$ , if C is between 1201-1400  $\text{cm}^3$ , otherwise it is 0

$C_3 = 1$ , if C is between 1401-1600  $\text{cm}^3$ , otherwise it is 0

$C_4 = 1$ , if C is between 1601-1800  $\text{cm}^3$ , otherwise it is 0

$C_5 = 1$ , if C is between 1801-2000  $\text{cm}^3$ , otherwise it is 0

$C_6 = 1$ , if C is  $\geq 2000 \text{ cm}^3$ , otherwise it is 0;

- made in :

$ROM = 1$ , if the automobile is manufactured in Romania, otherwise it is 0

$STR = 1$ , if the automobile is manufactured abroad, otherwise it is 0

$DW = 1$ , if the trade mark of the automobile is Daewoo (reference class), otherwise it is 0;

- the gender of the policyholder

$M = 1$ , for the male group (reference class), otherwise it is 0

$F = 1$ , for the female group, otherwise it is 0;

- the use of the car

$P = 1$ , if the car is for private use, otherwise it is 0

$B = 1$ , if the car is used for business, otherwise it is 0.

The classes for the explanatory variables have been constructed by taking into consideration the tariff classes used by most of the insurance companies from our country.

The dependent variables are the following:

NRC – the number of accidents per year

LNC – the logarithm of the claim size

In order to estimate the econometric models, we used the statistics packages EViews 4.1.

### ***3.1 The econometric model for the number of accidents***

We estimate the parameters of the Poisson count model and of the negative binomial model. Many variables were found significant. Table 3 from appendix includes the results obtained after the estimation of the Poisson count model (the conclusions regarding the significant variables are identical to those resulting from the negative binomial count model).

The coefficients of the indicative variables  $P$ , respectively of  $A_2$ ,  $A_3$ ,  $A_4$  were found insignificant in both methods of estimation. The variable use of the car does not exert a significant influence on the number of accidents; the number of accidents is similar in the case of private cars as well as in the case of those used for business. In addition, the count model does not show any justification of distinct tariff classes when the age of the automobile is of 0, 1, 2, 3 or 4 years. In the new model for the dependent variable the number of accidents which includes only the significant explanatory variables, presented in table 4 from appendix, the reference class for the age of the car is defined as  $A = 1$ , if the age of the car is of 0, 1, 2, 3 or 4 years, otherwise it is 0. The number of accidents is significantly lower for older cars than for the relatively new ones (less than 5 years of age).

The dummy variable related to the cylindrical capacity of the engine illustrates positive significant coefficients: the bigger the cylindrical capacity of the car, the higher the number of accidents.

For the gender variable, we observe, as expected, that women are involved in a considerably lower number of accidents as compared to men. The empirical result that has been obtained is similar to that contained in other studies (Dionne & Vanasse, 1989; Dionne & Ghali, 2003).

As for the “made in” variable, the cars made in Romania are involved in a considerably lower number of accidents than those manufactured by Daewoo. However, the study does not show any justification for the existence of a distinct class for automobiles manufactured abroad.

### ***3.2 The econometric model for the claim size***

For the dependent variable the claim size we used a log-linear regression model. In a first step we considered all the explanatory variables described above. The sample comprises 7247 individual claims. The model, estimated by techniques specific to linear econometric models, is presented in table 5 from appendix.

The variable related to the use of the car proves to be significant. The claim size is considerably higher if the automobile is used for business purposes. The claim size is also considerably higher for the automobiles that

have a bigger cylindrical capacity of the engine. As for the age of the car, we notice that the claim size does not vary in a significant manner comparing with the reference class. Therefore, the study does not show any justification for differentiating the insurance premium for each of these tariff classes. The cars made in Romania register a significantly lower claim size while those manufactured abroad have a higher one as compared to the reference class. The new model, after the exclusion of the variables of age and gender, is presented in table 5 from appendix.

As for the validity of the model:

- the residuals are not correlated according to the Breusch-Godfrey serial correlation LM test, as the LM statistics equals 0,75. The same result is given by the Durbin-Watson test, as well as by the Ljung-Box one;
- the residuals are not heteroscedastic, according to Lagrange's multipliers test for ARCH heteroscedastity; the LM statistics is LM = 1,466.

The level of significance, which has been considered here, is of 5%.

#### **4. Conclusions**

The tariff system studied here has the objective to incorporate a priori and a posteriori information in the premium, mainly according to the bonus-malus system proposed by Dionne & Vanasse (1989). For an important car insurance portfolio, the empirical study presented here selects the explanatory variables related to the number of accidents, respectively to the claim size. The econometric count model for the number of accidents, respectively the log-linear econometric model for claim size are estimated. We also point out the necessity of including in the premium the explanatory variables of the claim size.

## Appendix

**Table 1. Observed and fitted number of accidents for the Poisson distribution**

<i>Number of accidents</i>	<i>Observed number of policies</i>	<i>Expected number of policies</i> $\chi = 0.291155$
0	31518	287978.28
1	4627	8435.57
2	1640	1227.79
3	590	119.14
4	234	29.78
5	79	0.51
6	27	0.03
7	8	0.00
$\geq 8$	2	0.00
<i>Total</i>	38770	38770
<i>Descriptive statistics</i>	mean = 0.291155 std. dev. = 0.7269	

**Table 2. The claim size distribution**

<i>Claim size (euro)</i>	<i>Observed number of policies</i>
$\leq 4000$	7057
$(4000 - 8000]$	100
$(8000 - 12000]$	45
$(12000 - 16000]$	27
$\geq 16000$	23
<i>Total</i>	7242
<i>Descriptive statistics</i>	mean = 677.22 std. dev. = 2226.87

**Table 3. Poisson regression model for dependent variable number of accidents**

<i>Dependent Variable: NRC</i>				
<i>Method: ML/QML - Poisson Count</i>				
<i>Included observations: 38770</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>z-Statistic</i>	<i>Prob.</i>
<i>C</i>	-0.579617	0.063725	-9.095537	0.0000
<i>P</i>	0.024097	0.021816	1.104576	0.2693
<i>C2</i>	0.274010	0.046125	5.940663	0.0000
<i>C3</i>	0.191648	0.043301	4.425936	0.0000
<i>C4</i>	0.471912	0.054814	8.609381	0.0000
<i>C5</i>	0.486557	0.048477	10.03692	0.0000
<i>C6</i>	0.454671	0.046915	9.691398	0.0000
<i>A2</i>	0.089354	0.060495	1.477049	0.1397
<i>A3</i>	0.065275	0.058719	1.111648	0.2663
<i>A4</i>	-0.074764	0.058464	-1.278794	0.2010
<i>A5</i>	-0.130825	0.059945	-2.182400	0.0291
<i>A6</i>	-0.569014	0.058928	-9.656089	0.0000
<i>A7</i>	-0.344630	0.062493	-5.514703	0.0000
<i>A8</i>	-0.310797	0.062242	-4.993337	0.0000
<i>A9</i>	-0.408368	0.065389	-6.245198	0.0000
<i>A10</i>	-0.485030	0.072302	-6.708410	0.0000
<i>A11</i>	-0.718367	0.062606	-11.47446	0.0000
<i>ROM</i>	-0.907730	0.037481	-24.21838	0.0000
<i>STR</i>	-0.050792	0.035822	-1.417891	0.1562
<i>F</i>	-1.105815	0.024301	-45.50443	0.0000
<i>Log likelihood</i>	-26178.24	LR statistic (19 df)		5246.247
<i>Restr. log likelihood</i>	-28801.36	Probability(LR stat)		0.000000

**Table 4. The reestimated Poisson regression model for dependent variable number of accidents**

<i>Method: ML/QML - Poisson Count</i>				
<i>Included observations: 38770</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>z-Statistic</i>	<i>Prob.</i>
<i>C</i>	-0.579283	0.038637	-14.99291	0.0000
<i>C2</i>	0.262715	0.042736	6.147337	0.0000
<i>C3</i>	0.184235	0.042805	4.304091	0.0000
<i>C4</i>	0.449357	0.051909	8.656575	0.0000
<i>C5</i>	0.458987	0.043887	10.45844	0.0000
<i>C6</i>	0.421161	0.041255	10.20871	0.0000
<i>A5</i>	-0.139754	0.032419	-4.310919	0.0000
<i>A6</i>	-0.594870	0.030406	-19.56396	0.0000
<i>A7</i>	-0.353066	0.036709	-9.617939	0.0000
<i>A8</i>	-0.314362	0.035918	-8.752238	0.0000
<i>A9</i>	-0.414529	0.041227	-10.05485	0.0000
<i>A10</i>	-0.500027	0.051804	-9.652222	0.0000
<i>A11</i>	-0.731610	0.036657	-19.95851	0.0000
<i>ROM</i>	-0.872379	0.024723	-35.28625	0.0000
<i>F</i>	-1.105080	0.024128	-45.80059	0.0000

**Table 5. Log-linear regression model for dependent variable the claim size**

<i>Dependent Variable: LNC</i>				
<i>Method: Least Squares</i>				
<i>Included observations: 7242</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
<i>C</i>	5.223869	0.082592	63.24874	0.0000
<i>P</i>	-0.094860	0.029984	-3.163723	0.0016
<i>C2</i>	0.123056	0.066608	1.847461	0.0647
<i>C3</i>	0.248453	0.060138	4.131387	0.0000
<i>C4</i>	0.373584	0.077616	4.813239	0.0000
<i>C5</i>	0.436205	0.069267	6.297422	0.0000
<i>C6</i>	0.695436	0.067412	10.31618	0.0000
<i>A2</i>	0.111969	0.082112	1.363620	0.1727
<i>A3</i>	0.152156	0.078728	1.932677	0.0533
<i>A4</i>	0.119713	0.078451	1.525944	0.1271
<i>A5</i>	0.047591	0.080397	0.591947	0.5539
<i>A6</i>	-0.001086	0.078050	-0.013914	0.9889
<i>A7</i>	0.058933	0.083621	0.704765	0.4810
<i>A8</i>	0.075754	0.084050	0.901292	0.3675
<i>A9</i>	-0.075485	0.087511	-0.862578	0.3884
<i>A10</i>	0.071664	0.097275	0.736716	0.4613
<i>A11</i>	-0.138070	0.083394	-1.655626	0.0978
<i>ROM</i>	-0.524454	0.053307	-9.838301	0.0000
<i>STR</i>	0.193728	0.050504	3.835856	0.0001
<i>F</i>	0.055488	0.028864	1.922378	0.0546
<i>Log likelihood</i>	-11007.78	F-statistic		74.66047
<i>Durbin-Watson stat</i>	1.979408	Prob(F-statistic)		0.000000

**Table 6. The reestimated log-linear regression model for dependent variable the claim size**

<i>Dependent Variable: LNC</i>				
<i>Included observations: 7247</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
<i>C</i>	5.297142	0.051784	102.2937	0.0000
<i>P</i>	-0.124958	0.029375	-4.253886	0.0000
<i>C2</i>	0.135729	0.065821	2.062095	0.0392
<i>C3</i>	0.257040	0.058966	4.359139	0.0000
<i>C4</i>	0.365099	0.076419	4.777588	0.0000
<i>C5</i>	0.470459	0.068224	6.895753	0.0000
<i>C6</i>	0.683841	0.065662	10.41454	0.0000
<i>ROM</i>	-0.523077	0.052207	-10.01931	0.0000
<i>STR</i>	0.178272	0.049093	3.631344	0.0003
<i>Log likelihood</i>	-11034.82	F-statistic		171.5200
<i>Durbin-Watson stat</i>	1.979600	Prob(F-statistic)		0.000000

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# CHANGES IN LEGISLATURE SINCE 2000 AND THEIR IMPACT ON TECHNICAL RESERVES OF INSURANCE COMPANIES IN THE CZECH REPUBLIC<sup>1</sup>

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## **Abstract**

*The paper is fission into 4 parts. In the first part are introduced changes, which with teak system of insurance into year 2000. Here go above all about nullification monopoly some insurance company and conformity market environment. Second part a short characterizes the changes from year 2000. News was drawn law about system of insurance conformable with European rightly the lawful insurance of responsibility from operation motor vehicle was abolished. A tax deduction was accepted insurable on life insurance. Third part describe responsible position changes from year 2004, it means after entrance Czech republic into European union and at once A and B validity biennial important law - law about premium agreements and law about insurable mediator. Fourth part collation responsible position indices insurable market from year 1991 till this time. They are target premium and the expenses on the indemnifications. In conclusion is then mentioned growth specified insurable near industrial insurance in proportion to inanimate and general vegetative trend specified insurable compared to fall load on the indemnifications, which is denote as a prosperous development insurable market in Czech republic.*

**Keywords:** *Class of insurance, life assurance, non-life insurance, technical reserves, insurance technical rate of interest*

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## **1. Introduction**

On the break of the 80s and 90s significant political-economic changes occurred in the Middle and East Europe. At that time one of the main objectives of then Czechoslovakia was to re-build insurance environment, which will function on the base of the market –economic principle. Consistent with this clear requirement on April 26, 1991 the Law on Insurance Industry which corresponded to that by its character and content and published in the Collection of Laws under no. 185/1991 was accepted by the Czech National Council.

The Law adjusted specific conditions of entrepreneurship in the insurance industry, was valid for the territory of the Czech Republic and established above it the government control the execution of which was entrusted to the Ministry of Finance of the Czech Republic. The executor regulation of the Ministry of Finance no. 259/1991 Col., which was issued to the Law, set the way of creating and using special-purpose insurance funds.

The Law no. 185/1991 Col. corresponds in its principle to the transient time and therefore it was based on the rules of the material supervision. The licence system activity was concentrated on setting permitted legal forms of domestic insurance companies and reinsurance companies and on the performance of the government control when approving general policy conditions. That was at the same time in agreement with a very short adjustment of the insurance policy, which is incorporated into the still valid Civil Code. Financial supervision then according to the legal adjustment restricted on the obligatory bailment in the amount of CZK10 million for the benefit of the Ministry of Finance of the Czech Republic on submitting of three-years commercial and provisory plans and on the setting of special-purpose insurance funds.

The licence system and control activity of the state supervision in the spheres associated with entrepreneurship in the insurance industry as e.g. an intermediary activity in the insurance industry had only a common character. According to some provisions it was obvious that that activity constructed the inequality of entrepreneurship conditions among domestic and foreign companies.

## **2. Insurance Industry in the CR in the Year 2000**

Already in the first half of the 90s it was obvious that the legal adjustment would require fundamental changes mainly in the bigger security

of a consumer. It meant readjustment to the law of the European Economic Community both in the financial control of entrepreneurship and in the national legislature in the sphere of private contractual insurance. In its concrete form it meant mainly legalization of the duty for all insurance companies and reinsurance companies registered to transact business in the CR to create to its liabilities which result from contracted policies technical reserves in concurrence with a new account classification of insurance companies, at the same time to cover these reserves by corresponding assets and to show fixed rate of solvency.

This significant change was defined in the amendment of the Law on insurance industry, that is the Law no. 320/1993 Sb. (Coll.) and by the regulation no. 52/1994 Sb. of the Ministry of Finance. By this regulation at the same time the prior regulation no. 259/1991 Sb. was revoked. However, after implementation of stated changes the legal adjustment remained tributary to the time of its origin and it required fundamental revision. The amendment of the Law, which was done by the Law no. 60/1995 Sb., contained in addition a problematic regulation, which make possible for health insurance companies to carry business in private insurance industry.

Despite those mistakes occurring in the Law and its amendment it is necessary to say that the Law no. 185/1991 Sb. fulfilled its role by enabling the origin of insurance industry in the Czech Republic.

### **3. Insurance Industry in the CR after the Year 2000**

Only by the end of the 90s it was managed to enforce the fundamental legislature change, which meant de-monopolization of motor vehicle driving liability that is by accepting the Law no. 168/1999 Sb. Since the beginning of the year 2000 about 12 insurance companies which fulfilled strict conditions for granting authorization to operate this insurance could offer to roughly five million of car vehicle owners a quite new product, that is contractual liability insurance for the damage caused by driving a vehicle. Despite certain restrictions in the creation of insurance rates which were valid till the end of the year 2002 and which incorporated into the law this insurance fulfils all parameters valid no the EU and a consumer has thus the possibility of the choice of the insurance company and the product as well with preserving high security and certainty of the damaged with the compensation of the damage which he was caused by another vehicle.

Adoption of the Law no. 363/1999 Sb. was another significant step and consequently then the executor regulation no. 75/2000 Sb. Both of these

legal norms inured the virtue on April 1, 2000. In a significant way they changed conditions of carrying out insurance and reinsurance activities, mediator activities in the insurance industry and in the way and extent of performance of the government control in the insurance industry. The licence system activity set other conditions of capital facilities of claimers related to performed nurturance industry. From this date life and general insurance and reinsurance were divided. Another significant step was to adopt the law no. 363/1999 Sb. and consequently then the executor regulation no. 75/2000 Sb.

The significant change concerns further the business plan, which is based on the actuarial base with the emphasis on the permanent ability of the society to fulfil its engagements. Simultaneously the control of the criminal-law accountability of the owners of companies and persons with the decisive participation on their management was introduced.

By the example of developed countries the institution of a responsible actuary was introduced, and that is not only in the sphere of life insurance, but also in the general insurance and reinsurance.

Conditions on operating mediator activities in insurance industry were adjusted with distinguishing insurers and reinsuring brokers including the definition of their basic features.

Important changes also concerned the government control in the insurance industry, and that is in the direction of strengthening the financial control emphasizing the protection of a consumer. Thus there were made extensions and specifications of measures, which the Ministry of Finance is not only entitled but as well obligatory to admit provided it finds out deficiencies in the activity of supervised subjects.

The Law further brought changes mainly in creating technical reserves, in the composition of financial setting and solvency of insurance companies and reinsurance companies.

Insurance companies, which operated on the insurance market till the new law on the insurance industry came into force, were obliged to keep a two-years period for adapting their activities to new conditions and a ten-years period for dividing universal insurance companies into insurance companies specialized on insurance activities as for insurance spheres of life insurance or as for insurance spheres of general insurance.

All these changes were set from the reason of even more complete protection of a consumer

Another very significant change for consumers of the offer in the matter of insurance products mainly in the sphere of life insurances is the change of the Law on income taxes no. 586/1992 Sb. as amended, according

to which the amount of CZK12.000 is the deductible for the tax calculation of the income tax which is the sum of the paid insurance on life insurance in case it is this type of insurance:

- An insurance on life,
- With the insurance period for minimal 5 years,
- With the end of insurance at least in sixty years of age,
- When a policy holder and a policy client are identical persons, which means that the insured amount must not be bonded to the credit of another person than the insured

#### **4. Insurance Industry in the CR after Entry the European Union**

The year 2004, which became significant mainly by admitting the Czech Republic as a regular member into the European Union, meant also in the sphere of insurance legislature the release compared to the previous period when it was necessary to coordinate the legislature of the Czech Republic in the sphere of insurance industry with the legislature of the European Community.

The process of common convergence of legal regulations of the CR, repeatedly the CSFR, with the rules of the European Community already began by accepting the CR government decree no. 533/1991 on securing compatibility of the Czechoslovak system of law with the law of the European Community. In the sphere of insurance industry that process was initiated by the CR government decree no. 704/1997 by which the base for the preparation of new legislature was set.

Till the entry of the Czech Republic in the in the sphere of the private insurance it was necessary to prepare many legislature changes directly related to that act. It was mainly introducing the principle of a unified licence, execution of the control over the groups of insurance companies and financial conglomerates with the participation of insurance companies and reinsurance companies, releasing investment possibilities of insurance companies and reinsurance companies, within a free movement of the capital etc.

These changes are the content of the amendment of the Law on insurance industry no. 39/2004 and consequently then the executive regulation no. 303/2004 Sb. Consistent with the law of the European Community this law and the regulation modify conditions of carrying out insurance and covering activities after the entry of the Czech Republic to the

European Union. The above mentioned law came into force on May 1, 2004, that is on the day of the entry of the CR into the EU, the regulation then by the day of its decree, that is on 14.5.2004 and at the same time by this date it annulled the force of the regulation 75/1999.

This was achieved by adopting not only the amendment of the Law on insurance industry, but also the amendment of the law on operating motor vehicle liability insurance and two completely new laws:

- An amendment of the Law no. 363/1999 Sb. on insurance industry, that is Law 39/2004 Sb.,
- An amendment of the Law no. 168/1999 Sb., on operating motor vehicle liability insurance, that is the Law 47/2004,
- Law no. 37/2004 Sb., on insurance policy,
- Law no. 38/2004 Sb., on insurance mediators and independent loss adjusters of insured accident

In the year 2000 the legislature activity of the Institution was concentrated mainly on completing executive regulations:

- to the Law on insurance industry the regulation of Ministry of Finance no. 303/2004 Sb.,
- to the Law on operating motor vehicle liability insurance the regulation of the Ministry of Finance no. 309/2004 Sb.,
- to the Law on insurance mediators and independent loss adjusters of insured accident the regulation of the Ministry of Finance no. 582/2004 Sb.

Now it is necessary to mention a significant change in the regulation 303/2004 Sb., according to which from the date of coming into force insurance companies have the duty and the accountable actuary confirms correctness of rate and reserves calculation for life insurance using at maximum 2,4 % of actuarial rate of interest instead of original 4%. Basically that could mean the rise in price of the insurance; however, from the time being it is not possible to trace whether and how the change has influenced the insurance market of life insurance.

By these laws implemented all valid regulations for the sphere of insurance industry, a full harmonization of legislature of the Czech Republic with the current legislature of the European Community has been reached. The Czech Republic was one of the first countries, which implemented into the national legislature one of the important directive of the European

Community- Directive 2002/92/ES concerning mediator activities in the v insurance industry.

By the end of January 2005 the mentioned directive was implemented only in 13 countries of the European Community, which does not represent even the half.

## **5. Comparing Indexes and their Development from the Year 1991 So Far**

The development of the insurance industry in the Czech Republic had a positive influence on most of the indexes which were from the year 1993 regularly monitored at first by the ministry of Finance of the Czech Republic, then from the year 2000 by the Office of Government Control in the insurance industry and pension scheme supplementary insurance and at the same time from the year 1995 by the Czech Association of Insurance Companies which is a special interest association of commercial insurance companies and from 42 subjects which are licensed for entrepreneurship in the insurance industry on the territory of the Czech Republic, 28 insurance companies are its members.

Technical reserves, which are exactly defined by the Law on insurance industry, are one of the most important indexes of activities of insurance companies. However, in the course of the last 14 years, that means since de monopolization of the insurance industry in the Czech Republic in the year 1991 setting their amount has been subjected to many changes. Simultaneously with the development of the insurance industry in the CR values of these parameters have been changing gradually.

In the tables which are the enclosure of this article there are given mainly the values important for the insurance company functioning, which are fixed capital, specified insurance, indemnification expenses consistent with the development of insurance on the market in the CR in single years gradually from 1991 to 2004. Tables are in two variations, that is to the year 2000 and from the year 2001 as only since the year 2001 mainly the reserves on indemnification, the number of settled and unsettled insurance events were monitored.

Tables are the resource of the Ministry of Finance of the CR, and so they show he development of the insurance market on the base of all insurers operating on the Czech insurance market.

**Insurance industry – development of some monitored indexes 2001 – 2004 (Up-dating 27.10.2005)**

	04/03	04/01	04/95
<i>Market of life insurance – specified gross insurance (thousand - CZK)</i>	107,47%	156,29%	473,16%
<i>Number of concluded insurance policies of life insurance</i>	100,07%	105,12%	127,24%
<i>Indemnification expenses from life insurance (thousand - CZK)</i>	152,75%	187,05%	364,74%
<i>Market of general insurance - specified gross insurance (thousand - CZK)</i>	105,49%	130,34%	279,62%
<i>Number of concluded insurance policies of general insurance</i>	100,30%	79,37%	202,87%
<i>Indemnification expenses from general insurance (thousand - CZK)</i>	79,05%	132,39%	287,39%

	04	01	95
<i>Ratio of specified gross insurance of life insurance on specified gross insurance of general insurance</i>	39,26%	35,03%	27,64%

	04/95
<i>Surge of specified gross insurance total</i>	3,33

## 6. Conclusion

From the results of the Czech Association of Insurance Companies (ČAP) for the year 2004 it concludes that the insurance market has a constantly growing tendency. Total specified insurance of the ČAP members has increased since the year 2003 by 6,6% and has reached the level CZK111,5 mld.

Even from now on it can be observed the growing trend of the life insurance at which the specified insurance has increased by 7,5 % on CZK44,2 mld. Its ration on the total specified insurance has grown and amounted to 39,6 %.

In the same period general insurance has increased exactly by 6 % and amounted thus CZK67,3 mld.

Growth of specified insurance in total in the year 2004 is again higher than the rate of inflation 2,8 %. Compared to previous years, however, the growth rate slightly slowed down.

Definitely as for the positive phenomenon it can be considered the decrease of total indemnification expenses, that is by 2,5 %.

According to preliminary results of the ČAP, which it received from its members for the period 1-9/2005, it concludes that the insurance market in this period will increase. Total specified insurance of the ČAP members has increased compared to the same period of the year 2004 by 3,4 % and has reached the amount of CZK87,3 mld.

In the life insurance specified insurance has increased for the period 1-9/2005 by 1,1 % to CZK32,7 mld. It is important that currently paid insurance has increased by 9,9 %. Single-payment insurance, which is calculated into specified insurance immediately for the whole period of the validity of the insurance policy, however decreased by 16,4 %.

In the general insurance for the period 1-9/2005 the inter year growth 4,9 %, that is on CZK54,6 mld., has been recorded.

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# PERSPECTIVES OF BANCASSURANCE DEVELOPMENT IN POLAND

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## **Abstract**

*The beginnings of co-operation between banks and insurance companies reach the 70-ties. Along with changes on the world's financial market a new formula of providing financial services was formed – it was given the name "bancassurance". In its broadest meaning the bancassurance service covers products and activities related to those services that are needed by an individual or institutional customer in order to create, manage and secure one's property.*

**Key words:** *bancassurance services, development, legal rules, economic factors*

## 1. Introduction

To explain the term of bancassurance in a wider sense we can point out to three basic organisational and functional forms in which banks get involved to sell insurance products:

insurance companies owned by banks; in this case the bank has the majority share in the company settled by the bank, or a company it took over, or merged with;

bank - insurance captive: products of such company owned by the bank and offered mainly at bank establishments,

banks acting as insurance agents: the bank enters into distribution alliances with insurance companies at a low capital involvement and operates as an insurance agent selling products of one or more companies<sup>1</sup>.

All of these forms of co-operation between banks and insurance companies warrant a comprehensive financial service desired by customers. This complexity is advantageous for clients and justifies the existence of bancassurance services. Customers of modern financial institutions search for products that would entirely satisfy their financial needs in the quickest and most comfortable way. Thus, merging banking facilities with insurance seems obvious and while offered to a customer along with active finance consulting makes a full financial service.

## 2. Legal frames of bancassurance in Poland.

The basic factor conditioning bancassurance development is the adjustment level of legal regulations referring to distributing insurances through banks. One model of co-operation between a bank and an insurance company assumes informing the bank's customer about an opportunity to enter into an insurance agreement with a specific insurer. In this model a chosen insurance company is advertised on the bank's premises by displaying the company's informational brochures. Bank's activities of this kind can base on a promoting agreement concerning selling insurance policies by the bank. However, this procedure raises some reservations, particularly in reference to the act from the 22 of May 2003<sup>2</sup> concerning insurance intermediation, according to which agency activities include activities

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<sup>1</sup> M. Śliperski, *Bancassurance w Unii Europejskiej i w Polsce*, Biblioteka Menedżera i Bankowca Warszawa 2001r, s.8.

<sup>2</sup> *Ustawa z dnia 22 maja 2003 r o pośrednictwie ubezpieczeniowym*, Dz. U. Nr 124 poz. 1151

consisting in winning over customers and executing actions preparing to enter into an insurance contract. Thus, in order not to fall within the scope of this broad concept of insurance intermediation the bank has to adopt a policy consisting in simple promotional actions devoid of elements providing information about insurance conditions and not allowing getting the bank's client in touch with a particular insurance company agent. It appears that the concept of insurance intermediation is defined more accurately in the European Parliament's and Commission's directive<sup>3</sup>. As insurance mediation does not mean an activity consisting in casual information supply performed in frames of other basic activities, if the purpose of these activities is not aimed at helping the customer in concluding or executing the insurance contract, professional damage managing of the insurance office or valuation and liquidation of damages.

However, experiences of banks on the Polish financial market show that these casual relations between banks and insurance companies are short-termed and as a result lead to development of more durable relations between both institutions. Under the Polish banking law<sup>4</sup>, banks can perform as an insurance agent by providing consulting services in money matters and other financial issues. So the bank acts here as an agent -entrepreneur. Basic legal aspects of this form of co-operation are regulated by both the Act of Insurance Intermediation<sup>5</sup> and the Civil Code<sup>6</sup>. Agency activities include thus activities consisting in winning over customers and executing actions preparing to conclude an insurance contract. New regulations stemming from the Civil Code protect interests of insurance agents in a clear way. Thus it is highly beneficial to put the bank in the position of an insurance agent; in this was the bank gets a significant advantage over the insurance company and a privileged position in relation to its equivalent so far partner – the insurance company. According to novelized regulations of the Civil Code, not only consumers but also banks are subject to protection concerning relations with the insurance office, under unilateral standards of strictly binding force. As an example an agent has a right to compensatory benefit if within the contractual period of the agency agreement he/she won over new clients, or led to a significant increase in turnover with the present customers, and the person who gave the order still derives considerable benefits from agreements with these customers. The agent-entrepreneur - the bank, has the right to obtain a commission on an agreement signed after the termination of

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<sup>3</sup> *Dyrektywa Parlamentu Europejskiego i Rady 2002/92/WE z 09.12.2002r o pośrednictwie ubezpieczeniowym*

<sup>4</sup> *Ustawa prawo bankowe z dnia 29.08.1997 r. Dz. U. 2002r, Nr 72, poz. 665, art. 6*

<sup>6</sup> *Ustawa kodeks cywilny z dnia 26.07.2000r, Dz. U. Nr 74 poz. 857*

the agency agreement if except for fulfilling other conditions to get the commission the agent obtained the proposition to conclude the agreement resulting in the order before the end of the contractual period.

Moreover, the agent can demand the commission on an insurance agreement concluded after the termination of the agency agreement in case when this insurance contract was concluded mainly due to the bank's activity within the contractual period or within a reasonable time after its termination. By analysing the above-mentioned examples it seems obvious that a bank acting as an insurance agent in this type of relations between banks and insurance companies is put in a very advantageous position which is secured by law regulations binding in Poland in this field of activity.

The situation is different when the bank concludes an insurance policy with the insurer on behalf of a third party - that is a bank's customer. Then the bank as the insurer is obliged to pay the premium. However, this premium is paid from the bank's client's money accumulated on his account. This scheme often refers to payments due for securing transactions made by the bank's customer with a credit card. This situation conforms to the art. 808 § 1 of Civil Code and the Act on Insurance Activity that assume an opportunity to conclude an insurance contract on behalf of a third party.

Development of bancassurance in Poland is possible also due to favourable legal regulations included into widely understood consumer's rights. It is assumed that in case of a bank credit insurance, withdrawal from the credit contract evokes the same consequences to the insurance of the contract<sup>7</sup>.

Bank agreements granting credits, the repayment of which is secured by the creditor's life insurance agreement concluded for the period equal to the crediting period, should thus contain a provision making possible termination of the insurance contract in the situation when the credit agreement is resolved, for example in case of an earlier credit repayment.

Bancassurance is also legally acceptable according to regulations of the Act on Fighting Against Dishonest Competition and the Act on Protection of Competitors and Consumers<sup>8</sup>. In accordance to the first one activities consisting in hindering access to the market to other firms are prohibited. Very often banks condition the decision about concluding a crediting contract

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<sup>7</sup>Ustawa z dnia 20.07.2001r o kredycie konsumenckim , Dz. U. Nr 100 poz. 1081, art. 11.

<sup>8</sup> Ustawa z dnia 15.12.2000r o ochronie konkurencji i konsumentów, Dz. U. Nr 122 poz. 1319, art.5 pkt.6.

E. Nowińska ,M.Du Vall: „Komentarz do ustawy o zwalczaniu nieuczciwej konkurencji”, Warszawa 2001r,s.131.

on buying the life insurance for crediting purposes in a selected insurance company. However, banks argue that in this case they do not infringe regulations of the above mentioned act as they appoint a company of a good financial position, so that the policy should primarily guarantee an effective security for the interests of the bank. This action also conforms to the Act on Protection of Competitors and Customers which bans agreements that aim at or result in elimination, limitation or infringement of fair competition on the proper market, consisting in particular in restricting the access to the market for other companies not covered by agreements. However, this ban doesn't refer to companies that operate on various levels of circulation and their total share in the market in the calendar year preceding the conclusion of a contract does not exceed 10%. Summing up, one of the main premises of bancassurance development in Poland is the state of various regulations that in this field are convenient for banks. There are no regulations referring directly to the institution of bancassurance and the indicated various forms of co-operation between banks and insurers are acceptable.

### **3. Economics factors**

The other group of factors that influence the development of bancassurance in Poland are market and economic factors such as:

possibility to increase profits of the banks and insurance companies through offering a complex financial service to the banks' clients, and lowering of the joint operational costs without using other financial agents,

possibility to lower the price of banking services and so to better compete in the financial market,

lowering of operational risk of the bank through its partial transfer onto an insurance company,

diversification of sources of the bank earnings allowing greater freedom in deposit policy handling of the bank and ensuring greater financial safety,

winning over a larger group of clients through the effective application of loyalty in relation to clients by, e.g. offering them complex financing services.

The first of the above-mentioned factors confirms the tendency across the globe to offer complex services by the banks, comprising financial advice services, typical bank products, bank innovations and insurance products<sup>9</sup>.

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<sup>9</sup> „European bancassurance market to 2002” Datamonitor research and analysis 2003,s.43.

Offering of the above-mentioned services “under one ceiling” (meaning under the same roof) guarantees the associations of banks and insurance an increase of their profits. For example, in France, considered to be the leader of the bancassurance market in EU10, insurance is also sold with the use of networks of cash dispensers. In 2000 within bancassurance, 35% of life insurance policies, 60% of deposit type insurance policies and 7% of real estate insurance policies<sup>11</sup> were sold. The gross premium income of the five biggest banks amounted to 27600 million USD<sup>12</sup>. Additionally, the fact of lowering of the operational costs determines attractiveness of the connections between the banks and insurance companies. The market research shows that a cost of distribution of insurance policies in the bank amounts to 8% of a collected premium, which constitutes an amount three times lower compared to an amount of costs designated for remuneration of insurance agents<sup>13</sup>. As much as 80% of the main European banks which started to deal with the sales of insurance services show their operational costs at a lower level than traditional insurers<sup>14</sup>.

The risk transfer constitutes another important factor for the banks to establish the formal links with insurance companies. Thanks to this cooperation, the banks gain access to an enormous amount of capital for many years. Additionally, as a rule they try to transfer the weight of risk onto other entities. The insurance companies, however, deal with ‘taking’ of this risk, therefore the bank becomes for them a perfect partner. The insurers learn the principles and objectives of the investment policy of the bank. They use access to the network of bank branches, their website, and, first of all, to their wide client database. It can also be noted that, in the Polish market, the clients have much greater confidence in the banks than in the insurance companies. Therefore, an insurance company that has started a regular cooperation with the bank counts on loyalty of its clients, their trust and their attachment to ordering management of their finance with bank advisors.

The diversification of services is another equally obvious factor of success. On the current financial market, the trend to complete the traditional bank offer with other products may be observed, mainly advisory services, and insurance products. The modern financial institutions offer their clients a

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<sup>10</sup> www.actuaries.org dated 02.04.2004r, „Analysis and prospects of the French bancassurance market”.

<sup>11</sup> www.scor.com dated 18.03.2004., „Bancassurance across the globe”.

<sup>12</sup> www.datamonitor dated 07.2003.

<sup>13</sup> M.Śliperski „Zalecenia w strategii bancassurance”, Wiadomości ubezpieczeniowe No. 7-8 1998r,s.10.

<sup>14</sup> R.N.Hanisz „Strategia polskich banków wobec wyzwań rozwojowych”, Katowice 2002r, s.110

package offer which is well adjusted to the needs of individual clients, enterprises or local government units as these clients expect, first of all, to be offered a complex service that saves their time and money.

There are also some barriers that may limit the bancassurance development in Poland in a considerable way. Decrease of the pace of economic growth may result in lower demand for financial products among people. Moreover, the issue of the bank and insurance relations is relatively little known to financiers. The missing experience within that scope and ignorance of the issue may effectively limit development of these services. According to Datamonitor, a research and analysis agency, a negative attitude of the banks may prove to be the next barrier for bancassurance development. It turns out that most of the banks show their “superiority” over the insurance companies and they reluctantly decide to take up new enterprises for fear of typical bank offer sales drop and of putting their make and reputation to the test.

Summing up, it can be stated that creation of the connections between the banks and insurance companies results from the globalization and liberalization of the financial market across the world. This transformation is accompanied by aspiration of the banks to continuously modernize, to search for new income sources and to diversify risks of their operations. If the indicated success factors are met and certain barriers overcome, it will be possible to speak about development and success of the bancassurance market in Poland.

#### **4. The idea of bancassurance service**

There are two more factors also supporting attractiveness of the bancassurance service: it's simplicity and low price - as an English statement puts it: keep it simple keep it cheap. The proposition of linking banking facilities with insurance products completing them brings benefits to both the bank and its customer. The customer saves time on searching and purchasing an insurance product from an external insurance firm. Thus the customer is encouraged by an opportunity to fulfill all his financial needs “under one ceiling”.

The insurance product proposed at the bank establishments can also turn out to be cheaper for the customer than a matching product offered to him by other financial insurances agents that usually take higher commissions for their services. The customer's trust is an extremely important factor to the bank. Apparently, banks enjoy much higher trust than insurance companies, agents or insurance brokers. Yet, so far bank customers

usually lose their chance to choose an insurance offer from the whole palette of all insurance products from financial market offerings. Banks propose their own specific offer or a specific insurer. Obviously, the customer is free to choose: either use the bancassurance offer or to search on his own one and negotiate insurance conditions with an external insurance firm. Yet, there is some risk that the bank will reject an insurance policy other than their own that would contain conditions insufficiently protecting the interests of the bank in securing the credit repayments. For the customer that situation would mean that he would have to accept worse credit conditions or that he would be refused a credit from the bank. Another issue is an option to make an easy resignation from the insurance product offered him along with the bank product as the so called financial services package. It could turn out that an earlier resignation from the insurance bought out in the bank is impossible, ineffective and very costly. On the other hand using by the customer external insurance products that would make an integral part of banking services involves the need to update these agreements and submit them to be accepted by bank. Advantages and inconveniences of using the bancassurance services presented here are similar for the customer in our country and abroad. However, differences may concern the scope, the method and the quality of these services. In Poland this area of banking business is still relatively poorly managed.

It is also necessary to point out to factors influencing the bank's decision to start selling insurances at its enterprises. In conditions of constant changes on the financial market that manifest in a constant drop in the interest profit margin and income of the bank, to be able to ensure a competitive position the bank is obliged to take up actions in the field of expenses control, diversification of revenue sources, implementing modern risk management tools. Bancassurance is a perfect tool to diversify revenue sources and a modern tool which transfers the risk to the insurer. Following the globalisation of financial markets the banks' position dominating in respect to other financial institutions has been reduced. In the face of the strong competition between banks and non-bank institutions operating in the banking sector, consolidation of banks and insurance companies guarantees a definite competitive advantage and it changes the present image. A bank co-operating with an insurance company in one of the mentioned forms:

- increases his capital potential,
- implements modern technologies,
- increases its personnel's qualifications,
- introduces innovative bancassurance services

- obtains additional sources of income,

what proves its high ability to compete on the market. Moreover, an optimal risk level is ensured thanks to the possibility to transfer a part of this risk to the insurer, or due to accepting the same range of risk but by a stronger capital of a bancassurance group. Bancassurance institution is a banking and insurance group created for the purposes of offering comprehensive financial services, called bancassurance services, including fragmentary services typical for a bank, of insurance and consulting character performing as the product's amalgam<sup>15</sup>.

The risk incurred by bank does not increase proportionally to its size and annual turnover obtained by it. A large bancassurance institution characterizes with a lower risk of bankruptcy, and possesses increased bargaining power on the financial market. This enables reducing expenses related to capital acquisition by giving it a form of a credit and loans interest rate in case of individual customers or deposits for banks. A large financial institution, possessing a bigger credit wallet, spreads losses to a significantly higher number of transactions and moreover is capable of limiting them by applying insurance products or covering them with profits from an extra insurance activity. Co-operation between banks and insurance companies makes society perceive banks as developing financial institutions aimed at comprehensive customer service. Complex financial services comprising finance consulting and modern bancassurance products, has significant importance not only from the customers' points of view, but also for strengthening their loyalty to the very institution.

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<sup>15</sup> Authors own theory

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# THE DEMAND FOR DIFFERENT LIFE INSURANCE PRODUCTS IN ROMANIA: A DISCRETE CHOICE MODEL APPROACH

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## **Abstract**

*The Romanian life insurance market is in full expansion. There exists competition between insurance companies as well as between different products of the same company. In this article we describe a study using data that we collected from clients of a Romanian insurance company. We have observed two types of variables: characteristics of insurance products (e.g. profitability, risk), as well as characteristics of individuals (e.g. sex, age, income). We use a Discrete Choice Model – The Multinomial Logit Model. We estimate the variations in the market shares of life insurance products using marginal effects. The variations are due to possible changes in the values of some characteristics such as age or income.*

**Keywords:** *life insurance; demand; multinomial logit; market shares.*

## 1. Introduction

In the past years, Romanian insurance industry has gradually emerged to become an important part of the financial services sector. While in the Western Europe countries the life insurance sector dropped with more than 3% in 2003, the average of the Central and Eastern Europe (CEE) growth rate in this field was of 15,22%, exceeding the last ten years average growth rate with almost 80%.<sup>1</sup> It is expected that, while the welfare of the CEE inhabitants will grow, the density and the penetration degree will show a sustained evolution. According to the results provided by the insurance companies for the year 2004, there is a certain fact: the Romanian Insurance Market is rising and the life insurance sector has increased of about 10% from 2003. The life insurance line of business remains polarized, the market share held by the top ten companies ranked by gross written premiums is of 92% and the market share of the leader company exceeds 40%.

The study of life insurance demand has attracted the interest of a number of researchers in the past. Theoretical models on life insurance demand have been developed and empirical studies also have been conducted extensively to examine the influence of specific factors on the demand for life insurance.

This paper proceeds to review the literature related to life insurance demand, to present the Romanian life insurance market, to describe the data and estimation model, to present and discuss the empirical results, and to conclude with the findings of this study.

## 2. Literature Review

Economic theory predicts that households will save and insure in order to enjoy the same living standard over time and in the event of the death of a household head or spouse. Economic theory in this case accords with common sense and every day observation. “We save to be able to maintain our life styles in retirement. And we buy life insurance to make sure our survivors can continue to live at the same standard to which they have become accustomed” -Kotlikoff, Gokhale (2002).

There is no unique theory for life insurance demand. Yaari (1965) was the first to develop a theoretical framework to study the uncertainty of lifetime and the demand for life insurance. He predicted that investors make asset allocations decisions and life insurance purchase to maximize their

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<sup>1</sup> “*Insurance Profile – Romanian Insurance Market*” - Quarterly Insurance Review, issue 4, 2004.

lifetime utilities of wealth and consumption. Almost all of the theoretical works which study the impact of wealth and bequest motives on life insurance demand developed later have expanded their models based on the study of Yaari (1965).

There are a number of empirical studies of life insurance demand that have been developed in the past. Bernheim (1991) uses estimates of the demand for life insurance to assess the strength of bequest motives. He finds that a significant fraction of total saving is motivated by the desire to leave bequests. Browne and Kim (1993) present evidence on life insurance demand across 45 countries. They find that the main determinants of country variations in the demand for life insurance are the dependency ratio (the number of dependents per potential life insurance consumer), income, inflation and price of insurance.

The findings of Browne and Kim (1993) and Outreville (1996) confirm that the income level affects significantly the life insurance demand. Life insurance becomes more affordable when income increases.

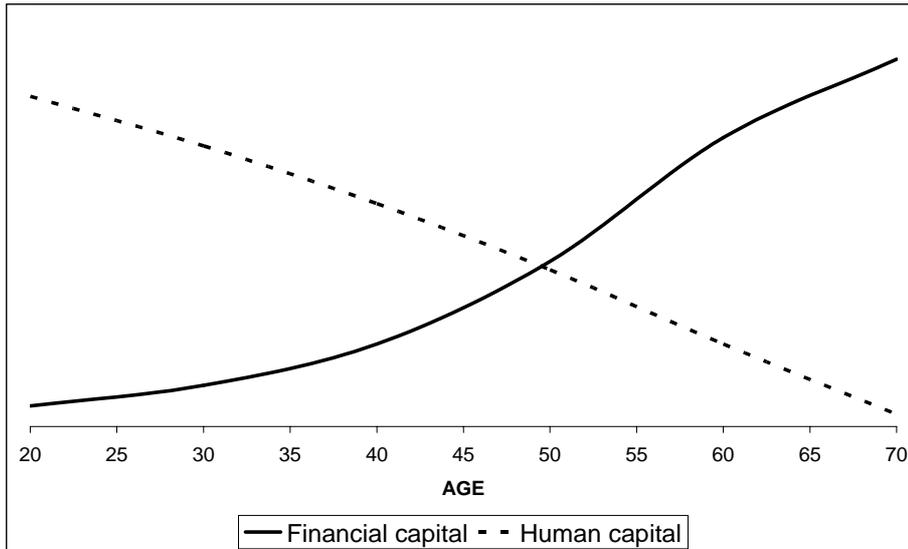
Over time, the life insurance decisions and the asset allocation have been analyzed separately, both in theory and practice. The human capital is the factor that makes the linking between these two, because it affects both the optimal asset allocation and the demand for life insurance – Chen, Ibbotson, Milevsky, Zhu (2005). They defined the human capital as the present value of an investor's future labor income.

An investor's human capital contains a unique mortality risk, which is the loss of all future income and wages in the unfortunate event of premature death. Life insurance has been used for long time to hedge against mortality risk. The greater the value of human capital is, the more life insurance the family demands.

Younger investors have far more human capital than financial capital. This is because younger investors have more years to work and they have had few years to save and accumulate financial wealth. On the other hand, young investors tend to have more financial capital than human capital, since they have fewer years ahead to work but have accumulated financial capital over a long career.

Figure 1 illustrates the amounts of financial capital and human capital over an investor's working years from age 20 to age 60. When the investor is young, his human capital far outweighs his financial capital. As the investor gets older, he will continue to make savings and with the return from the existing financial portfolio, the amount of financial capital will increase.

**Figure 1. Financial Capital and Human Capital over the Life Cycle**



Source: Chen, Ibbotson, Milevsky, Zhu (2005) - “Human Capital, Asset Allocation and Life Insurance”, Working Paper

The human capital gradually decreases as the investor gets older and the remaining number of working years gets smaller. The amount of financial capital increases as the investor ages. This is the result of the growth of the existing financial wealth and additional savings that the investor makes each year.

The allocation of capital in risky asset decreases as the investor ages. This result is due to the dynamic between human capital and financial wealth over time. When an investor is young, the investor’s total wealth is dominated by the human capital. Since human capital in this case is less risky than the financial risky asset, young investors will invest more financial wealth into risky assets to offset the impact of human capital on the overall asset allocation. As the investor gets older, the allocation to risky assets is reduced, as human capital gets smaller.

### **3. Data Issues About Life Insurance**

There are two issues about life insurance that we have to emphasize: first we provide descriptive statistics on the structure of life insurance policies in Romania and secondly, we briefly present the types of life insurance products that we are referring to.

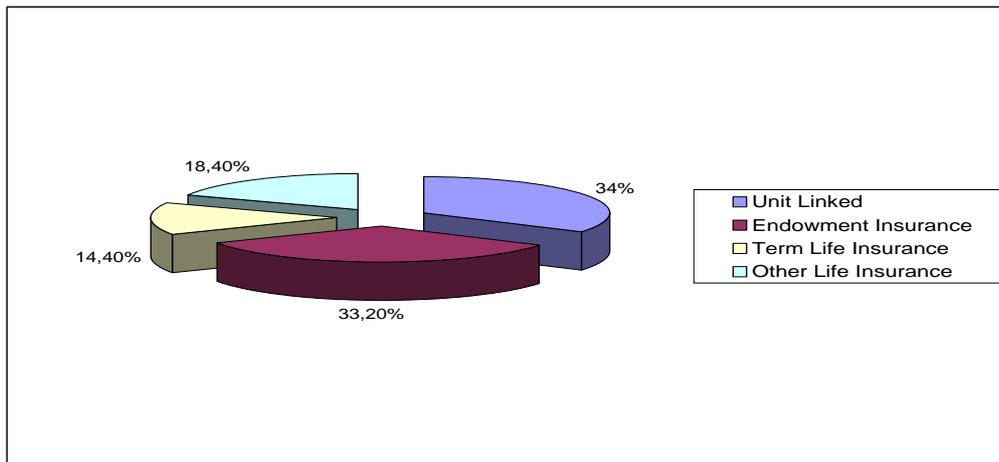
### 3.1 The Classification of the Life Insurance Products in Romania

The main types of life insurance products offered by the insurance companies in Romania are the *Term Life Insurance*, the *Whole Life Insurance*, the *Endowment Insurance*, the *Life Insurance Annuities* and the *Unit Linked Life Insurance*.

In the year 2004, three types of life insurance products held 81,6% from the total of gross written premiums, as follows<sup>2</sup>:

- *Unit Linked Life Insurance* with a market share of 34% from the total of gross written premiums;
- *Endowment Insurance* with a market share of 33,2% from the total of gross written premiums;
- *Term Life Insurance* with a market share of 14,4% from the total of gross written premiums.

**Figure 2. The Market Share of the Main Types of Life Insurance Products considering the Volume of the Gross Written Premiums, in 2004**



Source: *The Insurance Supervision Commission, Annual Report for the Romanian Insurance Market, 2004.*

Taking into consideration this ranking of the insurance products, we have analyzed for a certain insurance company the factors that influence an individual to choose one these three top products. From here on, we will briefly present the three types of life insurance products mentioned previously.

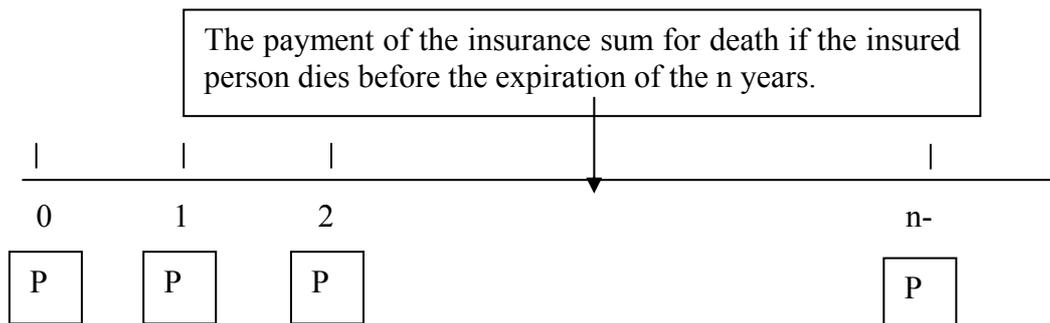
<sup>2</sup> The Insurance Supervision Commission, Annual Report for the Romanian Insurance Market, 2004.

## 3.2 A Brief Presentation of the Analyzed Insurance Products

### 3.2.1 The Term Life Insurance

This insurance provides protection for the risk of death only, it doesn't imply saving or capitalization. The insured person pays periodically the prime, for which a third person – the beneficiary - will collect the insured sum at his death. If when the term is reached the insured person is alive, he or the beneficiary doesn't receive anything. This is the reason for the prime to be quite small in relation with other types of insurance.

**Figure 3. The scheme of the Term Life Insurance**

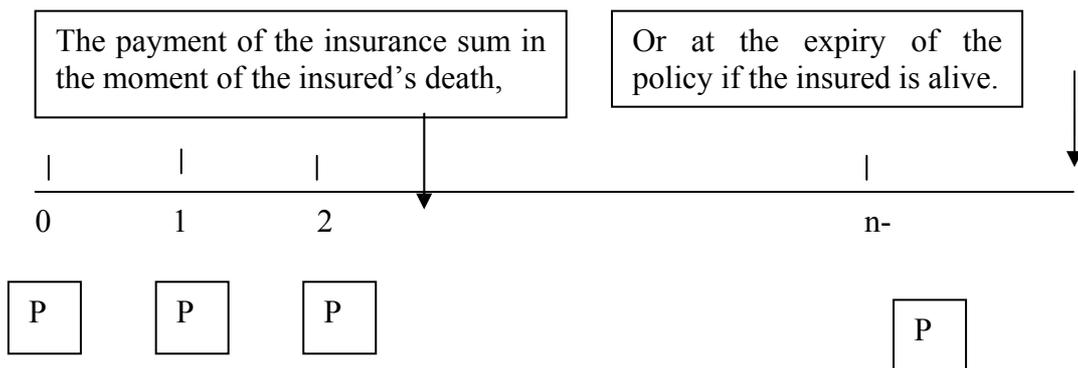


*Source: Corfias, Th, (2003), Assurance-vie: techniques et produits, L'Argus de L'assurance, Paris.*

### 3.2.2 Endowment Life Insurance

The Endowment Life Insurance is a capitalization insurance, which covers both the risk of death and the risk of "surviving". If the insured person is alive at the end of the contract he personally gets the insured sum, and if he dies before the end of the contract the insured sum would be collected by the beneficiary. The advantage of this insurance type is the fact that the sums paid as insurance premiums are capitalized and can be used when the policy expires. Obviously, the insurance premium in this case is greater than in the case of the term life insurance.

**Figure 4. The scheme of the Endowment Life Insurance**



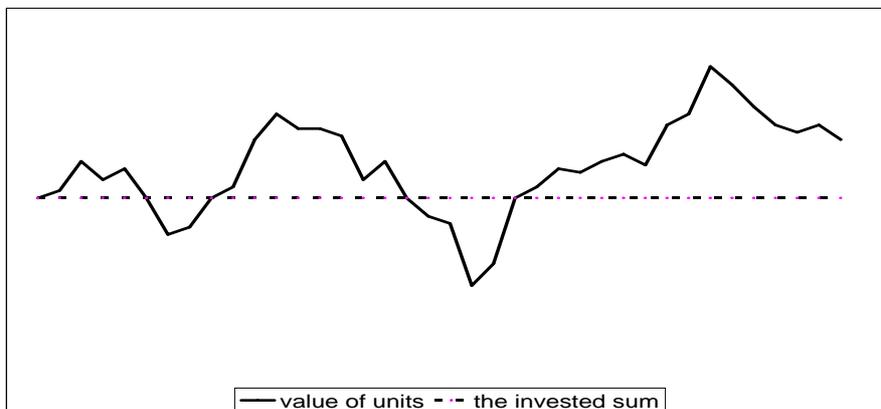
Source: Corfias, Th, (2003), *Assurance-vie: techniques et produits*, L'Argus de L'assurance, Paris.

### 3.2.3 Unit Linked Life Insurance

The Unit Linked Life Insurance has an investment component and a protection component. The *protection component* is represented by a whole life insurance. In case of death, the beneficiary will get the maximum between the invested sum and the value of the count. The value of the count represents the value of the units held in the funds of the insurer.

The *investment component* consists of buying units in the financial funds constituted for this type of insurance. The value of the count is obtained by multiplying the number of units with the value of the unit fund for that day. The profits obtained by investment are connected to the performance of the funds, which may imply a lower or a higher risk.

**Figure 5. The scheme of the Unit Linked Life Insurance**



Source: Corfias, Th, (2003), *Assurance-vie: techniques et produits*, L'Argus de L'assurance, Paris.

For the traditional insurance products, the insured person has considerable guarantees which consist of a fixed insured sum at death or when the policy expires.

The risk of the investment belongs to the insurance company:

- The company must adopt a prudential attitude towards the future profits obtained from investments;
- The company has to invest their clients' money in safe financial instruments like governmental bonds, treasury bonds or bank deposits at safe banks.

In the case of Unit Linked Life Insurances, when it comes to investing his savings, the insured person is given the possibility to choose between different funds (having different composition in bonds and shares). The policy profitability depends on the risk exposure of the chosen funds and on the proportion invested in them. The risk of the investment belongs to the insured. If the insured is willing to take greater risks he will select the funds with a greater proportion of shares, which offer the opportunity of a higher profitability.

We will estimate the variations of the market shares of these three life insurance products using marginal effects, in the case when the values of the two variables, age and income, are modified.

#### **4. Data and Estimation Model**

Our application involves clients of a Romanian insurance company, whose name will remain unrevealed, out of competition reasons. In July, we have made a poll consisting of 78 subjects who possess insurance policies at that company. Three insurance products have been taken into consideration: term life insurance, endowment life insurance and unit linked insurance, which altogether represent 80% of the turnover of the company.

##### ***4.1 The Sample***

The individuals from the sample have been questioned about two kinds of variables: variables that characterise the insurance products and variables that characterise the insured person.

1. Defining the profitability of an insurance as being the income produced for a given value of the insurance premium, mark on a scale from 1 (lowest profitability) to 10 (highest profitability) the following products:
  - a) term life insurance : .....
  - b) endowment life insurance : .....
  - c) unit linked insurance : .....
  
2. Defining the risk as being the certainty of achieving the estimated income, mark on a scale from 1 (lowest risk) to 10 (highest risk) the following products:
  - a) term life insurance : .....
  - b) endowment life insurance : .....
  - c) unit linked insurance : .....
  
3. You have a:
  - a) term life insurance : .....
  - b) endowment life insurance : .....
  - c) unit linked insurance : .....
  
4. You are: ..... years old.
  
5. You are a:
  - a) Male
  - b) Female
  
6. Your monthly income is: ..... RON/month .

#### ***4.2 The Model***

Supposing that each one of the individuals of the sample chooses only one type of life insurance, the decision of choosing the product is discreet. Consequently, the model chosen for explaining the choice of an insurance product is a discreet one, so the estimation will be made using the econometrics of qualitative variables. The model will be a multinomial one because the qualitative dependent variable  $y$  has more than two states,  $y_i = j$ ,  $j = 0, 1, \dots, m$ , respectively. In our application, the states of  $y$  are the insurance products.

**The Multinomial Logit Model.** The multinomial Logit is actually an extension of the binary Logit model, having more modalities of choice. Let  $(p_0, p_1, \dots, p_m)$  be the probabilities of  $m+1$  modalities of choice. The probability of an individual  $i$  to choose the modality  $j$  is given by:

$$p_{ji} = P(y_i = j) = \frac{\exp(x_i b_j)}{1 + \sum_{j=1}^m \exp(x_i b_j)} \quad j = 1, 2, \dots, m \quad (1)$$

where  $x_i$  is the vector of the explicative variables associated to the individual  $i$ , and  $b_j$  is the vector of parameters associated to the modality  $j$ .

**The Conditional Multinomial Logit Model.** The generalization of the Logit model for the multinomial case is made taking different parameters  $b_j$  depending on the variants of choice (products), such that the explicative variables  $x_i$  remain constants depending on the products. Still, there is another possibility: the McFadden conditional Logit model which considers a constant vector of parameters  $b$  and allows the explicative variables  $x_{ij}$  to depend on the variants (McFadden 1973, 1980). The probability of an individual  $i$  to choose the modality  $j$  is given by:

$$p_{ji} = P(y_i = j) = \frac{\exp(x_{ij} b)}{\sum_{k=1}^m \exp(x_{ik} b)} = \frac{\exp(x_{ij}^* b)}{1 + \sum_{k=1}^m \exp(x_{ik}^* b)} \quad j = 1, 2, \dots, m \quad (2)$$

where  $x_{ij}^* = x_{ij} - x_{i0}$ , and the proportion of the probabilities is:

$$\frac{P(y_i = j)}{P(y_i = l)} = \frac{\exp(x_{ij}^* b)}{\exp(x_{il}^* b)} = \frac{\exp(x_{ij} b)}{\exp(x_{il} b)} = \exp[(x_{ij} - x_{il})b] \quad \forall j, l = 1, 2, \dots, m \quad (3)$$

which, as in the case of the multinomial Logit is independent of the other variants of choice.

When computing the marginal effects, we are interested in the estimated variation of the probability of an individual  $i$  to choose modality  $j$ , when the explicative variable  $k$  associated to a product varies. We have:

$$p_{ij} = \frac{\exp\left(\sum_{k=1}^K x_{ijk} b_k\right)}{1 + \sum_{h=1}^m \exp\left(\sum_{k=1}^K x_{ihk} b_k\right)} \quad (4)$$

the marginal effect  $\frac{\partial p_{ij}}{\partial x_{ilk}}$  being:

$$\begin{cases} b_k p_{ij}(1-p_{ij}) & \text{daca } j=l \\ -b_k p_{ij}(1-p_{il}) & \text{daca } j \neq l \end{cases} \quad (5)$$

**The General Multinomial Logit Model.** Due to the fact that our application involves both explicative variables that characterise the products and variables characterising the individual, a more general model will be used, which contains both the multinomial and the conditional Logit models. The probability of an individual  $i$  to choose the modality  $j$  is given by:

$$p_{ji} = P(y_i = j) = \frac{\exp(x_{ij}b + x_i b_j)}{\sum_{k=1}^m \exp(x_{ik}b + x_i b_k)} \quad j, k = 1, 2, \dots, m \quad (6)$$

Once the parameters have been estimated, by replacing the values of the explicative variables with the mean values from the sample, we can obtain an estimation of the probability  $\tilde{p}_j$  that a randomly chosen individual (average individual) will choose the product  $j$ . By multiplying this number by the total number of consumers  $N$ , an estimation of the demand (or of the market share) for the product  $j$  will be obtained:

$$\tilde{D}_j = \tilde{p}_j \times N \quad (7)$$

We can also obtain simulated market shares for products, computed for other values of the explicative variables, thus facilitating the foundation of some product policies.

### The Variables

Profitability – values from 1 to 10

Risk – values from 1 to 10

Age – years

Sex – 0 if the individual is a woman, 1 if it is a man

Income – RON/month

Term – dummy variable. Equal to 1 if the term life insurance product is chosen, 0 otherwise

Endowment – dummy variable. Equal to 1 if the endowment insurance product is chosen, 0 otherwise

Unit linked – dummy variable. Equal to 1 if the unit linked insurance product is chosen, 0 otherwise

Age\_term = Age × Term

Age\_endowment = Age × Endowment

Age\_unit linked = Age × Unit linked

Sex\_term = Sex × Term

Sex\_endowment = Sex × Endowment

Sex\_unit linked = Sex × Unit linked

Income\_unit linked = Income × Unit linked

Income\_endowment = Income × Endowment

Income\_unit linked = Income × Unit linked.

## 5. Results Presentation

**Table 1 The average values of variables in the sample**

	Variables				
	Profitability	Risk	Age	Sex (% of males)	Monthly income (RON)
<i>Term Insurance</i>	4.44	6.05	59.3	33.3	819
<i>Endowment</i>	2.78	2.01	50.4	48.1	928
<i>Unit Linked</i>	8.17	6.90	40.6	66.8	1118

### 5.1 The Estimation of the Model

For estimating the parameters, the LIMDEP 7.0 program will be used and as an estimation algorithm, the Newton-Raphson method.

**Table 2 Parameters estimates – all variables**

Discrete choice (multinomial Logit) model  
 Maximum Likelihood Estimates  
 Number of observations 78  
 R-sqrd 0.78815

<b>Variable</b>	<b>Coefficient</b>	<b>Standard Dev.</b>	<b>t-statistic</b>
<i>Profitability***</i>	2.030	0.6562	3.094
<i>Risk***</i>	-2.695	0.6977	-3.862
<i>Age_term</i>	0.000	Fixed parameter	-
<i>Age_endowment**</i>	-0.159	0.0726	-2.194
<i>Age_unit linked***</i>	-0.268	0.0965	-2.777
<i>Sex_term</i>	0.000	Fixed parameter	-
<i>Sex_endowment</i>	0.898	1.430	0.628
<i>Sex_unit linked</i>	-1.674	1.733	-0.966
<i>Income_term</i>	0.000	Fixed parameter	-
<i>Income_endowment</i>	0.0027	0.0040	0.664
<i>Income_unit linked**</i>	0.0114	0.0052	2.177

\*\*\*p<0.01 \*\*p<0.05 \*p<0.10

We remark that the *sex* variable is insignificant from a statistical point of view, for all possibilities of choice (all types of insurances). We estimate once more the model, after having eliminated this variable.

**Table 3 Parameters estimates – all variables except for sex**

Discrete choice (multinomial logit) model  
 Maximum Likelihood Estimates  
 Number of observations 78  
 R-sqrd .76708

<b>Variable</b>	<b>Coefficient</b>	<b>Standard Dev.</b>	<b>t-statistic</b>
<i>Profitability***</i>	1.753	0.5415	3.237
<i>Risk***</i>	-2.182	0.5122	-4.259
<i>Age_term</i>	0.000	Fixed parameter	-
<i>Age_endowment**</i>	-0.132	0.0583	-2.258
<i>Age_unit linked***</i>	-0.211	0.0744	-2.844
<i>Income_term</i>	0.000	Fixed parameter	-
<i>Income_endowment</i>	0.0021	0.0034	0.845
<i>Income_unit linked**</i>	0.0082	0.0041	2.004

\*\*\*p<0.01 \*\*p<0.05 \*p<0.10

The values of the parameters are according to prediction. The plus for *profitability* shows an increased probability of choosing the product when the value of the variable increases. The minus for *risk* shows a decrease of probability. The minuses for *age\_endowment* and *age\_unit*

linked show the fact that when age increases, it decreases the probability of choosing the endowment insurance and unit linked insurance products, with respect to the reference product, the term insurance. The minuses for `inc_endowment` and `inc_unit_linked` show the fact that when income increases, it increases the probability of choosing the endowment insurance and unit linked insurance products, with respect to the reference product, the term insurance.

For each individual, we can compute according to the formula (6) the probability of choosing each of the three insurance products:

**Table 4 Predicted Probabilities (\* marks chosen, + marks prediction.)**

Indiv.	term insur	endow.insur	unit_linked.insur
1	.7456*+	.2515	.0029
2	.9690*+	.0246	.0064
...	...	...	...
17	.9684*+	.0276	.0039
18	.9987*+	.0007	.0006
19	.6737 +	.2945*	.0318
20	.3366	.6566*+	.0068
...	...	...	...
44	.0036	.7231*+	.2733
45	.0355	.9518*+	.0127
46	.0000	.0001	.9999*+
47	.0021	.0088	.9891*+
...	...	...	...
77	.0001	.0107	.9893*+
78	.0064	.0063	.9873*+

A study of the estimated probabilities show that the model is an evolved one from the point of view of predictions, the percentage of correct prediction being 84.6%.

### ***5.2 The Applicability of the Model***

We may consider the case when the values of the explicative variables change. We compute the marginal effects, the percentage variations of the share markets of the products respectively, when the *profitability* and *risk* variables are increased by 1.

**Table 5 The marginal effects (%) for the variable *profitability***

		<i>The marginal effect over the product</i>		
		<i>Term insurance</i>	<i>Endowment</i>	<i>Unit Linked</i>
<i>The product for which “profitability” varies</i>	<i>Term</i>	6.45	-4.62	-1.82
	<i>Endowment</i>	-4.62	10.93	-6.31
	<i>Unit Linked</i>	-1,82	-6,31	8,12

*Source: Author’s calculation*

The results obtained are according to prediction: the increase of the profitability of a product determines the increase of its market share and the decrease of the market shares of the other products, but of different values. For instance, the increase of profitability for the term insurances will have a greater impact on the endowment insurances than on the unit linked ones.

**Table 6 The marginal effects (%) for the variable *risk***

		<i>The marginal effect over the product</i>		
		<i>Term insurance</i>	<i>Endowment</i>	<i>Unit Linked</i>
<i>The product for which “risk” varies</i>	<i>Term</i>	-8.02	5.76	2.26
	<i>Endowment</i>	5.76	-13.61	7.85
	<i>Unit Linked</i>	2.26	7.85	-10.12

*Source: Author’s calculation*

For the *risk* variable, the results are very similar, but of opposite sign: when the risk of a product increases its market share decreases and the market share for the other products increase.

The model can be also used for founding some product strategies (advertising, promotion). Considering this, we estimate the markets shares of the three insurance products, for different values of the variables *income* and *age*. The variables *profitability* and *risk* keep their medium values from the sample.

**Table 7 The market shares for the three insurance products in the group age 30-40 years**

	<i>Medium income (RON/month)</i>							
	700	800	900	1000	1100	1200	1300	1400
<i>Term</i>	2.1	1.2	0.7	0.3	0.2	0.1	0.0	0.0
<i>Endowment</i>	56.4	43.9	31.8	21.7	14.0	87.8	5.4	3.2
<i>Unit Linked</i>	41.5	54.9	67.5	78.0	85.8	91.1	94.6	96.8

*Source: Author’s calculation*

**Table 8 The market shares for the three insurance products in the group age 40-50 years**

	<i>Medium income (RON/month)</i>							
	700	800	900	1000	1100	1200	1300	1400
<i>Term</i>	9.3	6.2	3.8	2.1	1.1	0.6	0.3	0.1
<i>Endowment</i>	68.2	60.1	49.2	37.4	26.4	17.5	11.2	6.9
<i>Unit Linked</i>	22.5	33.7	47.0	60.5	72.5	81.9	88.5	93.0

*Source: Author's calculation*

**Table 9 The market shares for the three insurance products in the group age 50-60 years**

	<i>Medium income (RON/month)</i>							
	700	800	900	1000	1100	1200	1300	1400
<i>Term</i>	30.7	23.3	16.7	11.0	6.7	3.8	1.9	1.0
<i>Endowment</i>	60.3	61.2	58.3	51.5	41.7	31.0	21.5	14.0
<i>Unit Linked</i>	9.0	15.5	25.0	37.5	51.6	65.2	76.6	85.0

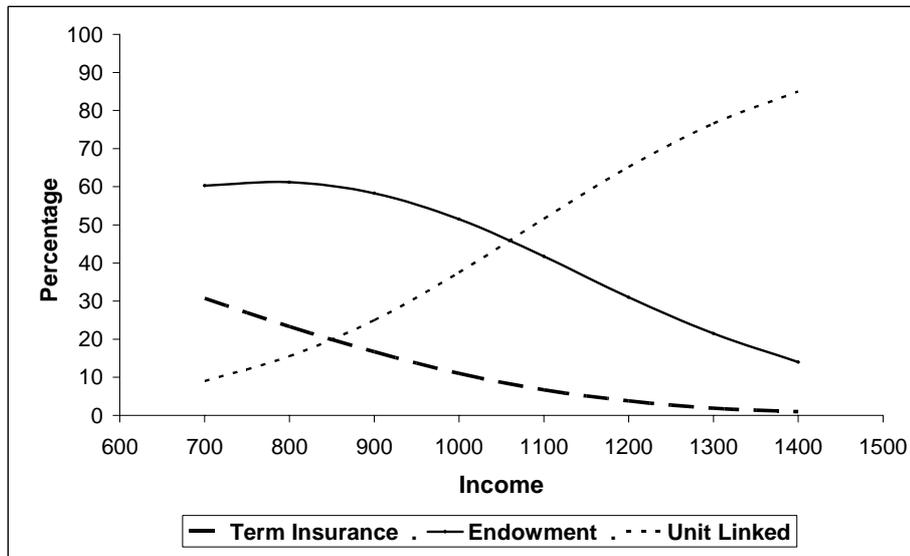
*Source: Author's calculation*

**Table 10 The market shares for the three insurance products in the group age 60-70 years**

	<i>Medium income (RON/month)</i>							
	700	800	900	1000	1100	1200	1300	1400
<i>Term</i>	64.0	56.1	47.2	37.6	27.9	18.8	11.5	6.4
<i>Endowment</i>	33.7	39.4	44.2	47.0	46.3	41.7	34.0	25.1
<i>Unit Linked</i>	2.3	4.5	8.6	15.4	25.8	39.5	54.5	68.5

*Source: Author's calculation*

**Figure 6 The evolution of the percentage of the three insurance products with respect to the income, for a 55 years old person**



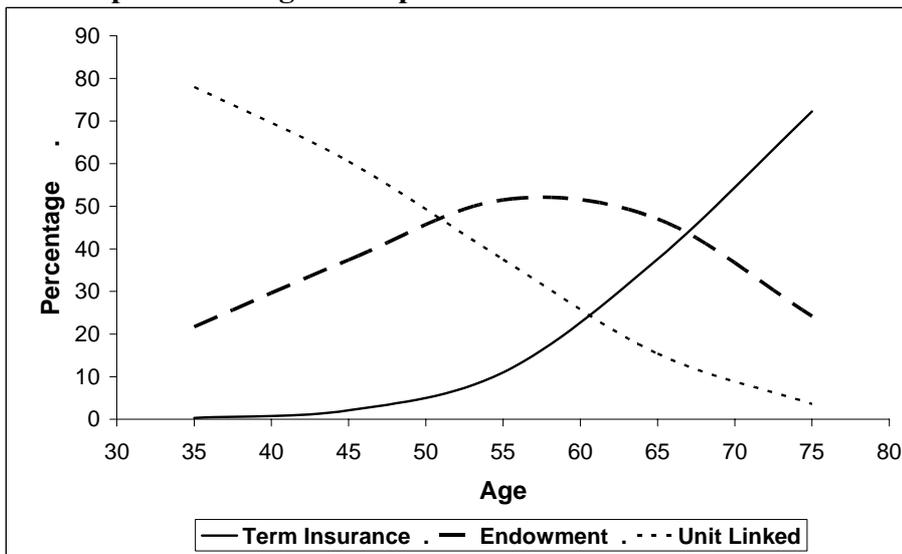
Source: Author's calculation

**Table 11 The market shares for the insurance products for an income of 1.000 RON/month**

	Age								
	35	40	45	50	55	60	65	70	75
<i>Term</i>	0.3	0.9	2.1	5.1	11.0	21.8	37.6	55.9	72.2
<i>Endowment</i>	21.7	29.0	37.4	45.5	51.5	52.5	47.0	36.1	24.2
<i>Unit Linked</i>	78.0	70.1	60.5	49.4	37.5	25.7	15.4	8.0	3.6

Source: Author's calculation

**Figure 7 The evolution of the percentage of the three insurance products with respect to the age. for a person with an income of 1000 RON/month**



Source: Author's calculation

## 6. Conclusion

All in all, we have succeeded to explain through The Multinomial Logit Model different aspects of the demand for life insurance products in a company from the Romanian insurance market. The results obtained in the application match perfectly to the theory presented previously. The demand for products with lower risk level increases, as a person is getting older, to the detriment of the products of higher risk level. Moreover, the income is a major factor that influences the choice of a specific insurance product: as income increases, there exists an increased affordability for the higher risk products.

The demand for each product is well forecasted, as well as the attributes of the products (and individuals) that determine the choice. The model can be used for modifying the characteristics of the life insurance products, in order to obtain among these a relation that would maximize the profit of the company. One insurance product may be more profitable than another, while the achievement of a demand structure, as profitable as possible for the company, can be determined based on the estimations of the marginal effects of the risk and on the profitability of insurance products.

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# THE COMPULSORY BUILDINGS' INSURANCE IN ROMANIA – A POSSIBLE SOLUTION FOR CAT-EVENTS' CONSEQUENCES?

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## **Abstract**

*Recently, Romania has been confronted with severe floods. Thousands of people found themselves homeless in couple of hours. Lives were lost and people injured. And it seems that the vagaries of weather and its risks will not stop here. On the same token, given its geomorphological and geographical location Romania is permanently exposed to the imminence of a severe earthquake. This paper intends to examine the problems with the introduction of compulsory buildings' insurance in Romania as a solution for managing the consequences of natural catastrophes. Three important viewpoints will be considered: 4the insured, the insurance companies and the recommendations of the World Bank.*

**Keywords:** *compulsory insurance, natural catastrophes, consequences, solutions, World Bank's recommendations.*

## 1. Introduction

According to a recent study conducted by the World Bank in april 2002, Romania is strongly exposed to natural catastrophes risks, especially earthquakes, floods and landslides which could severely lead to a loss of human lifes and important damages. Bucharest, is the European capital most exposed to earthquakes, and one of the first 10 capitals in the world that could face such a risk<sup>1</sup>.

Regarding properties, the above mentioned study estimates that annual damages following possible earthquakes and floods would reach 400 millions USD.

Since 1908, in Romania there have been recorded :

- a) 14 strong earthquakes out of which 3 with a magnitude above 7 degrees on a Richter scale (in 1940,1977,1986) that have affected 60% of Romania's territory.
- b) 8 major floods that affected more than 2 million people and caused important economic damages.

Moreover, 20% of Romania's territory may be exposed to landslides.

**Tabel 1. Top Natural Catastrophes in Romania**

<i>Earthquakes</i>	<i>Floods</i>
<b>1977</b> ; 7,2 degrees Richter scale, 2 bilion USD damages; 1.641 deaths.	<b>1991</b> ; 500 million USD damages, 15.000 people distressed;
<b>2005</b> , 7 earthquakes, above 4 degrees Richter are being produced each 15 through 45 days; specialists estimate a major earthquake (2006).	<b>1997</b> ; 310 million USD damages, 222.320 people distressed;
	<b>2005</b> ; the damages following the April, July, August and September floods reached 1,4 billion EUROS, approximately 2% of the 2005 estimated GDP; 31 deaths.

*Source: Author's compilation*

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<sup>1</sup> Munich RE's specialists have characterized Bucharest as a " *a large city with a Mexico City effect*". There are only 6 location in the world with such a possible effect, out of which 2 are in Europe: Bucharest and Lisbon.

How will this damages be covered (2005)? How will the reconstruction houses works, socio-cultural objectives' works, the reconstruction of the infrastructure such as piers, bridges be financed?

## 2. Overview of the Romanian insurance market.

### 2.1. Comparisons with the insurance markets in Central and East European countries, European Union 15, European Union 27 and with the global markets.

We will consider useful this comparison, given certain macroeconomic ratios and indicators such as *density of insurance and the degree of insurance penetration*. Below, we will provide a table with data supporting our comparison:

**Table 2 Major macroeconomic indicators concerning the comparison between Romania's insurance market and the insurance market in CEE, EU 15, EU 27 and the global markets.**

Country	Insurance premiums 2004		Population	GDP	GDP/inhabitant	Density of insurance		Insurance penetration	
	total	non-life				total	non-life	total	non-life
	Mil. euro	Mil. euro				Mil. inhabitants	Mil. euro	euro/person	euro/person
Poland	5,538	3,492	38.6	183.2	4,746.0	<b>143.5</b>	90.5	<b>3.02</b>	1.91
Czech R.	3,287	2,027	10.2	73.2	7,201.5	<b>322.2</b>	198.7	<b>4.47</b>	2.76
Hungary	2,172	1,304	9.9	72.6	7,330.3	<b>219.4</b>	131.7	<b>2.99</b>	1.80
Slovakia	1,009	598	5.4	30.1	5,572.2	<b>186.8</b>	110.8	<b>3.35</b>	1.99
Romania	876,52	687,19	22,2	48,7	2,192.6	<b>40.4</b>	30.85	<b>1.46</b>	1.01
Bulgaria	342	304	7.9	17.7	2,240.5	<b>43.4</b>	38.4	<b>1.94</b>	1.72
Russia	12,468	8,160	143.5	383.2	2,670.4	<b>86.9</b>	56.9	<b>3.25</b>	2.13
Ukraine	1,515	1,504	48.4	42.5	877.7	<b>31.3</b>	31	<b>3.57</b>	3.54
Croatia	801	623	4.4	24.8	5,631.8	<b>182.0</b>	141.6	<b>3.23</b>	2.51

<i>Serbia-Monte negro</i>	386	372	10.7	16.8	1,571.5	<b>36.1</b>	34.7	<b>2.29</b>	2.21
<i>EU 15</i>	808,016	344,33	382,8	9,417.4	24,601	<b>2,110.8</b>	862.7	<b>8.58</b>	3.66
<i>EU 27</i>	838,545	353,57	466,8	10,043	21,516	<b>1,796.6</b>	741.5	<b>8.35</b>	3.52
<i>Global</i>	2,602,49	1,122,3	6,262.1	32,289	5,156.3	<b>415.6</b>	179.2	<b>8.06</b>	3.48

Source: *Piata Financiara – Supliment Asigurari, february 2005; CSA, Report CSA 2004*

Considering the 2004 financial year, Romania has a low density of insurance<sup>2</sup>, compared with the Czech Republic. Romanians are almost 8 times more “uninsured” and 8 times more exposed to natural catastrophes risks than the Czechs. If we are to compare Romanian indicators with the global and European ones, we are 10 times more “uninsured” than the global inhabitant and 44 times more insurance deficient than EU 27.

Moreover, Romania has the lowest insurance penetration ratio<sup>3</sup>.

*How can this be explained?*

## **2.2. The Romanian insurance demand.**

At the initiative of the Romanian publication “Piata Financiara” and under the auspices of the Media Controller Research Company, a program is being run named TEBA – “Trends in Economics, Banking and Insurance”. The program aims at periodically evaluating couple of indicators pertaining to the attitudes of the Romanian population towards the financial institutions active on the Romanian market and the financial institutions’ offers<sup>4</sup>.

Three polls have been conducted in Bucharest in September 2001, February 2002 and November 2002.

The results led us to couple of conclusions presented below:

<sup>2</sup> The insurance density is computed as a ratio between gross insurance premiums and the volume of the population.

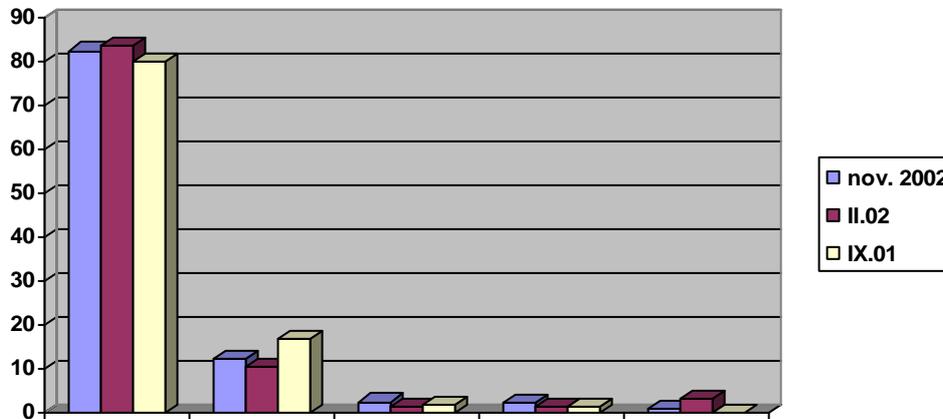
<sup>3</sup> The degree of insurance penetration is computed as a ratio between gross insurance premiums and the gross domestic product (GDP)

<sup>4</sup> Piata Financiara, *Asigurari*, february 2003, pag. 23 – 24.

**Table 3. Do you have an insurance contract (other than RCA – mandatory car insurance)?**

	<i>NO</i> %	<i>Yes, I have a single insurance contract with a single insurance company.</i> %	<i>Yes, I have multiple insurance contracts with a single insurance company.</i> %	<i>Yes, I have multiple insurance contracts with multiple insurance companies.</i> %	<i>NS/NR</i> %
<i>nov. 2002</i>	82,5	12,1	2,5	2,2	0,7
<i>feb. 2002</i>	83,7	10,4	1,5	1,3	3,1
<i>sep. 2001</i>	79,9	16,9	1,7	1,4	0,1

**Figure 1. Do you have an insurance contract (other than RCA – mandatory car insurance)**



Source: Piata Financiara, Supliment - Asigurari, February 2003, page. 24;

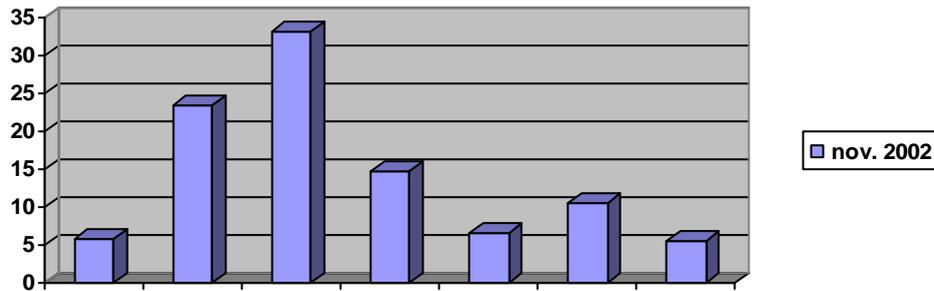
NS/NR: don't know / no answer.

( 1 ) In November 2002, out of the 1330 subjects questioned, only 17% had optional insurance contracts (i.e. less than 1/5)

**Table 4. How much trust do you have in the insurance companies?**

	<i>Very much</i> %	<i>Much</i> %	<i>Not much, not less</i> %	<i>A little</i> %	<i>Very little</i> %	<i>None</i> %	<i>NS/NR</i> %
<i>nov. 2002</i>	5,9	23,5	33	14,7	6,7	10,5	5,7

**Figure 2. How much trust do you have in the insurance companies?**



Source: *Piata Financiara, Supliment - Asigurari, February 2003, page 23;*  
*NS/NR: don't know / no answer.*

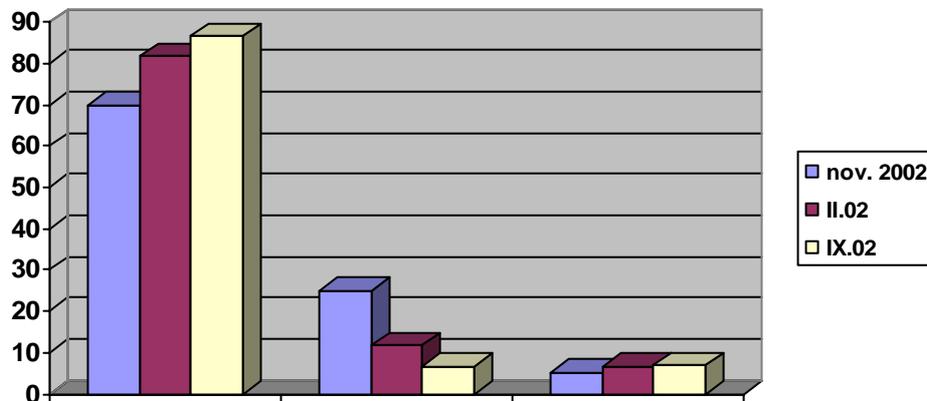
( 2 )30% of the people subject to the poll trust the local insurance companies, 1/3 are skeptical when it comes to the seriousness of the insurance firms and 33% are indifferent. The answers' structure is in equilibrium, indicating that "the trust" is not the critical problem blocking the insurance market development in Romania.

**Table 5. Do you intend to buy an insurance contract in the next 6 months?**

	<i>No</i>	<i>Yes</i>	<i>NS/NR</i>
<i>nov. 2002</i>	69,9 %	24,9 %	5,2 %
<i>feb.2002</i>	81,7 %	11,7 %	6,6 %
<i>sep.2002</i>	86,5 %	6,7 %	6,9 %

Source: *Piata Financiara, Supliment - Asigurari, February 2003, page 24;*  
*NS/NR: don't know / no answer.*

**Figure 3. Do you intend to buy an insurance contract in the next 6 months?**

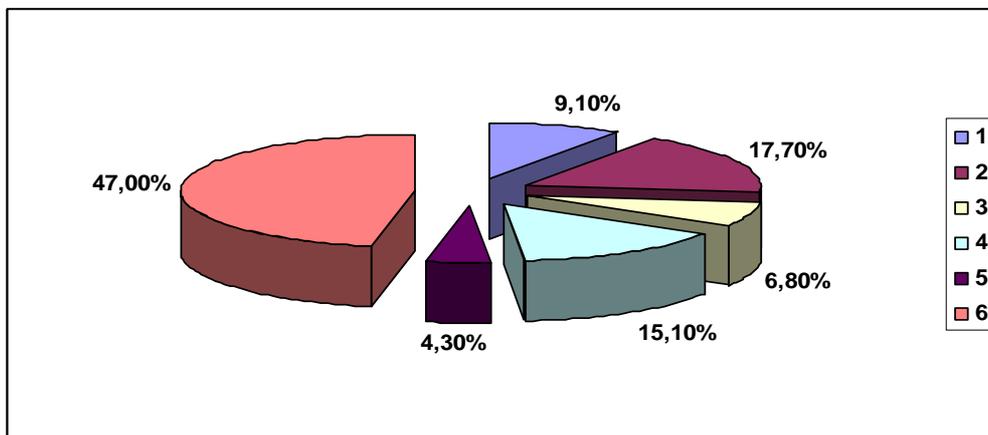


*Source: Piata Financiara, Supliment - Asigurari, February 2003, page 24; NS/NR: don't know / no answer*

( 3 ) In November 2002, the polls indicated that a 25% increase in demand was possible. This percent is higher than 9 months or 13 months ago.

*What is the reason behind this low interest of the Romanians in buying an insurance contract?*

**Figure 4. The reasons why they are not interested in buying an insurance contract.**



*Source: Piata Financiara – Supliment Asigurari, march 2002, page 24.*

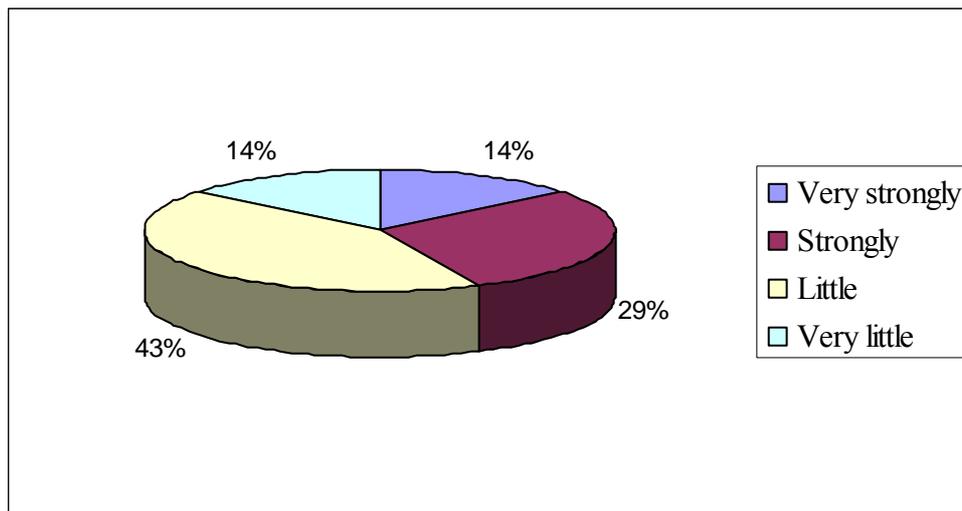
1. 9,1% (935 persons) do not trust the insurance market and system;
2. 17,70% don't think they need one;
3. 6,80% have no information regarding the advantages of buying an insurance coverage;
4. 15,10% are indifferent regarding the subject;
5. 4,30% other reasons, and
6. 47% can't afford one.

*Note:* The subjects of the poll were inhabitants of Bucharest ; the degree of insurance penetration in Bucharest is higher than in the rest of the country.

*How are the perspectives after the major 2005 floods?*

The results of a poll conducted on the portal [iasig.ro](http://iasig.ro) regarding “the measure in which this year floods will influence the population’s proneness towards buying an insurance contract” reflected the following characteristics:

**Figure 5. The population’s proneness towards buying an insurance contract after the 2005 floods:**



*Source: iasig.ro / Archives.*

According to the above figure, 57% of the people participating in the poll believe that the 2005 floods have influence in the population’s proneness towards buying an insurance coverage.

The motives often invoked are:

- lack of population’s education regarding insurance coverages;
- the cost of such insurance coverages.

**The lack of population's education regarding insurance coverages**, is a characteristic of the population living in the rural areas. The rural population is old and has a low purchasing power of insurance coverages. Moreover, as the data presented in Table 4, Figure 2 suggests, the Romanian population does not have sufficient trust in the Romanian insurance system, although the insurance companies have consistently strived through advertising and promotions to overcome this obstacle. The governmental policies regarding the matter are not helping the insurance companies' cause, especially if we think at the fiscal policies enacted.

Often, remarks like «people living in the rural area don't have money ; they live from the crops they harvest in the fields, they don't have cash, they prefer the barter when they need something. This is the reason why they can not insure their house» are made.

There are 2 opinions related to the above mentioned statement: on one hand there are those who represent the insurance companies and who consider that the lack of cash is a false problem as the annual premiums for 10.000 EURO are between 1,5 – 3,5 EURO and that from the increase in the insured properties the state, the insurance company and the insured win ; on the other hand, the insurance premiums used in the Western Europe can not be afforded by a middle romanian employee and the cheap premiums are not worth their money.

*What is the genuine view of the romanian insurance market reflected in numbers ?*

### **2.3. The insurance offer in Romania**

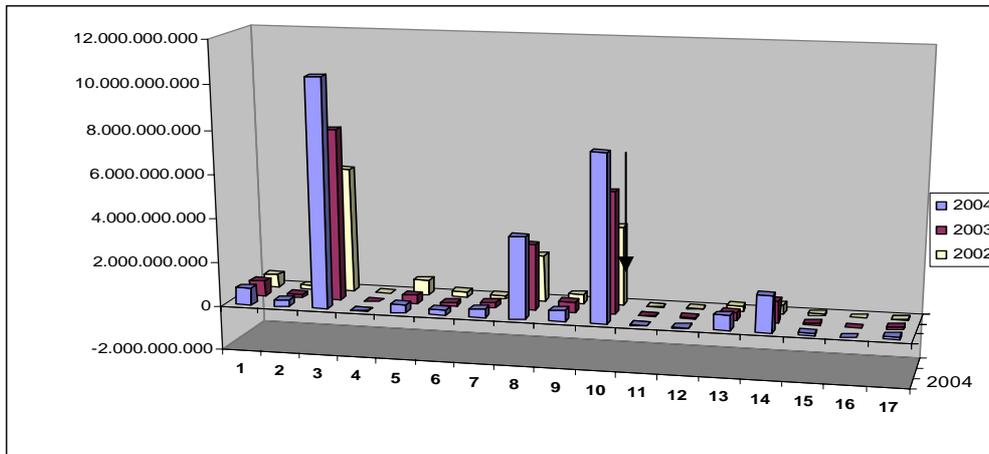
We would like to assert that our perspective, presented below, is synthetic. We will tackle the issue of general insurance coverages and out of those 17 legal insurance categories we will develop the eight one : « The insurance against fire and the insurance against natural catastrophes ». The period considered is that between 2001-2004, according with the official data published by the Insurance Supervisory Commission in their annual reports.

Why 2001 ? Because according with CSA's norm no. 3/2001 regarding the insurance coverages categories that can be used by the insurance companies<sup>5</sup>, for the harmonization of the romanian legislation with the comunitarian one, the legal tipology of the insurance coverages has been modified.

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<sup>5</sup> Published in Monitorul Oficial al Romaniei, Partea I, nr. 501 in 24 august 2001.

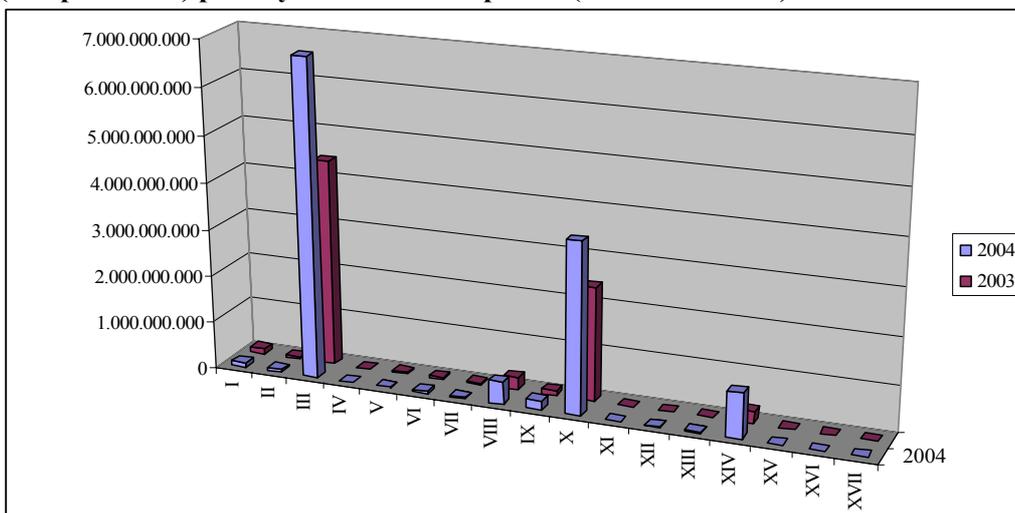
**Figure 6. The insurance against fire and the insurance against natural catastrophes' position in the general insurance coverages – the evolution between 2002-2004 – taking into consideration the volume of subscribed insurance premiums (thousands ROL)**



Source: CSA, Reports 2002, 2003, 2004, [www.csa-isc.ro/Rapoarte](http://www.csa-isc.ro/Rapoarte).

As the above figure suggests, the insurance against fire and the insurance against natural catastrophes was ranked third during 2002, 2003, 2004, after the insurance against car damages (IIIrd category) and the mandatory auto insurance (malpractice) (Xth category).

**Figure 7. The insurance against fire and the insurance against natural catastrophes' position in the general insurance coverages – the evolution between 2003-2004 – taking into consideration the volume of the indemnity (compensation) paid by insurance companies (thousands ROL)**



Source: CSA, Reports 2003, 2004, [www.csa-isc.ro/Rapoarte](http://www.csa-isc.ro/Rapoarte).

Data for 2002 was not available.

During 2004, the insurance against fire and the insurance against natural catastrophes was ranked 4th after the insurance for credit and warranties.

**Table 6. The dynamic of the insurance against fire and the insurance against natural catastrophes market during 2001-2004**

<i>Year</i>	<i>Gross premiums subscribed</i> <i>Thousands ROL</i>	<i>Nominal annual increase</i> <i>%</i>	<i>Inflation rate</i> <i>%</i>	<i>Real annual increase</i> <i>%</i>
2001	1.106.517.000	-	-	-
2002	2.112.478.710	90,91	17,8	62,06
2003	3.011.215.343	42,54	14,1	24,93
2004	3.716.950.266	23,44	9,3	12,94

Source: 1. CSA, Reports 2001, 2002, 2003, 2004, [www.csa-isc.ro](http://www.csa-isc.ro) / Rapoarte; 2. Author's compilation.

**Table 7. The insurance against fire and the insurance against natural catastrophes – macroeconomic indicators**

<i>YEAR</i>	<i>Percent in the total volume of the subscribed premiums – general insurance coverages</i> <i>%</i>	<i>Percent in the total volume of the paid compensation – general insurance</i> <i>%</i>	<i>The rate of indemnity</i> <i>%</i>
2001	14,01	4,45	14,01
2002	14,56	ND	ND
2003	14,89	3,49	8,98
2004	13,78	3,90	12,92

Source: 1. CSA, Reports 2001, 2002, 2003, 2004, [www.csa-isc.ro](http://www.csa-isc.ro) / Rapoarte; 2. Author's compilation. ND: not available

Conclusions:

1. The percent in the total volume of the subscribed premiums of the general insurance coverages during 2001-2004 was approximately 14%, less than 1/5.
2. The positive aspects are:

- a) the real annual increase for this insurance type is above the annual real increase for general insurance coverages.
  - b) the 4% of the compensations paid for this type of insurance in the total volume of compensation paid.
3. The increase in the trend of the indemnity rate, rate that is expected to grow further given the natural catastrophes that are expected in the years to come.

Given this background and adding the issues of the damages produced by the 2005 floods evaluated at 1,4 billion Euros, the indemnities paid by the insurance companies which amounted to 5,5 million Euros, the insurance rate of 0,4% or 4‰ raised the issue of mandatory house insurance.

*What are the opinions of the insured, the insurance companies and the representatives of the supervisory commission? What are the recommendations of the World Bank?*

### **3. The issue of reinstating compulsory insurance on population's houses and apartments.**

#### ***3.1 An Analysis of the main elements and topics involved in compulsory building insurance.***

We consider it is much more compelling to present in a tabular illustration the comparison between the characteristics of the insurance form mentioned in the title of this study and of this chapter for the period 1971 – 1995 (with some necessary observations for 1990 -1995) and the project introduced for debate in 2001, forgotten for a while and then recently awakened– October 2005.

**Table 8 Comparative study regarding the insurance's product characteristics**

<b>Elements</b>	<b><i>During 1971<sup>6</sup> - 1995<sup>7</sup></i></b>	<b><i>Project 2002</i></b>
<b>Insured (Policyholders)</b>	- individuals; - agricultural cooperatives <sup>8</sup> ; - intercooperative economical associations <sup>9</sup> ; - firms.	- individuals

<sup>6</sup> Type of mandatory insurance through the state regllementations (decret) no. 471/197

<sup>7</sup> The insurance was not considered mandatory as enacted in the Law no. 136/1995, the Law regarding insurance and reinsurance in Romania, published in « Monitorul Oficial al Romaniei », Part I, no. 303 from 30 december 1995.

<sup>8</sup> Discontinue after 1990;

<b>Insurer</b>	ADAS (State Insurance Administration (in Romanian: Administratia Asigurarilor de Stat) – state monopoly until 1990.	<i>Type 1)</i> Specialized insurer <sup>10</sup> whose sole shareholder is the state;
		<i>Type 2)</i> Private insurance companies.
<b>Insured risks</b>	1) fire, lightning, explosion, even if the lightning or explosion were not followed by fire, torrential rain and the indirect effects it has ; flooding, storm, hurricane, earthquake minimum 6 on Richter scale, land fall or land slide, snow or ice weight, snow avalanches, fall on buildings or other annexes; 2) destruction or damage provoked by the salvage measures taken during the insured event ; 3) demolishing, dismounting or moving expenses.	<i>Type 1)</i> Earthquake plus fire or explosion produced by the earthquake.
		<i>Type 2)</i> 1) storm; 2) earthquake; 3) floods; 4) land fall and land slides.
		<b>Exemptions :</b> Financial loss following the insured risk appearance (loss of income from rent, costs associated with finding an alternative accomodation)
<b>Insured object</b>	1. Buildings and other constructions ; 2. Including: a) engines, machines, installations, means of transport and tools owned by the firm; b) raw materials, fuel, semifinished and finished products; c) animal products, agricultural	The insurance is only for <i>individuals' buildings</i> (private) and will provide cover only for buildings not for the objects inside them.

<sup>9</sup> Idem.

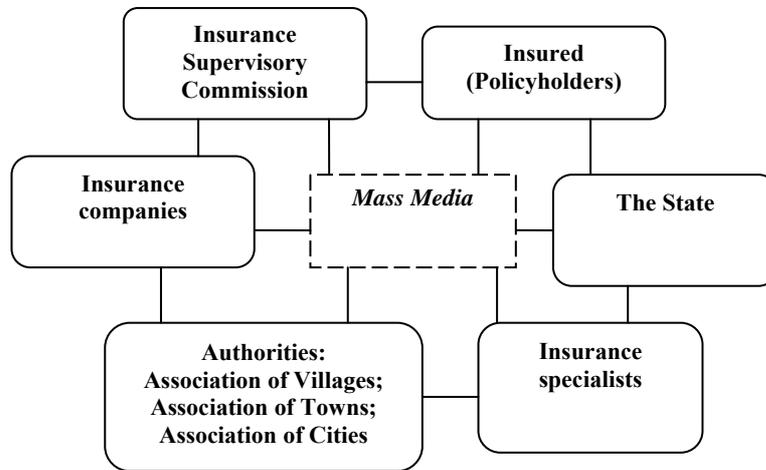
<sup>10</sup> Whose sole purpose would be mandatory building insurance.

	products, fodders and the deposited crop of orchards.	<b>Exemptions :</b> -buildings constructed after 1989 without proper authorizations or that do not fulfil the resistance standards; -buildings deemed as major risk for earthquakes (larger than 7 degrees on the Richter scale)
<b>Insured Amount (Sa)</b>	a) <i>individuals</i> : $Sa = Sc \cdot Na/m^2$ ; unde: Sc –built surface; Na/m <sup>2</sup> - insurance norm / square meter built, differentiated between urban and or rural whereabouts and type of building.	Maximum amount insured = 15.000 euro; “extra value” of buildings can be insured (optional).
	b) <i>firms</i> : value of the buildings as stated in the balance sheet (accounting value).	
<b>Insurance Premium (Pa)</b>	$Pa = ct \cdot Sa$ Tarrifs quota (ct): -urban: 0,3%; - rural: 0,4%.	$Pa = ct \cdot Sa$ Tarrifs quota (ct): - urban: 0,2%; - rural: 0,3%.
<b>Insurers responsibility begins</b>	Automatically: a) immediately after contract is signed; b) if the object is under construction, from the moment the building has walls and roof ; c) when construction begins for buildings belonging to agricultural cooperatives.	24 hours after the day when the contract is signed ends.
<b>Insurers responsibility ends</b>	When the building no longer belongs to the insured or can no longer be used for living or for any economical destination due to degradation or ruin.	At midnight of the last day of validity of the contract,.

Source: Author's compilation.

### 3.2 Opinions regarding the reintroduction of compulsory insurance of buildings

The dialogue partners will be schematically drawn below:



**The State** is present at discussions through the voice of governmental representatives : R. M. Popescu – state secretary for local communities at the Interior Ministry – coordonating ministry of the relaunched project of 2005; L. Borbely – Ministry of Public Works and Territory Fitting. Both support the idea of reintroducing compulsory insurance of individuals’ houses starting January 1, 2006:

- a) against floods, earthquakes, landslides and storms;
- b) insured value: maximum 15.000 euro;
- c) insurance premiums differntiated by area (rural/urban), not more than 30 euros anually.

**Reprezentatives of Association of Villages, Association of Towns, Association of Cities** have announced their support in promoting the project, their role being that of intermediaries in the process of signing the contracts..

**The Insurance Supervision Agency** through its president, Mr. N. Crisan supports the idea of coercitive measures such as : those individuals that have not signed insurance contracts will not be able to sell their houses or fill inheritance papers.

The representatives of the insurance companies and insurance intermediaries do not disapprove the introduction of compulsory building insurance, but they make couple of remarks related to the subject:

- a) in order for the population not to think of this compulsory insurance as a sort of fiscal burden, a financial and fiscal motivation must be found, such as: the deduction of the insurance premium from the annual building tax paid by the owners.
- b) the insurance companies can not take the state's place and they can not solve the social problems in Romania – such as those concerning the capability of the population to pay the premiums.

**The policyholders** (insured) are very reluctant to the subject. They believe that this sort of mandatory insurance coverages are a sort of “forced consumer protection”. Their opinions regarding the subject are summarized below:

- a) the insurance coverage must be the individual's own option given that the premium is “cheap” and that the compensation is high.
- b) those affected by natural catastrophes must receive aid from the government and not compensations from the insurance companies.
- c) for the insurance companies this mandatory insurance system is their “cup of tea”; besides the insurance companies obvious advantages, the local authorities will certainly act as intermediaries, bringing more clients for the insurance companies.
- d) the biggest complaint is that the authorities and the politicians do not debate or make public the causes that led to such high damages from this year' floods: possible undone protection works of the piers and the bridges, improper construction works etc.

**The insurance specialists**, mainly Prof univ. Gh Badea, PhD, the president of the Insurance Institute thinks that such a mandatory introduction of insurance coverage is wrong on one hand because the state should not intervene in such a problem as the state has proven to be a poor manager when it comes to money management and on the other hand because obliging the population to such a thing would impair the right to property. He sustains the introduction of prevention programs and plans to reduce such damages

and an educational plan that would help people comprehend the risks involved. We totally agree with this opinion.

### ***3.3 The World's Bank Recommendations***

The World's Bank specialists think that an insurance pool is needed because:

1. a dispersion of the risks from natural catastrophes is made at the national level; different regions in the country have different exposure to natural catastrophes so the concept of national solidarity would be brought forward.
2. the "pool" would be an important partner in the dialogues with the government, the capital markets, the reinsurance companies, the hedge funds and the investment bankers.
3. through this pool, optimal levels for insurance retaining would be chosen and there would be an obvious advantage in the international negotiations in the insurance companies.
4. managing the consequences of the natural catastrophes through a pool by exporting an optimal level of risk would reduce the country's risk on the global market with net benefits for public policy and capital markets.

Al the above mentioned advantages would not reduce the difficulties with implementing such a system, difficulties generated mainly due to the low level of insurance penetration (below 1% in GDP – Table 2), low level of optional building insurance coverage and the low level of insurance companies capitalization:

- 1) strict and transparent pool's organization's structure and coordination; transparent management of the compensations procedures and schemes; transparent investment methodologies and techniques.
- 2) types of buildings and houses subject to such an insurance pool: private buildings, companies buildings', public buildings.
- 3) the methods and techniques involved in the monitorization and the supervision of the compulsory insurance coverage must be made public.

## 4. Conclusions

The Government's representative, R. Popescu -state secretary in the Internal Affairs Minister – said on 11.10.2005 that although the government is tempted to adopt the World's bank recommendations regarding an insurance pool according with Turkey's model, the fact that in Turkey only 16% of the population subscribed to such a pool would make the Romanian government willing to adopt another solution or model.

Eugen Gurenko, the World's Bank insurance specialist estimated that there are 3 kinds of dilemmas regarding the management of CAT events.

### I. Government's Dilemmas.

- a. A national program for managing the consequences of natural catastrophes, program that includes mandatory insurance coverages, should surpass the political alternance. On the other hand, the lack of natural catastrophes would make this national program unpopular.
- b. Financing these techniques towards managing CAT events would reduce the financing capabilities for other investment projects.
- c. International aid is diminished whether such an insurance system is used.

**II. Insurance market's dilemmas** concern the low level of insurance premiums used by local insurance companies which provide fronting operations for the international insurance firms. Acting as intermediaries, the local insurance companies receive huge reinsurance fees which are disproportionate with the size of the potential damages from cat events.

**III. The policyholder's dilemma.** The potential policyholder's balance between two way of reasoning: on one hand they believe that nothing bad would happen to them and on the other hand they regard the issue of buying an insurance coverage as futile as long as the government should intervene and help them out. By subscribing to an insurance coverage they will diminish any chance they would have to receive governmental aid. Looking from another perspective, they are at the state's mercy, which can decide to help them or not.

Our own opinions regarding the matter are as follows:

The policyholders: As the analysis provided in subchapter 2.2 shows, 44.2% of the Romanians tend to underestimate the importance of buying an insurance coverage; to this 44,2% we should add the other 49% that can not

afford to buy an insurance coverage due to financial restraints. This proves the low level of insurance penetration (5%) and the indemnity rate of only 0.4% for the year 2005.

Romanians above the age of 60 strongly believe in “charity hazard” which means that they do not consider approaching other means of insurance as they believe they will receive help from the government through some governmental emergency programs. They must learn how to be responsible and how to act proactively when it comes to possible risks and dangers. For this to happen they must be educated.

Our opinion is that they must learn how to be responsible and imposing a compulsory insurance coverage system through the legal governmental constraints will not do them much good; besides, this system greatly impairs the right to property. More “actors” involved there are, more difficult it is to control and manage the whole system.

The state must help educating the population and the potential policyholders and it has certain tools that can help him in fulfilling this goal:

- a. the deductability of insurance premiums in the context of the tax on global income;
- b. offering reductions for the tax on buildings paid for those who have subscribed to an insurance coverage;
- c. different quotas for the insurance companies that provide insurance products against the risks from natural catastrophes.

The public intervention and opinion moulding is being made through the activity of the Supervisory Insurance Commission through:

- access on the insurance market;
- close and permanent supervision of the insurance market operators and “actors”;
- enacting reglementations regarding the insurance conditions.

The insurance companies that offer insurance products that cover CAT risks must have the authorization of the Supervisory Insurance Commission, must make available the data and calculus regarding the maxim level of exposure on each insurance type, the method for estimating the maxim damage possible, must provide the Supervisory Insurance Commission with the reinsurance program for this kind of risks, with copies of the reinsurance contracts, broker’s contracts or the list with the reinsurers mentioning the participation quota.

The insurance companies' services must be organized on modules with coverage types for the risks insured, offering the option for the potential policyholder to choose the level of the amount insured and the availability to index the amount to the inflation rate or to the indices regarding currency devaluation. The insurance companies will decide the tariffs systems, tariffs criteria, but these tariffs should not be below a certain threshold. The Supervisory Insurance Commission may intervene for imposing minimal tariffs. They may fix mandatory insurance tariffs criteria for differentiating the insurance types such as: the type of the building, type of the region where the building is, the age of the building etc.

The category of the compensation, favorable to the insured is that of "the first risk", but the policyholder should have the option of buying an insurance contract with franchise.

But before everything else, the insured must have the option of choosing the insurer.

Certain problems still remain:

- a. The age of many buildings, buildings that do not have a construction authorization and which structure do not follow all the technical procedures imposed in the construction business; these kind of buildings can not be insured.
- b. The impossibility of many people living in the rural area to pay the insurance premiums, not even if the premiums are amounting to 30 euros.

On 11.10.2005, Mr. L. Borbely, the minister of the Public Works and Territory Fitting Ministry said that all the expenses related to the rehabilitation of the buildings exposed to an earthquake would be supported from the state budget and that in 2006 the budget will be supplemented with 67 billion lei. These are signs that those in power acknowledge the risks population is confronted with, but we believe that the government major goal should be not the introduction of mandatory building insurance, but the standard of living of the Romanians.

The insurance industry in Romania, as the analysis provided in subchapter 2.3. (table 6 and 7) suggests, there are positive and encouraging signs that things are evolving in the right direction. Those with the power of decision should keep their promises so that Romania becomes an European country for the insurance industry as well.

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*Business  
Administration*

# **ENVIRONMENTAL FINANCING- INCENTIVE FINANCING FOR ENERGY EFFICIENCY IN JAPAN**

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## **1. Introduction**

It becomes a serious global problem to everybody that the burden of the modern industrialization on the environment is approaching the limit of nature's capacity. If humans continue to depend on the present social systems and lifestyles, the world of future will face an environmental catastrophe. It is also of big concern that wars and conflicts could break out over the limited energy resources, food and other resources.

In order to use energy effectively, it must be used efficiently. It is also important not simply to minimize energy consumption, but to consider the effects of energy use on the natural environment, taking into consideration of the global environment as well as the environmental costs.

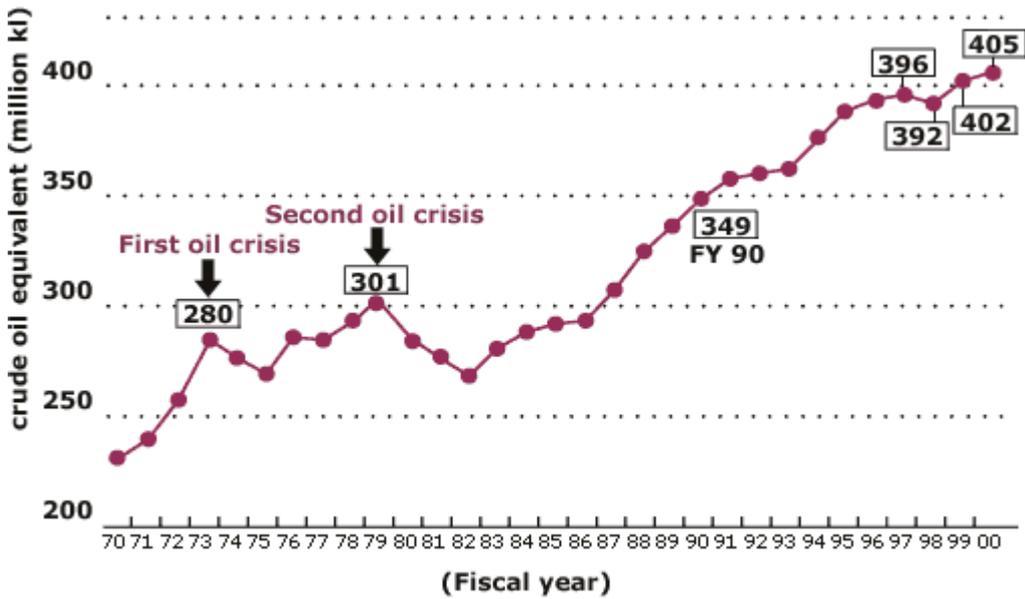
Japan's energy demand-supply structure changed much with the promotion of strenuous efforts for energy conservation in the aftermath of past two oil crises, by 1991. Japan had achieved an approximately 35% improvement in energy efficiency compared with the level in 1973 and now ranks at the top level among the countries of the world in terms of energy conservation. This promotion has been made by close tie up between environmental financing and technical development. In this paper major progress of this two factors have been described.

## **2. Energy situation of Japan**

Japan focused its priority energy conservation measures specifically on the industrial sector, which then account for more than half of Japan's total

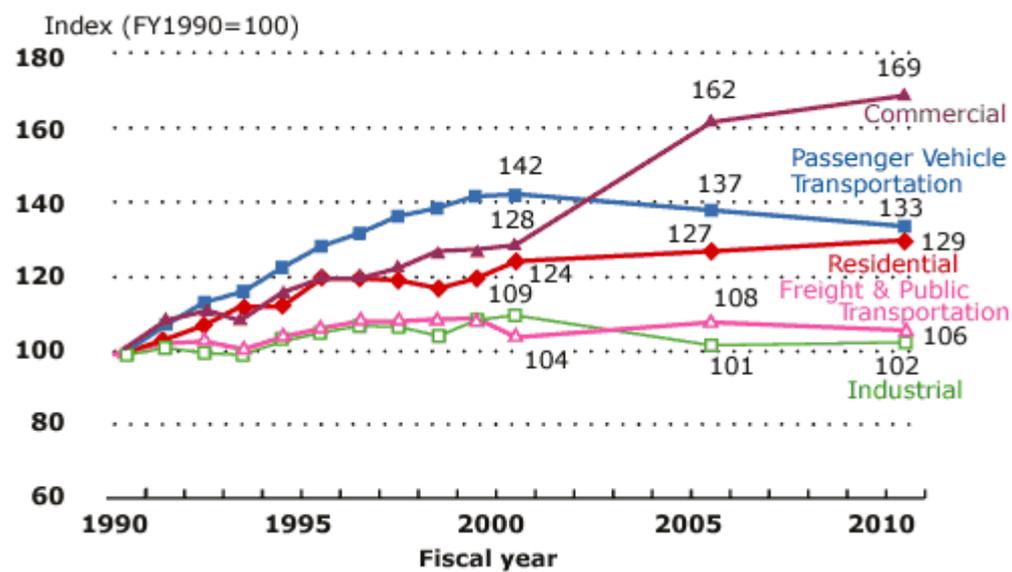
energy consumption, and this led to remarkable improvements in energy intensity and gave international trade competency.

**Figure 1: Changes in Final Energy Consumption from 1970**



(Source: Comprehensive Energy Statistics (preliminary figure for FY2000))

**Figure 2 Changes in Final Energy Consumption by Sector from 1990**

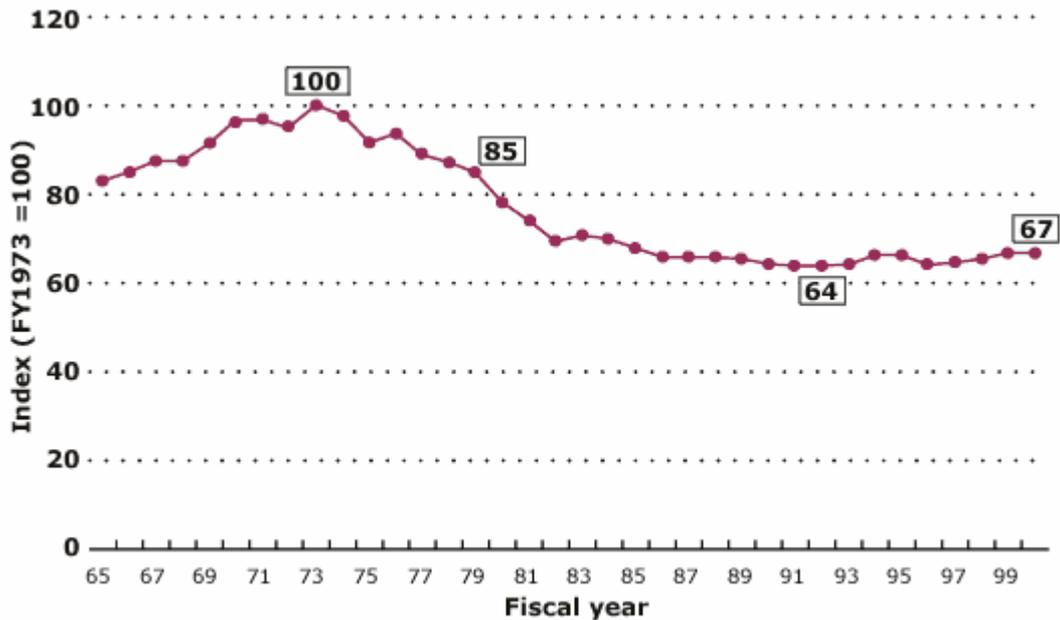


(Source: Comprehensive Energy Statistics (preliminary figure for FY2000))

Since 1991, however, energy intensity has been showing a tendency to increase, mainly due to increased energy consumption by the residential, commercial and transportation sectors as a result of the public's pursuit of convenience and comfort in daily life. In the industrial sector as well, the energy consumption trend is somewhat on the rise as a result of the diversification of products and the increased value added factor.

Japan's level of dependence on oil has decreased drastically since the two oil crises. On the other hand, nuclear energy and natural gas have grown in importance in their supply share of energy. Consumption of nuclear energy has increased from 1% in 1973 to 12% in 2000, while natural gas has increased from 2% in 1973 to 13% in 2000.

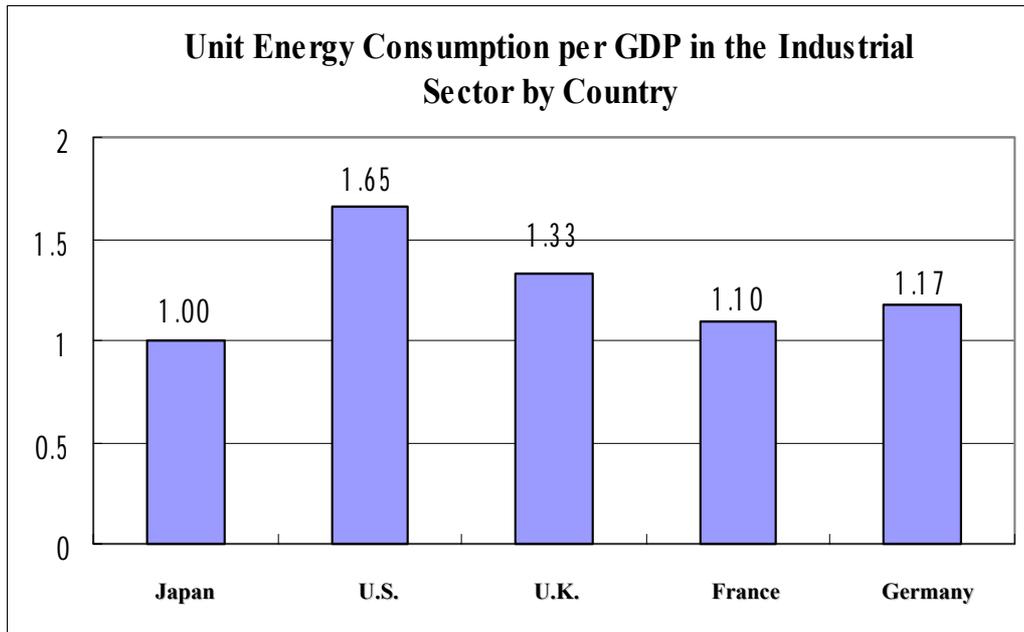
**Figure 3: Energy Intensity per industrial production index in Japan**



Energy consumption in the industrial sector has been generally steady since oil crisis. Energy consumption unit per industrial production index for the manufacturing industry experienced sharp fall through to the 1980S, but has been on a trend of slight increase since the 1990s.

However Japan's energy consumption unit against GDP in the industrial sector is lower than those of other major countries.

**Figure 4: Unit Energy Consumption per GDP**



At the COP3 held in December 1997 at Kyoto Japan, Japan set a goal of reducing its green gas emissions for the 2008-2012 period by 6 % from the level in 1990, and thus it needs to make further efforts to improve energy efficiency.

Under these circumstances, energy conservation measures currently being taken in Japan include both reinforcing regulations, such as the amendment of the“Conservation Law” and providing incentives for investment in energy conservation through financial support.

**Table 1 Japan has made a CO<sub>2</sub> reduction plan by several measures.**

Breakdown of the -5% Reduction in Greenhouse Gases	
-2.50%	Emission control of CO <sub>2</sub> , methane, and nitrous oxide
-3.70%	Carbon dioxide sinks due to changes in land use and forest management
2.00%	Control of emissions of CFC alternatives, etc. (HFC, PFC, SF6)
Remaining(-1.8%)	Use of Joint Implementation and emission trading, etc.

*Reference: The previous "Long-Term Supply and Demand Outlook" In June 1998, the previous "Long-Term Supply and Demand Outlook" was put together following COP3.*

### **3. Energy Conservation Law and Financing**

The "Energy Conservation Law", which has been enacted in 1979 as a fundamental law to promote energy conservation in Japan, stipulates the measures to be taken regarding facilities and equipment that use large amount of energy, such as factories, buildings, household electrical appliances and automobiles.

The Energy Conservation law was amended in June 1998, and came into effect as of April 1999.

**Table 2: Fundamental issues for promoting rational use of energy**

1. Measures to be taken by the central and local governments themselves as energy users, etc.
2. Support to capital investment, etc.
3. Support to energy management
4. Support to technical development
5. Support to the introduction and diffusion of optimum energy supply-demand systems in areas
6. Promotion of research and development, etc.
7. Education, public relations, etc. to people

#### **3.1 Tax incentives**

The "Tax System for Investment in Reformation of Energy Supply and Demand Structure" was established in 1978 with a view to facilitating the equipment investment involved in energy conservation. In reforming the tax

system several times, it was reviewed in line with the technical development, etc, of the subject equipment.

**Table 3 Tax Incentives**

Intended for	Tax incentives
<input type="checkbox"/> 124 facilities <input type="checkbox"/> 64 facilities for small and medium companies <input type="checkbox"/> others	1 Tax exemption equivalent to 7% of the equipment acquisition cost from the income tax or corporate tax payable (applicable only to small and medium companies from fiscal year 1999) or 2 Special depreciation of up to 30% of the equipment acquisition cost.
System approved on the basis of the "Assistance Law" (Improvement of 5% energy intensity or 1,500kl energy saving)	

*Basic acquisition cost = [Acquisition cost] × [Multiplier rate (25 to 100%) Special depreciation; The depreciation is classified as "loss" as defined in the Tax Law, and is included in the calculation of profit in the settlement of accounts.*

### 3.2 Low-interest loans

A system of low-interest financing by governmental financial institutions is available for installation of specific energy-efficient equipment.

**Table 4 Low-Interest Loans**

Intended for	Applicable for	Loan limit	Period of loan (deferment)
Energy facilities and production facilities (An improvement of 20% or more in energy efficiency, and energy saving of 100 kl/y)	Preferential rate	50% of the construction cost.	Up to 15 years
96 facilities and 14 systems approved under the <input type="checkbox"/> Assistance Law <input type="checkbox"/> (Energy saving of 100kl/y)	Preferential rate		
Co-generation facilities (60% or more primary energy efficiency and 50kw or more output)	Preferential rate		
76 facilities approved under the <input type="checkbox"/> Assistance Law <input type="checkbox"/>	Special energy conservation A		
Replacing outdated boilers	Special energy conservation B		

*Interest subsidies are granted to financial institutions from the Oil Special Account.*

### 3.3 Subsidy

The New Energy and Industrial technology Development organization(hereafter referred to as NEDO) grants subsidies for the financing required for the energy conserving technologies that specially need to be disseminated, as stipulated in the“ Energy Conservation Law”

**Table 5: Strategy for subsidy**

1	□□□□□□□□□□ □□ introduction of high-performance industrial furnaces
2	Model projects for installation of advanced energy efficiency facilities
3	Projects for promotion of introduction of cogeneration systems
4	Supporting ESCO enterprises

#### **4. Measures for energy conservation measures**

Outline of efficiency measures is

(1) To further promote the improvement of energy consumption efficiency in automobiles and electrical equipment. (Strengthening measures for electrical equipment and appliances)

Introduction of a Top-runner program, which seeks to advance currently available products to a level above the level of the most currently, advanced products with regard to automobile fuel efficiency standards or energy efficiency standards for electrical appliances (household appliances and Office Equipment, etc). Security measures have also been strengthened (Public announcements, issuing orders, and penalties (fines) for those that do not follow the recommendations)

(2) Complete rationalization of energy use in factories and businesses (Strengthening measures for factories)

The creation of measures obliging the submission of plans for rationalization from specified factories that have up until now had a multi faceted energy consumption approach, in order to bring about structured rationalization of energy use.

For medium-scale energy consumption factories and businesses, the creation of thorough measures for energy efficiency (appointment of energy management, compulsory attendance of energy efficiency course, compulsory recording of the state of energy use).

### (3) Promotion of energy efficiency education

With regard to the sense of values that people have towards different problems, much of that comes from the education we receive in our youth, so priority will be given to providing enlightening activities at schools and educating people from a young age about energy efficiency.

### (4) Promotion of highly efficiency cogeneration

Aiming to popularize Cogeneration, which has a high total efficiency, strengthening of operational measures for regulation (criteria of the Law Concerning the Rational Use of Energy) and implementation support was carried out. Moreover, environmental considerations were made for the technological development and introduction for the power generation efficiency improvement of a decentralized power supply.

### (5) Unutilized energy

Unutilized energy refers to energy we did not give consideration to before, such as temperature difference energy in rivers and sewer, etc. (water that is colder than air in summer, and warmer than air in winter), and waste heat from factories, etc. In recent years, it is becoming possible to meet the heat demand of daily living by utilizing heat pump technology, etc., and introducing the system that properly combines each step of heat utilization from high temperature range to low temperature suitable for local situation, including for power generating purpose.

## **5. Conclusion**

1) Through the energy efficiency efforts of the public and the government, Japan has achieved the highest level of energy efficiency anywhere in the world since the oil crises. With an increasing tendency of energy consumption in commercial/residential and transportation sectors in recent years, the promotion of steady energy efficiency measures in the future is essential.

2) Energy conservation is a key for enhancement of industrial capacity  
Energy conservation has been put into practice sequentially by checking industrial statistics, such as heat balance, material balance, process flow, by grasping the problems of instrumental/control, machinery/process characteristics, condition and quality of utilities such as water, gas, energy, time adjustment between the front and rear lines, impact on quantity and quality of products.

Therefore energy conservation activities should be started based on the knowledge of self-capacity and capability. Without this, we will often meet catastrophic conditions.

3)The fundamental goal of the energy conservation policy for each country is to achieve a stable supply of energy in accordance with demands for environmental preservation and efficiency improvement. It is indispensable activity in the 21<sup>st</sup> century. For this purpose, energy conservation expert development, renewal of old equipments, layout change, improvement of quality of raw materials, energy conservation technology development are needed as prior investment. Environmental financing by the government and banks for monetary support ,tax exemption as an incentive measures for the society.

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# **FLEXIBILITY OF THE PRODUCTION SYSTEM: A COMPETITIVE ADVANTAGE FOR AN INDUSTRIAL FIRM**

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## **Abstract**

*After December 1989 the Romanian economy had to deal with a new economic environment, due to the transition to a free market. Therefore, the industrial firms had to make changes in order to be competitive on the new market. The production system has to adapt to the new conditions. One of the most important mean to realize this goal is a new approach to flexibility. Flexibility is a very large concept, not a very simple one, including only production aspects. This paper presents the theoretical aspects of the flexibility – organizational, machines and equipment, human resources and how they are implemented in a Romanian firm acting on the cosmetic market. The case study presents the last 15 years of the activity of the firm and the main steps that it followed in order to achieve a sustainable advantage, and also the goals for the future. The final part of the paper tries to present some economic results to emphasize that an industrial firm whose priority is flexibility on a long term is a competitive one.*

**Keywords:** *competitiveness, flexibility, adaptability, continuous improvement*

## 1. The need for flexibility in an industrial firm

In our days, in order to survive on a certain market, a firm has to pay more and more attention to the market and its dynamic needs. This goal seems to be very simple to be accomplished, but the economic reality proves the opposite. The firm has a lot of means that help achieving the previous objective, but it has to know how these means can be used with high efficiency.

Another aspect is the fact that these means have to be used according to the particularities of the industries, revealed by some features like the level of scientific research development, the quality of competitors playing on the market, the implemented production system or the quality of human resources.

In order to be competitive a firm has to know how to gain and sustain a competitive advantage on the specific circumstances that came out from the market. One general solution is *flexibility*, but not only at the production level, like the traditional concept. The roots of flexibility came from production but the concept means much more than being flexible within the production area.

### 1.1 Historical approach to flexibility

- a. *the simple approach* is to see flexibility like “ the ability to adjust your production goals according to the market, not only in quantity, but also in the structure of the production schedules “. Even this simple approach evolved in the last decades and today we can enlarge it with some aspects regarding the market as the main priority. Therefore flexibility means that the firm has to change the parameters of the production system in an on-going process, not only from time to time. The advanced production systems can be implemented in any type of production, not only in mass production because their features afford that. Additionally, we can say today that there is a trend for any firm to reduce as much as possible the economic order quantity, in order to be able to adapt themselves as good as possible to the market demands. There is not any firm today managing with a high level of inventory because the firm has to reduce the costs instead of increasing them using a high level for inventory. Therefore we can say that a firm that wants to be a strong competitor on the market has to have flexible production schedules, established on a short period of time, in order to be able to change the products and to be responsive to the market.

- b. *A complex approach to flexibility is to enlarge its content to the entire firm, not only at the production level. To be competitive on the market you need to be flexible in every aspects of the production system, not only in production. When the firm is able to offer to the market “always a different product compared to the previous one“ we can say that it is flexible. In order to achieve that goal a firm has to:*
- Be able to produce different quantities of a certain group of product
  - Be able to produce different types of products in a certain period of time
  - Use a flexible supplier base in order to be itself flexible
  - Have good and adjustable human resource policies
  - Implement a modern production system
  - Adapt a product at the most recent demands on the market
  - Be innovative, in order to remain a real competitor on the market

Another approach to flexibility is from internal and external point of view. For the last approach flexibility means to respond at the dynamic demands of the market in the shortest time; this goal leads to a sustaining competitive advantage. From internal point of view, the firm has to have the internal capacities and abilities – machines and equipments, human resources, information systems; finally they determine a better external flexibility.

### ***1.2 The Flexible Manufacturing System - an instrument for increasing flexibility in a firm***

A Flexible Manufacturing System (FMS) is an advanced system for organizing, coordinating and assessing the production. At a basis level it implies only the production activity but the results determine better performances for the entire production system. The main features of a FMS are the following:

- A central computer that coordinates the overall production activity and establishes all the production parameters like schedules, priorities for different activities, the utilization of capacities - equipment or human resource
- A computer integrated in the network at every workplace that transmits every change occurred at the work place. The influences over the entire process are processed in an ongoing activity. The 100 % of a FMS is when robots realize all the workplace activity. The

worker has responsibilities regarding the coordination and surveillance of the machine. This is a reason that determines fewer workers compared with a traditional production process.

- A small batch production becomes desirable from cost prospective, very close to the optimum production batch determined by mathematical procedures. This is possible because the set up cost due to changes that occurred because of the changes in structure of production are less time consuming and therefore they do not really influence the final cost.
- A computerized system for transportation and handling that leads to a better coordination between these sectors and production

The advantages of a FMS are:

- Reducing the direct costs of the final product
- Reducing investments because of a better productivity for the new ones compared with the older ones
- A better reaction speed to the market needs
- A better and constant quality level for the whole production
- Better opportunities for coordination and evaluation of the production results because of the computerized system
- Reducing bureaucracy of the firm also due to the computerized system

The main disadvantages of a FMS are:

- The initial investment is big
- The implementation decision is a difficult one because it needs the approval of every level in the firm
- The implementation determines a smaller need for workers compared with the traditional organization
- The creativity and intelligence of the human resource is ignored; the robots and machines have the central role
- The system requires more qualified – with interdisciplinary abilities - employees that determine higher costs for wages
- Better results can be obtained only after a significant period so the benefits are not as immediate as they are expected to be.

In conclusion, we can say that FMS is a solution for an increased flexibility at the production level in the first place and it is an expensive solution related to money and time. For the Romanian industry it is an alternative but, because of the financial aspect, not very desirable for the firms. Therefore we should look to other production systems, less expensive but also more flexible.

### ***1.3 Other production systems that determine flexibility***

There are other production systems that offer a bigger flexibility to the firms. We consider that the most important one is Just In Time system ( JIT ). With its roots in Japan, JIT is in our days implemented all over the world, not always at the firm level but certainly in the most important areas.

A JIT has four main features and one of them is flexibility. Some aspects regarding flexibility in a JIT are:

- *Flexibility in the supply process.*

The philosophy in supply policies is to have a long term orientation, with few suppliers. Also it is recommended to supply as often as possible in order to work with minimum inventory levels. JIT introduces for the first time the concept of “supply on line”.

- *Flexibility in the production process*

It is given by work cells organization that permits to do different jobs by the same worker if he has the required skill.

- *Flexibility of human resources*

Human resources are one of the most critical resources in a firm and that determine a special attention. JIT offers it a central place and pay attention to any problem that may occur. A good level of flexibility is realized by team work whenever is possible and to give the responsibility both to the individual and to the group, also.

- *Flexibility in satisfying the market*

The market determines always what to produce, in what quantity and at a certain level of quality. As much the firm accomplish that, as more flexible will be.

There are other advanced systems that accomplish good level of flexibility through their specific features. All of them regard not only the production, but also other parts in the firm. Most of them include all the firm’s functions and have good performances if they are well implemented.

## **2. Case study: how a Romanian firm is able to compete in the cosmetics market**

The firm F is one of the most famous in the cosmetic product industry in Romania. It was established more than fifty years ago in a period of developing for our area, after the second world war. At the very beginning the firm F had 6 workers and had a diversification range of 5 products.

The firm was privatized in 1995, after a long period of state ownership. In the year 2005 it represents about 45 % of the national cosmetic production and it has more than 700 employees.

Some important elements about the firm F until the year 2000

- During the decade 1950- 1960 the structure of the product increased at 50 types of products, all in the cosmetics industry. Most of them were creams and lotions.
- Beginning with the year 1972 F decided to produce within the factory the packages for the main products
- Beginning with 1973-1974 the creams and lotions lose the leading position for another type of product sprays.
- Until the December 1989 F was the leader of the cosmetic products on the Romanian market
- The financial results after 5 years reveals an average increase by year with 25 % of the revenues
- At the beginning of the year 2000 the number of products was about 320, grouped in four main areas: *deodorants spray and roll-on, creams and lotions*, other cosmetic products like *lipstick-nail care -make up products* and the *chemical home cleaning products*. The first two groups represent more than 70 % from the point of view of both revenues and number of the products.

### ***2.1 What did make F in the last 5 years in order to be flexible?***

The competition on the cosmetic market is very strong beginning with 1990. In the first years F had to deal with competitors that offer a lot of products, not always good quality, but low prices. After 1995 a lot of multinational companies came in and the competition became stronger but with other dimensions: a diversified range of products, a better quality and well developed marketing policies.

On these circumstances, F has to pay attention to *flexibility*, in order to be able to maintain its leading position gained in the previous years, in a more competitive environment.

### ***2.2 Investments in the production area***

F has had a strategic approach of its objective earlier than other Romanian competitors. In this sense, F realized that the old machines and equipment are obsolete and they are not any more able to compete efficiently. The managers in the firm decided in the year 1999 that a big investment has to be made in order to improve the productivity and to ensure a better and constant quality of the production. First, they decided to move some activities outside the city before that these movements has to be make due to the legislation because of ecological reasons. After that, they purchased a new

automatic line for filling the sprays and they decided to move it on the new location. The investment was 3.2 million \$ but the line was delivered from the best European line producer. It was the first investment in Central and Eastern Europe in the cosmetic industries.

The results in the filling line activity were impressive:

- with only 4 workers instead of 40 they increased the daily production with 100%
- increasing the ability to change the product on the line. Initially, it was changed two times a day because the workers had to pay attention to some previous phases of the production, like preparing the solution for filling. With the principal line they purchased some special containers of different capacities; therefore, they were able to prepare different solutions for filling in different quantities, adapting rapidly to the market needs
- on the line they were able to fill not only the deodorants, but also other spray products; after 4 months they moved the entire spray activity in the new location and optimize the capacity utilization.

As we can see, the basic results within the production activity were very good but with them a lot of questions appear, like:

What did happen with the extra-workers, no more needed in the production process? The simple answer is that some of them were retired, other used in other production process and about 20 were fired.

What about the capacity of the market to need a double level of the products? It was a problem for more than 3 months, the level of inventory increased with more than 80 % at the very beginning, but decreased later. Still, the inventory problems remained in the first 2 years of the activity for the new filling line.

What did they do about the connection between the new production rate and the marketing activity? This is still a weakness and the results could be improved by solving it.

### ***2.3 Research and development***

The RD department is organized near the marketing department. The employees have different specialties like chemical engineer or pharmaceuticals, biologists. They are selected very carefully and they are working in a good climate. The main problem is the small budget for RD department that determine results not very good related to the potential of human resources. Another problem is coming from the previous one. Even the RD employees were selected carefully, because of the small budget they

have to work on a poor basis, like very few means for update them according to some research made outside the country, no opportunities to go and do some specialization courses abroad or a salary that do not always motivate them because it is not in correlation with their work.

Still, we consider that their performances are very good under the given circumstances and we consider them a real strength of the firm.

In the RD department flexibility comes out from the specialties diversification and also from the large range of researched products. Also, the activity is very dynamic if we consider that about 50 new products come out from the RD department every year. From these more than 60 % are successfully introduced on the cosmetics market

#### ***2.4 Product and price policy***

The flexibility in the product area comes out from the rate of the new product. If we want to go further in the main groups of product we can say that the first two are the priorities because they represent more than 70 % of the activity.

- *The creams and lotions group.* F pays attention to the over world trend regarding the infusion of natural and medicine products within the cosmetic industry. Only in the last two years they developed 4 new brands for face and foot care. Within every brand we can find between 4-10 different products for different clients or problems therefore every client could be satisfied using the different products of the same brand and having a complete care system
  - These brands are based on using Romanian natural plants with curative properties. The main strength is the relation between price and quality because the competition is a very hard one due to the multinational companies that have similar products at higher prices. We have to say that it is the main group to go for the international market, all over the world.
  - The results in the last years prove that the group is the most powerful one in the firm and also with the biggest development potential.
- *The sprays group.* It is the group that benefited of the 3.2 million \$ investment and the results came out. After a first period not very efficient this sector begins to get better results. The main strengths are namely *product diversification* and *small batches in*

*production* in order to be able to adapt to the market needs in the shortest time. Despite the fact that this group lost some percentages in the overall activity of the firm, we can say that the efficiency increased and the sector is still a competitive one on the market. The new product policy determined 2 new brands in the last 2 years, one for women and the other one for men.

### **3. Conclusion**

1. In order to be competitive a firm has to be able to adapt to the market at the best it can; it has to be able to offer the right product in the right place. This means that flexibility is one of the most important priorities
2. Flexibility has to be seen on a large basis because it is not only about being flexible in production, but in any function for the firm. The start is the production area but the ultimate goal is the market. To be able to achieve this goal it is necessary to adapt your policies in every area of the activity
3. It is obvious that firm F has a lot of development potential but it will have more and more difficult periods of time in the future.
4. Until now the results are good because F paid attention to the market and tried to anticipate the customer needs. F made the investment for the filling line despite the fact it was a big one and it was a risk that the product will not be sold on the market. Also, a flexible product policy determined a good rate for new product development and many new such products were successfully launched.
5. For the future F has to establish goals that have among them a good flexibility in every part of the firm. On a hard competition flexibility is not a desirable goal but a compulsory one. Because it has to be realized everywhere in the organization the main instrument to do that is an efficient production system that leads to achieve the goal.

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# A STUDY ON THE SUCCESS FACTORS OF A STRATEGIC TOOL IN TURKISH INDUSTRIAL ORGANIZATIONS

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## **Abstract**

*In today's dynamic business environment sustaining competitive advantage is vital for survival and success of business organizations. In that sense, performance of the organization and its measurement as a mean of strategic control becomes very important for sustaining this competitive advantage. We can say that what organizations need is a real strategic performance measurement system that is balanced, integrated, and designed to highlight the firm's critical input, output, and process variables. The Balanced Scorecard (BSC) is a widely used management tool for optimal measurement of organizational performance. It is a strategic control methodology, which uses a multi-dimensional framework for describing, implementing and managing strategy throughout an organization. An extensive review of the literature made us clear that the effectiveness and successful implementation of the BSC -as a strategic performance management tool- in business organizations depends on some factors. Therefore, these findings in the literature review made up the basis of the research to analyze the degree of importance and the degree of implementation of success factors of BSC in Turkish industrial organizations. Subjects of the study are the managers who are responsible from Balanced Scorecard Applications in business organizations in Turkey. Data were collected from the managers via questionnaire technique.*

**Keywords:** *Strategic control, performance measurement, balanced scorecard*

## 1. Introduction

In today's dynamic business environment sustaining competitive advantage is vital for survival and success of business organizations. In that sense, performance of the organization and its measurement as a mean of strategic control becomes very important for sustaining this competitive advantage. We can say that what organizations need is a real strategic performance measurement system that is balanced, integrated, and designed to highlight the firm's critical input, output, and process variables. Strategic measurement systems do not try to measure everything; only the elements crucial for managerial decision-making. Given the findings of these systems, management should be able to see where value is being created, where investment and improvement are required, and where the firm's strategies are being successfully implemented<sup>1</sup>.

## 2. Literature Review

Balanced Scorecard (BSC) is a widely used management tool for optimal measurement of organizational performance. It is a strategic control methodology, which uses a multi-dimensional framework for describing, implementing and managing strategy throughout the organization<sup>2</sup>. The heart of the BSC system lies in organization's vision and strategy. Vision is where the organization wants to be. Strategy is how the organization is going to get its vision<sup>3</sup>. Balanced Scorecard is a way of implementing strategy, linking strategy to action, and making strategy understandable to those on the front line as well as to senior managers<sup>4</sup>. BSC is a useful tool for translating vision and strategy into a comprehensive set of performance measures to which all levels of the organization can relate<sup>5</sup>.

Traditional performance measurement systems rely only on financial measures. These systems do not provide managers the information they need

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<sup>1</sup> Vitale, M., Mavrinac, S.C. and Hauser, M. (1994), New Process/Financial Scorecard: A Strategic Performance Measurement System, *Planning Review*, 22(4): 12-18.

<sup>2</sup> Johnsen, A. (2001), Balanced Scorecard: Theoretical Perspectives and Public Management Implications, *Managerial Auditing Journal*, 16(6): 319-331.

<sup>3</sup> Chia, A. and Hoon, H.S. (2000), Adopting and Creating Balanced Scorecards in Singapore-Based Companies, *Singapore Management Review*, 22(2): 1-15.

<sup>4</sup> Vliet, A.V. (1997), The New Balancing Act, *Management Today*, July: 78-81.

<sup>5</sup> - Eagle, K., Cooke, T.C. and Rossi, T.S.C. (2004), Translating Strategy into Results, *Government Finance Review*, 20(5): 16-26.

- Randor, Z. and Lovell, B. (2003), Success Factors For Implementation of the Balanced Scorecard in a NHS Multi-Agency Setting, *International Journal of Health Care Quality Assurance*, 16(2/3): 99-108.

to manage all the important capabilities and processes that drive competitive advantage for their organizations<sup>6</sup>. By the early 1980s, there was a growing concern that with the global competition followed by increased customer orientation and technological change, it was no longer appropriate to use financial measures as the only criterion for assessing success<sup>7</sup>.

The Balanced Scorecard supplements the traditional financial measures with three additional perspectives: customers, internal business processes and learning and growth<sup>8</sup>.

### ***2.1 Perspectives of Balanced Scorecard***

Balanced Scorecard methodology requires that companies set goals and specific measures related with customer expectations such as customer satisfaction, quality and service<sup>9</sup>. Customer perspective includes measures such as market share, customer acquisition and retention and customer satisfaction<sup>10</sup>. Measures related with customer needs and satisfaction should be translated into measures of what the company must do internally to meet its customers' expectations. In the internal business processes, the company should focus on core competencies, processes, decisions and actions that have the greatest impact on customer satisfaction. The general measures should then be decomposed to department and workstation levels, where the action takes place<sup>11</sup>. The learning and growth perspective identifies the intangible assets that are most important to the strategy. The objectives of this perspective are to identify which jobs (the human capital), which systems (the information capital), and what kind of climate (the organization capital) required to support the value-creating internal business processes. These assets must be bundled together and aligned to the critical internal processes<sup>12</sup>. As a result of increasing competition, companies should make continual improvements to their existing products and processes and should have the ability to introduce new products with expanded capabilities in order

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<sup>6</sup> IBID, Vitale et al., 1994

<sup>7</sup> Kaplan, R.S. and Norton, D. (1996b), Strategic Learning & the Balanced Scorecard, *Strategy & Leadership*, 24(5): 18-25.

<sup>8</sup> Roest, P. (1997), The Golden Rules for Implementing the Balanced Business Scorecard, *Information Management & Computer Security*, 5(5): 163-165.

<sup>9</sup> IBID, Kaplan, R.S. and Norton, D. (1996b).

<sup>10</sup> Lubieniecki, E.C. and Desrocher, N. J. (2003), The Case for Simple Comparison: A Simple Performance Scorecard for Effectiveness and Efficiency, *Journal of Corporate Real Estate*, 6(1): 39-53.

<sup>11</sup> IBID, Kaplan, R.S. and Norton, D. (1996b).

<sup>12</sup> Kaplan, R.S. and Norton, D. (2004), Plotting Success with 'Strategy Maps', *Optimize*, February: 61-66.

to survive<sup>13</sup>. The learning and growth perspective could be used to monitor this long-term value creation process<sup>14</sup>.

Financial measures are essential to determine if the company executives correctly identified and constructed their measures for customer, internal business processes and learning and growth perspectives. The financial perspective describes the tangible outcomes of the strategy in traditional financial terms<sup>15</sup>. The financial perspective concentrates on whether the corporate strategy is resulting in bottom line improvement and covers measures such as profitability, growth and shareholder value<sup>16</sup>.

On conceptual basis BSC and its perspectives can easily be understood but its success in business organizations depends on how it is implemented<sup>17</sup>. Successful implementation of BSC provides various benefits to the organizations such as improvements in competitive position of the company in the market<sup>18</sup>, improvements in financial performance and profitability<sup>19</sup> improvements in decision making and problem solving ability<sup>20</sup>. In organizations where BSC is successfully implemented morale and motivation of the employees increase through conceiving how their efforts

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<sup>13</sup> IBID, Kaplan, R.S. and Norton, D. (1996b).

<sup>14</sup> Sim, K.L. and Koh, H.C. (2001), Balanced Scorecard: A Rising Trend in Strategic Performance Measurement, *Measuring Business Excellence*, 5(2): 18-27.

<sup>15</sup> IBID, Kaplan, R.S. and Norton, D. (2004).

<sup>16</sup> Newing, R. (1994), Benefits of a Balanced Scorecard, *Accountancy*, 114(1215): 52-54.

<sup>17</sup> Speckbacher, G., Bischof, J. and Pfeiffer, T. (2003), A Descriptive Analysis on the Implementation of Balanced Scorecard in German Speaking Countries, *Management Accounting Research*, 14(4): 361-388.

<sup>18</sup> - Inamdar, N., Kaplan, R.S. and Reynolds, K. (2002), Applying the Balanced Scorecard in Healthcare Provider Organizations/Practitioner's Response, *Journal of Healthcare Management*, 47(3): 179-197.

- Newing, R. (1995), Wake Up to the Balanced Scorecard!, *Management Accounting*, 73(3): 22-24.

<sup>19</sup> - IBID, Kaplan, R.S. and Norton, D. (1996b).

- IBID, Lubieniecki, E.C. and Desrocher, N. J. (2003).

- IBID, Newing, R. (1994).

- Olve, N., Petri, C. and Roy, J.R.S. (2004), Twelve Years Later: Understanding and Realizing the Value of Balanced Scorecards, *Business Journal Online*, May/June: 1.

- Maiga, A.S. and Jacobs, F.A. (2003), Balanced Scorecard, Activity-Based Costing and Company Performance: An Empirical Analysis, *Journal of Managerial Issue*, 15(3): 283-301.

<sup>20</sup> - Kaplan, R.S. and Norton, D. (1992), The Balanced Scorecard- Measures that Drive Performance, *Harvard Business Review*, January-February: 71-79.

- IBID, Chia and Hoon, 2000.

contribute to the achievement of strategic goals and objectives of the organization<sup>21</sup>.

But in order to obtain benefits from BSC organizations have to consider some factors at the design and implementation stages of their balanced scorecards:

- The key to success with the BSC concept depends on the appropriateness and quality of the measures chosen<sup>22</sup>. Measures derived from organization's vision, mission and strategy is at the heart of the Balanced Scorecard<sup>23</sup>. The selected measures should represent the strategic objectives<sup>24</sup> otherwise managers will not be able to properly execute the strategy<sup>25</sup>. It is important to have a well-balanced set of measures, from each of the perspectives<sup>26</sup>. BSC measures should be easy to interpret so that scorecard readers should understand both the operational and strategic significance of every measure<sup>27</sup>. When designing a scorecard, it is important to focus on the vital performance measures<sup>28</sup> which are limited in number<sup>29</sup> accurate, objective and reliable<sup>30</sup>, and dynamic since environment, strategy or structure of the organization changes.

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<sup>21</sup>- Kaplan, R.S. and Norton, D. (1996a), Linking the Balanced Scorecard to Strategy, *California Management Review*, 39(1): 53-79.

- Lyons, B. and Gumbus, A. (2004), How Unilever Hpc-Na Sold Its Employees on the Balanced Scorecard, *Strategic Finance*, 85(10): 40-45.

- IBID, Inamdar et al., 2002

- Lawson, R., Stratton, W. and Hatch, T. (2003a), The Benefits of a Scorecard System, *CMA Management*, 77 (4): 24-26.

<sup>22</sup> Sagner, M. (1998), Supporting the Balanced Scorecard, *Work Study*, 47(6): 197-200.

<sup>23</sup> Fonvielle, W. and Carr, L.P. (2001), Gaining Strategic Alignment: Making Scorecards Work, *Management Accounting Quarterly*, Fall: 4-14.

<sup>24</sup> Papalexandris, A., Ioannou, G. and Prastacos, G.P. (2004), Implementing the Balanced Scorecard in Greece: a Software Firm's Experience, *Long Range Planning*, 37(4): 351-366.

<sup>25</sup> Beiman, I. and Sun, Y. (2003b), Implementing a Balanced Scorecard in China: Steps for success, *China Staff Hong Kong*, 9(9): 11-14.

<sup>26</sup> Brown, M.G. (1994), Is Your Measurement System Well Balanced?, *The Journal for Quality and Participation*, 17(6): 6-12.

<sup>27</sup> IBID, Roest, 1997.

<sup>28</sup> Frigo, M.L. and Krumwiede, K.R. (2000), The Balanced Scorecard, *Strategic Finance*, 81(7): 50-54.

<sup>29</sup> -Broady-Preston, J. and Hayward, T. (2001), "Strategy, Information Processing and Scorecard Models in The UK Financial Services Sector", *Information Research*, 7(1): <http://InformationR.net/ir/7-1/paper122.html>.

-IBID, Sim and Koh

<sup>30</sup> -Parker, C. (2000), Performance Measurement, *Work Study*, 49(2): 63-66.

- Successful implementation of the Balanced Scorecard also depends on the commitment of top management<sup>31</sup>. Clear signals from the top of the organization about the importance of the Balanced Scorecard will help the organization to accept and use it<sup>32</sup>. Besides executives, employees at all levels have to be aligned and committed to it. In the absence of commitment, Balanced Scorecard system is likely to be ignored or abandoned<sup>33</sup>.

- The Balanced Scorecard supports the idea that employees should be observed on how they are performing with respect to the company strategy<sup>34</sup>. The best way to get a work force's attention about corporate focus is to link achievement of desired results directly to rewards<sup>35</sup>. BSC should be linked with well-understood rewards. Rewards that are delayed, uncertain, or ambiguous may be ineffective motivational devices<sup>36</sup>.

- Successful implementation of Balanced Scorecard depends on integrating the information stored in the computer systems of the organization and providing immediate organization-wide access to the status of key performance indicators<sup>37</sup>. When an unexpected signal appears on the Balanced Scorecard, managers need access to the underlying data to investigate the cause of the problem or to analyze trends and correlation. In

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-Malina, M.A. and Selto, F.H. (2001), Communicating and Controlling Strategy: An Empirical Study of the Effectiveness of the Balanced Scorecard, *Journal of Management Accounting Research*, 13: 47-91

<sup>31</sup>- Veen-Dirks, P. and Wijn, M. (2002), Strategic Control: Meshing Critical Success Factors with the Balanced Scorecard, *Long Range Planning*, 35(4): 407-427.

-IBID, Roest.-Braam, G.J.M. and Nijssen, E.J. (2004), Performance Effects of Using the Balanced Scorecard: A Note on the Dutch Experience, *Long Range Planning*, 37(4): 335-349.

-IBID, Beiman and Sun, 2003b.

-IBID, Parker

<sup>32</sup> IBID, Braam and Nijssen.

<sup>33</sup> - IBID, Fonvielle and Carr.

- IBID, Veen-Dirks, Wijn.

- Blundell, B., Sayers, H. and Shanahan, Y. (2003), The Adoption and Use of the Balanced Scorecard in New Zealand: A Survey of the Top 40 Companies, *Pacific Accounting Review*, 15(1): 49-74.

- Clarke, P. and Tyler, F. (2000), Implementing a Balanced Scorecard: An Irish example, *IBAR*, 21(2): 137-156.

<sup>34</sup> Gautreau, A. and Kleiner, B.H. (2001), Recent Trends in Performance Measurement Systems- The Balanced Scorecard Approach, *Management Research News*, 2004(3): 153-156.

<sup>35</sup> Boomer, L.G. (2002), Using Balanced Scorecards to Determine Compensation, *Accounting Today*, 16(21): 22-25.

<sup>36</sup> IBID, Malina and Selto, 2001.

<sup>37</sup> Wyatt, J. (2004), Scorecards, Dashboards, and KPI's Keys to Integrated Performance Measurement, *Healthcare Financial Management*, 58(2): 76-80.

that sense automation of BSC and choosing the appropriate software can significantly effect the success of Balanced Scorecard<sup>38</sup>.

- As a performance measurement system, BSC is a dynamic model that needs to be modified, adapted and improved on a regular basis<sup>39</sup>. Because the competitive environment surrounding an organization is changing rapidly, performance measurement systems require continuous improvements and revisions to maintain their relevance.

- As other measurement tools, successful implementation of BSC also requires effective communication of the performance measures to all levels of management and staff within the organization<sup>40</sup>. This enables them to understand how their own efforts can have an effect on the targets set in respect of each perspective<sup>41</sup>.

- Activity Based Costing should be considered as a supportive measurement tool for Balanced Scorecard<sup>42</sup>. Activity Based Costing (ABC) is a method that aims to increase the accuracy of cost measures. ABC ties costs to activities and products much more accurately than traditional accounting

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<sup>38</sup>- Sharman, P. and Kavan, C.B. (1999), Software is not the Solution: Software Selection's Effect on Implementing the Balanced Scorecard, *Journal of Strategic Performance Measurement*, February/March: 7-15.

- Marr, B. and Neely, A. (2003), Automating The Balanced Scorecard- Selection Criteria To Identify Appropriate Software Applications, *Measuring Business Excellence*, 7(3): 29-36.

- IOMA's Report on Financial Analysis, Planning & Reporting (2004), Performance Reporting: Majority of Companies Need to Fix Their Balanced Scorecards, New York, 04(11): 4-6.

- IBID, Wyatt.

- IBID, Olve et al..

- IBID, Sagner.

<sup>39</sup> - IBID, Braam and Nijssen.

- Vliet

- Reisinger, H., Cravens, K.S. and Tell, N. (2003), Prioritizing Performance Measures Within the Balanced Scorecard Framework, *Management International Review*, 43(4): 429-437.

- IBID, Parker.

- Franco-Santos, M. and Bourne, M. (2003), Factors That Play a Role in Managing Through Measures, *Management Decision*, 41(8): 698-710.

<sup>40</sup> - IBID, Lyons and Gumbus, 2004.

- IBID, Gautreau and Kleiner.

- Manas, T. (1999), Making the Balanced Scorecard Approach Pay Off, *American Compensation Association Journal*, 8(2): 13-21.

- National Partnership for Reinventing Government Balancing Measures: Best Practices in Performance Management. Part 1 of 4, August 1999 Report.

<sup>41</sup>- IBID, Newing, 1995

- IBID, Franco and Bourne 2003.

<sup>42</sup> IBID, Maiga and Jacobs, 2003.

methods<sup>43</sup>. Inaccurate cost data can have a negative effect on the BSC system<sup>44</sup>.

- Organizations that are implementing BSC, can increase their chances of success by starting with a pilot project<sup>45</sup>. A pilot study of BSC allows the determination of best measures that are useful. The development and the introduction of the BSC should not take too much time<sup>46</sup>.

Our findings in the literature review made up the basis of our research to analyze the factors, which are important for the success of BSC implementation in Turkish firms.

### **3.Methodology**

#### ***3.1Population and Data collection***

In Turkey there are 70 companies implementing Balanced Scorecard [As a result of contacting with 500 major industrial enterprises of Turkey listed in Istanbul Chamber of Industry<sup>47</sup> It was found that only 70 of them were implementing Balanced Scorecard ].Our subjects of the study are the managers who are responsible from Balanced Scorecard Applications in these firms. Data were collected from the managers via questionnaire technique. As a survey instrument, questionnaire consisting of sixty items was used. All the items in the questionnaire was developed by the researcher benefiting from the literature. Respondents were asked to indicate the degree of importance of the given statements on a five-points scale. The scale ranged from 1, “not important at all” to 5, “very important”. Besides sixty items questionnaire some demographic questions were also asked. We sent our questionnaire to the managers who are responsible from Balanced Scorecard Applications in these 70 companies and 62 of the questionnaires were returned to us, so the degree of response rate is about 90 %. At the end of the research item analysis were done for the items measuring the degree of importance of success factors of BSC. None of the items on the degree of importance of success factors of BSC scale had an alpha value lower than

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<sup>43</sup> - IBID, Parker

-Liberatore, M.J. and Miller, T. (1998), A Framework for Integrating Activity-Based Costing and the Balanced Scorecard into the Logistics Strategy Development and Monitoring Process, *Journal of Business Logistics*, 19(2): 131-155.

<sup>44</sup> IBID, (Lawson et al., 2003a)

<sup>45</sup> - McCunn, P. (1998), The Balanced Scorecard...The Eleventh Commandment, *Management Accounting*, 76(11): 34-36.

- IBID, Roest.

<sup>46</sup> - IBID, Veen-Dirks, Wijn.

<sup>47</sup> ([www.iso.org.tr/html/500htm](http://www.iso.org.tr/html/500htm))

0.93 and Cronbach's alpha for full degree of importance of success factors of BSC scale was 0.94.

### 3.2 Findings

According to the data collected from managers responding to our questionnaire 97% of the firms were using all four perspectives of BSC, 65% of the firms tied compensation incentives and rewards to BSC results, 55% of the firms have automated their BSC system, 16.1 % of the firms were reviewing their BSC system once a year whereas 22.6 % of the firms twice a year, 25.8 % of the firms quarterly and 35.5 % of the firms were reviewing their BSC system monthly. 77.4% of the firms had information about Activity Based Costing but only 38.7% of the firms were using ABC and only 29% of the firms were using ABC in the manner to support their BSC system.

*H1: Appropriateness of the measures are important for successful implementation of BSC.*

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.481	.231	.219	3.5982

a Predictors: (Constant), APPR.MEA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	234.001	1	234.001	18.073	.000**
	Residual	776.838	60	12.947		
	Total	1010.839	61			

a Predictors: (Constant), APPR.MEA

b Dependent Variable: SUCC.BSC

\* p< 0.05 \*\* p< 0.01

Coefficients

Model		Unstandard. Coefficients	Std. Error	Standard Coefficients	t	Sig.
1	(Constant)	14.330	6.003		2.387	.020
	APPR.MEA	.514	.121	.481	4.251	.000

a Dependent Variable: SUCC.BSC

**Regression analysis result indicates that using appropriate measures is important for successful implementation of BSC ( 0.000 < 0.01)**

*H2:Senior management' involvement is important for successful implementation of BSC.*

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.416	.173	.160	3.7319

a Predictors: (Constant), MNG.INV

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175.221	1	175.221	12.581	.001*
	Residual	835.618	60	13.927		
	Total	1010.839	61			

a Predictors: (Constant), MNG.INV

b Dependent Variable: SUCC.BSC

\* p< 0.05 \*\* p< 0.01

Coefficients

Model		Unstand.	Std. Error	Standard	t	Sig.
		Coefficients		Coefficients		
	B			Beta		
1	(Constant)	13.098	7.536		1.738	.087
	MNG.INV	.708	.200	.416	3.547	.001

a Dependent Variable: SUCC.BSC

**As a result of the regression analysis it is clear that senior management support and commitment is important for successful implementation of BSC ( 0.001< 0.05 ) .**

*H3: Linking compensation system to BSC is important for successful implementation of BSC.*

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.480	.230	.217	3.6016

a Predictors: (Constant), LINKCOMP

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	232.536	1	232.536	17.926	.000**
	Residual	778.303	60	12.972		
	Total	1010.839	61			

a Predictors: (Constant), LINKCOMP

b Dependent Variable: SUCC.BSC

\* p< 0.05 \*\* p< 0.01

Coefficients

		Unstandard. Coefficients		Standard Coefficients	t	Sig.
Model		B	Std. Error	Beta		
	(Constant)	30.336	2.276		13.331	.000
	LINKCOMP	.784	.185	.480	4.234	.000

a Dependent Variable: SUCC.BSC

**H3 is accepted since  $0.000 < 0.01$**

*H4 : Employees' participation and commitment is important for successful implementation of BSC.*

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.368	.136	.121	3.8159

a Predictors: (Constant), EMP.COM

ANOVA

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	137.168	1	137.168	9.420	.003**
	Residual	873.671	60	14.561		
	Total	1010.839	61			

a Predictors: (Constant), EMP.COM

b Dependent Variable: SUCC.BSC

\*  $p < 0.05$  \*\*  $p < 0.01$

Coefficients

		Unstandard. Coefficients		Standard Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	21.323	6.031		3.535	.001
	EMP.COM	.993	.324	.368	3.069	.003

a Dependent Variable: SUCC.BSC

**The importance of employees participation and commitment for successful implementation of BSC is evident since  $0.003 < 0.01$**

*H5 : Selecting the suitable BSC automation and software system is important for successful implementation of BSC.*

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.582	.339	.328	3.3381

a Predictors: (Constant), AUT.SOFT

## ANOVA

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	342.251	1	342.251	30.714	.000**
	Residual	668.588	60	11.143		
	Total	1010.839	61			

a Predictors: (Constant), AUT.SOFT

b Dependent Variable: SUCC.BSC

\* p< 0.05 \*\* p< 0.01

## Coefficients

Model		Unstandard. Coefficients	Std. Error	Standard Coefficients	t	Sig.
		B		Beta		
1	(Constant)	22.428	3.158		7.101	.000
	AUT.SOFT	.565	.102	.582	5.542	.000

a Dependent Variable: SUCC.BSC

Our hypothesis assuming that selecting the suitable BSC automation and software system effects successful implementation of BSC is accepted ( $\alpha = 0.01$ ,  $p=0.000$ ).

*H6 : Reviewing and updating BSC is important for its successful implementation*

## Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.479	.229	.217	3.6030

a Predictors: (Constant), REW.BSC

## ANOVA

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	231.921	1	231.921	17.865	.000**
	Residual	778.918	60	12.982		
	Total	1010.839	61			

a Predictors: (Constant), REW.BSC

b Dependent Variable: SUCC.BSC

\* p< 0.05 \*\* p< 0.01

## Coefficients

Model		Unstandard. Coefficients	Std. Error	Standard Coefficients	t	Sig.
		B		Beta		
1	(Constant)	21.710	4.298		5.051	.000
	REW.BSC	1.311	.310	.479	4.227	.000

a Dependent Variable: SUCC.BSC

Regression analysis results indicates that reviewing and updating BSC is necessary for its successful implementation ( $\alpha = 0.01$ ,  $p=0.000$ )

***H7: Communicating the performance measures of BSC throughout the organization is important for its successful implementation.***

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.470	.221	.208	3.6229

a Predictors: (Constant), COMM.BSC

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	223.304	1	223.304	17.013	.000**
	Residual	787.535	60	13.126		
	Total	1010.839	61			

a Predictors: (Constant), COMM.BSC

b Dependent Variable: SUCC.BSC

\*  $p < 0.05$  \*\*  $p < 0.01$

Coefficients

Model		Unstandard. Coefficients	Std. Error	Standard Coefficients	t	Sig.
		B		Beta		
1	(Constant)	18.173	5.257		3.457	.001
	COMM.BSC	.942	.228	.470	4.125	.000

a Dependent Variable: SUCC.BSC

According to the regression analysis results effective communication of the scorecard throughout the organization is accepted to be important since  $0.000 < 0.01$ .

***H8: Using Activity Based costing is important for successful implementation of BSC***

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.302	.091	.076	3.9132

a Predictors: (Constant), USE.ABC

## ANOVA

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	92.056	1	92.056	6.012	.017*
	Residual	918.783	60	15.313		
	Total	1010.839	61			

a Predictors: (Constant), USE.ABC

b Dependent Variable: SUCC.BSC

\* p &lt; 0.05 \*\* p &lt; 0.01

## Coefficients

Model		Unstandard. Coefficients	Std. Error	Standard Coefficients	t	Sig.
1	(Constant)	34.239	2.312		14.812	.000
	USE.ABC	.455	.186	.302	2.452	.017

a Dependent Variable: SUCC.BSC

Using Activity Based Costing is important for the success of BSC implementation

$$0.017 < 0.05$$

***H9: Implementing a pilot study of BSC is important for the success of the BSC***

## Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.484	.234	.221	3.5925

a Predictors: (Constant), PILOT.ST

## ANOVA

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	236.492	1	236.492	18.325	.000**
	Residual	774.346	60	12.906		
	Total	1010.839	61			

a Predictors: (Constant), PILOT.ST

b Dependent Variable: SUCC.BSC

\* p &lt; 0.05 \*\* p &lt; 0.01

## Coefficients

		Unstandard. Coefficients	Std. Error	Standard Coefficients	t	Sig.
Model		B		Beta		
1	(Constant)	25.526	3.360		7.598	.000
	PILOT.ST	1.234	.288	.484	4.281	.000

a. Dependent Variable: SUCC.BSC

Implementing a pilot study before broadening the implementation of Balanced Scorecard is important for its success ( $\alpha = 0.01$ ,  $p=0.000$ )

**Table 1: Correlations**

		PILOT STUDY	USE ABC	REW BSC	AUTO. & SOFT WARE	EMP COMMIT	LINK COMPE N	MNG.I NV	APPR.M EA	COMM UNI.
PILOT STUDY	Pearson Corr.	1.000	.207	.067	.372	.233	.161	.124	.095	.314
	<b>Sig. (2- tailed)</b>		.106	.606	<b>.003*</b>	.068	.213	.336	.462	<b>.013*</b>
	N	62	62	62	62	62	62	62	62	62
USE ABC	Pearson Corr.	.207	1.000	.361	.473	.331	.336	.257	.577	.504
	<b>Sig. (2- tailed)</b>	.106		<b>.004**</b>	<b>.000*</b>	<b>.009**</b>	<b>.008**</b>	<b>.044*</b>	<b>.000**</b>	<b>.000**</b>
	N	62	62	62	62	62	62	62	62	62
REW BSC	Pearson Corr.	.067	.361	1.000	.305	.483	.117	.495	.438	.538
	<b>Sig. (2- tailed)</b>	.606	<b>.004**</b>		<b>.016*</b>	<b>.000**</b>	.364	<b>.000**</b>	<b>.000**</b>	<b>.000**</b>
	N	62	62	62	62	62	62	62	62	62
AUTO. & SOFTW ARE	Pearson Corr.	.372	.473	.305	1.000	.327	.503	.059	.580	.487
	<b>Sig. (2- tailed)</b>	<b>.003*</b>	<b>.000**</b>	<b>.016*</b>		<b>.009**</b>	<b>.000**</b>	.648	<b>.000**</b>	<b>.000**</b>
	N	62	62	62	62	62	62	62	62	62
EMP COMMI T	Pearson Corr.	.233	.331	.483	.327	1.000	.309	.406	.439	.793
	<b>Sig. (2- tailed)</b>	.068	<b>.009**</b>	<b>.000**</b>	<b>.009**</b>		<b>.015*</b>	<b>.001**</b>	<b>.000**</b>	<b>.000**</b>
	N	62	62	62	62	62	62	62	62	62
LINK COMPE N	Pearson Corr.	.161	.336	.117	.503	.309	1.000	-.031	.392	.253
	<b>Sig. (2- tailed)</b>	.213	<b>.008**</b>	.364	<b>.000**</b>	<b>.015*</b>		.810	<b>.002**</b>	<b>.047*</b>
	N	62	62	62	62	62	62	62	62	62

MNG.I NV	Pearson Corr.	.124	.257	.495	.059	.406	-.031	1.000	.433	.522
	<b>Sig. (2- tailed)</b>	.336	<b>.044*</b>	<b>.000**</b>	.648	<b>.001**</b>	.810	.	<b>.000**</b>	<b>.000**</b>
	N	62	62	62	62	62	62	62	62	62
APPR. MEA	Pearson Corr.	.095	.577	.438	.580	.439	.392	.433	1.000	.563
	<b>Sig. (2- tailed)</b>	.462	<b>.000**</b>	<b>.000**</b>	<b>.000**</b>	<b>.000**</b>	<b>.002**</b>	<b>.000**</b>	.	<b>.000**</b>
	N	62	62	62	62	62	62	62	62	62
COMM UNI.	Pearson Corr.	.314	.504	.538	.487	.793	.253	.522	.563	1.000
	<b>Sig. (2- tailed)</b>	<b>.013*</b>	<b>.000**</b>	<b>.000**</b>	<b>.000**</b>	<b>.000**</b>	<b>.047*</b>	<b>.000**</b>	<b>.000**</b>	.
	N	62	62	62	62	62	62	62	62	62

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

### 3.3 Discussion and Concluding Remarks

Performance measurement is an issue of growing importance for business organizations, because success of business organizations, achieving competitive advantage and sustaining it depends on how good they are performing. Balanced Scorecard defines what management means by "performance" and measures whether management is achieving desired results<sup>48</sup>. BSC is a powerful concept based on a simple principle; managers need a balanced set of performance indicators to run an organization successfully. The indicators should measure performance against the critical success factors of the business, and the "balance" is the balancing tension between the traditional financial and non-financial, operational, leading and lagging, and action-oriented and monitoring measures<sup>49</sup>. The term "balanced approach" also means that these four measurement categories are given roughly equal weight in supporting management decisions. While this model can be effective, its biggest contribution is that it emphasizes, particularly to traditional managers, that financial measures (the bottom line) are not the only measurements needed to manage companies effectively, there are also other measures of equal importance<sup>50</sup>.

<sup>48</sup> IBID, IOMA's Report on Financial Analysis, Planning & Reporting.

<sup>49</sup> McCunn, P. (1998), The Balanced Scorecard... The Eleventh Commandment, *Management Accounting*, 76(11): 34-36.

<sup>50</sup> - Stein, P. (2001), Measurements for Business, *Quality Progress*, 34(2): 29-33.

- IBID, Roest

In this study we tried to shed light on the factors which are important for successful implementation of Balanced Scorecard in Turkish business organizations. We have seen that in Turkish firms that implement BSC using appropriate measures, top management support and commitment, linking compensation, incentives and rewards to BSC results, employees' participation and commitment, selecting the appropriate BSC automation and software system, communicating the BSC throughout the organization, reviewing and updating BSC are important factors for the success of BSC implementation. Since managers give importance to the participation, commitment and support of both employees and managerial levels to the BSC and see communication as an essential tool for the success of BSC implementation, we can say that culture of the organization can also be a factor for successful implementation of BSC in Turkish Firms. This is also in accordance with the literature. Franco and Bourne, 2003 in a survey found out that for the success of BSC there is a need for an organizational culture that encourages discussion and analysis. Correlations among the factors that effect successful implementation of BSC (table 1), had also some implications for us: Communicating BSC throughout the organization is significantly correlated to all other success factors. Similarly top management's support and commitment and employees participation and commitment are significantly correlated to all success factors except using a pilot study before implementing BSC. This finding also support our idea that organizational culture can be important for the success of BSC implementation in Turkish business firms. For further research implications a study can be conducted to analyze the type of organizational cultures and components of organizational culture that effects successful implementation of BSC in Turkish firms

There are also limitations to this study, in Turkey the number of firms implementing BSC are very few in size, because it is a new concept for the Turkish firms. For that reason this study can be repeated in future with a larger population when number of companies using BSC increase in size.

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# INDUSTRY CHANGE THROUGH THE DECONSTRUCTION OF THE VALUE CHAIN: NEW BUSINESS MODELS

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## **Abstract**

*The business model at the end of the 19<sup>th</sup> century was , in many industries the vertical integration of the value chain. Towards the end of 20<sup>th</sup> century we began to witness the deconstruction of these integrated models. New business models are introduced transforming thus the boundaries and the competitive skills that define firms and industries and the nature of competition. In this new competitive environment is not unusual that firms that compete on a single layer of the value chain to extend their activity in more industries. Companies use, more and more, the different layers of the value chain to migrate to other markets. This migration not only causes new profitable markets and businesses but also causing the merger of previous separate industries. Thus it becomes difficult to define the industries using the traditional methods. It is very probable that in the future the competition will take place at the value chain layers and not at industry level. The paper concentrates also on the new business models in this new competitive environment: the layer players, the orchestrators, the market makers, the integrators and the navigators.*

**Keywords:** *deconstruction; value chain; business models.*

## 1. Introduction

In many industries the business model at the end of 19<sup>th</sup> century was the vertical integration of the value chain. Towards the end of 20<sup>th</sup> century we began to witness the deconstruction of these integrated models. Competitors with new business models change or sometimes even destroy the competitive advantage of integrated firms. As these new firms introduce new business models, the boundaries and the competitive skills that define firms and industries are also changing, transforming the nature of competition.

Although vertical disintegration may be a relatively invisible part of industry evolution, it can radically transform the sectors in which it occurs. In this new competitive environment it is not unusual that firms that compete on a single layer of the value chain to extend their activity in more industries. Companies use, more and more, the different layers of the value chain to migrate to other markets. This migration not only causes new profitable markets and businesses but also causing the merger of previous separate industries. Thus it becomes difficult to define the industries using the traditional methods. It is very probable that in the future the competition will take place at the value chain layers and not at industry level.

Practical experience and empirical research on vertical integration has stressed that internal transaction costs that make the vertically integrated firm inert and inflexible can be extremely high. As a result many integrated firms began disintegration or outsourcing processes in the 1980's to save on overhead costs or to regain some sourcing flexibility. This was the beginning of the deconstruction of the integrated value chains. Over time factors such as: globalization, deregulation, privatization, increasing sophistication of capital markets and most important – the revolution in the economics of information contributed to the process of deconstruction. The consequence was an increasing number of specialized businesses (focusing on a single or few layers of the value chain), an augmentation of layer specialization and business migration across the traditional industries.

Vertical integration decisions were based on information anomalies. The high cost of getting enough information to suppliers, distribution channels and customers has been the factor that influenced most vertical integration. Today there is the possibility of an open exchange of information at a very low cost and those aspects have two immediate consequences: it allows firm to outsource more activities that was previously possible and encourage the firms that act on a single layer to attack the integrated firms by means of advanced information technology such as the Internet. As a result, the integrated value chains are fragmenting into multiple businesses.

## 2. Causes of value chains deconstruction

It is very important to understand the reasons for deconstruction, which parts of the chain are most likely to be affected and how it can be used by the company to its advantage. There are three main theories that deal with the main reasons for value chain deconstruction : 'rich versus reach', 'interaction versus transformation' and 'three businesses in one'.

### 2.1. *Rich versus reach*

Evans and Wurster<sup>1</sup> hold that the value chain has traditionally been defined in terms of the trade off between 'richness' and 'reach' of information. Companies, for example, set up branch networks to communicate 'rich' (read detailed or complex) information to customers, whilst advertising could 'reach' a broader population, but not deliver rich information effectively.

The authors hold that a company can increase its competitiveness in this situation by moving along the tradeoff line, e.g. offering higher reach but with less richness than a competitor. A second, but more difficult, strategy would be to move the line outward by offering both increased richness and reach.

Evans and Wurster<sup>2</sup> predict that the trade-offline is not only shifted by innovative competitors. Two inventions are causing the line to move. The first is the advent of open, universal communication standards, such as found in Internet communication. The second is the introduction of content standards for the definition, storage and presentation of information. The effect of these changes is that rich information will increasingly reach a much larger audience at a greatly reduced cost. In addition, the market starts performing activities previously requiring managerial co-ordination. Due to this some parts of the value chain might become obsolete and others can be performed in new ways. The outcome is often that the traditional integrated value chain starts deconstructing.

### 2.2. *Interaction versus transformation*

Butler and Hall sustain that organizations frequently compare interaction cost with transformation cost. Interaction refers to 'the searching, coordinating and monitoring that firms do when they exchange goods, services or ideas'. Transformation relates to the economic activities of

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<sup>1</sup> EVANS, P. WURSTER, Strategy and the new economics of information, *Harvard Business Review*, pg.72, 1997

<sup>2</sup> EVANS, P. WURSTER, '*CLICK.BOOM*', Ivey Business Journal, pg.35 , 2000

production and delivery<sup>3</sup>. The theory of comparative advantage holds that the parties should trade and increase individual and total wealth when one party has a comparative advantage in an activity. Butler and Hall hold that even if one party has a comparative advantage, but the cost of finding, negotiating and exchanging goods is more than can be gained through trading, the parties would not trade. Interaction is estimated to represent as much as 51 percent of labour activity in the United States of America (USA) with an equivalent cost of one third of the gross domestic product<sup>4</sup>. The authors postulate that due to this huge cost, traditional organisations were constructed to decrease the impact of interaction.

If, for any reason, the cost of interaction decrease, the dynamics of industry could change. A decrease in interaction cost could, for example, lead to a component being sourced from a third party rather than manufactured in-house.

### **2.3. Three different businesses**

The 'three firms in one' theory presents one of the most attractive models. This probably results from the instinctive recognition of the different dimensions of an organization that managers have noticed through experience but were unable to describe in terms of a theoretical framework. Hagel and Singer suggest that most organisations engage in three kinds of businesses. The first attracts customers; the second develops products, whilst the third oversees operations. Each unit employs different types of people, has different cultures and even has different economic and competitive imperatives.

The main driver for the customer business is scope (gaining the largest share of market), whilst operations focus on scale. The product unit focuses on speed to market and innovation. Evans and Wurster hold that the integrated value chains often found in industries are sub-optimal because they integrate businesses with different drivers into one. Hagel and Singer agree that the trade-offs resulting from running the businesses as one adds inefficiency to the system. As soon as the cost of these inefficiencies is more than the interaction cost holding the business together, organisations will unbundle into three.

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<sup>3</sup> BUTLER, P., HALL, T.W. *The revolution in interaction*, McKinsey Quarterly, Issue 1, pg.2, 1997.

<sup>4</sup> BUTLER, P., HALL, T.W. *The revolution in interaction*, McKinsey Quarterly, Issue 1, pg.4, 1997.

The unbundled businesses are not predicted to necessarily remain loose standing entities. Some parts are expected to consolidate with similar sections of other organisations that have also unbundled. Consolidation in the customer and operations businesses is likely as the business drivers are scope and scale. Product companies are foreseen to remain small with fragmented players characterising the new industry. Evans and Wurster argue that in the traditional value chain trade-offs were inevitable. One activity was done at a sub-optimal level to accommodate another. The player with the lowest average cost for all activities held a competitive advantage. With deconstruction, 'de-averaging'<sup>5</sup> occurs. Each part of the value chain must now be competitive. 'Deconstructors' seek out the most profitable part of the chain and focus only on this element, thus gaining a competitive advantage. Traditional players are potentially left with the less profitable activities.

### **3. The Implications of Deconstruction**

The competitive implications of deconstruction are profound and wide ranging:

- The traditional definition of businesses and industries and, therefore, the reference set of competitors, suppliers, and customers becomes obsolete. The development of new technologies, deregulation, privatization, the liberalization of trade, the expansion of Internet have helped to blur the lines between industries and give rise to new businesses that do not readily fit the traditional industry definitions.
- Competitive advantage is de-averaged. Businesses in which the economics of one activity are compromised for the sake of the whole will be especially vulnerable. In an economy of integrated value chains, competitive advantage is a game of averages. Take the simple example of costs. If a company's aggregate costs are competitive, then having a cost advantage at every step of the value chain isn't necessary: the steps are bundled together. But as value chains deconstruct into distinct segments, layers, and markets, average advantage loses its importance. What counts is advantage in each individual piece of the value chain. Deconstruction leads to de-averaging.
- Advantage across the entire value chain no longer matters; it's advantage in each layer that counts. As a result, the new unit of strategic analysis is the layer.

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<sup>5</sup> EVANS, P., *How deconstruction drives de-averaging*, pg.1, 1998

- Horizontal strategies those that leverage layer capabilities across previously distinct businesses become serious alternatives to traditional strategies of vertical integration and customer franchise in a single industry.
- Managing resource allocation at the layer level requires new ways to evaluate investments and gives birth to a whole new concept of the portfolio.
- The boundaries of the corporation become fluid and permeable. Ownership is no longer a condition for effective co-ordination or control. Companies can now make use of key activities in the value chain without owning them.
- Customers are empowered; brands become vulnerable. Traditional asymmetries of information are challenged by the rise of navigators that search and switch on the customer's behalf.

#### **4. New business models**

The deconstruction of the integrated value chains provides more freedom to search for or create new business opportunities as each layer of the value chain can be the focus of value creation. We can distinguish five new business models: the layer players, the market makers, the orchestrators, the integrators and the navigators.

##### ***4.1 The layer players***

As deconstruction spreads, integrated value chains break apart into independent businesses, or layers. Some of these layers have the potential to become the places where the most value is concentrated and where the highest profits and returns can be found.

The layer players usually try to exploit economies of scale and superior know-how to build a new market by dominating an existent layer of the value chain and maybe they try to expand the layer horizontally across several industries. In order to exist as a layer, a product or activity supplied by a single company must be a key input to one or many value chains, while also being modular enough to stand on its own as an independent business. The most common way to create increasing returns of this sort is to establish an industry wide standard. The existence of a common operating-system standard in personal computing creates enormous value for consumers as more and more software applications are written to the common standard. Microsoft's scale advantage has allowed it to shape the evolution of the personal computer industry. Companies have achieved layer mastery also by

creating markets where none have existed before in the process, triggering further deconstruction and changing the way an entire industry does business.

Any aspiring layer master must carefully anticipate the likely moves and countermoves of other industry players partners, competitors, customers. They have to decide how much of the potential future value they can afford to give away in order to establish a standard. This companies have to be prepared to execute radical changes in strategy as the balance of competitive forces shifts.

Even when layer mastery is finally established, a company must remain vigilant. Mastery is rarely permanent. New technologies can render previously essential information or standards obsolete. Customers can conspire to work around established layers by finding new partners or even by going into business themselves. Although layer mastery often means that the winner takes all, that winner must be prepared to do so over and over again. In a deconstructed environment, defensibility is by definition dynamic. If you stand still, your control is likely to erode.

The best way to defend a layer is to extend it. The most successful layer masters search for opportunities to project their mastery across multiple industry boundaries to amass still more scale, to keep control of the customer, or to defend themselves against competitive threats from other industries. In this way, Microsoft has tried (with uneven success) to spread the Windows standard from personal computers to consumer-electronics devices to cable-television set-top boxes.

An example of layer player is EDS (Electronic Data Systems), a computer company that has specialized by providing services to control and govern comprehensive IT systems. Initially it has operated in the automotive industry- as a part of GM but today it provides IT services ( IT development, online marketing) to firms operating in different industries.

#### ***4.2. The Market Makers***

Another business model is the market maker. The firm's success is based on a pioneering development that has become an industry standard. In contrast to layer player that concentrate on an existing value chain layer, market makers create an entirely new value adding layer. But, like the layer players they develop new markets first by using informational advantages and capabilities in one industry. If the market maker succeeds in creating a new layer, the firm then tries to extend this layer across additional industries.

Sabre, with it's IT- based airline reservation system is a good example of market maker. This system was a marketing invention by American

Airlines and today Sabre is an independent company and it's basic product is now a standard in the entire travel and tourist segment. This system connect thousands of tourism agents, airlines, car rental companies and hotels.

Another successful invention that resulted in a new market is Internet bookselling. Firms like Amazon.com achieved a high volume of business and gained a positive reputation that now develop related Internet markets.

Enron, that constitutes another example of market maker, revolutionized the business by creating a market for energy trading and making that market a key part of the industry's value chain. Today everyone in the business trades energy, but Enron retains a powerful advantage. Because the company has more than twice the trade volume of its next largest competitor, it has a wealth of experience that few rivals can match. The more trades Enron executes, the more information it acquires about how to identify the best deals and develop innovative techniques for structuring financing and for managing risk. That trading information has even given Enron a proprietary advantage in discovering the most profitable asset plays.

### ***4.3. The orchestrators***

As the forces of deconstruction break industries apart into an array of discrete businesses, one compelling strategic idea is to orchestrate the pieces of the value chain rather than own them. The logic is appealing. Instead of holding every link in the chain, orchestrators choose the pieces they want to own and direct the activities of the others by means of a powerful brand, control over critical information, or some other hard-to-create proprietary resource.

Orchestrators create competitive advantage by never acquiring nonstrategic or capital-intensive assets in order to focus on assets that add the most value. Their strategic focus allows them to concentrate capital, time, knowledge, and managerial expertise where they will have the greatest impact. Their unusually high asset efficiency leverages their economics and contributes to extraordinary returns. And their control of key resources gives them an opportunity to dominate the value-added architecture of an industry and even to shape its evolution.

There's no wonder, then, that some of the most successful companies of recent years have been orchestrators. Nike has dominated the athletic footwear business by concentrating on design and marketing while outsourcing and closely coordinating production through an offshore network of low-cost suppliers. Dell Computer has become the leading supplier of

personal computers to businesses by orchestrating a highly disaggregated supply chain to provide fast delivery of made-to-order PCs.

But orchestration can be hard to execute and even harder to sustain. The very changes in industry structure that make it possible also make it vulnerable to miscalculation, imitation, and competitive subversion. Unless orchestrators master new strategies and skills, they can find themselves defeated by the competitive dynamics that deconstruction unleashes.

The very factors that make orchestration possible also make it easy to copy. The process is straightforward: Orchestrators depend on a network of suppliers. If a supplier base does not exist, the orchestrator must create one. The orchestrator defines precise specifications for product design and delivery, then works with suppliers so they can meet them. As suppliers develop specialized expertise, an entire industrial infrastructure takes shape. Eventually, the system becomes so standardized and transparent that the suppliers are able to offer their services and products to anyone not only to the original orchestrator but to competing orchestrators as well.

That is what happened to Nike. Once the company established an efficient network of low-cost suppliers to produce its shoes, it found the network hard to hold on to. There was nothing to stop Nike's competitors from sourcing from the same suppliers on roughly the same terms. Today the athletic shoe market is awash in new labels and excess product, and Nike's growth has stalled despite the company's powerful brand. Orchestrators must learn to anticipate attacks by imitation and figure out how to head them off.

But imitation is not even the most serious competitive challenge that orchestrators face. Far more dangerous and disruptive is the situation where an orchestrator's suppliers themselves become so strong that the balance of power in the industry tilts decisively in their favor. The classic example is IBM's famous decision to outsource the operating system of its PC to Microsoft.

Orchestration is no mere outsourcing decision. It is a strategic choice that can be extraordinarily profitable but also extremely difficult to defend. Successful orchestrators understand thoroughly the economic attractions of their strategy. But they also anticipate the myriad ways competitors can take it apart. They think hard about whether their strategy can be defended and how.

#### ***4.4. The Integrators***

A viable strategic option is still the integrated business model. For some firms, the control of all value chain layers allows for cost or

differentiation advantages. The conditions for the success of value chain integration changed under the deconstruction. As compared with layer players, the integrator must be superior at every layer of the value chain, and in comparison with the orchestrators, the coordination capabilities must be at least as good if not superior. We can find successful integrators in many industries: ExxonMobil in oil industry, Nestle in food and Procter & Gamble in consumer products. As the factors that drive value chain disintegration proliferate, the integrator business model will be increasingly under attack.

#### ***4.5. The Navigators***

Power in a value chain often flows to the company that controls navigation the activities shaping how customers search, compare, and decide what to buy. As value chains deconstruct, a new class of independent navigators is gaining power. These companies threaten to wrest control of navigation from traditional product suppliers, undermining long-standing brands and customer relationships. Fortunately, there are ways to fight back.

Independent navigation isn't a new idea. Retailers have been around for more than a century. More recently, new retail formats such as mail-order houses and big-box retailers have greatly expanded the power of navigators. Now electronic commerce is rapidly accelerating the trend, spreading independent navigation to new industries and to unprecedented levels of efficiency and reach.

The new navigators bring wider choice to more customers, give them more information, and cater more successfully to their individual preferences than ever before. Schwab OneSource, for example, helps investors pick and choose from more than 3,000 mutual funds; Chemdex helps industrial customers select from specialty chemicals offered by more than 100 suppliers. Unencumbered by constraints of geography, inventory, or existing distribution channels, the new navigators aim to control the customer relationship by providing a one-stop solution based on breadth of choice and rich information.

For established product brands, independent navigation is a serious competitive threat. By focusing on easily compared attributes like price, navigators shrink margins and threaten to commoditize every product in a category except the quality leader. By inserting themselves between companies and their customers, they erode the brand experience and hijack valuable customer information and relationships. By deconstructing traditional sales and distribution channels, they strip control from suppliers and profits from the value chain.

Faced with such threats, many companies are tempted simply to give in for example, by adopting the navigator's product standard, buying "shelf space," or even manufacturing a navigator's private-label products. But surrender is a mistake. Incumbents can retake the initiative, but only if they start using the dynamics of the deconstructing value chain to their advantage.

## **5. Conclusion**

Information has always been the glue that has held value chains together. The cost of getting sufficiently rich information to suppliers, distribution channels, and customers has given vertical integration its leverage. As transaction costs plummet, that glue is dissolving. Increasingly, universal access to rich information and common communications standards are enabling the open and virtually free exchange of all kinds of information.

Before deconstruction, a company could maintain an advantage if the average productivity of all the activities it performed was higher than that of its competitors. Today a company must excel in every activity because every link of its value chain is being challenged. That doesn't mean that integrated manufacturers will disappear altogether, but they must be highly productive in everything they do. Otherwise, they should be ready to deconstruct.

As new markets appear at every link in the value chain, the logic of a vertically integrated company must be continually proved rather than taken for granted. Deconstruction is having a considerable impact. But taking apart a value chain is a radical decision. It could mean transforming a company into a collection of independent businesses that buy and sell on the open market.

The key is knowing what you do best. If you are the low-cost manufacturer, could you gain leverage by producing for all players? If your brand can extend into new areas, could you create a licensing and management infrastructure? If you have technology that is applicable across disparate businesses, could you create a strategy to capture that value?

Deconstruction means separating a product or service chain into its component parts and realigning those components to maximize overall value or flexibility. . The goal isn't necessarily to break a company apart; it is to make each layer of the value chain as productive as it can be.

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# **HUMAN RESOURCES CONTROLLING: ANSWER TO THE PRODUCTIVITY CHALLENGE**

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## **Abstract**

*Productivity gap between new EU members and developed western countries has been a topic of recent debates both at macro- and microeconomic level. At micro level, a fundamental role is carried out by management. In this paper we focus on human resources factor as it is believed to be one of the most important determinant of companies growth. We refer to a concept of HR controlling, which stresses the need for complexity in human resources management. For the cross-country comparison of HR management we use the results from research conducted by Deloitte and the University of Economics of Prague.*

**Keywords:** *controlling; human; resources; HR; management*

## **1. Introduction**

Controlling as a management practice is understood as a group function which is carried out equally by the controller and the manager at various company organisational levels. The basis of this function is to determine the strategic and operational company aims, the collection and processing of information in decision making, preparation of material which will assist in the companies direction and also the ongoing control of gathering results.

Development of controlling also supports enterprise growth on a workforce level which up to this point has not demanded individual initiative. Thanks to this, employee activity has grown because of on the one hand delegation entitlement and on the other, the ability to have responsibility in the decision making process. This, however, requires much time and can't be decided upon without direct participation in this process. This conversion requires gradual and controlled introduction, at the same time with commitment from staff and management where the situation for both is completely new.

Employees are, more than often, recognised as the most treasured element in company growth and expansion, they are recognised by modern managers as capital worth investing in. However, in order to create such a friendly environment, it is vital to work through or introduce a successful system in human resource management in a company which will give noticeable effects.

This task is undertaken by human resource controlling, which allows for avoiding the effects of improper decisions in the area of human resource management, which could contribute to unfounded growth in company operational costs.

The purpose of this paper is to present human resource controlling as an advanced management tool to improve companies productivity and effectiveness as well as employees' satisfaction.

## **2. The problem of productivity**

Most of new EU members face the problem of low labour productivity (Table 1). This phenomenon is easily explained on a macro level. Most of these countries were centrally planned economies, which didn't go in the line with the free market mechanism. Therefore, over decades private sector didn't develop at the same pace as in western economies. In

other words, when post communist workforce fulfilled the centrally planed tasks, whereas western economies developed organisations, which were market and profit oriented. Through capital accumulation and continuous quality increase they developed goods and services which are now exported worldwide. Therefore, disproportions in aggregates presented below primarily arise from the fact, that advanced economies are using value added over long period.

Another reason behind low productivity may be poor organisational system and management dysfunctions. Again, it should be mentioned, that advanced economies have at disposal far more experienced managers than developing countries.

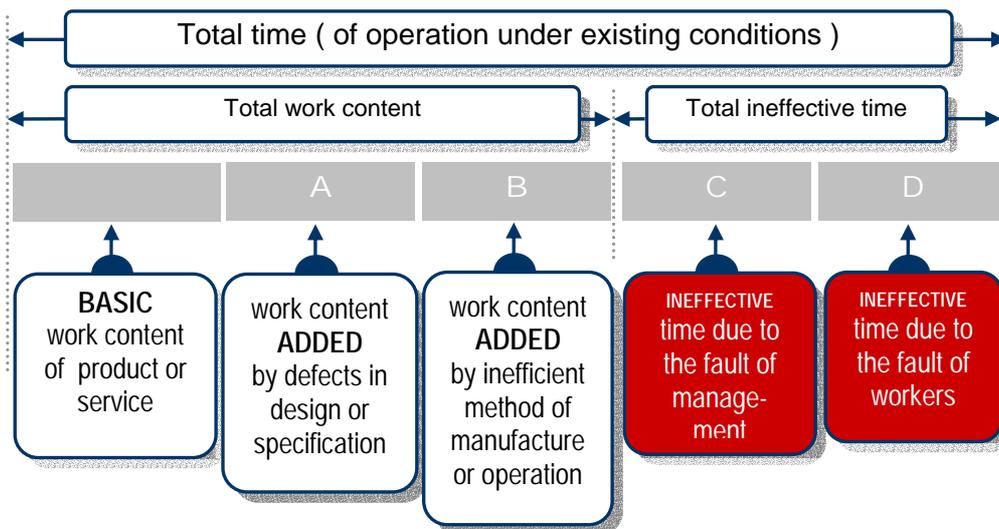
Human resources is recognised as one of the most important factor of company's growth in the neoclassical models. Diagram 1 presents a typical work time structure. Area C and D stand for human resources failures. Both of them may be reduced or even eliminated through a proper design of HR system.

**Table 1. Labour productivity index**

	2001	2002	2003	2004	2005	2006
EU (25 countries)	100.0	100.0	100.0 (f)	100.0 (f)	100.0 (f)	100.0 (f)
EU (15 countries)	107.8	107.4	107.1 (f)	106.8 (f)	106.6 (f)	106.4 (f)
Austria	104.4	103.3	103.5	104.9	105.4 (f)	105.2 (f)
Czech Republic	60.4	60.9	62.7	63.9	65.5 (f)	67.2 (f)
Hungary	64.5	66.9	67.2	69.2	70.5 (f)	71.4 (f)
Poland	49.8	50.5	58.0	59.6	60.7 (f)	61.8 (f)
Slovakia	56.1	59.1	59.0	59.4	61.1 (f)	62.7 (f)
Slovenia	71.6	72.7	74.2	75.9	77.5 (f)	79.3 (f)

*Source: Eurostat*

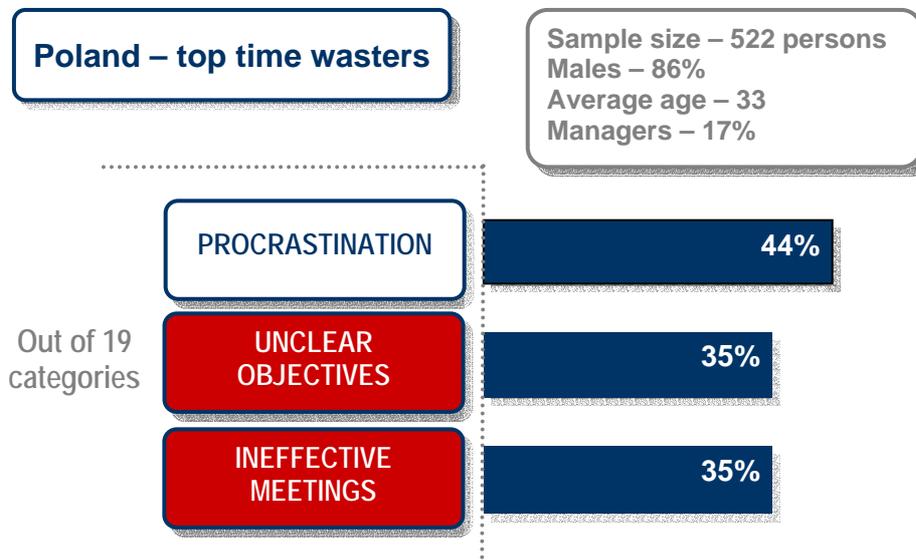
**Diagram 1. Work time structure**



Source: Accel Team ([www.accel-team.com](http://www.accel-team.com))

Microsoft Office Personal Productivity Challenge discloses HR management dysfunctions. According to the research, unclear objectives and ineffective meetings are representatives of the top three time wasters. This suggest how much there is to be done in the field of human resources.

**Diagram 2. Productivity research results for Poland**

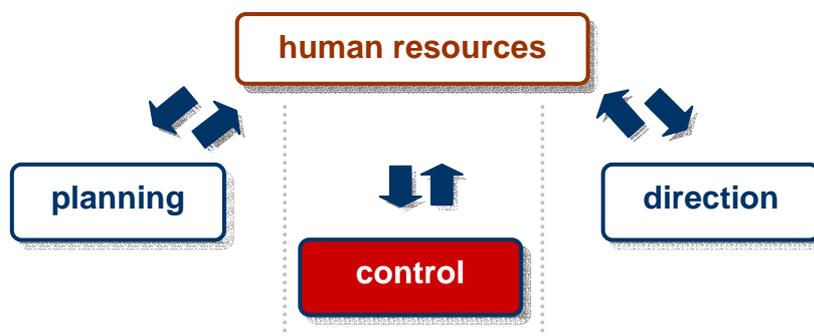


Source: Microsoft Office Personal Productivity Challenge Global Assessment Poland Data Snapshot ( February 2005)

### 3. The essence, aims and tasks of human resource controlling in companies

Human resource controlling is defined in literature as „...an internal system controlling the achievement of aims in individual areas of human resource management in a company involving planning, control effects and work costs and also factors which influence this...”<sup>1</sup>. Controlling fulfils an extremely important role in the area of human resource management. It permits a better use of the opportunities which resides in the human resource potential the company has. Employees often constitute the companies largest growth and development factors, and proper management of them allows the attainment of high market placement, increasing its value and contributes to effectively making use of the abilities and qualifications of the staff. Via the integration of planning and forecasting, consultancy and also via the informing and controlling in human resource, the possibility of rational administration becomes accessible for all available company resources. This consequently influences a bettering of the competitive position in the market and contributes to achieving company success. The concept of such understood human resource controlling is represented in diagram 3.

**Diagram 3. Concept of controlling in relation to human resource management**



*Source: I.Chomiak, Problemy kadrowe rozwiązywane poprzez wdrażanie systemu informacyjnego controllingu personalnego, Prace Naukowe Akademii Ekonomicznej, Wrocław, 2002, nr 953, s.229.*

<sup>1</sup> J. Lipiecki, Controlling personalny, „Ekonomika i Organizacja Przedsiębiorstwa”, 1998, nr 12, p.28.

In literature there are distinguished the following types of human resource controlling<sup>2</sup>:

- **Strategic**, whose task is one of observation and then analysis and forecasting qualitative factors and effects connected to the process of human resource management. It can be said that this is set on the maximum importance of human capital as well as the amount and quality, with the aim of achieving a greater stable market position and being more competitive.
- **Operational** whose short term activity direction within human resource management is aimed at a definite purpose for the company. The characteristic feature of human resource controlling is above all: much more detailed activities, short term planning, determining the direction of on going aims within the area of human resource management and the company itself.

In regard to the operational tasks of human resource controlling, it is important to<sup>3</sup>:

- combine both the strategy of the workforce with the strategy of management,
- verify the correct strategy to move human resources in the direction of a precise aim,
- control in the gradual carrying out of this strategy and achieving results,
- treating the human resource department as the core for profit and centre for shaping employee value.

It can be said, that the aim of human resource controlling is firstly based on a „bottle neck” principle, which means changes to employees production according to the scope and structure of work costs, recruitment and the qualifications of staff. Other factors such us changes in work related accidents which may effect loss of work time, internal work relationships and work related illness may in the end, effect how the reward system via the company is carried out<sup>4</sup>. The second aim may be determined by how to make the most of and shape the abilities of the staff, so that management may increase their value and to gain a competitive edge.

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<sup>2</sup> A.Pocztowski, J. Pugał-Popieła, Controlling..., op.cit., s.187.

<sup>3</sup> A. Sikorski, Controlling..., op. cit, p.51

<sup>4</sup> M.Sierpińska, B.Niedbała, System controllingu operacyjnego w przedsiębiorstwie, Akademia Ekonomiczna w Krakowie, Kraków, 2001, p.85

## 4. Cross-country analysis of the HR function<sup>5</sup>

The HR survey was divided into 5 sections and the questions (multiple choice and open questions) focused on providing us with specific details and insights on:

- HR leadership and staffing;
- HR roles and responsibilities;
- The current state of selected HR processes and activities;
- HR performance metrics;
- The envisaged challenges of the HR function in the forthcoming years.

### *4.1 HR Strategy and Service Delivery*

The HR function in general develops an HR strategy and then links it with the organisation strategy. The responses in the Czech Republic, Slovakia and Slovenia show particularly high percentages. However 25% of the organisations in Poland and Hungary do not link the HR strategies with the organisation strategy. In Austria this is the case in 20% of the population. However in most countries the linkage seems to be only one-way: top-down. The organisations that develop an HR strategy take into account the organisation's situational and environmental changes as well as culture, strengths and weaknesses of the organisation, and social and political changes.

However, only about 50% of the organisations measure the impact of the realisation of the HR strategy. About 75% of organizations in Austria and Slovenia, though, measure the impact human resources have on the organisation while in the Czech Republic just about a third do so.

The most mentioned reasons for not using HR performance metrics are:

- no knowledge about how to measure HR;
- no standard for generally accepted metrics;
- HRIS does not provide required data.

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<sup>5</sup> Deloitte and the University of Economics of Prague; "The State of HR in Central Europe"; 2004/2005;  
<http://www.deloitte.com/dtt/cda/doc/content/HRSurvey2EN.pdf>

All organisations in Slovenia indicated that they link the organisation with the HR strategy and use HR performance metrics.

When asked, which HR performance metrics are the top 3 HR performance indicators it appears that organisations mostly mention metrics like:

- employee satisfaction,
- employee turnover,
- absenteeism,
- training (hours) per employee.

Most organisations use both qualitative and quantitative indicators. This leads to the assumption that it looks like the HR function is focused primarily internally and not externally. An external focused HR function would stress HR key performance indicators that measure for example the:

- Human Capital return on investment,
- sales revenue per employee,
- productivity indicator,
- error-free service,
- the effect of salary costs on the value-added.

There were only about 5 organisations that mentioned these kind of HR metrics and all are from Hungary. Hungary and Austria are the countries that have the highest percentage of organisations which use HR performance metrics. The involvement of HR priorities in the short- and long-term strategic planning process of organisations differs from country to country. In Hungary in particular the HR function is much involved in the strategic planning process. HR strategies and priorities are involved in this process. This level of involvement might be linked to the HR performance metrics that are used in organisations in Hungary. Also in Slovakia the HR function has established not only top-down links but also bottom-up links with the top organisational level and planning. In Slovenia there is a mixture of answers which vary from “to a significant extent” to a “minimal extent“.

Many of the participants indicated that they are a local subsidiary that is part of a global organisation with a global HR function or they represent the HR function at the global level. Participants have been asked about the implementation and use at the local level of HR processes and services developed at the global level. It appears that in Austria, the Czech Republic and Poland most local subsidiaries develop and/or modify the global HR

processes. Also most local subsidiaries are served with one or more HR processes/services from the global HR function. In Slovakia and Hungary a small percentage of organisations take HR services from a global level.

#### **4.2 HR Structure and Roles**

The main role of the HR function in Austria and Poland is as a strategic partner. The HR function focuses on aligning HRM strategies and practices with business strategy, internal and external resources and competences. The HR function executes the HR strategy and HRM practices support in accomplishing business objectives.

In the Czech Republic and Slovakia the main role of the HR function is as Change Enabler. The HR function focuses on managing transformation and change processes and creates relationships with its stakeholders (e.g. employees, management and unions).

**Table 2. Human Resources Roles**

<b>Country</b>	<b>Administrative</b>	<b>Employee Champion</b>	<b>Change Enabler</b>	<b>Strategic Partner</b>
Austria	0 %	33 %	27 %	40 %
Czech Republic	19 %	21 %	37 %	23 %
Hungary	11 %	39 %	22 %	28 %
Poland	20 %	4 %	31 %	45 %
Slovakia	0 %	6 %	50 %	44 %

*Source: Deloitte and the University of Economics of Prague...*

The main role of the HR function in Hungary is Employee Champion. The HR function is oriented on increasing employee commitment, capability and establishes relations with employees to solve day-to-day problems, concerns and needs.

In Poland and the Czech Republic about 20% of the respondents still indicate that the main role of the HR function is to design and deliver efficient HRM processes; HR builds efficient infrastructures. In Slovenia a mixture of roles is indicated.

Total HR staff : employee ratio and the span-of-control of HR executives/management were calculated. No correlation was found between the HR staff : employee ratio and:

- the main role of the HR function; or
- the use of Human Resource Information Systems; or
- outsourcing of HR processes/activities.

**Table 3. Human resources staff on employee ratio**

<b>Country</b>	<b>HR staff : employee ratio</b>	<b>Span-of-control</b>
Austria	1:108	1:4,8
Czech Republic	1:73	1:3
Hungary	1:51	1:15
Poland	1:59	1:5
Slovakia	1:84	1:4
Slovenia	1:98	1:2

*Source: Deloitte and the University of Economics of Prague...*

HR staff are, in general, qualified at the appropriate level from an educational point of view. Although in Austria, the Czech Republic and Poland for the positions of HR executive post-graduate level is preferred while university level is actual. While for HR manager, technical/professional HR staff university level is ideal and typical. However in Slovenia the expected education level for professional/technical staff is college level.

In Slovakia for the positions of HR executive, HR manager and technical/professional HR staff university level is asked. For all above named countries college level is sufficient for administrative HR staff. In Austria, the Czech Republic and Slovakia previous working experience outside the organisation is perceived as positive but this does not have to be experience in the HR area. However, only in Poland is it preferred to have previous working experience in the HR area.

#### **4.3 HR Processes**

There have been selected following HR processes for more detailed inquiry:

- recruitment & selection,
- performance management,
- compensation & benefits,
- training & development,
- Human Resources Information System (HRIS),
- occupational health & safety.

#### **Recruitment**

In Austria, Poland, Slovakia and Slovenia 80 – 100% of the organisations tend to have specialised recruitment teams in the organisation, where as in the Czech Republic and Hungary this is true for only about 60%

of the organisations. The recruitment process incorporates in all countries most of the activities that are considered as ‘best practice’ approaches: job profiles and competencies are used in the selection process, recruitment policy is linked with the HR strategy and in most cases (65% of participants) organisations have prepared employee value propositions (compensation & benefits, career and development, training possibilities are offered). One of the practices that is less used is the monitoring of the costs, quality and effectiveness of recruitment channels (between 50% and 65% of participants).

### ***Performance management***

In Austria, Slovakia and Slovenia about 90% of the organisations have a performance management process in place. In the Czech Republic, Hungary and Poland this percentage is about 60%. For the organisations that have a performance management process implemented the use of all recognised ‘best practices’ is not that common. Almost all organisations however have regular performance appraisals with employees but on the other hand most organisations do not have a linkage between performance management and resourcing (internal and external recruitment).

Another weak linkage in most countries except Austria, Poland and Czech Republic is how performance management practices are connected to the development and deployment of employees. Examples of these practices are linkages between performance management and training & development, career & succession planning and personal growth plans.

Only in Austria and Slovenia is the use of performance management measurements broadly used (85% of participants). In the other countries this percentage is between 60% and 70% while for Hungary it is just 50%.

All countries, except Slovakia, have a propensity to link their compensation & benefits process well with other HR practices. And in all countries, except Slovakia, the compensation & benefits policy takes into account topics like motivation, employees’ needs and financial forecasts. Most of the organisations distinguish between some employee groups for offering compensation & benefits services. In general almost all organisations offer variable and/or performance related pay but a large number of the organisations indicate that this is true only for some employees. The same counts for offering a cafeteria and/or flexible benefits model.

In Austria most organisations (over 80%) regularly use external compensation & benefits benchmarks for reflecting their policies with the external market.

### ***Training & Development***

In all countries about 80% or more of the organisations have formalised training, development and learning programmes (and budgets) for at least some of the employee groups. Also, the majority of organisations monitor the effectiveness of at least some of the trainings at the individual and organisational level and use their training programmes to anticipate future strategic changes.

In this respect it is remarkable that many organisations invest in the development of employees but do not yet seem to have the right mechanisms in place to adequately deploy employees.

### ***Human Resources Information System (HRIS)***

Only in Austria (47%) and Poland (63%) do the majority of organisations have fully integrated HRIS systems implemented (i.e. HRIS systems that cover various HR processes and make it possible for one-time data administration per employee). In these countries respectively 38% and 30% of the organisations use various HR administration systems that are not necessarily linked, which leads to multiple-data entry of employee data.

In the Czech Republic, Hungary, Slovakia and Slovenia integrated HRIS is not widely used and most organisations (40% to 50% of the participants) use various HR administration systems. In these countries only about 25% of the organisations use an integrated HRIS.

### ***Occupational health & safety***

All participants follow regulations and therefore promote health and safety protection. In Austria, Poland, Slovakia and Slovenia about 70% of the organisations monitor employee work satisfaction. In the Czech Republic this is only roughly 60% and in Hungary only 45%.

Participants were asked which benefits they provide to employees to improve employee well-being. Most organisations provide benefits which are more compensation based than supporting employee and organisation wellness. The majority of organisations provide:

- restaurant vouchers,
- contribution to holidays/recreation,
- travel allowance,
- insurance benefits,
- health care.

Benefits that are focused on employee and organisation wellness provided by 50 – 60% of the organisations are:

- sport and activity programmes,
- company team building,
- flexible working hours.

Benefits that are particularly focused on employee and organisation wellness but are not common include:

- work-life balance,
- working from home,
- parental leave,
- child assistance.

#### ***4.4 Future outlook***

In all countries the majority (between 60% and 80%) of organisations expect “no change” in the HR budget for the next fiscal year. A minority (between 10% and 30%) of organisations expect a decrease in the HR budget.

The same response was received for a change in the number of HR staff. Again a majority (between 60% and 90%) of organisations expect “no change” in FTE of the HR staff in the next fiscal year. A “decrease” in HR staff is expected by 10% to 30% of the participants. However, when asked what the situation will be 3 to 5 years from now the number of participants that expect a “decrease” remains the same but more participants expect an increase.

The table below shows which HR processes are expected to have the greatest demands. We have shown the HR processes with the top 3 percentages per country. In the EU accession countries it appears that the major focus and demand is expected to be on performance management, compensation & benefits, training & development as well as internal communication, while in Austria the focus is on HR policy development, training & development, HR planning and employee counselling/coaching. The latter two topics are in Austria, as mentioned above, currently indicated by none of the participants as a main responsibility for line management.

**Table 4. Priority demand for HR processes**

	Austria	Czech Rep.	Hungary	Poland	Slovakia	Slovenia
HR Policy Development	31%					
HR Planning	31%					
Recruitment & Selection					70%	
Performance Management			45%	26%		80%
Training & Development	31%	36%		26%	75%	80%
Compensation & Benefits		33%	36%	32%	80%	80%
Change Management			36%			
Employee Counselling/Coaching	31%					
Internal Communication		34%		35%	70%	
Employee Relations						80%

Source: Deloitte and the University of Economics of Prague...

## 5. Organisation of human resource controlling within companies

One of the most intrinsic factors affecting the efficiency and effectiveness of human resource controlling as a helpful tool in the process of human resource management in companies is the organisational manner which has as its aim:<sup>6</sup>

- precise range of task and the competency as well as determining the responsibilities of the human resource controller or those for whom are accountable for this function,
- assigning specific activities to the appropriate organisational divisions by human resource controlling,
- to determine where these divisions can be most effective within the organisational structure of the company.

Generally, it can be said that the role of the controller in companies is to above all, implement human resource control systems and to then monitor

<sup>6</sup> A. Poczowski, J. Purgał-Popiela, Controlling..., op. cit, p.189

their on going effective functioning. Responsibilities of the human resource controller are very wide and the administration of these activities more than often bring with them a great deal of accountability. Therefore, an absolutely vital function is to determine the individual personality, talent and ability along with the necessary qualifications such a controller should have in order for this person to realise his/her personal goals and achieve market success. It is necessary that the controller's profile within the function of personnel and other functions have analytical, persuasive, motivational and interpersonal and management skills. Also of importance is that professional training includes the understanding of the concepts, instruments and techniques involved with human resource management as well as company economics, concepts of business planning, budgeting and balances. P. Świerkula states that the model controller should be an open minded person who is able to detect and identify the most important information quickly and effectively in order to analyse and present it to interested organisations<sup>7</sup>.

The basic role of the controller within the function of human resource management should include<sup>8</sup>:

- choosing a specific method, time and range of planning for personnel within a company,
- control the true realisation of processes connected to the area of human resource management as well as their progress in achieving desired goals,
- „bottle neck” analysis, where human resource management can identify the weaker areas of the company and define ways for them to be eliminated,
- coordinate work associated with the controlling process and to work through a coherent timetable and programme for human resource managers,
- establish the information needs for staff function,
- measurement and reporting of internal and external concerning employment,
- assistance and training for upper management and human resource manager.

The appropriate positioning of controlling staff within the organisational structure is an important factor in achieving high performance

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<sup>7</sup> P.Świerkula, Controller- rola i zadania:  
[www.controlling.info.pl//artyk/pokaz\\_artykul.php3?nr=14](http://www.controlling.info.pl//artyk/pokaz_artykul.php3?nr=14)

<sup>8</sup> Z. Sekuła, Controlling..., op. cit., p.387-390

and effectiveness in activities carried out. The human resource controlling department can be located at head office where it deals with upper management only<sup>9</sup>. The second location would be working with middle management on the same level as other management. A high human resource controller position within the company hierarchy allows for them to be in a favourable position to promote organisational issues of internal human capital, permitting independence and access to a variety of information of great strategic company value. Thanks to this structural position, the controller can fulfil the function of advisor although not having the ability to make or carry out decisions. In the second position, the controller works much closer with all company divisions which have an essential effect on the regularity and speed of the decision making process and carrying out of tasks. Z. Sekuła states that it is possible in such a situation of using human resource controlling which doesn't present an independent controlling position but rather its function is passed on to the human resource department<sup>10</sup>.

Of course the factors which determine the location of human resource controlling staff within the organisational structure of companies are also quite wide and the specifics of its activity, already existing organisational structure and the company level of expansion shouldn't be forgotten. In small business the function of controller is taken over by the owner or the director whose role is to support the process of management via the attainment of information and fulfilling a consulting function<sup>11</sup>. In mid range business the role of controlling is carried out by organisational divisions created for this purpose. Whereas in large companies, the position of controller emerges as either the head of the department or directly responsible to upper management.

The firm Cap Gemini Ernst & Young undertook a questionnaire among company owners regarding the use of controlling staff within their company. The results were published in the report Human Resources Management 2002/2005 Bedeutung, Strategien, Trends. Presented in Chart 2<sup>12</sup>.

The research was carried out on a group of 100 companies of which over 60% responded that their controlling staff were located in the personnel department. Every 3<sup>d</sup> person also identified controlling staff within the personnel department and the financial department. Only 6% of respondents

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<sup>9</sup> K. Czubakowska, Controlling jako instrument zarządzania, Zeszyty Metodyczne Rachunkowości, Wydawnictwo Podatkowe GOFIN, 2000, nr 14, p.14

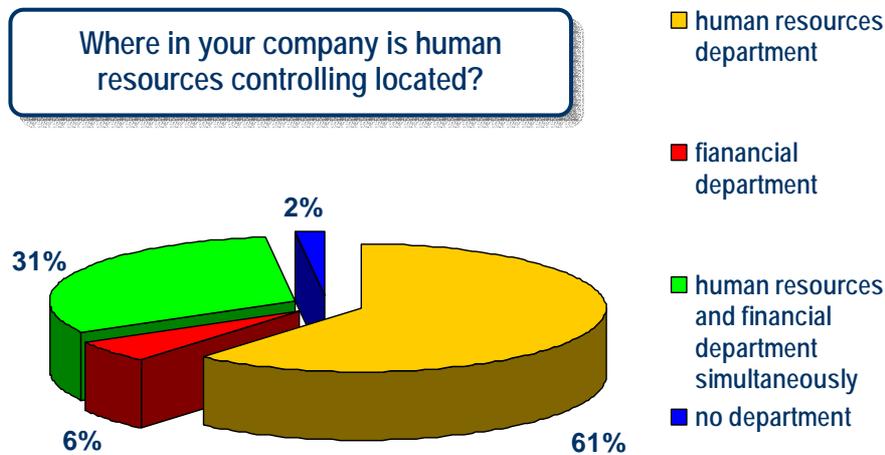
<sup>10</sup> Z. Sekuła, Controlling..., op. cit, p.371-373.

<sup>11</sup> A. Poczowski, Controlling..., op. cit, p.8.

<sup>12</sup> Human Resources Management 2002/2005, Bedeutung, Strategien, Trends, Cap Gemini Ernst&Young, 2002, rozdz.V, s. 20- raport z badań.

stated that their controlling staff were solely allocated to the financial department.

**Chart 1. Location of human resources controlling within companies**



*Source: Research Report -Human Resources Management 2002/2005, Bedeutung,Strategien, Trends, Cap Gemini Ernst&Young, 2002, p. 20*

## 6. Conclusion

In conclusion it should be stated that human resources controlling represents an essential tool in the assistance of the human resource management process within companies. They are necessary as this form of instrument management, results in mainly a greater meaning as to how not only staff work but their work within the company itself. Thanks to the effective use of their ability and qualifications, companies are in the position to follow through earlier plans, minimize or completely eliminate threats or difficulties which may appear in the near future.

The use of human resources controlling allows for recruitment rationalisation, taking into account the staff number realistically required by companies, limit accidental activities in the process of human resource management, eliminates the repetition of work by several members of staff, counteract incorrect decisions which are often expensive and carry out systematic appraisals of all activity connected with personnel policies realized within the company. All of these activities on significant levels effect the ability of companies to achieve results and to enhance its market performance. In order for these tools to be totally effective and provide the

desired results, it is vital that managerial commitment and also abilities are utilized by the company to adapt to market changes.

Thanks to the information provided by the human resources controlling, improvements in human resource management occur and the consequences of this are represented by the companies results and stronger financial position.

The success of these adoption processes allow for controlling solutions which are dependant mainly upon the personal characteristics of the controller and also how important the process of human resource controlling is for upper management.

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# CHANGES IN THE FIELDS OF ACTIVITY DURING THE TRANSITION PERIOD AND ROMANIA'S ACCESSION TO THE EUROPEAN UNION - CASE STUDY: SC ALCOM SA

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## **Abstract**

*After the Revolution of 1989, Romanian economy went through an important transformation process from a planned economy to a functional market economy. The changes which occurred in the labor market (the increasing rate of unemployment), the market of goods and services (the emergence of foreign companies) and in the capital market forced many Romanian companies, which already existed before 1989, to change their field of activity in order to survive. The company S.C. ALCOM S.A of Cluj-Napoca is in the same situation. It used to be the greatest company of distribution and logistics in the county of Cluj. As the competition on the wholesale market increased due to the emergence of super and hypermarkets chains such as Metro, Selgros, Carrefour, Billa, Plus, Auchan etc.), the company was forced to reorient itself to the real estate market. This reorientation brought about the laying off of more than 500 employees as well as the giving up to the logistics equipment. Moreover, the frequent changes in the fiscal legislation forced the managers to adopt a strategy of company division into 14 micro-enterprises. In this article, we shall tackle on the changes that merged at the national level and the reaction mode of the managers at the micro level.*

**Keywords:** labor market, distribution, logistics, hypermarkets, legislative changes

## **1. Introduction**

The transition to the market economy has eventually been understood as a movement from the public sector – controlled by administrative levers – to the private sector, where the managerial posts seem to go first. The most significant function held by the management within this transition is enforced by the necessity to create an overall capacity of innovation, flexibility, and, even under the circumstances of an unstable business environment, a certain stability that should ensure success in the most difficult or extreme situations will be needed.

Within the given context, the theoretical and furthermore, the methodological approach to a theory of the commercial management, which makes the object and the topic of this project brings distinct, practical bonds. Throughout this study, we will seek to emphasize, while building a case in point, the need to switch the traditional, managerial mentality over the economic activities to a marketing vision, which calls forth on the primary necessity of any company to detect the demands and the wishes of the aimed consumers / customers and give forth / satisfy their complacencies in an economic manner that should be more efficient than the competition's offer.

The method of underlining the manners and the means that allowed the achievement of an efficient improvement of the commercial management, situation that applies to the company analyzed throughout this paperwork, and under the impact of the major changes appeared during the transition process, implied certain conceptual and methodological disentanglements regarding the essence of that process, the analysis tools and the evaluation markers.

## **2. Changes in the national economy after 1980**

In order to recall the bonds of the economic science, it will be enough quoting John Maynard Keynes's words: "The theory of the economic sciences does not furnish a complex of invariable conclusions, with direct application in politics. It is a method, not a doctrine, a mental instrument, a thinking technique that helps its users reach the right answer" (Conrad Hilton – "Be My Guest", Ed. Prentice Hall Press, New York, 1987, page 278). Therefore, we will focus on the fact that, in order to elaborate efficient development strategies, the management of any business must set as its main goal the economic analysis, relating permanently to a given business environment, while permanently noticing and explaining the economic cycles.

The overall categories of competitive management, undauntedly envisioned, will be approached by highlighting the technical solutions meant to improve the profitability of the company, considering that the success of a deal is possible only through a full insight into the environmental factors.

Conceptually, and considering the process of applying the theoretical principles to the practical area, the transition from a **centralized economy**, with the state propriety as its main feature, to a **market economy**, turned out to be a very complex matter. Due to the lack of precursory conditions, necessary for the good functioning of the economic body that relies on self-adjusting mechanisms, the transformation of the over-centralized system appeared to be a very difficult process. The major restrictions that affected the process of transformation in order to create the market self-adjusting mechanism are as follows:

- The idleness of various structures (social, economic, institutional);
- The lack of financial provision (the inhibition of the process of forming the in-land capital and the insignificant draw of foreign capital due to a general mistrust in the newly-formed markets);
- The insufficient development in the sector of services;
- The gap between the speed of the implementation of the banking, financial and currency policies and that of achieving the absolute economic basis of the transition (management buy-out, management, capital, labor force);
- The existence of serious structural mismatches in the areas of social protection and labor force;
- The scarcity of knowledge held by the formers of the economic policies, both at the macro and micro-economical levels.
- The economic thinking is divided into embracing two different opinions regarding the means of passing to the **market economy**: the so-called **shock therapy**, and the **gradual transition**.

The shock therapy brings forth its own disadvantages:

- It diminishes the time factor, the cold existence of the gap between the moment of the institutional reform and the

moment of the adjustment of the micro-economic sector to the institutional changes;

- It neglects the national feature of the economies in transition;
- It totally disregards some events pointing at the changes in the international climate (the disappearance of the URSS, the breaking-up of the CAER, the national-separatist movements);
- Its fundamental thesis - modifying the institutional system would automatically bring radical changes in the society and the economy's structure, behavior and function – is false.

In Romania, as well as in other former communist countries, due to the above mentioned conditions, the concept of gradual therapy, according to which the best transition strategy is combining the stabilizing policies (short-term policies) with those that promote the reforms and the reorganization (long-term policies) has been gradually developed. Today, when in Romania the management buy-out process has not been accomplished yet, most authorized opinions state that it has proved to be a wrong solution, which has excessively delayed the reform.

Ignoring the management buy-out process, the main components of the transformation process into market self-adjusting mechanisms, were:

- The creation of the market institutions and the organizational structures needed for their well-functioning: stock exchanges, banking system;
- The liberalization of prices and their evolution which was mostly determined by the demand-offer ratio;
- The creation of the main components of the market: the labor market, the goods and the services market and the financial market.

The management buy-out is a fundamental condition to meeting the demand of turning the structure of economic agents and of adjusting their behavior to the self-adjusting mechanism of the economic system. The management buy-out is not a goal per se, but it is the basic means by which the competitive structures of the environment of the market economy are created. It implies two major goals: the development of the private propriety and the building-up of organizational structures that would create and consolidate the competitive environment, as well as ensure the conditions for raising the business profitability.

The following analysis will briefly revise the way in which the company - subject to our case in point has adapted itself to this process of transition to the market economy.

### **3. Case study – S.C. ALCOM S.A.**

The “ALCOM” S.A. Company has been founded on the former structure of the Wholesale Trade Company (I.C.R.A.), being a Romanian legal person that operates according to the laws of the country, legally organized as a share company, with business quarters in the city of Cluj-Napoca.

In its first years of life, S.C. “ALCOM” S.A.Cluj functioned as a company with entirely state-held capital, carrying on the main activity of its predecessor (I.C.R.A.), the queue handling and the distribution of alimentary goods to its customers; these operations were carried out so as to meet the customers’ demands or according to the assignments and decisions made by its board. Afterwards, following the creation of the two types of funds, The Fund of State Propriety (FPS) and The Fund of Private Propriety (FPP), the company’s capital was divided 70% to the F.P.S., namely to the state capital, and 30% towards the population in propriety certificates, handled by the F.P.P. Thus legally organized, the company functioned until 1992, with the General Shareholders Assembly as its board. The General Shareholders Assembly was not strongly motivated in taking decisions that should point at a real development of the company mainly because it consisted of representatives of the F.P.S., of the F.P.P. and of the employees, being a heterogeneous board from every point of view (business interests, professional training and involvement).

In 1993, the Company’s employees created a non-profit company, a legal person whose only purpose was to buy the shares held by F.P.S. and F.P.P., therefore the management buy-out of the “ALCOM” S.A.Cluj Company, renamed “ALCOM” P.A.S. Cluj (Employees Action Program). The board of “ALCOM” P.A.S. Cluj negotiated the buy-out of all the “ALCOM” S.A.Cluj shares for the employees with the two Funds, and got the deal.

In 1994 there the share buy-sell contracts were signed; thus, the entire joint stock of 991,8 millions lei, divided in 9918 shares of 100.000/ share face value, entered the private propriety of the employees, and the “ALCOM” S.A.Cluj Company became a company with entirely private capital.

- The activity of lab analysis for all the products commercialized by the company as well as for other companies;
- The activity of getting together encasements, their reworking and capitalization through restitution and through selling to tierces;
- The activity of renting available camp sites to tierce legal persons in order to judiciously administrate the existing camp sites;
- The activity of maintenance and repair (by their own personnel) of en-gross camp sites, of their own shops, their own means of auto transport, their cargo handling appliances, of the machines, aggregates, apparatus, installations.

The “ALCOM” Company functioned according to the laws no. 15/1990, 31/1990 and to the Company’s Order - approved by the General Shareholders Assembly, within the space of goods camp sites, which add up to over 30.000 square meters, and which are adequately prepared for the mechanized handling of good where thousands of commercial companies used to get their supplies and where 10.000 – 12.000 bills, more than 2.000 taking – ins, more than 10.000 transfers to its own en – detail shops were operated, by using more than 60 transportation vehicles.

As the company’s logical diagram / organization chart shown in the Annex no. 1 points out, the supreme collective organism that makes the company’s decisions is the Shareholders General Assembly. The Administration Board of S.C. ALCOM S.R.L. is made up of 5 members, appointed by G.S.A. for a period of 4 years. While dealing with tierces the company is represented by the president of the Board who is also the General Director / Manager and who, together with his administrative directors operates the company’s management.

**The Commercial Department** is made up of two commercial departments, one for the en-gross activities and a commercial office for the en-detail activity, this being the engine of the company, taking care of both supplying the goods from various providers, thus concluding economic contracts which they monitor, they supervise the delivery of these products to their own chain of shops and take care of the prompt customer demands brought forth by the salesmen.

According to art. 6 of the company's statute, the company's main object of activity refers to commercial deeds and commercial activities that follow the legal stipulations of the Romanian Commerce Book in force and the terms of the other regulations on the company's activities, terms agreed on by its shareholders.

The company's main activity involves traditional commerce, the en-gross type, with food and other products. Immediately after its buy-out, a chain of company-owned en-detail stores that have gradually counted 33 units was created.

With more than 30 years experience in the field, the company has accomplished its main goal, mainly by developing the following activities:

- Conclude mutually beneficial transactions with providers, producers or distributors of food and different types of non-food products.
- Conclude mutually beneficial transactions with the users – the company has signed more than 600 transactions with various customers, legal persons from Cluj County and the nearby counties.
- Regularly supply its own store houses and stores with a great variety of food products and food components.
- Organize the management of the products' qualitative and quantitative taking-over.
- Provide the stock supplies.
- The efficient management of the goods transportation while stocking and distributing them.
- Coordinating the activities of supplying the storehouses and the regional stores and managing the expenses involved.
- Obeying the legal terms while organizing and managing the operative evidence, the accounting handling, handling the analytic and synthetic accounting, efficient handling of the legal documents and of the operations generated by each activity.
- The efficient management of the camp sites.
- The activity of roasting the green coffee and of pre-packing the roasted coffee.

- The activity of pre-packing a series of products delivered in bulk by their producers.

By the implementation of the already exposed organizational structure, by making use of the logistic data base and especially by adopting a strategic management, the company that we have monitored / analyzed, as emphasized by Table no. 1.1. registered between 1999 – 2000 an upwards evolution of both its rate of turnover and of its profit earning capacity indicators, although it has continuously been threatened by keen competition in the field. The study sighted out a total of 40 Romanian companies which had a similar start and status in 1990, a total of 37 having a different, downwards course.

**Table 1.1. Sales Evolution at National Level and at S.C. ALCOM S.A.**

Years	National Economy			S.C. ALCOM S.A.	
	Inflation Indicators	Whole sale food goods – billion Lei (current prices)	Evolution Indices(%)	Sales – Billion Lei (current prices)	Sales Evolution Indices
0	1	2	3	4	5
1993	395,5	666,6	100,0	1,204	100,0
1994	161,7	1083,2	100,5	2,351	120,76
1995	127,8	1607,2	116,1	4,283	142,55
1996	156,9	3048,7	120,9	9,857	146,68
1997	251,4	8361,8	109,1	34,837	141,39
1998	140,6	14108,6	120,1	56,011	114,8
1999	154,8	22298,8	102,1	95,993	110,74
2000	140,7	30339,1	96,7	98,070	73,37
2001	130,3	39097,1	98,9	106,419	83,34
2002	117,8	48727,7	105,8	92,598	73,88
2003	114,1	63882,5	114,9	63,035	59,73
2004	109,3	76945,6	110,2	36,212	52,59

*Source: The statistical annual of Romania 1991 – 2004*

Having in view the conditions of the nowadays market economy competition becomes an objective necessity, it becomes one of the most important rules of the market strategies, stimulating the need to maximize, diversify and improve the quality of the goods offer in order to align it to the market standards, namely to the customers' demands.

The transition period in Romania – transition which we have summarized in the opening part of this paperwork – marked an uncontrolled use of the unfair competition, of the underground economy, phenomena widely generated by the activity of a series of economic agents who constantly broke the terms of the legislation in force. The legislation in every field has been gradually modified in order to keep the pace with the demands of the free market.

The fiscal legislation has met with multiple and repeated changes itself. Therefore, whether the period before 1989 considered it important just because of the tax rate that affected the goods sales and established a different percent for each group of products, beginning with the 90's the tax rate on profit was introduced, initially demanding a totally unrealistic 42% / percent. This percent has eventually decreased in time to a 39%, then to a 25%, to ultimately come to a 16%, as a consequence of the amendment of the rules of the Fiscal Book this year. Beginning with 1993 the new element of the economic market appeared in the shape of the VAT (value added tax) which has been standardized for most of the products or services to a quote of 22%. The food tax equaled a rate of 11% for a while, a tax rate of 9% being applied to the so-called basic food products. During the last 6 years a 19% tax rate has been applied / demanded.

Although Alcom S.A. has tried to promote and enforce by its owners' associations and through the Romanian Department of Commerce certain law trends meant to stimulate a faster development in the sales sphere where it operates, in order to improve it and make it ready for the great competition caused and run by the international commercial concerns ( Metro, Billa, Selgros, Auchan, Aldi, etc) and which, immediately after 1990 have shown a particular interest for the Romanian market, attempts that have finally failed.

Under the given circumstances, the company management focused on the continuous evolution of the market and on the legislation amendments, trying to dwell on activities, products or departments which have proved to register a plus / a growth of their profitability level, by making an effort to choose strategic alternatives that should provide the company competitive advantages.

The excessive revenue legislation, the evolution of the inflation which during 1991 – 1993 registered a percentage of 322.8, 299.2, 395.5, and 251.4, in 1997 have led to a decapitalization of the company. This period registered a growth of the bank credit up to a level of 200% even during the years in which the inflation went under the already mentioned barriers, fact that cost the company unforeseen losses. In spite of these rough conditions S.C. Alcom S.A. has managed to achieve profitability. As far as its activities are

concerned the company has accomplished its objectives and reinvesting the dividends of its stockholders it managed to pay off the installments stated by the buy – sale agreements on the already mentioned shares.

Rid of these contractual terms, here included the clauses regarding the main activity of the company and the need to keep all its employees up to the date of the final payment of the shares, the company which makes the object of the present paperwork implemented a different strategy: realizing its impossibility to compete with the chain of international stores, it has gradually reduced its activity of commercializing food products in the favor of producing goods (spice production, poultry, chicken breeding).

It has also had in view the revamping of its assets and their exploitation by renting them or by applying certain policies / strategies of association. While giving up certain traditional activities the company oriented itself to new activities, with a greater potential, such as civil building and real estate business.

Taking advantages of the legislative stipulations regarding the micro-corporations that should not pay any taxes on their profit and whose tax rate equals 3% (from a previous 1.5%) the company divided itself into 11 new commercial companies, each considered a micro-enterprise, each administrating just one asset of the initial company, each understood as an independent profit gathering center.

The need to adjust itself to the demands of the European Union has gradually turned the production activities into a costly business. First, the necessity to get and use a computer program that should allow a daily evaluation of the company stock became urgent. Secondly, the company had to draw a new project on packing its products so that the wrapping should now provide information on the bar code for each product, the cost of which not being easily swallowed by the amount of the whole manufacturing / production process.

#### **4. Conclusion**

Aiming not only at its survival but also at its adjustment to the demands of the market economy S.C. Alcom S.A. has been forced to adopt a series of strategic decision.

We consider the following to have had an enormous impact on the future development of the company: the company's management buy-out, the creation of its own chain of en-detail stores, the development of a series of profitable activities, the change of the company's traditional main activity into a new, required activity, the division of the company into 11 micro-

enterprises and other strategic decisions regarding the efficient management of the company's assets, managerial efforts that followed the requirements of Romania's integration into the European Union.

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*International Economy  
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# FINANCIAL STRUCTURE AND ECONOMIC GROWTH

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## **Abstract**

*In the centre of this paper is the analysis of the financial superstructure, namely to study how and in what extent the financial structures developed by political, economical and financial factors have an influence on the economic growth of a national economy/region. In the last two decades Europe has experienced a significant expansion of financial markets. The international comparative analysis of the bank oriented- and market based financial structures is in search of the explanation of the shift towards the market-based financial structure and the changing role of the relationship-based and arm's- length financing. In the focus of cross-country comparison are primarily the EU countries, especially the new EU member states, where time series analysis can emphasize the relationship between financial structure changes and economic growth.*

**Keywords:** *financial structure; financial intermediation; financial markets; banking*

## **1. Introduction**

“One of the most important problems in the field of finance, if not the single most important one, almost everyone would agree, is the effect that financial structure and development have on economic growth” Goldsmith [1969]

My study is divided into three parts. In the first part, I give an overview of the major factors affecting financial structures, and the evolution of the various financial architectures characteristic of the individual countries. The second chapter is the comparative analysis of market-based vs. bank-based systems and relationship-based vs. arm's length financing systems. In the third part, I take a closer look at the financial structure indexes (size, activity, efficiency) characteristic of certain countries / groups of countries – mainly the Anglo-Saxon countries and the old and new EU member states – during the period between 1997 and 2003. These indexes are suitable for examining trends of change in the relative ratio of banks and markets, as well as the effects on economic development and growth.

## **2. History of the financial structure's evolution**

When examining financial superstructures, we can differentiate between two basic types: bank-based and market-based structures. In a bank-based financial structure, the banks have an intermediary role, collecting deposits and providing loans primarily to the corporate sector. In collecting deposits, they can largely rely on households, as their willingness to take risks is low, and they mostly prefer bank deposits to the various securities. The asset side, on the other hand, is dominated by corporate loans, thanks to the fact that funds acquired from banks is an almost exclusive, and by all means primary means of acquiring external funds. Market financing (equity or bond issues) is only supplementary. The above-mentioned structure is typical mostly of Germany, France and the majority of EMU member states (the Netherlands can be mentioned as an exception), as well as Japan. The other group of countries is characterized by the market-based system, where, due to the highly-developed securities market, businesses give preference to corporate bond or equity issues to funds acquired from banks. For this, however, is only possible if households are more willing to make savings, and give preference to the more risky market assets over bank deposits that grant a fixed return. A small part of household savings appears on the market directly, whereas the larger part appears through institutional investors. Accordingly, the dominance of these institutions compared to banks is

detectable on the market. The market-based structure is typical of the USA and England.

Most publications (e.g. Asli Demirguc-Kunt and Ross Levine [2002]) lead to the conclusion that, whereas the degree of development of the financial system has a profound influence on economic results and economic success, the dominance of one or the other financial structure is of lesser importance in this respect. No close connection can be pointed out between the dominance of any type and the success of the economy. The publications suggest that decision-makers should pay attention to the legal and regulatory environment and the reforms that may be necessary in that area, rather than to the prevalence of market-based or bank-based structures. It can be observed, however, that the financial systems of richer countries are much more developed, and therefore the stock exchanges of these countries are far more active and efficient as compared to banks. When examining the legal regulatory environment, the general conclusion can be drawn that the financial systems of countries where shareholders' rights are strongly defended, accounting regulations are well-structured, less emphasis is put on the protection of deposit holders, and the level of corruption is lower, are usually more advanced. On the other hand, countries characterized by weaker protection of shareholders' and loan provider's rights, low-level accounting regulations, high corruption, high inflation and restrictive banking regulations usually have less developed financial systems.

Many economists have studied the connection between financial development (well-functioning financial markets and intermediaries) and growth, leading to the conclusion that the high level of financial development has a strong positive effect on economic growth. The primary function of financial systems (financial markets and intermediaries) is to forward funds from the savers to the market players, who have productive investment opportunities. This basic function can be split up into three partial functions: the mobilization of savings, the acquisition of information and risk management. By performing these functions, financial systems increase both the quantity and quality of real investment, and thus they also increase general welfare. Financial systems can influence economic growth through three different channels. First, the commissions of financial services motivate the mobilization of the savings of small market players. The financial system can achieve capital and productivity increase through better efficiency, and it contributes to economic growth by cutting the liquidity risk of corporations. Second, better analysis and monitoring by loan providers leads to the more efficient distribution of resources. Third, the improvement of risk sharing aids the launching of innovative projects through the increase of the saving ratio.

Most researchers draw the conclusion that financial intermediaries and financial markets are complementary to each other in providing financial services. Both market-based and bank-based systems have comparative advantages. Financial markets are better at financing new technologies and projects where there is much disagreement concerning the issue of corporate financing, whereas banks are more efficient in handling the conflicts between lender and debtor (moral hazard).

### **3. Relationship lending versus arm's length financing**

Based on the events of the last 20 years, a clear shift towards market-based structures can be observed. As a result of globalization, deregulation and technological development, the size of efficient operation has grown significantly. Disintermediation and the securitization had a negative effect on the profitability of banks, and entailed the necessity to lay off superfluous capacities. Traditional lines of business proved insufficient to maintain profitability, therefore it became necessary to provide supplementary banking services. Since the 1980s, the investment products division has gained increasing importance as part of the banks' core activities, and contributed to their increasing efficiency. Most banks recognized that it is more worthwhile to keep their clients by making investment products available than to lose their deposits. They considered it much more important that the disintermediation process slows down greatly if banks are able to meet the demands of their clients as regards their financial services. In the mid 1990s, numerous studies showed that client retention depends directly on the number of products and services offered by the bank. Gackle [1994].

The market-based and bank-based intermediary systems are difficult to mark off for several reasons. In countries where the structure is traditionally bank-based, like Germany and Japan, there is a stable and long-term relationship between bank and corporation. This is called relationship-based financing. In German banks, the investment division has acquired an important role alongside traditional banking, and now we can speak about the system of powerful universal banks. Through their investment banking activities, the banks can monitor the way corporations enter the capital market. Beyond the loan provider's position, the regulatory environment also makes it possible for banks to hold stakes in corporations. Japanese banks own 20% of corporate shares, whereas German banks have a package of cca. 10%. The same ratio is around 2% in the United States.

**Table 1 Indicators of financial development in 1980 and 2000**

Country	Bank Loan to Private Sector		Stock Market Capitalization	
	1980	2000	1980	2000
<i>Austria</i>	0,742	1,040	0,030	0,156
<i>Belgium</i>	0,272	0,792	0,090	0,783
<i>Denmark</i>	0,244	NA	0,090	0,686
<i>Finland</i>	0,462	0,464	NA	2,383
<i>France</i>	0,731	0,636	0,090	1,087
<i>Germany</i>	0,864	0,925	0,090	0,668
<i>Greece</i>	0,520	0,566	0,085	0,942
<i>Ireland</i>	0,315	0,793	NA	0,843
<i>Italy</i>	0,555	0,514	0,070	0,703
<i>Luxembourg</i>	1,210	3,367	0,001	1,771
<i>Netherlands</i>	0,632	0,963	0,190	1,070
<i>Portugal</i>	0,855	0,997	0,006	0,567
<i>Spain</i>	NA	0,816	0,087	0,882
<i>Sweden</i>	0,415	0,391	0,110	1,476
<b>Average Cont.</b>				
<b>Europe</b>	<b>0,601</b>	<b>0,930</b>	<b>0,078</b>	<b>1,046</b>
<i>United Kingdom</i>	0,276	1,069	0,380	1,840
<i>United States</i>	0,354	0,379	0,460	1,549
<b>Average Anglo-American</b>	<b>0,315</b>	<b>0,724</b>	<b>0,420</b>	<b>1,694</b>

*Source: ECB (2003) Rajan and Zingales*

In relationship-based financing, the financier (who can be an owner, a sole or primary creditor, a supplier or a customer) makes an attempt to ensure the return on investment by establishing a certain degree of monopoly at the financed company. The lack of regulation and system transparency means that other players have only limited access to the market, and the cost of entering the market is significant. In “arm’s-length” financing, however, the financier is protected mainly or exclusively by an explicit contract. In the relationship-based system, the bank has a close relationship with the financed company either because of their past contacts or because of its role as a stakeholder. Therefore, beyond the loan applicant’s current liquidity, the bank also inspects its long-term solvency, as well as numerous other factors not mentioned in the contract that help the bank enforce repayment. The current interest rate is negotiable, and is not necessarily in line with the extent of the project’s actual risk. In the case of arm’s-length financing, the loan applicant can choose from a wide range of creditors, thanks to the accessibility of relevant financial information. The loan contract is concluded for a specified period, the interest rate is competitive, and in line with the risk factor and period of the loan. As the relationship-based system is characterized by the lack of competition, transparency and publicity, the

decision-making involves no realistic price signals. As opposed to arm's-length financing, where the loan providers are in competition with each other, and make independent assessments of the project cost, the cost of the loan in the relationship-based system depends on the negotiations between the loan provider and the borrower.

There is no doubt some overlap between bank-based/market-based and relationship-based/arm's length approaches when it comes to the classification of structures / systems of financing. The bank-based structure is primarily, but not exclusively, characterized by the relationship-based system of financing. Venture capital financing is typically relationship-based, despite the fact that it is not a typical banking activity, and can be seen mostly in market-based countries. Similarly, the client's diverse banking relations lead to loss of strength for the individual banks, and point to the formation of a system that shares quite a few features of the arm's-length system. R.G. Rajan, L. Zingales in: ECB [2003]

#### **4. Cross-country financial structure index comparison**

For the comparison of financial structures between countries, I used the indexes as in Demirgüç-Kunt and Levine (2002). The authors performed a comparative analysis involving 130 countries using the 1997 data. With the help of these data, they classified the countries by the relative development of markets and banks (size, activity and efficiency) as market-based, bank-based and undeveloped financial structures (the latter term means that both banks and markets are developed below the average level of the examined countries).

For lack of data, the study does not include the new member states that joined the EU in 2004. The database of the characteristics of the individual countries' financial structures already contains the relevant country data for the period 1997-2003<sup>1</sup>. At the comparative analysis of the financial structure indexes of the different groups of countries, I was interested in whether the financial structure of the new member states (whose growth rate is higher than that of the EU-15) has become similar to that of the old member states, and whether it shifted towards the market-based structure during the seven-year period.

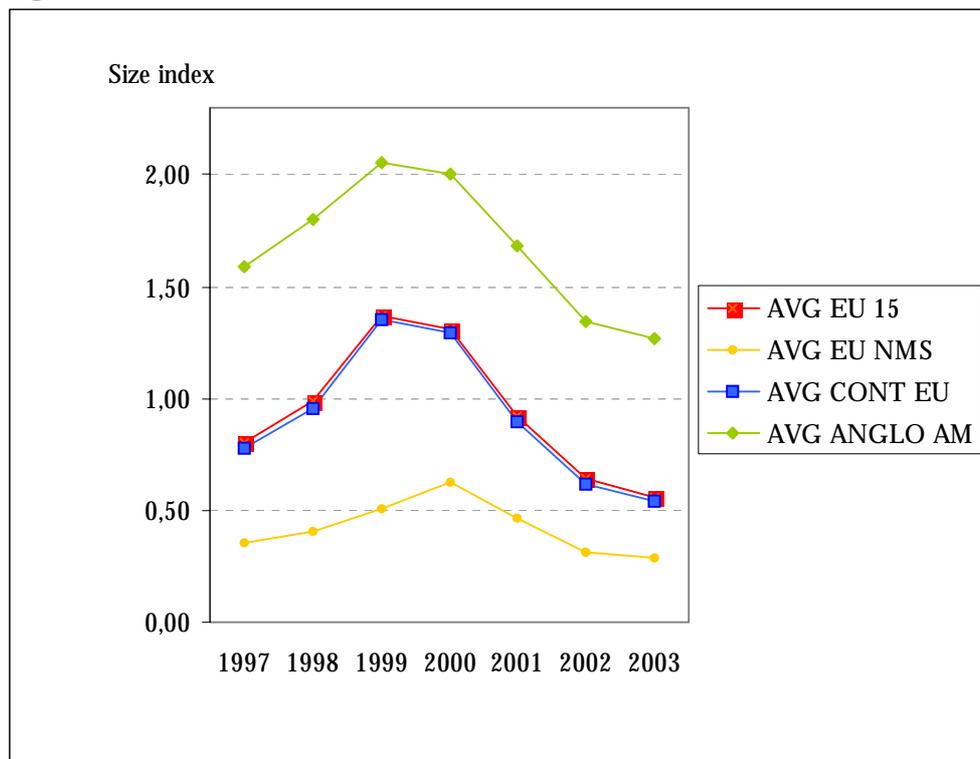
I examined the relative size of banks and the stock market with the capitalization vs. banks indicator, which is the quotient of stock market capitalization and the domestic assets of deposit money banks. To be more precise, it equals stock market capitalization/GDP divided by domestic assets

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<sup>1</sup> The World Bank Group: Financial structure and economic development database

of deposit money banks/GDP. The growth of the resulting indicator shows the relative increase of market capitalization as compared to the size of banks. The examined groups of countries were the following: old EU member states (EU 15), new member states (NMS), Anglo-Saxon countries (United Kingdom and United States), and “continental Europe”, i.e. the old member states without the United Kingdom. The chart shows the average index values of the different groups of countries in the given period. Up to 1999 – or up to 2000 for the new member states -, a clear shift towards the growth of the market at the expense of banks is detectable, fitting into a 20-year trend. In the periods 1999-2003 and 2000-2003, however, the trend clearly turned, and the relative size of banks grew at the expense of markets.

**Figure 1 Financial structure size index**

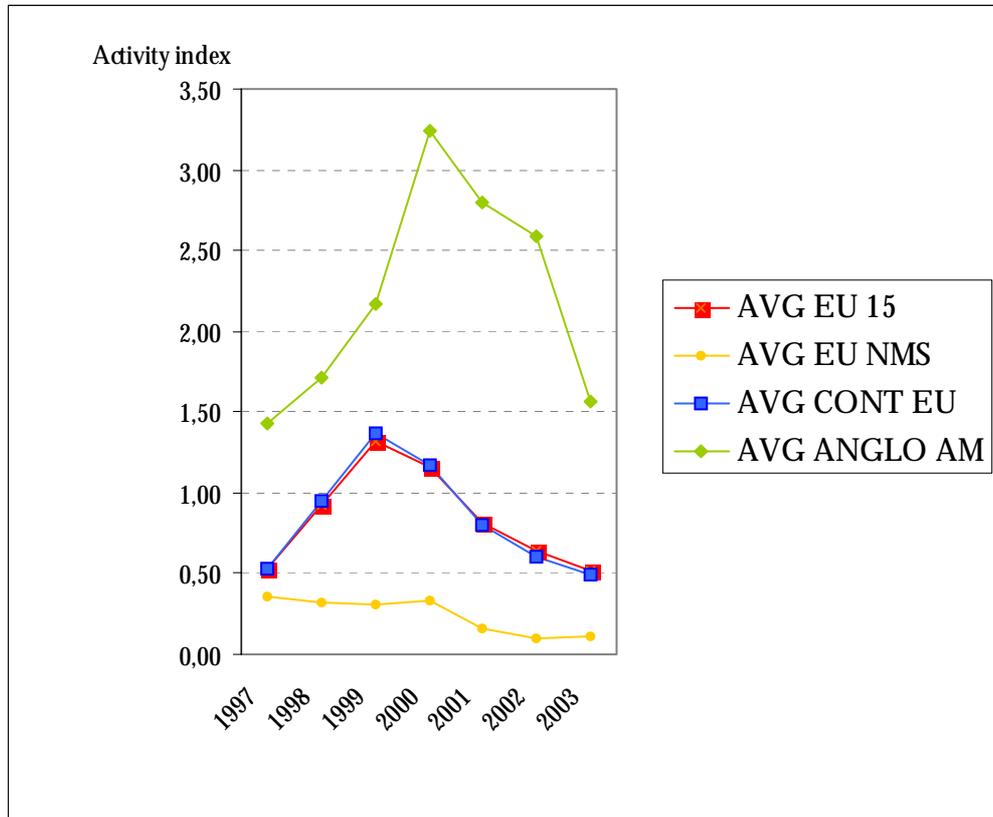


*Source: Author's calculation*

I interpreted the relative activity of stock markets and banks as the quotient of the stock market indicator ‘total value traded/GDP’ and the bank indicator ‘claims of deposit money banks on private sector/GDP’. The rise of the resulting indicator shows the increasing activity of the stock market as compared to the banks. In Anglo-Saxon countries, this phenomenon can be observed up to 2000, whereas in old EU member states / countries with fundamentally bank-based financial structures it lasted till 1999. The

indicator started to fall after this in the above-mentioned groups of countries, whereas in new member states it was on the fall almost throughout the examined period.

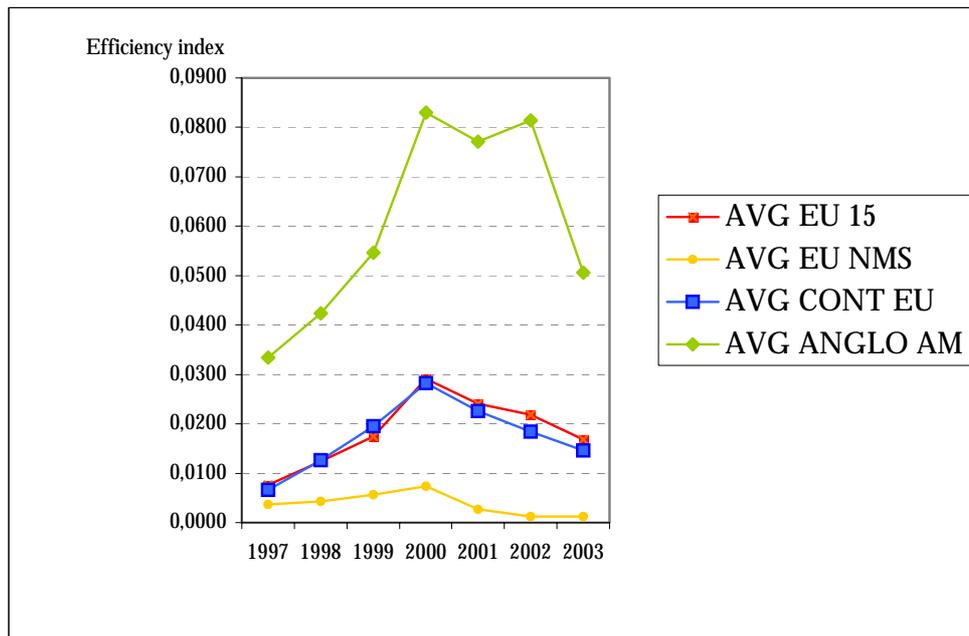
**Figure 2 Financial structure activity index**



*Source: Author's calculation*

The efficiency indicator is constituted by the product of the 'total value traded/GDP' and the 'net interest margin/total asset' indicators. The rise of the resulting indicators shows the increasing relative weight/efficiency of the market-based structure, as the increase of net interest margin is indicative of the decreasing efficiency of banks, and thus implicitly indicative of the growing relative efficiency of markets. Drawing a chart of the average indexes of the different groups of countries as a function of time, a clear growth in the relative efficiency of markets can be observed up to 2000. After that, a decreasing trend can be seen in both old and new EU member states, which is strongly characteristic of Anglo-Saxon countries only after 2002.

**Figure 3 Financial structure efficiency index**



*Source: Author's calculation*

Obviously, quite a few factors must be taken into consideration for the assessment of the indexes. Naturally, the fall of equity prices must have had a great influence on relative size, activity and efficiency. Earlier studies pointed out that in higher income countries, the activity and efficiency of domestic stock markets grows in comparison with the activity and efficiency of domestic banks. The higher growth of new EU member states as compared to the old member states did not result in a category rise in the World Bank's classification (low income, lower middle income, upper middle income, high income countries) On the basis of the used financial structure indexes, the rise of the activity and efficiency of domestic stock markets as compared to the activity and efficiency of domestic banks is not detectable during the whole period. Up to 2000 relative activity almost stagnated and efficiency was on the increase, whereas after 2000 the values of both indicators fell. However, considering the relative activity and efficiency index of the former and the new member states, there is a clear phenomenon of convergence. The financial structure of the new member states has become similar to that of the old member states.

## 5. Conclusion

The comparative analysis of bank-based and market-based financial structures can be performed from numerous aspects. The relationship lending/arm's length financing approach enables the more thorough study of the above-mentioned categories. The indexes used for describing the financial structures of the different groups of countries are suitable for analyzing the relative size, activity and efficiency of markets and banks. Based on the trend of the last 20 years, which shows a shift towards market-based financial structures, it can be observed that the relative weight of markets was falling as compared to banks in the years after 2000. However, considering the old and the new EU member states there is a convergence of relative activity and efficiency of markets versus banks.

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# COMPETITION, MONOPOLY AND ANTIMONOPOLY POLICY – INTERSECTION OF HISTORICAL THEORIES

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## **Abstract**

*There are two main objects of this paper. The first object is to compare the most important theories and opinions about competition, monopoly and antimonopoly policy. The second object is to summarize some monopoly regulation of this economics theories. All these theories are subdivided into five parts started from the oldest time, e. g. from Aristotle, through mercantilism, early capitalism, theories of A. Smith to the classical Ricardian theories. There is discussed the competition and the origin of the first framework of anti-trust legislation at the break of the 19<sup>th</sup> and 20<sup>th</sup> centuries, the Karl Marx's and his followers' theories, the origin of imperfect competition and the system of neoliberal politics. This project was financially supported by the Internal Grant System of Silesian University, IGS SU Nr.15/2005.*

**Keywords:** *competition; monopoly; antimonopoly; regulation*

## **1. Introduction**

The main aim of this paper is to summarize and compare the attitudes towards imperfect competition, special towards monopoly and monopoly regulation of some economics theories. It stands to reason that the attitudes of several theories coherent with monopoly and antimonopoly policy were very different during the process of evolution. Above all the evolution of the last century was focused on the theory of dynamic competition. It was made out that monopoly is also limited by the process of making prices. These findings were the sources of new state regulations activities. It is the point, why to analyze the present situation of monopoly regulation and try to find a new arrangement which will make whole economics more competitive.

## **2. The oldest theories of monopoly**

It generally known, that the first man, who wrote about monopoly, was Aristotle. He has introduced a monopoly of marketable goods. There was a man in Sicily who used a sum of money deposited with him to buy up all the iron from the iron foundries, and afterwards when the dealers came from the trading-centres he was the only seller, though he did not greatly raise the price, but all the same he made a profit of a hundred talents on his capital (Aristotle, Politics, 1997, p. 57). It seems to be clear there were a discussion about monopoly in Antique time. The Greece word has two parts – „mono“means one and „polein“ means to sell.

The word monopoly is derived from Greek words meaning one seller. If one company is the only manufacturer of a product, that company has a monopoly. It is able to set its own quality standards and establish selling prices. It can also control middlemen, such as wholesalers and truckers. This does not mean that the monopolist will set the highest possible price for his goods. Market demand will decrease as prices rise. Therefore, the monopolist must set prices that the market will bear in order to make the highest possible profit. The prices will normally be far in excess of actual manufacturing costs and above a normal return on investment.

One-company monopolies are not common in the industries that manufacture products. However, we can have several single-firm monopolies in public utilities—companies that supply gas, electricity, and telephone and telegraph services. In spite of the breakup of the telephone and Telegraph Company, several regional telephone companies have virtual monopolies on service in their areas. In many nations these services are operated by

governments. Public transportation is normally a government monopoly as well. In some countries the government also owns the airlines.

Public utilities in the United States are usually investor-owned firms, similar to other corporations. Although they may be monopolies within their geographic areas, they are regulated by government. Thus the rates they can charge and the quality of service they offer are both subject to standards set by commissions or legislatures.

Adam Smith is writing about monopoly in his *An Inquiry into the Nature and Causes of the Wealth of Nations* like about an individual or a trading company. This company has the same effect as a secret in trade or manufactures. The monopolists, by keeping the market constantly understocked, by never fully supplying the effectual demand, sell their commodities much above the natural price, and raise their emoluments, whether they consist in wages or profit, greatly above their natural rate.

The price of monopoly is upon every occasion the highest which can be got. The natural price, or the price of free competition, on the contrary, is the lowest which can be taken, not upon every occasion, indeed, but for any considerable time together. The one is upon every occasion the highest which can be squeezed out of the buyers, or which, it is supposed, they will consent to give. The other is lowest which the sellers can commonly afford to take, and at the same time continue their business (Smith, A., *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1976, p. 78).

In the accordance with was written above, wrote Smith that only state could stop the evolution of beginning monopoly. It helped to creative the origin of the first framework of anti-trust legislation.

As Smith was averse to restrains on international trade, so also he was opposed to those on domestic commerce and with colonies. In an age when restrictive preferences, privileges and state grants of monopoly were commonplace, he opposed them all. He also opposed private combinations of producers and workers, although, in a characteristic aside, he noted that there were more laws against combinations by the sellers of labour than against the similar practice by the merchants and manufacturers who employed them. He was not, however, entirely optimistic as to the possibility of contending with private combination. The impulse to such association was strong. In another deathless passage he observes that people of the same trade seldom meet together, even for merriment a diversion ends in a conspiracy against the public, or in some contrivance to raise prices. It is impossible, he says, to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice. But though the law cannot hinder people

of the same trade from sometimes assembling together, it ought to do nothing to facilitate such assemblies, much less to render them necessary.

A century later, what Smith thought impossible would, after a fashion, be attempted in the United States, and the effort would continue for another hundred years. The Sherman Act and later legislation would forbid those of the same trade, even when gathered for merriment and diversion, from discussing, much less agreeing upon, prices. The prohibition would encounter not a few of the difficulties that Smith foresaw.

From Smith has come the commitment to competition as a principle in all capitalist societies – competition that is presumed to ensure optimal industrial performance. Considerably less influential has been Smith's warning as to the institution that, along with the state it might destroy competition. This was the state chartered company – the corporation. Where it had monopoly privileges, as in the colonial era, he was especially critical. But he also thought little of its efficiency. He would be appalled at a world where, as in the United States, a thousand corporations dominate the industrial, commercial and financial landscape and are controlled by their hired management, something Smith thought especially to be deplored. He says, that being the managers' father of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnership frequently watch over their own (Galbraith, *A History Of Economics*, 1987, p. 70).

### **3. First framework of antitrust law on the break of the 19<sup>th</sup> and 20<sup>th</sup> century**

On the break of the 19<sup>th</sup> and 20<sup>th</sup> century was necessary to start managing the regulation of the monopoly. The competition necessitated to its own destruction. The biggest companies tried to make the lowest prices as was possible and wanted to get exoteric market. So they tried to place another market with new products and services. Because of stronger and stronger competition these companies' costs were pushed lower. The levels of these costs were lower than the demand enabled.

Monopoly as defined above is better termed absolute monopoly and is the opposite of perfect competition. Perfect competition exists when there are large numbers of sellers and buyers of a homogeneous commodity. Each seller accounts for a relatively small share of the market; he cannot, therefore, influence the market price by varying his output, and he cannot increase his price above the market price because buyers would shift to other producers.

Although the concepts of absolute monopoly and perfect competition are useful for the purpose of illustrating economic principles, they seldom if ever occur in reality, where actual conditions range between the extremes of near monopoly and nearly perfect competition. In common usage the term monopoly is often employed to signify a state in which the degree of competition is restricted (but still present), whereas competition is used to denote a state in which competition is less restricted (but still not perfect). The precise dividing line between monopoly and competition used in this way is a question of definition. One generally accepted definition of monopoly is that embodied in British antimonopoly legislation, according to which a monopoly exists if at least one-third of the supply of a particular product or service is controlled by one enterprise or by several enterprises acting in concert with a view to restricting competition. Another name for a market in which a small number of sellers may each substantially affect prices and one another's behavior is oligopoly. Oligopolies often tend to act in concert or, when permitted by law, to form cartels with formal agreements on prices and supplies.

The arguments in favour of monopolies are largely concerned with efficiencies of scale in production, as for example the arguments that in large-scale, integrated operations, efficiency is raised and production costs are reduced; that by avoiding wasteful competition, monopolies can rationalize activities and eliminate excess capacity; that by providing a degree of future certainty, monopoly makes possible meaningful long-term planning and rational investment and development decisions. Against these are the arguments that, because of its power over the marketplace, the monopoly is likely to exploit the consumer by restricting production and variety and by charging higher prices in order to extract excess profits; and that, in fact, the lack of competition may well work against efficiency and lower production costs, with the result that the factors of production are not used in the most economical manner.

It has been one of the principles of free-enterprise economic philosophies that monopolies are, as a general rule, undesirable and need to be strictly controlled. This is not to say that the advantages of monopolistic supply in certain specific areas have not been recognized; it is rather a case of ensuring that monopolies are restricted to these areas and, at the same time, taking the necessary steps to prevent them from exploiting the consumer. A case in point is the natural-gas industry. It is clear that a situation in which individual consumers could obtain their gas supply from competing companies, through competing pipelines and distribution systems, would be a highly wasteful form of competition. The idea of a single supplier, therefore, makes sense in economic terms. In order to prevent the consumer from being

exploited, the monopoly's ability to control prices and supply needs to be restricted. This has generally been the view taken of firms operating as public utilities or in technical fields that invite a natural monopoly.

The owners of monopoly fixed the prices of their commodity with exclusive reference to the immediate net revenue which they can derive from it. The increased use of their commodity will before long recoup them for their preset loss. So it is clear that is wanted of calculations by which monopolists should govern their actions, on the supposition that he regards an increase of consumers' surplus as equally desirable to them. In case that the customer's surplus is added to the monopoly revenue derived from it, the sum of the two is the money measure of the net benefits accruing from the sale of the commodity to producers and consumers together. And if the monopolist regards a gain to the consumers as of equal importance with an equal gain to himself, his aim will be to produce just that amount of the commodity which will make this total benefit a maximum. The amount which the monopolist will offer for sale will be greater and the price at which he will sell it will be less if he is to any extent desirous to promote the interests of consumers (Marshall, Principles of Economics, 1961, p. 402). These conditions conveyed to the origin of the first antitrust legislation. The first most famous law led to curb concentrations of power and restrict trade and reduce economic competition were proposed by Sen. John Sherman.

Accordingly, most free-enterprise economic systems have an elaborate framework of laws and regulations aimed at controlling monopoly. The oldest and probably the most vigorous monopoly control legislation is represented in the U.S. antitrust laws. Consisting primarily of the Sherman and Clayton antitrust acts and the Celler-Kefauver Act, they are aimed at preventing agreements among suppliers, the effect of which would be to limit competition, and at preventing mergers between and acquisitions by and of firms, the result of which would be to lessen competition or to create a monopoly. The legislation provides for stiff civil and criminal penalties, and most administrations have tended to enforce the laws vigorously. In areas where monopoly is countenanced, such as in public utilities, a considerable degree of public control is exercised to ensure that monopoly power is not abused. In Great Britain the basic aims of the anti-monopoly legislation are similar to those of the United States, but much greater weight is given to the concept of the public interest. In the United States, any agreement or act that limits competition is regarded as undesirable, but in Great Britain and other west European countries such acts are accepted if they can be demonstrated to be in, or not to be against, the public interest. In general terms, the degree of monopoly tends to be relatively small in the United States; it is considerably more pronounced in Britain, France, and other parts of Europe, where among

operating monopolies are a large number of state-owned enterprises (Encyclopedia Britannica Online, <http://search.eb.com/eb/article?tocId=9067322>).

The Sherman Antitrust Act of 1890, which declare illegal all attempts to monopolize any part of trade or commerce in the U.S. initially used against trade unions, it was more widely enforced under press. Theodore Roosevelt. In 1914 Congress strengthened the act with the Clayton Antitrust Act and the formation of the Federal Trade Commission. In 1920 the U.S. Supreme Court relaxed antitrust regulations so that only “unreasonable” restraint of trade through acquisitions, mergers, and predatory pricing constituted a violation. For instance we can mention some others antitrust acts: The Clayton Antitrust Act of 1914 outlawed unfair price discrimination, interlocking directorates, and holding companies , as amended in 1936 by the Robinson-Patman Act, prohibits discrimination among customers through prices or other means; it also prohibits mergers or acquisitions whenever the effect may be to substantially lessen competition. A 1950 amendment to the Clayton act forbade a corporation to purchase another corporation's assets or stock, if doing so would reduce competition. Labour unions are also subject to antitrust laws (Encyclopedia Britannica Online, <http://search.eb.com/ebc/article?tocId=9378482>).

In the absence of competition, the supplier usually restricts output and increases price in order to maximize profits. The concept of pure monopoly is useful for theoretical discussion but is rarely encountered in actuality. In situations where having more than one supplier is inefficient (e.g., for electricity, gas, or water), economists refer to natural monopoly. For monopoly to exist there must be a barrier to the entry of competing firms. In the case of natural monopolies, the government creates that barrier. Either local government provides the service itself, or it awards a franchise to a private company and regulates it. In some cases the barrier is attributable to an effective patent. In other cases the barrier that eliminates competing firms is technological. Large-scale, integrated operations that increase efficiency and reduce production costs confer a benefit on firms that adopt them and may confer a benefit on consumers if the lower costs lead to lower product prices. In many cases the barrier is a result of anticompetitive behavior on the part of the firm. Most free-enterprise economies have adopted laws to protect consumers from the abuse of monopoly power. The U.S. antitrust laws is the oldest examples of this type of monopoly-control legislation; public-utility law is an outgrowth of the English common law as it pertains to natural monopolies. Antitrust law prohibits mergers and acquisitions that lessen competition. The question asked is whether consumers will benefit from increased efficiency or be penalized with a lower output and a higher price.

#### **4. Karl Marx and his followers**

Marx was unaware of the existence of monopoly in the British economy of his day. He treated monopolies not as essential elements of capitalism but rather as remnants of the feudal and mercantilist past which had to be abstracted from in order to attain the clearest possible view of the basic structure and tendencies of capitalism. It is true that, unlike the classicists, Marx fully recognized the powerful trend toward the concentration and centralization of capital inherent in a competitive economy. His vision of the future of capitalism certainly included new and purely capitalist forms of monopoly. But he never attempted to investigate what would at the time have been a hypothetical system characterized by the prevalence of large-scale enterprise and monopoly.

By accidental monopoly we mean a monopoly which a buyer or seller acquires through an accidental state of supply and demand. The assumption that the commodities of the various spheres of production are sold at their value merely implies, of course, that their value is the centre of gravity around which their prices fluctuate, and their continual rises and drops tend to equalize. There is also the market value—of which later—to be distinguished from the individual value of particular commodities produced by different producers. The individual value of some of these commodities will be below their market-value (that is, less labour-time is required for their production than expressed in the market-value) while that of others will exceed the market-value. On the one hand, market-value is to be viewed as the average value of commodities produced in a single sphere, and, on the other, as the individual value of the commodities produced under average conditions of their respective sphere and forming the bulk of the products of that sphere. It is only in extraordinary combinations that commodities produced under the worst, or the most favourable, conditions regulate the market-value, which, in turn, forms the centre of fluctuation for market-prices. The latter, however, are the same for commodities of the same kind. If the ordinary demand is satisfied by the supply of commodities of average value hence of a value midway between the two extremes, then the commodities whose individual value is below the market-value realize an extra surplus-value, or surplus-profit, while those, whose individual value exceeds the market-value, are unable to realize a portion of the surplus-value contained in them (Marx, K., *Capital Vol III.*, London, UK: ElecBook, 2001, <http://site.ebrary.com/lib/oulu/Doc?id=2001686&page=235>). It does no good to say that the sale of commodities produced under the least favourable conditions proves that they

are required to satisfy the demand. If in the assumed case the price were higher than the average market-value, the demand would be smaller.

Finally, if equalisation of surplus-value into average profit meets with obstacles in the various spheres of production in the form of artificial or natural monopolies, and particularly monopoly in landed property, so that a monopoly price becomes possible, which rises above the price of production and above the value of the commodities affected by such a monopoly, then the limits imposed by the value of the commodities would not thereby be removed. The monopoly price of certain commodities would merely transfer a portion of the profit of the other commodity-producers to the commodities having the monopoly price. A local disturbance in the distribution of the surplus-value among the various spheres of production would indirectly take place, but it would leave the limit of this surplus-value itself unaltered. Should the commodity having the monopoly price enter into the necessary consumption of the labourer, it would increase the wage and thereby reduce the surplus-value, assuming the labourer receives the value of his labour-power as before. It could depress wages below the value of labour-power, but only to the extent that the former exceed the limit of their physical minimum. In this case the monopoly price would be paid by a deduction from real wages (i. e.. the quantity of use-values received by the labourer for the same quantity of labour) and from the profit of the other capitalists. The limits within which the monopoly price would affect the normal regulation of the prices of commodities would be firmly fixed and accurately calculable (Marx, K., *Capital Vol III.*, London, UK: ElecBook, 2001, <http://site.ebrary.com/lib/oulu/Doc?id=2001686&page=1153>).

Engels, in some of his own writings after Marx's death commented on the rapid growth of monopolies during the 1880s and 1890s, but he did not try to incorporate monopoly into the body of Marxian economic theory. The wholesale merchant, Engel, says quite correctly, that efforts of the syndicate are intended to create a monopoly for itself and to eliminate the wholesale trade entirely. Naturally prices will not be any lower for the retailer. If the motives were not to obtain for the factory and the syndicate the same benefits which accrue to the wholesale merchant, the whole movement would be without purpose (Hilferding, R., *Finance Capital*, London, 1981, p. 416).

The first who incorporate monopoly into the body of Marxian economic theory was Rudolf Hilferding in his important work, *Das Finanzkapital*, published in 1910. But for all his emphasis on monopoly, Hilferding did not treat it as a qualitatively new element in the capitalist economy; rather he saw it as effecting essentially quantitative modifications of the basic Marxian laws of capitalism. We must recognize that competition, which was the predominated form of market relations in nineteenth-century

Britain, has ceased to occupy that position, not only in Britain but everywhere else in the capitalist world (Baran A. P., Sweezy, M., *Monopoly Capital*, Suffolk, 1966, p. 416).

Rudolf Hilferding writes about protective tariff, which means a constriction of the economic territory, and hence an interference with the development of the productive forces, since it reduces the size of industrial plants, discourages specialization, and impedes, finally, that international division of labour which brings about a flow of capital into those branches of production for which a given country is best suited. This is all the more important in the case of the modern high protective tariff since the tariff rates are frequently fixed less of regard for the technical conditions of production which prevail in particular branches of production, than as the outcome of a political struggle for power among various industrial groups whose influence upon the state ultimately determines the tariff structure. The tariff is a brake upon the development of the productive forces and hence of industry. It means direct deprives industries which are capable of being cartelized of their monopoly of the domestic market, if that monopoly is not already assured by protected freight rates in the case of coal or by a natural monopoly in the case of German potash production (Hilferding, R., *Finance Capital*, London, 1981, p. 312).

## **5. Neoclassicism**

In the market for consumer's goods a relatively small number of sellers face a large number of buyers, so that the imperfection of competition tells in favour of the sellers. In the labour market the position is reversed. Thus the share of labour in total output is ground between the upper and the nether millstones of monopoly and monopsony. This account of the matter bears a close resemblance to the theory of Lexis, quoted by Engels in the preface to Volume III of *Capital*. He writes that the capitalist sellers, such as the producer of raw materials, the manufacturer, the wholesale dealer, the retail dealer, all make a profit on their transactions, each selling his product at a higher price than the purchase price, each adding a certain percentage to the price paid by him. The labourer alone is unable to raise the price of his commodity, he is compelled, by his oppressed condition, to sell his labour to the capitalist at a price corresponding to its cost of production, that is to say, or the means of his subsistence. Further he writes therefore that capitalist additions to the prices strike the labourer with full force and result in a transfer of a part of the value of the total produce to the capitalist class. Engels gives (though grudgingly) his approval to this formulation which amounts to the same thing as the Marxian theory of surplus-value. Lexis thus provides a bridge between Marx

and the later theory. For Marx's scheme under-capacity working is impossible and the limit to the output of any concern is set, not by the imperfection of the market, but by the capacity of capital. The post dated theories exposed many relatively minor defects in capitalism which Marx, concentrating on major issues, was content to ignore.

The theory is good enough for purposes of a general discussion of the nature of the system. Where outright monopoly rules, or where a group of commodities is produced by a few powerful firms, there is great scope for individual variations in policy, and it is hard to make any generalization at all as to what governs the margin of profit per unit of output.

All this makes a serious breach in the smooth surface of the orthodox theory of value, and it seems that economic science has not yet solved its first problem – what determines the price of a commodity?

In this first statement of the theory of value Marshall wrote, that the great central law of economic science is that producers, each governed under the sway of free competition by calculations of his own interest, will endeavour so to regulate the amount of any commodity which is produced for a given market, during a given period, that this amount shall be just capable on the average of finding purchasers at a remunerative price, a remunerative price being defined so as to allow for normal profits on capital. This statement may be taken to mean two quite different things. It may mean that each producer, governed by calculations of his own interest, endeavours to maximize the profit, at each moment, on his current rate of output, by balancing marginal cost against margin gain.

The other interpretation is that each producer endeavours to fix, not the price which maximizes his current profit, but the price which will be remunerative in the long run. This at first sight seems plausible, but it entirely begs the question of normal profits on which, as we have seen, academic economics fails to provide any theory which is relevant to the real world. Moreover, even if the question of normal profits were settled, it would still remain to inquire what level of utilization of equipment is normal in the long run. Generally speaking, the lower the level of utilization, good years with bad, the higher the gross margin required to bring in any given level of profits. But the higher the gross margin, other things equal, the lower the level of utilization, for given the expected fluctuations in demand, the amount of capital seeking employment in the industry is governed by the gross margin established in the market. And the amount of capital employed influences the average utilization per unit of capital. The three determinants, profit per unit of output, profit per unit of capital, and capital per unit of output, are all interdependent, and the whole analysis dissolves in a haze of doubt.

The Marxian theory might yield the explanation that the development of trade-union power has been just sufficiently rapid to prevent the rate of exploitation from rising with the productivity of labour, while the academic theory suggests that a secular rise in monopoly has been just offset by a relative fall in raw-materials prices. Both explanations are somewhat lame, and the mystery of the constant relative shares remains as a reproach to theoretical economics (Robinson, J., *An essay on Marxian economics*, New York, 1967, p. 81).

## **6. Ordoliberalism and dynamic theory of competition**

The determination of the value of the monopoly is a special problem, and in solving it we must not forget that in the normal circular flow no motive to form such a value exists, hence the gain is not to be related to any other magnitude. However all this may be, the monopolist can at any rate never say, that they make no profit because they ascribe an extremely high value to their monopoly.

In a discussing Lauderdale's theory of interest Böhm-Bawerk also comments upon the case in which a labor-saving and hence profit-yielding machine is monopolized. He emphasizes rightly that this machine will be so dear that no profit, or only the minimum which will just induce people to purchase or hire it, will be connected with its employment. Yet a profit is undoubtedly connected with its production, which is as permanent as the patent. It might be said that the monopoly position is for the monopolist something analogous to a productive factor. Imputation takes place with reference to the services of this quasi-factor of production just as with reference to other factors. The machine as such is not a source of surplus value, nor is its means of production, but the monopoly makes it possible to obtain a surplus value with the machine or its means of production. Obviously nothing is changed if we allow producer and user to coincide in one person. There would be a source of surplus value the existence of which would be explained by the theory of monopoly; there would also be a reason for the assignment of a return to monopolists; and finally the fact that neither imputation nor competition annihilates the return would be explained. However, such monopoly positions do not occur regularly and numerous enough for this explanation to be accepted, and moreover interest exists without them.

There are several designs for escaping market discipline, including that imposed by younger, more adaptable, more aggressive competitors. The first is a return to tariff protection. Faced with foreign competition, the great

industrial corporation seeks tariffs and also quotas that will release it from the pressure of market constraints. After ceremonial praise of the free market, the need for a worthy exception is urged. A revival of protectionist sentiment and legislation in the older industrial countries having already occurred in the present, it will do so to even greater degree in the future. Once protective tariffs were for infant industries, now they are for the old and putatively senile.

A second well-established design for dealing with competition is simply to take it over. This is the purpose of the international or multinational corporation. It has long been thought that the latter is an instrument of aggression, even imperialism, on the world stage. Far more important is its protective purpose, its profoundly important service as an escape from the constraints of the market.

Evading market discipline is increasingly apparent in a third design, this is for the older bureaucratically and intellectually more rigid enterprise to assign to firms in the newer industrial lands work that can no longer be performed competitively in the older countries.

Another and final recourse available to aging and inefficient private enterprises is to seek forthright intervention by the government. This, in practice, goes far beyond protection from foreign competition. In the United States the Reagan administration has repeatedly set aside its free market rhetoric to come to the rescue of failing banks and needful exporters and, at unprecedented costs, to protect farmers from the free market. Again there is first the speech on the eternal verities of free enterprise and then the case for the particular exception (Galbraith, J., K., *A History Of Economics*, London, 1987, p. 294).

We conclude that sunk costs, unlike fixed costs; can constitute a barrier to entry. In particular, we argue now that fixed costs need not have any detrimental welfare consequences, unless they also happen to be sunk. In an industry whose firms use only capital on wheels or winks, some or all of that capital may be fixed, but it is not sunk. This means that in the absence of other entry barriers, natural or artificial, an incumbent, even if he can threaten retaliation after entry, dare not offer profit-making opportunities to potential entrants because an entering firm can hit and run, gathering in the available profits and departing when the going gets rough. Such a situation fits our definition of a contestable market, that is, a market vulnerable to costlessly reversible entry, even when it is currently occupied by an oligopoly or a monopoly. The contestable market is a generalization of the case of pure competition, and it offers many of the same benefits. Even if it is run by a monopoly, a contestable market will yield only zero profits and offer inducements for the adoption of Ramsey-optimal prices; in addition, it will

enforce efficiency of production, the adoption of new improved techniques as they become available, and avoidance of cross subsidy in pricing .

This resolves the apparent contradiction between our conclusion that fixed costs of sufficient magnitude permit the incumbent to adopt entry preventing prices and the preceding assertion that, in themselves, they constitute no barrier to entry. The availability of sustainable prices does permit the incumbent to preclude entry. But he can do so only by offering the public the very same benefits that actual competition would otherwise have brought with it. With entry barriers, supernormal profits, inefficiencies, cross subsidies, and no optimal prices all become possible. But in a contestable market, which is perfectly consistent with the presence of fixed costs that are not sunk, matters change drastically, and government intervention can contribute far less, if anything, to the general welfare (Galbraith, J., K., *A History Of Economics*, London, 1987, p. 292).

## **7. Conclusion**

Finally, we come to a variety of artificial sources of unsustainability which result from special disadvantages imposed by public policy upon incumbents over entrants, either intentionally or unintentionally. Examples include regulatory rules on depreciation policy, which force prices for some periods to fall below the pertinent marginal costs; deliberate imposition of cross subsidies designed to benefit groups considered particularly meritorious, environmental regulations, if they are more severe for incumbents; and rules against price discrimination, which prevent adoption of sustainable Ramsey prices. Any of these measures, as we have seen, can lead to unsustainability. The way to deal with such artificial sources of unsustainability is fairly obvious. One simply avoids the measure that give rise to them. For one thing, incumbents and entrants should always be treated similarly in any cost-imposing rule. For example, internal cross subsidies, such as those for the elderly should be replaced either by direct government grants or by funds obtained from the imposition of a tax that falls on an equal basis on all firms in the industry.

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# UNEMPLOYMENT EVOLUTION AND STRUCTURE IN ROMANIA DURING THE PERIOD OF TRANSITION TOWARDS A MARKET ECONOMY

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## **Abstract**

*The period of transition from a totalitarian regime and a supercentralized economy to a democratic state with a social market economy has been and it still is marked with great difficulties and obstacles, both objective and subjective, still coping with a prolonged structural crisis. As far as the unemployment structure in Romania is concerned, we may notice the following features: The unemployment rates by sex had an interesting dynamics; The evolution of unemployment by residential average was relatively stable in the course of time. It had the highest intensity in the urban area. The analysis of the unemployment structure by age groups shows that young people of 25 are the most affected.*

**Keywords:** *transition, centralized economy, unemployment structure*

## 1. Introduction

In the countries with a consolidated market economy unemployment is regarded as a natural phenomenon which, if maintained within certain limits, may even bring about positive effects by fostering a competitive climate on the labour market; this is an objective element of any market economy, irrespective of its level of development.

It is important to know that unemployment cannot be eradicated; it can only be *improved* and brought to reasonable limits economically and socially.

In Romania, unemployment emerged with the transition to the market economy though the estimations of various authors<sup>1</sup> indicate rates of hidden unemployment reaching 4 – 5 % around the year 1989.

## 2. Unemployment in Romania after 1989

The economical regressions accompanied for a long time by the prevalence of passive politics, reactive of labour market, have generated the explosion and the perpetuation of unemployment, the beginning of long-term unemployment and the segmentation of labour market.

Because of all these, unemployment has been assimilated in the individuals' mentality and at the level of community quite heterogeneously and not always correctly and coherently, as follows<sup>2</sup>:

- As a *traumatic phenomenon* affecting the *individual*, his personality, the social relations; it may even lead to individual's marginalization;
- As *transitory*, with effects on the individual's professional evolution;
- As *privileged*, providing the individual with certain advantages derived from the combination of social security and the possibility to obtain some other income on the informal market (undeclared work).

Among the main *causes*<sup>3</sup> of unemployment in Romania, we would like to mention:

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<sup>1</sup> Goga, P.A., Mărginean Ș., *Restructurare. Ocupare. Șomaj Restreucturing. Employment. Unemployment*, P.S.P. & Co SRL Bucharest 2001, pg. 123

<sup>2</sup> Pert, S., *Piața muncii în România [Labour Market in Romania]*, CIDE, Bucharest, 1994, pg. 112

- Continuous reduction of social production (which represented in 1999 about 60% of the production level registered in 1989) under the influence of the thorough restructuring processes in the real economy, the standards imposed by Romania's joining the EU as well as other serious errors in the elaboration and enforcement of policies at the macroeconomic level;
- Inexistence of an economic and social development strategy which should have represented the starting point in directing the future structures of employment;
- The difficult start of economy restructuring process and its adaptation to the market economic mechanisms;
- Permanent lowering of solvent demand and the aggregate demand which, not supported by active policies, the investments from the state and the economic agents, brings about the decrease of the activity in many economic units and the increase of unemployment, especially the technical unemployment;
- Almost complete lack of internal investments and the insufficient mobilization of foreign capital.

Internal investments are in they greatest part reduced drastically by the decline of the national economy, the insufficiency of accumulation as well as the perpetuation of a galloping inflation and the starting of a consumption psychosis at the level of population and the economic agents. As far as the mobilization of foreign investments is concerned, the essential elements are not constituted of the richness of resources of the factors of production, but the dimension of the internal market and the economic and political stability.

As the dimension of internal market depends on the solvent demand, we can see that foreign investors are still reluctant.

In Romania after 1989, due to the breaking-up of the traditional structures responsible for the production of raw materials, the reduction in the volume of production, the decrease of supply of goods and services and the reduction of demand for labour force, unemployment increased incredibly fast as the current state of economy was not able to provide with a real social security.

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<sup>3</sup> Pert, S., the work cited, pg. 129

It is painful that the Romanian citizen once able to meet the basic requirements to support himself and his family finds, in the current social and economic circumstances, with astonishment, revolt and even desperation that he is no longer capable to do it.

Unknown officially until 1990, unemployment registered a boom in 1991 after the promulgation of the Law 1 / 1991 (at the end of the year 337, 440 unemployed people were already registered, which indicates an increase of 267 thousand persons as compared to February 1991), an unemployment rate of 3% respectively. In the period between 1991 and 1994, the evolution of unemployment was rapid, reaching a climax of 1, 223, 925 unemployed people (at the end of 1994). After 1994, it started to decrease slowly due to the beginning of a process of economic stimulation. From 1996 a new ascending trend began which reached at the end of 2000 the figure of 1,007,131 unemployed workers. From this year, the quota of unemployed workers began to lower again, only 659 thousand unemployed persons being registered in 2003 (see table 1.1 and figure 1.1). Not denying that this evolution which has been registered in the last three years is a direct consequence of economic stimulation, we appreciate that the reduction of unemployment rate as a trend is to be reflected in the increase in the quota of the newly employed people. Nevertheless, figures show that the quota of the unemployed people decreased much more as compared to the quota of the newly employed people. This reality leads us to the following conclusions: either the unemployed workers are no longer registered or they are working without a labour contract.

This evolution of unemployment was the result of the simultaneous action of numerous economic, demographic and social factors. Among these, the economic factors and especially the economic decline played the most important part as well as the reduction of the economic activity, in general, and the industrial activity, in particular.

All the same, the demographic factor is extremely important. Unemployment, as the result of a continuous balancing between the demand and supply of labour, has increased, on the one hand, by the compression of the first, and on the other hand, by the increase of the latter due to massive lay-offs of workers as well the entering on the labour market of secondary and higher education graduates and other categories of unemployed people respectively.

As mentioned above, the information sources regarding the labour market are represented by the administrative ones (M.M.S.S.S.F.)<sup>4</sup> and the

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<sup>4</sup> Ministry of Labour, Social Security and Family

AMIGO inquiry to complete the first. As a result of using various criteria (the BIM criteria in the case of AMIGO inquiry and the criteria of lack of a place of work and the registration with the M.M.S.S.F. administrative sources), the following differences are emphasized.

In the analyses presented below, to dispose of information in a range as large as possible of characteristics, we shall use both sources and we shall, of course, mention both the source of information and the methods applied (B.I.M. and M.M.S.S.F.)

**Table 1. Quota of unemployed persons and the unemployment rate at the registered level and according to B.I.M.**

<i>Indicators</i>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Registered unemployed workers (thousand persons)</b>													
Number of unemployed persons	337	929	1165	1224	998	658	881	1025	1130	1007	827	761	659
<b>Unemployment rate (%)</b>													
Total	3,0	8,2	10,4	10,9	9,5	6,6	8,9	10,4	11,8	10,5	8,8	8,4	7,4
Men	2,2	6,2	8,1	9,0	7,9	5,7	8,5	10,4	12,1	10,8	9,2	8,9	7,9
Women	4,0	10,3	12,9	12,9	11,4	7,5	9,3	10,4	11,6	10,1	8,4	7,8	6,8
<b>Unemployed persons B.I.M. (thousand persons)</b>													
Number of unemployed persons	-	-	-	971	968	791	706	732	790	821	750	845	692
<b>Unemployment rate (%)</b>													
Total	-	-	-	8,2	8,0	6,7	6,0	6,3	6,8	7,1	6,6	8,4	7,0
Men	-	-	-	7,7	7,5	6,3	5,7	6,5	7,4	7,7	7,1	8,9	7,5
Women	-	-	-	8,7	8,6	7,3	6,4	6,1	6,2	6,4	5,9	7,7	6,4

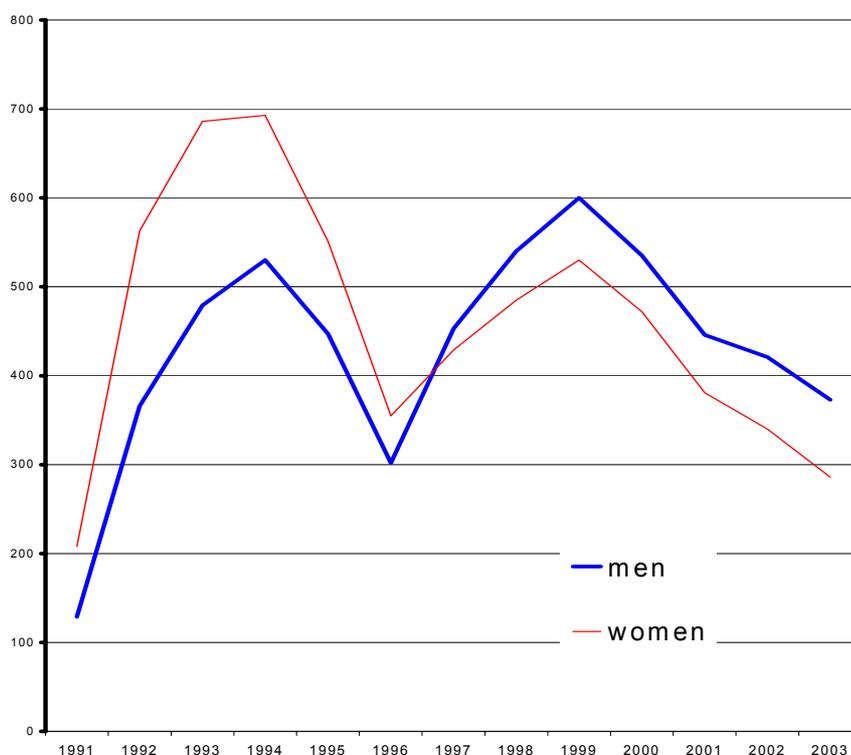
*Source: The statistical annual of Romania 1991 – 2004 and AMIGO 1996-2004, I.N.S.*

As we can notice from the Table1.1, there are some differences in the area covered by the “Unemployment rate” indicator registered with the employment agencies and the unemployment rate calculated according to B.I.M. methods of AMIGO. The specialists<sup>5</sup> explain the difference between the two series of data in the following manner: there are persons who, while registered as unemployed with the employment agencies, they work outside the legal framework.

<sup>5</sup> Pert, S., *Piața muncii în România [Labour Market in Romania]*, CIDE, Bucharest, 1994, pg. 132

As far as *the unemployment structure by sex* is concerned, until 1996 it could have been seen that the women's unemployment was higher.

**Figure 1. Evolution of the unemployed persons by sex in the period 1991 – 2003**



*Source: It was accomplished based on the information taken from the Statistical Annual of Romania for the years 1991 – 2004.*

Everywhere around the world, the level of education and vocational training of women is continually growing. Despite of all these, when the general employment decreases, the labour force represented by women goes through a faster and more intensive erosion than the one represented by men. The factors of such an evolution derive from the particularities of this type of labour force (involved in the process of demographical reproduction) but also of mentalities, behaviours of the economic agents or other economic reasons.

In most of the cases, the dissipation of the productive, creative and participating potential of women's labour force by unemployment is greater as compared to the men's, indicating effects both on the family life and in

providing the inter-generation with a demographic balance and training of future generations<sup>6</sup>.

In absolute terms, the unemployment level by sex had the dynamics shown in the Table 1.2.

In the period between 1992 and 1996, as an absolute unemployment term and rate (the Table 1, 2 and the Figure 1), the women's unemployment was constantly higher than the men's unemployment.

On this background of 1997, an extremely interesting and rather paradoxical trend emerged: *the decrease of women's unemployment* and the corresponding increase of men's unemployment.

**Table 2. Absolute and relative unemployment by sex (1992-2003)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total unemployed, of which	929.019	1.164.705	1.223.925	998.432	657.564	881.435	1.025.056	1.130.296	1.007.131	826.932	760.623	658891
Women	563.06	685.49	693.34	551.492	355.435	428.620	485.181	530.119	471.608	381.139	339.520	286271
% women, a total of	60,6	58,9	56,6	55,2	54,0	48,6	47,3	46,9	46,8	46,1	44,6	43,4
Men	365.95	479.20	530.58	446.940	302.129	452.815	539.875	600.177	535.523	445.793	421.103	372620
% men, a total of	39,4	41,1	43,4	44,8	46,0	51,4	52,7	53,1	53,2	53,9	55,4	56,6

Source: *The statistical annual of Romania 1991 – 2004 and AMIGO 1996-2004, I.N.S.*

The causes of such a surprising unemployment reversal in the structure by sex are based on demographic, economic and psycho-social factors, their simultaneous action rendering difficult the precise quantification of the influence of each<sup>7</sup>.

Basically, we *appreciate* that it is the question of:

- Cutting down of women's labour supply and the corresponding increase of men's labour force. In the years following the year of 1997, according to the official sources, both the population employed and the women's unemployment were decreasing; moreover, the supply of men labor force increases as a result of lay-offs and reduction of activity on several economic branches (especially the

<sup>6</sup> Pert, S., *Piața muncii în România [Labour Market in Romania]*, CIDE, Bucharest, 1994, pg. 133

<sup>7</sup> Mihăescu, C., *Populație. Ocupare, Trecut, Prezent, Viitor [Population, Employment, Past, Present, Future]*, Economica Publishing House, Bucharest 2001, pg. 306

processing and mining industry); these were the branches where the population employed and later laid off was preponderantly represented by men.

- Development of clothing industry, garments and shoes, where the labour force is mostly represented by women;
- Women started entering in the occupational atypical structures) part-time jobs, authorized social services, etc. or the “underground” economy.

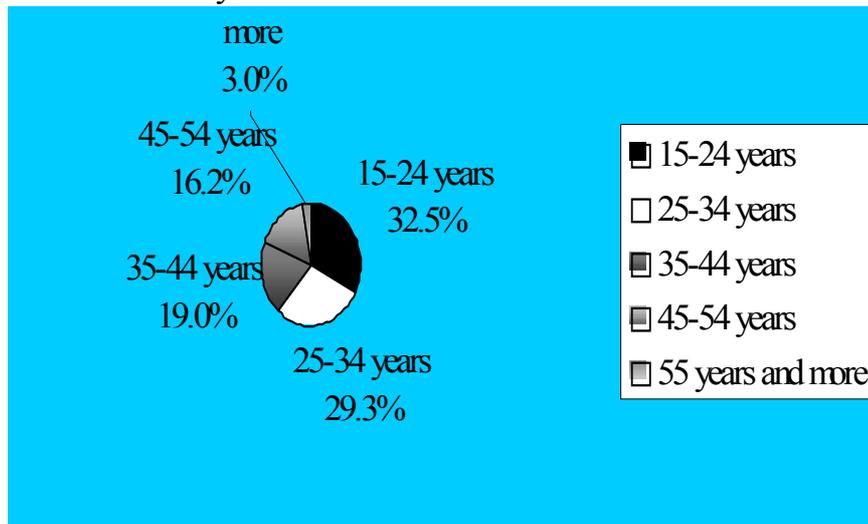
As far as the structure of unemployment *by residential environment is concerned*, the evolution was relatively stable in the course of years, the highest intensity being registered in the urban area where (according to the AMIGO data) the unemployment rate was, on average, 2,4 times higher than in the rural area.

The analysis of unemployment structure *by groups of age* shows that the young people under 25 are the most affected (Figure 2). The lack working places for the young people (though the labor legislation is stimulating for the employers to hire young people) remains one of the most serious and most difficult to solve economic and social problems of transition.

Another aspect to be mentioned is as follows: while a greater number of young people acquire the skills and qualifications required for the various trades, the number of working places does not increase accordingly. Young people who have recently completed a certain stage of education must compete on the labour market with other people with higher qualifications and longer work experience and thus are forced to accept positions of an inferior level, less paid or even enter in the circuit of unprotected labour (undeclared labour); this situation isolate them from society before allowing the to make the first steps in the professional and family life.

The next age group greatly affected by unemployment is the group 15 – 24 years, followed by the group 25 – 34 years which is the main category of population intended for industrial restructuring.

**Figure 2. Structure of category of age of the population unemployed as of the year of 2004.**



Source : Based on the data from “Labor Force in Romania. Employment and unemployment in 2004”, INS, 2005.

By examining the unemployment according to its *duration*, we come to the conclusion that in Romania, though the unemployment became apparent only at the beginning of year 1991, it remained permanent even chronic in only a few years, by the increase of *long – term unemployment*.

The long-term unemployment is the effect of an ever deeper economic and social crisis which has been inducing the reduction of employment and labour force supply.

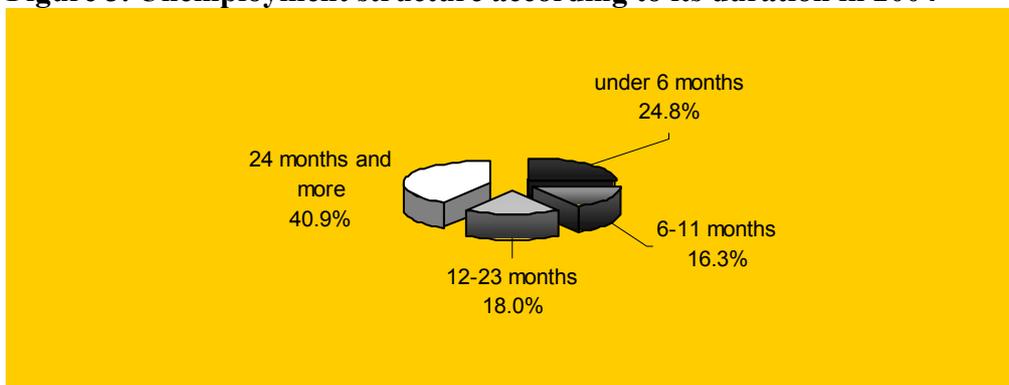
After 1992, it has been noticed that (according to the AMIGO inquiry) year by year, the average duration of unemployment shows increasing trends: from 16, 3 months in 1995 to 17, 9 months in 2001, to 21, 2 months in 2002 and 22, 4 months in 2004.

In 2004, more than the half of the total number of unemployed people (59, 9%) have been inactive for more than 1 year as compared to a percent of 43, 2% in 1999.

The categories of persons that could be most directly affected by the perspective of unemployment becoming chronic in our country are the workers over 50, the women, the young graduates and the individuals with a little level of qualification.

The structure of unemployment as of the end of 2004, according to its duration (expressed in the number of months) is shown in the figure bellow (Fig. 3.)

**Figure 3. Unemployment structure according to its duration in 2004**



Source : Based on the data from “Labour Force in Romania. Employment and unemployment in 2004”, INS, 2005.

Another form of long-term unemployment which is registered in the official records is the *discouraging unemployment*.

An alarming phenomenon is that the young are the most affected by this type of unemployment. According to the AMIGO<sup>8</sup> inquiry on the integration of the young people on the labour market, at the end of 2004, more than 30% of the total number of people discouraged were young persons, between 15 – 24 years.

Both the discouraging phenomenon and the long-term phenomenon generate serious social effects which, if prolonged, may acquire dimensions difficult to keep under control.

The analysis of unemployment according to the *occupational-professional* structure and *qualification of the unemployed workers* (Table 3) broadens the knowledge area of this phenomenon, suggesting solutions for the increase of employment in the fields that require professional retraining and re-qualification.

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<sup>8</sup> The persons discouraged, in the sense of AMIGO, are the inactive persons, willing to work for the following 15 days, who do not have a job and have stated that they are looking for a job but they have not done anything on this purpose in the last 4 weeks or they are not looking for a job for the following reasons: they are not trained from the professional point of view, they think they won't be able to find a job because of their age or they have looked for a job somewhere else and they did not find one.

According to the M.M.S.S.F. records, the occupational-professional and qualification structure is composed of:

- Workers;
- Personnel with secondary studies;
- Personnel with higher studies.

The data in the Table 1.3 shows the massive concentration of unemployment in the category of workers. The quota represented by them (of almost 80% until 1996) gradually lowered, reaching 72, 5 % in 2001, as other categories began to be affected by unemployment. A significant change is also seen in the category of the unemployed workers with secondary studies, the quota of which shall double by the year 1991. In 2002, 2003 the quota of the unemployed workers in the category workers has increased as the quota of category of persons with secondary studies has decreased.

**Table 3 Structure of unemployed workers on their training level in the period 1991-2003 (%)**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Workers	84,1	87,0	85,6	83,5	81,1	79,6	75,9	74,7	73,0	72,1	72,5	76,8	75,1
- of whom women (total of unemployed women)	82,6	85,8	84,4	82,2	79,6	76,2	69,7	67,8	65,3	65,5	65,0	71,0	69,4
Persons with secondary studies	12,9	11,1	12,8	14,9	17,4	18,8	21,7	22,8	24,1	24,7	24,1	20,0	20,7
-- of whom women (total of unemployed women)	14,8	12,5	14,1	16,3	18,8	22,1	27,7	29,3	31,4	30,8	31,1	25,0	25,2
Persons with higher studies	3,0	1,9	1,6	1,6	1,5	1,6	2,4	2,5	2,9	3,2	3,4	3,2	4,2
- of whom women (total of unemployed women)	2,6	1,7	1,4	1,5	1,6	1,7	2,7	2,8	3,3	3,7	4,0	3,9	5,4

*Source: calculus based on the data in the Statistical Directory of Romania I.N.S., 1991-2004.*

The quota of the unemployed with higher studies was rather changing during this period, oscillating between 1, 5% and 5, 4%, as the clear tendency from 1997 being an increasing one.

From the M.M/S.S.F. data, the most affected by unemployment are the trades in the processing industry (manufacturers-fitters of metallic structures, operators of polishing-rectifying machines, fitting mechanics and machine menders, electricians, fitters and trouble shooters of electrical wires, motor-vehicle mechanics and repairmen). The least affected by unemployment are the economists, the social workers, computer operators.

A deeper analysis of this typology may have positive effects in promoting some retraining and refresher courses, professional reorientation to trades which are actually on demand on the labor market.

### **3. Conclusion**

Concerning the unemployment in Romania, we observe the following characteristics:

- Concerning *its evolution*, we observe that the unemployment registered an explosion in 1991, having a fast evolution and reaching a peak of 1.223.952 unemployed at the end of the year 1994. After 1994, it starts to slightly decrease, on the background of a new process of economic invigoration. In the period 1996-2000 a new ascendant trend started to take place, reaching 1.007.131 unemployed at the end of 2000. Starting with this year, the number of unemployed started to decrease again, reaching 659 thousand unemployed in 2003.
- Without denying that this evolution from the last years is a consequence of the economic invigoration, we consider that reducing the unemployment rate as a tendency is also found in the increase of the number of employees. At the level of numbers, though, the number of unemployed decreased much more compared with the number of those newly employed. This reality leads us to the idea that either the unemployed have gone out of evidences, or were employed without working contract.
- The level of unemployment *on sexes* had an interesting dynamics; in the period 1992-1996, as absolute value and as unemployment rate, the feminine unemployment has been permanently higher than the masculine one. Starting with 1997, a very interesting and somehow paradoxical tendency

occurred: the decrease of the feminine unemployment weight and the corresponding increase of the masculine one;

- The evolution of unemployment on *residential averages* was relatively stable in time, having the highest intensity in the urban area, where the unemployment rate was 2,4 times higher on average than the one in the rural area;
- The analysis of the unemployment structure on *age groups* shows that young people under 25 years old are the most affected;
- The analysis of unemployed *according to its duration*, leads to the conclusion that, in Romania, although the unemployment phenomenon occurred only at the beginning of the year 1991, it became permanent in just a few years, it became chronic, through an increase of the long term unemployment; in 2004 more than half of the unemployed (58,9%) were inactive for more than one year compared to a percent of 43,2% in 1999;
- The analysis of unemployment according to the *professional employment and unemployed qualification structure* indicates the massive concentration of unemployment in the workers' category; a significant change is emphasized within the category of unemployed with medium studies, whose weight doubles compared to the year 1991.

As a *general conclusion*, we consider that the labour force market from Romania after 1990 was characterized by significant mutations. People were obliged to pay very high the transition to a market economy, very many of them loosing their jobs as a result of the imposed restructuring at macro and microeconomic level.

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# FOREIGN DIRECT INVESTMENTS – A CHANCE FOR AGRICULTURE AND INDUSTRY

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## **Abstract**

*The paper is based upon the last report regarding the global development new vistas lay down by the International Monetary Fund and made public in April this year, which is optimistic regarding the chances of overtaking the world recession. Fields of economy like agriculture and industry will be deeply affected by the new structural changes. The International Monetary Fund's report shows the weakness of the economies from euro area and it proposals regarding the solutions that could be put into practice. The experts are predicting that the most of the countries will intensify their efforts for attracting new foreign investments. The competition is rising, the investments playing an essential roll in the economical development of a region. For 2005 – 2006 is anticipating an increase of the beneficiaries of the foreign investments, comparatively with the last year. The liberation process of the markets will be expanding so that as many economies as possible should benefit by the foreign investments. In developed economies, the liberation process will have a smaller roll, but the orientation of funds towards the top domains will be more obvious as ever.*

**Keywords:** *foreign direct investment, challenges, Romanian agriculture, Romanian industry, and liberalization*

## 1. Introduction

Global economic integration is not a new phenomenon. Some communication and trade took place between distant civilizations even in ancient times. Since the travels of Marco Polo seven centuries ago, global economic integration—through trade, factor movements, and communication of economically useful knowledge and technology—has been on a generally rising trend. This process of globalization in the economic domain has not always proceeded smoothly. Nor has it always benefited all whom it has affected. But, despite occasional interruptions, such as following the collapse of the Roman Empire or during the interwar period in this century, the degree of economic integration among different societies around the world has generally been rising. Indeed, during the past half century, the pace of economic globalization (including the reversal of the interwar decline) has been particularly rapid. And, with the exception of human migration, global economic integration today is greater than it ever has been and is likely to deepen going forward.

Three fundamental factors have affected the process of economic globalization and are likely to continue driving it in the future. First, improvements in the technology of transportation and communication have reduced the costs of transporting goods, services, and factors of production and of communicating economically useful knowledge and technology. Second, the tastes of individuals and societies have generally, but not universally, favored taking advantage of the opportunities provided by declining costs of transportation and communication through increasing economic integration. Third, public policies have significantly influenced the character and pace of economic integration, although not always in the direction of increasing economic integration.

These three fundamental factors have influenced the pattern and pace of economic integration in all of its important dimensions. In particular, this paper discusses three important dimensions of economic integration: (1) through human migration; (2) through trade in goods and services; and (3) through movements of capital and integration of financial markets. After examining how fundamental forces have influenced economic integration in these dimensions, the paper concludes with reflections on three issues of general importance to the future course of global economic integration: the importance of communication as an influence on integration; the possibility that we may see a sharp reversal in the general trend of increasing integration, as occurred in the interwar period; and the apparent end of imperialism as a mechanism of integration. Before turning to this agenda, however, it is important to emphasize a key theme that will recur in

subsequent discussion: the main factors that drive the process of economic integration exert not only independent influences but also interact in important and complex ways.

## **2. Interactions Among the Fundamental Factors Driving Economic Integration**

Although technology, tastes, and public policy each have important independent influences on the pattern and pace of economic integration in its various dimensions, they clearly interact in important ways. Improvements in the technology of transportation and communication do not occur spontaneously in an economic vacuum. The desire of people to take advantage of what they see as the benefits of closer economic integration—that is, the taste for the benefits of integration—is a key reason why it is profitable to make the innovations and investments that bring improvements in the technology of transportation and communication. And, public policy has often played a significant role in fostering innovation and investment in transportation and communication both to pursue the benefits of closer economic integration (within as well as across political boundaries) and for other reasons, such as national defense.

The tastes that people have and develop for the potential benefits of closer economic integration are themselves partly dependent on experience that is made possible by cheaper means of transportation and communication. For example, centuries ago, wealthy people in Europe first learned about the tea and spices of the East as the consequence of limited and very expensive trade. The broadening desire for these products resulting from limited experience hastened the search for easier and cheaper means of securing them. As a by-product of these efforts, America was discovered, and new frontiers of integration were opened up in the economic and other domains. More recently, if less dramatically, it is clear that tastes for products and services produced in far away locations (including tastes exercised through travel and tourism), as well as for investment in foreign assets, depend to an important degree on experience. As this experience grows, partly because it becomes cheaper, the tastes for the benefits of economic integration typically tend to rise. For example, it appears that as global investors have gained more experience with equities issued by firms in emerging market countries, they have become more interested in diversifying their portfolios to include some of these assets.

Public policy toward economic integration is also, to an important extent, responsive to the tastes that people have regarding various aspects of such integration, as well as to the technologies that make integration possible.

On the latter score, it is relevant to note the current issues concerning public policy with respect to commerce conducted over the Internet. Before recent advances in computing and communications technology, there was no Internet over which commerce could be conducted; and, accordingly, these issues of public policy simply did not arise. Regarding the influence of tastes on public policy, the situation is complicated. Reflecting the general desire to secure the perceived benefits of integration, public policies usually, if not invariably, tend to support closer economic integration within political jurisdictions. The disposition of public policy toward economic integration between different jurisdictions is typically more ambivalent. Better harbors built with public support (and better internal means of transportation as well) tend to facilitate international trade—both imports and exports. Import tariffs and quotas, however, are clearly intended to discourage people from exercising their individual tastes for imported products and encourage production of domestic substitutes. Sadly, the mercantilist fallacy that seems to provide common-sense support for these policies often finds political resonance. Even very smart politicians, such as Abraham Lincoln (who favored a protective tariff, as well as public support for investments to enhance domestic economic integration) often fail to understand the fundamental truth of Lerner's (1936) symmetry theorem—a tax on imports is fundamentally the same thing as a tax on exports.

### **3. Human Migration**

Evidence from DNA has established that all modern humans are descended from common pre-human ancestors living in Africa roughly one million years ago. From that time until a few centuries ago, the most important mechanism for interaction among and integration of the activities of different human societies was undoubtedly people moving from one place to another, predominantly by foot. In the great span of pre-history up to roughly fifty thousand years ago, humans walked out of Africa and settled across the Eurasian land mass. Settlement of the Americas came later; my mother's Native American ancestors probably walked across the land bridge between Asia and North America now submerged under the Bering Strait roughly ten thousand years ago.

Throughout most of historical time, extending back roughly five thousand years, human migration has remained the predominant mechanism of interaction and integration of different societies. Use of the horse and other beasts of burden changed somewhat the technology of human movement (and had a larger effect on methods of warfare), and boats were used to cross water barriers. However, most people most of the time continued to travel by foot. Although migration was slow (by the standards of present speeds of

human transport) and often posed considerable risks, it proceeded on a vast scale. Indeed, even for many societies that pursued agriculture (as well as hunting and gathering) migration was a very common phenomenon up until quite recent times—as is testified to by the waves of migration out of Asia and across Europe extending up to roughly 1000 AD.

What fundamental factors were driving these waves of human migration? Relevant technologies (e.g., use of horses) presumably had some effect, and changing tastes may also have mattered somewhat. But, the key factor was surely public policy. In some cases a society would see that it was exhausting the productive opportunities in a particular location and decide to move on. Also, if one society thought it had the military might to improve its welfare by taking over the territory and other property of one of its neighbors, and, perhaps also enslave its citizens it would launch an attack. Seeing discretion as the better part of valor, the society under attack might decide to move on—and perhaps attack somebody else.

For the victor who succeeded in subjugating or driving out a rival society, the result would probably be an improvement in economic welfare. The loser, of course, would lose. The overall result presumably was negative sum. Indeed, in the first work in the entire field now known as social science, Thucydides opens his *History* on the Peloponnesian War with the following observation:

“...it is evident that the country now called Hellas had in ancient times [i.e., well before 400 BC] no settled population; on the contrary, migrations were of frequent occurrence, the several tribes readily abandoning their homes under pressure of superior numbers. Without commerce, without freedom of communication either by land or sea, cultivating no more of their territory than the necessities of life required, destitute of capital, never planting their land (for they could not tell when an invader might not come and take it all away, and when he did come they had no walls to stop him), thinking that the necessities of daily sustenance could be supplied at one place as well as another, they cared little about shifting their habitation, and consequently neither built large cities nor attained to any other form of greatness. Their richest soils were always subject to this change of masters... The goodness of the land favored the enrichment of particular individuals, and thus created faction, which proved a fertile source of ruin. It also invited invasion.”

This ancient observation remains highly relevant today. It reminds us that good governance at the national and international level—especially maintenance of reasonable security for peoples’ lives and property—is essential for economic progress. It also reminds us that not all forms of

economic interaction among different societies are necessarily beneficial. Globalization by means of the sword, the gunboat, or the slave ship is very different from globalization through voluntary movements of people, goods, services, and physical and financial assets.

Turning to human migration in more recent times, it is useful to distinguish between mass migrations which have continued to occur in response to wars and political and social turmoil, and migrations of individuals and families undertaken primarily for economic reasons. Of course, the two categories are not completely distinct; individual and family decisions about migration are often affected by both economic and non-economic factors. Nevertheless, events such as the mass migrations in Europe that occurred during and immediately after World War II clearly reflect different fundamental factors than those that were primarily at work in influencing migration to the United States during the past two centuries.

#### **4. Economies of scale and agricultural production**

Johnson and Ruttan (1993) examined the experiences of large-scale agricultural projects in six different developing countries: the Tanganyika Groundnut Scheme (1947 to 1949); the Molinos Nacionales sorghum project in Venezuela (1964 to 1966); the Dez agribusiness program in Iran (1968 to mid-1970s); Projeto de Jari forest and rice project in Brazil (1967 to the present); the Philippine Corporate Farming Project, started in 1974; and the Hershey's Hummingbird Farm in Belize (1976 to 1992). The key assumption underlying these projects is economies of scale - gaining a more than proportional increase in output for a given increase in all inputs. Economies of scale arise due to the following:

The use of lumpy inputs, such as machinery or management, might lead to economies of scale in the short run. Over the long run, the minimum scale of operations is likely to increase, with the result that the economies disappear. Biological and chemical inputs are likely to be scale neutral.

External economies of scale allow larger farms to buy inputs such as capital, storage, transport and marketing and distribution services at a lower price than is possible for smaller farms. This means that larger farms may have an advantage over smaller ones without necessarily being more technically efficient.

In some situations, Johnson and Ruttan (1993) say scale diseconomies might exist, and this has been used as a justification for land reform. Situations where this can occur are where labor markets might not exist,

where transaction costs in labor markets are high and where the effort of hired labor is affected by level of supervision.

Johnson and Ruttan conclude that the consensus is that agriculture is generally not characterized by economies of scale. In the US, changes in the relative price of capital and labor led to a substitution of capital for labor. If there are no economies of scale, then this substitution will occur at all farm sizes. A large part of the capital that is used in the US is machinery. Since machinery allows farmers to work larger areas of land, it may not be all that surprising that farm sizes have been increasing. The seasonal nature of the production cycle limits the opportunity for gains from specialization and division of labor. This is seen by some as a reason for limited opportunities associated with expansion beyond the size of the family farm. Further reasons favoring the family farm are that family labor is inherently more productive than hired labor. Monitoring costs are likely to be much lower with family labor than is the case with hired labor. Further, decisions on the spot are part and parcel of agriculture. With no managers around, hired labor might be unwilling and/or unable to make a decision. As risk increases, it has been argued that farm size should decrease. However, Johnson and Ruttan (1993) note that little work has been done on this relationship. Related to this, it has been observed that it is not a good idea to pool risk across farmers in a given area because of the high covariance of their natural risk. Hence, in risky environments, small farms may be better than large ones. Wealth tends to offset this in the sense that wealthy farmers have been found to be more immune to risks imposed by the weather. Industrial projects are generally perceived to be less risky in developing countries than agricultural projects, with the result that the more industrialized the agricultural project, the less risky it is considered to be.

## **5. International trade and environment**

The impact of international trade on the environment has been a contentious issue since the early 1990s. The debates over the North American Free Trade Agreement (NAFTA) and Uruguay Round of trade negotiations, which led to the creation of the World Trade Organization (WTO), stimulated a great deal of economic research on the ways in which international trade might be environmentally harmful or environmentally beneficial, along with case studies of many industries and sectors.

The last fifteen years have seen major developments in both the theoretical and applied economic literature on trade and the environment. Such issues are also of increasing policy relevance. U.S. Executive Order 13141 and the U.S. Trade Act of 2002 require environmental assessments of

trade agreements during the negotiation process. In the European Union, sustainability impact assessments of trade agreements are required as part of trade negotiations.

This special issue of the *Agricultural and Resource Economics Review* contains papers from a workshop on international trade and the environment that was held in Halifax, Nova Scotia, in June 2004, following the joint annual meetings of the Northeastern Agricultural and Resource Economics Association and the Canadian Agricultural Economics Society. The objective of the workshop was to stimulate research and discussion to improve our understanding of the complex interrelationships between international trade, natural resource use, and the environment, particularly as they relate to agriculture, forestry, and fisheries.

The paper by Brian Copeland in this issue reviews recent work on the implications of endogenous policy responses for the impacts of trade on the environment. As Copeland demonstrates, the effects of trade on the environment can be quite different in the case where the environmental policy regime is assumed fixed and in the case where it adjusts in response to changing economic and environmental conditions.

## **6. What are some of the critical global change issues?**

Over the past two decades, a number of specific issues have gained significant attention and served as the foci of global change research. Critical issues attracting attention include:

*Climate Change and Greenhouse Warming*, which relates to the potential for greenhouse gases and aerosols emitted as a result of human activities to alter the global climate and cause significant impacts on the natural environment and societal activities;

*Ozone Depletion and UV Radiation*, which relates to the effects of emissions from human activities on the atmospheric ozone layer, and the consequent reduction in the ability of the atmosphere to screen out ultraviolet (UV) radiation; and

*Significant Variations of the Seasonal Climate*, which relates to the agricultural, economic, and related effects on human activities of sharp fluctuations and variations in the seasonal to inter-annual climate, particularly the extended heavy precipitation and drought episodes associated with El Niño-Southern Oscillation (ENSO) events in the tropical Pacific Ocean.

These three issues are by no means the only issues of global environmental concern. Extension of agriculture and rapid increases in population are leading to major changes in land use, including deforestation

and dry land degradation, which often have detrimental effects on the resilience and complexity of ecosystems. The development of coastlines is altering beach processes, reducing coastal habitats, and making communities more vulnerable to severe weather and sea level change.

To meet the challenge of a changing environment, it is essential to continue to undertake research to improve the predictions of consequences and the effectiveness of options for responding to the impacts of global change.

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*Banking Services and  
Payment Systems*

# SELECTED PROBLEMS OF E-ECONOMY IN BANKING<sup>1</sup>

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## 1. Introduction

*The future of banking sector belongs to companies which can not only offer products and services fallen with needs of an individual client, but can provide them at any time and anywhere as well*

*Tom Peterson*

An increase in social expectations in relation to subjects rendering financial services, dissemination of new technologies, more developing technical culture of society, an increase in importance on information technology in economy, business globalization, consolidation of banks and an increase in competitiveness are only a few reasons which had an influence on a type and quality of services rendered by banks.

An abstract feature of financial products, which undergo dematerialization rather easily, possibility of their connection with information exchange (due to the developing market of new technologies) and an introduction of the electronic signature influenced significantly

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easiness of reaching wide ranges of targeted groups and increasing the distribution of financial services.

The work deals with new possibilities of the distribution of financial services by banks on basis of selected channels – internet banking and virtual banking, which are especially important problem during integration of the financial sector of the new EU member countries and their way into the EMU.

## **2. New economy and its dimensions**

The new economy, also called e-economy, is the most frequently used term in economic and technical literature, discussions of scientists, businessmen and politicians beside globalization and information technology society. Three planes of understanding of the new economy can be distinguished:

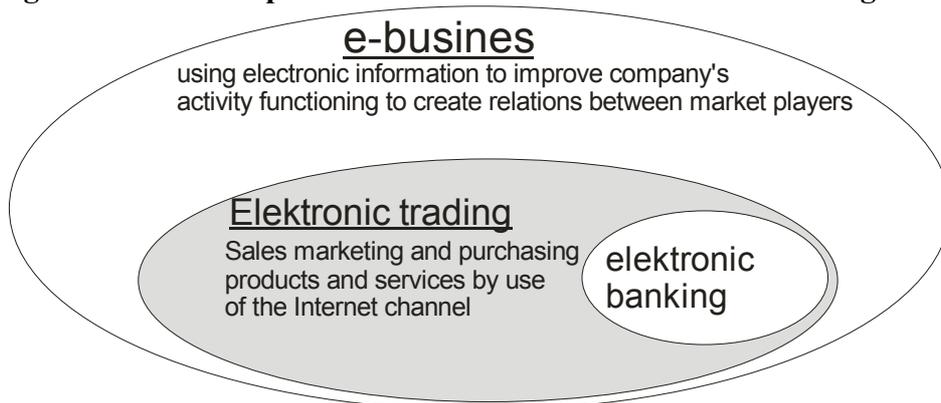
- as a system of new principles explaining how economic subjects function on the market;
- as activities of economic subjects in the strongly changed conditions. Owing to the dynamic development of technical progress, especially in information technology economic subjects change completely strategy of their activities many times. Information and knowledge as main economic categories, which are the basis of the contemporary business, are the foundation of activity. Another term is assigned to this understanding, namely knowledge-based-economy.
- new economy treated as a subject, namely determining activities of an enterprise in the IT sector.

Considering economy as knowledge-based is the most adequate to the contemporary trends in the economic processes. Innovations in the advanced technology and globalization of worlds' markets changed our economy to such extent that we are forced to think and act in a different way in it. It is connected with searching for new sources of quick growth, making structural changes in the development of information technologies, and above all, quick commercialization of the Internet. Owing to new technologies, and particularly the Internet network, the economy is characterized by high degree of transparency, there is a technical possibility to compare economic results, competition results and prices of products with ease. In fact, three channels of influence of those technologies on the economy can be distinguished:

- accelerating an increase in work productivity in sectors manufacturing equipment of new technologies and an increase of their share in the National Gross Product;
- fall in prices and an increase in demand for this type of equipment, what results in an increase in investment level and the National Gross Product;
- changes in a way enterprises function in new market conditions and accelerating work efficiency and capital productivity.

Therefore, *the new economy*, also called *cyber- economy*, constitutes a new paradigm of business. On this virtual market E-business is a new form of an exchange of resources by means of information technology systems and internet technologies, conducted *on-line* through electronic connections and an information exchange by use of electronic multimedia such as Internet, cable and satellite television, telephony, electronic cards, Intra and Extranet at the national and international level. It consists of electronic trading, business intelligence and technological capacities to self-service business processes conducted. For that reason e-business is a new source of speed, innovation initiatives, efficiency and new ways to create values in the organization, Fig.1

**Figure1 Relationships between e-business and electronic trading**



*Source: our own work*

It contains three areas of activities:

- *involvement*, namely needs to create cost effective commercial websites and applications, directed at marketing, network advertising and promotion tools;
- *trading*, conducting *on-line* business with safe and measurable execution of orders;

- *analysis*, concerning understanding of attitudes of customers and motives directing purchases and use of this knowledge to improve quality of services rendered.

Transactions on the electronic market are performed in the following relations:

- business-to-business, B2B, it refers to the co-operation between companies (e.g. transactions between companies), distribution of information, goods and services and relations between commercial companies and public administrations institutions (e.g. paying taxes) ;
- business-to-customer, B2C, co-operation between companies and customers in a scope of retail sales of products and services (e.g. banks, internet shops) and between customers and public administration institutions (e.g. making payments to treasury offices, city halls etc.);
- customer-to-customer, C2C, it concerns transactions concluded between private persons (e.g. auctions, electronic “notice boards”);
- customer-to-business, C2B, concerning transactions concluded by customers directly with firms. Prices of products are determined by customers, a firm can accept them, or reject e.g. potential customers offer a price which they are ready to pay for a flight, whereas the airlines can accept it, or turn down the offer. This type of market has not achieved that level of development as B2B, B2C or C2C yet;
- business-to-administration, B2A, it concerns relations between a company and the state administration. Companies via the Internet can participate in public tenders, pay taxes and other dues to the state. Whereas in the opposite direction – subsidies or returning of taxes reach a company;
- customer-to-administration, C2A, instead of business parties there are consumers, who via the Internet settle taxes with the Treasury Office, receive tax refunds, compensations or allowances.

The development of electronic business takes place in phases. In the first phase the Internet is web enabled to conduct activity, whereas in the second one business is web based totally. The fact to which phase countries belong to depends on the internet infrastructure and communication channels they have. Europe comparing to the USA is backward about two years and it is still in the phase of building infrastructure.

### **3. Electronic banking as an element of e-business**

Electronic business is a complex and dynamically developing sector. It is not only limited to access to World Wide Web and information exchange. In order to achieve success in it, different requirements must be met, and they are such as: safe information processing concerning transactions, winning customer's trust, skillful management of intangible products. Electronic business is of particular importance in the finance sector. It comprises both a scope of customer service and a transfer of funds and mutual co-operation of institutions. Necessity to introduce comprehensive electronic business results from, among others, a level and scope of competition present on world financial markets nowadays. Banks wanting to maintain an appropriate position on the market face challenges which force them to use solutions increasing effectiveness of their activities. In this system of market forces even commercial networks offering their own credit cards and financial institutions not having a status of a bank, but offering less expensive services of the same kind constitute a threat and competition for banks.

Financial sector activity, including banks, is not connected with manufacturing physical products, but it is business based on information using telecommunication and information technology achievements on a wide scale. Management of finances becomes more and more management of information about creditability, purchasing power and financial position of persons and institutions [9]. New technologies are directed to manage relations with customers, to improve internal integration of systems and internal operations of banks, but not as in the previous period to increase inner efficiency and development of distribution channels. Those factors cause that the bank sector is prepared best to function in the electronic environment and develop electronic economy. Information and communication technologies (ICT) can be used in any type of bank activity and they are the main factor of changes in the whole sector of financial services. In that economic situation only those banks, which will use different distribution channels and variety of services and modern technological solutions will be basis of their long-term strategy, will achieve success. Problems of electronic economy became a key element of initiatives undertaken by European Union within the framework of the Lisbon Strategy. The main aim of the Lisbon Strategy, within the e-Europe initiative accepted in Seville in July 2002, is to transform the European economy to 2010 into the most competitive world's knowledge-based economy. One of the assumptions of the strategy is to make electronic banking development more dynamic – a fundamental factor to create an integrated European market of

financial services. It is possible due to liberalization of the telecommunication services market, what will have an advantageous influence both on development of this sector and development of electronic services rendered by the banking sector. For that reasons the Lisbon Strategy emphasizes the market liberalization, development of the telecommunication sector and it defines clearly a role and place of financial institutions and capital market in UE. The Polish banking sector has been obliged to undertake activities aiming at creating an integrated market of financial services until 2005. Detailed activities are included in the document Financial Service Action Plan (SAP).

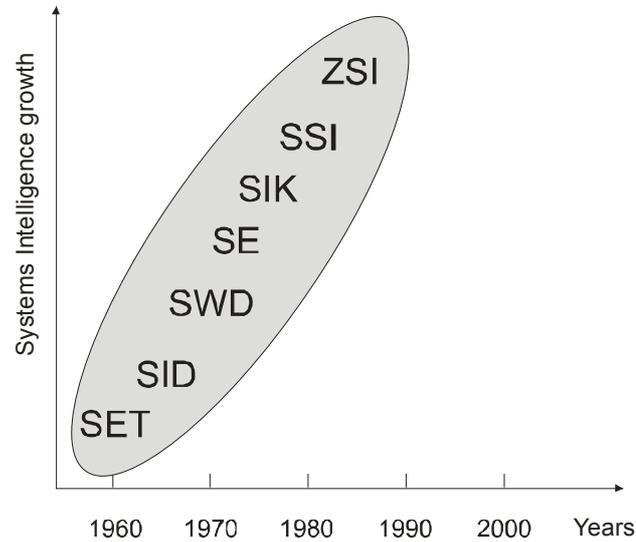
#### **4. Artificial intelligence in e-banking**

The growth of the accessibility of the new e-banking solutions, new banking tools (for instance card to buy in the internet, EMV card - Europay-Matercard-Visa) is the result of building bank position on the market and competitive superiority. This can be seen in the methods of the access to the financial means on the account proposed by the bank, the way of using bank tools as well as their new functions, using mobile solutions (for instance *m-banking*) and lowering bank commission for its service. These actions may encourage new clients to use the service of the certain bank and gained clients to stay with their choice, on the other hand it should enlarge competitive position of the bank. To achieve the planned goals by the banks may be possible by making the society aware of benefits related to new bank solutions, constant growing of technical culture of the society as well as the most favorable decision making on the highest managing level.

The main influence on the achievement of competitive advantage by the banks have advanced information systems which rise the bank services for the corporate and individual clients. It is necessary to mention that the usage of new technologies in not a must related to the current trends but it is important tool in bank strategy, which cause its rising position. If the bank lacks the vision of supplies for new services then the most advanced investments in new technology will be only the serious cost not the profits for the bank. It is important to use the golden rule of the new economy, market position and competitive advantages, which says that commonness of the solution does not cause long-term and stable position of the enterprise on the market. That is why the usage of the new information technologies in the bank in the essential component of banking e-business. The matter of this issue is of great importance because in the age of necessity of processing

large information data and making decision based on them, current banking systems are not enough, Fig.2.

**Figure 2. The changes of the intelligence level of information managing systems<sup>2</sup>**



It is the most important in the field of supporting the essential decisions which are at the same time the most difficult, strategic related to banking *Top Management*. Traditional information systems which support the process of managing are related to gaining from the computer concrete answers to the given questions and nowadays they become less effective. The difficulty is in the proper explicitness of the question on the basis of large amount of possessed information, often uncertain and unclear. We do not know which features will cause success or failure of the concrete business strategies. The mentioned features cause that the typical tools of information support of process support decisions are less effective. That is why it is necessary to use different techniques and tools of artificial intelligence such as expert, neuronal systems of processing natural language.

In the literature of this subject there are different terms of this issue such as AI is the part of information technology related to designing intelligent computer systems [E. Faigenbaum], AI is the system which

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<sup>2</sup> SET – List- & Transactional Systems; SID – Informative and Decision Systems; SWD – Decision Support Systems; SE – Evaluation Systems (macro- & micro- economical models); SIK – Executive Information Systems; SSI – Computer Network Systems, ZSI – Computer Integrated Systems

demonstrates the abilities of understanding similar to those of a human in order to improve life conditions and economy competitiveness [Japan AI Centre]<sup>3</sup>. Other definition of this issue points out on the problem solving related to natural action and cognitive processes of human beings by means of computer programmes which stimulate them [Encyclopaedia PWN]. There are two different approaches to AI in the literature of the subject:

- Symbolic one where the systems are based on logic( PROLOG) as well as the systems with the base of knowledge (expertise);
- Computational one where neuron net, evolution system, systems with unclear logic as well as intelligence without presentation are used (Project COG).

## **5. Distribution channels of the products and e- services in e-banking**

In new economy conditions managing financial institutions is connected with the change of the ways of services selling, providing information to clients as well as with the change of their function and noticing the key competence. The standard of work in banking area has been related to the usage of solutions based on information, knowledge and new technologies which give the clients access to financial means collected on the bank accounts and the possibility to make different transaction there. It has led to distinguishing great variety of e-banking channels such as:

- Cash dispensers,
- Phone banking;
- Banking based on separate network - home banking ( Corporate banking),
- Call Centre,
- Voice-IVR,
- Internet banking (with the type, limited to virtual sphere, virtual banking),
- Mobile banking (SMS banking – make possible to manage the bank account by means of textual news SMS as well as WAP banking – allowing for interactive contact of the client with the bank by means of mobile phone using protocol WAP<sup>4</sup>),

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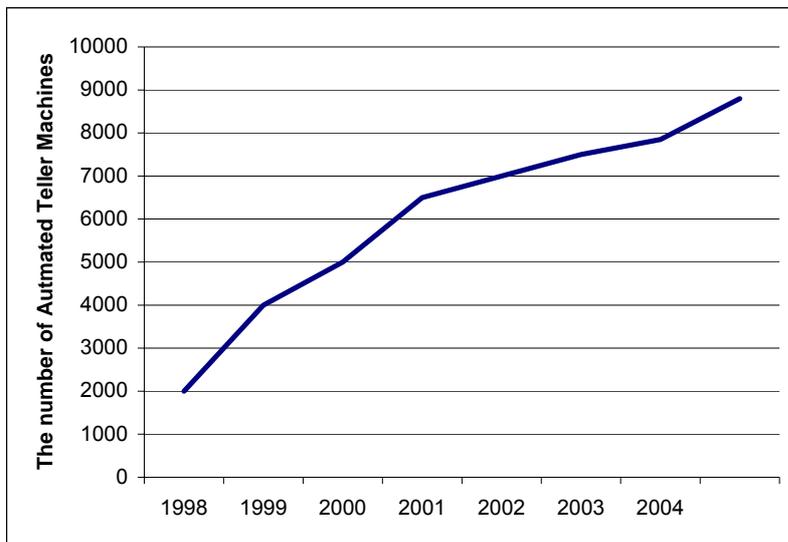
<sup>3</sup> VIII Forum bankowości elektronicznej, Warszawa 2004

<sup>4</sup> WAP (ang. Wireless Application protocol).

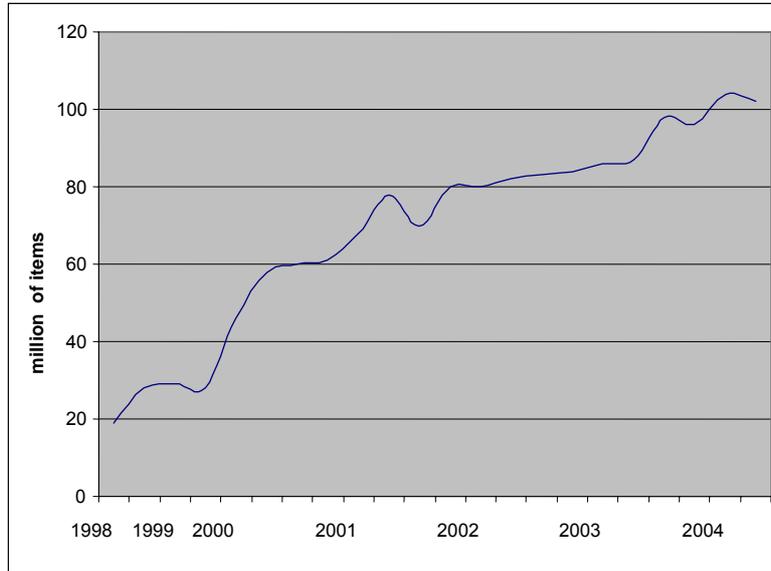
- TV-banking – allowing access to the bank account by means of TV set and telephone
- Multimedia kiosk.

The usage of these channels in the banking sector vary and depend on the level of entanglement of the services offered by them, offer of banking financial tools as well as strategies used by the banks. Cash dispensers are the most popular channels. It results from the easiest way of operating and the possibility of doing different services by these machines. In Poland the network of ATM is constantly developing. In 2004 7850 items have been installed (Fig.3), 107 million transactions have been made (Fig. 4) and their value has been on 32 milliard zloty, Fig. 5.

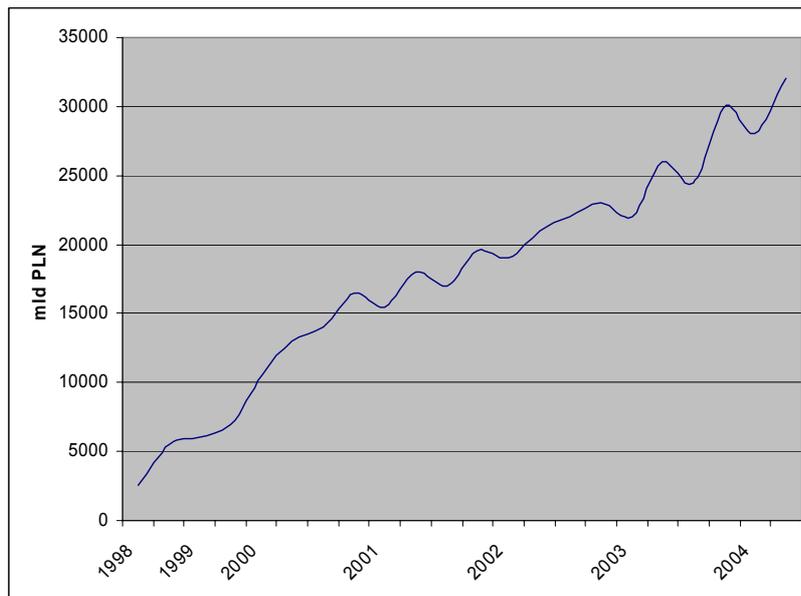
**Figure 3 Changes of the number of ATM in Poland in 1998-2004**



**Figure 4 Changes in the number of transaction in cash dispensers in million items**



**Figure 5 Changes of value of transactions in cash dispensers in milliard zł**



Nowadays many of the cash dispensers functioning on the Polish market are the multi functioning machines and the owners of the cards can use them 24 hours. In spite of the fact that year by year there is a growth of

cash dispensers their location is not steady. Further growth of the popularity of this banking channel will be possible when the financial tool such as chip cards EMV will become more common. The internet becomes the e-channel which is developing very fast these days. Its advantages as the channel for distributing the products and services in e-banking were used in 1995 by SFNB bank (*Security First Network Bank*)<sup>5</sup>. Despite the e-banking leads to segmentation of the market, products and services (this may derive from the level of service complication, its value and the security of transactions), it allows to enlarge the receivers. It is caused by:

- Conducting simultaneous and fast bank service for large number of clients,
- Individualisation of bank offers, creating of individual client wallet on the basis of information gained about him for instance preferences.
- Conducting service of client by the bank 7 days a week as well as 24 hours (without time limit),
- Enlarging geographical reach – bank without borders (borderless bank), which allows to realise the order from different place (without space limit),
- Enlarging market research,
- Realisation of the orders on-line,
- Quick support of bank workers in case of emergency,
- Lowering the cost of single transactions and commission for the services,
- Enlarging client satisfaction this can lead to the growth of his loyalty towards the bank.
- Enlarging the competitiveness of the bank on the market of bank services.

The growth of the interests in services offered by this channel was the reason of creating by the banks, in terms of their structures, internet branches which are mainly responsible for the development of e-services, Table 1. The success of the internet branches have been gained by traditional banks with strong and stable position on the financial market and with wide consumers base. It resulted from the compromise between the habits of clients to traditional form of transaction realisation in the bank and the solutions of 21<sup>st</sup> century standards (internet channels).

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<sup>5</sup>In the process of communication between the client and the bank the protocol http lub https was used.

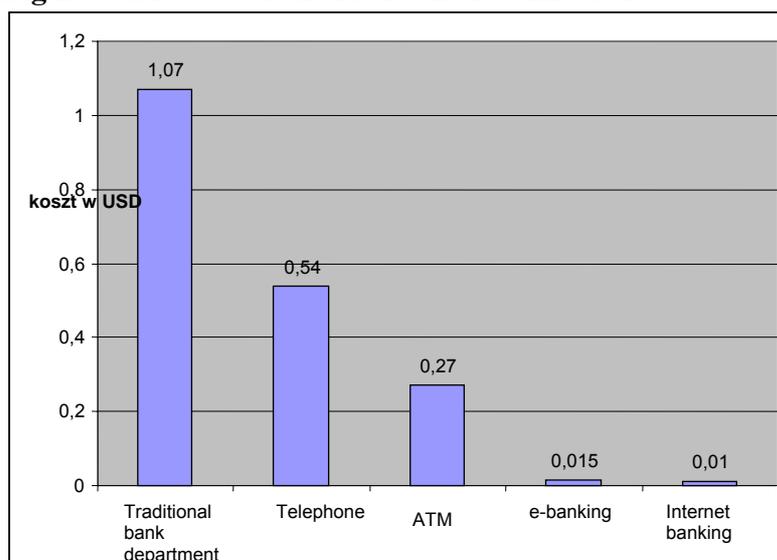
**Table 1 Internet branches of the biggest financial institution in Europe**

Founder's bank	Name of the internet brunches	Number of on-line clients (million)	Type of the service
Nordea	Solo	2.3	Bank services, insurance, leasing, broker's services
Deutsche Bank	Deutsche Bank 24	1.1	Bank services
HVB	Webpower	1.0	Bank services, insurance
Midland Bank	First Direct	0.8	Bank services
Skandinaviska Enskilda Banken	SEB	0.7	Bank services, assets managing
Commerrzbank	Comdirect	0.5	Bank and broker's services
HSBC – Merlin Lynch	-	b.d.	Bank and broker's services

Source : J. Pietrzak, „Wpływ modelu dystrybucji na konkurencyjność banku”, *Bank i Kredyt*, nr 3, str. 35-43, marzec, 2002

In the new economy conditions banks intensifier the actions towards lowering the costs of running a business (the transaction make in the internet is 100 hundred times cheaper than the same transaction made in the bank), or commission for the bank service<sup>6</sup>, Fig. 6.

**Figure 6 The cost of distribution of bank services**



Source : Booz Allen Hamilton Inc.

<sup>6</sup> Rport firmy doradczej Booz, Allen & Hamilton

The savings gained from the clients' service by e-banking are restricted at great financial cost for the promotion campaign connected with gaining new and maintaining present bank's clients. The survey of the e-banking shows that the expected savings from the clients' service are reached by gaining the proper number of clients-called the critical market mass. The amount constitutes 600 thousands clients. However, 6<sup>th</sup> E-Banking Forum – CPI states that the earning capacity of the account led by Internet is gained by 1600 zł of the monthly payments. In comparison to the traditional bank, the earning capacity is about 1298 zł.

Resulting from easily gained benefits, as far as on-line banking is concerned, typical, virtual subjects originated, rendering services to people by internet. Such kind of activity which is the simplification of the multi-channel distribution (*bricks and clicks*) fits in the model– *clicks only- virtual banking*, Table 2.

**Table 2 The costs of those subjects which offer virtual service**

The name of the subject	Costs in Euro(mln)
Egg	310
First-e	58
IKANOBanken	25
OnBanca	20
Sainsbury's Bank	47
VZ Bank	30
VirginOne Bank	30

Source: *The Banker*, March 2000 p. 11

The fight for incomes among virtual banks, maintaining the stable competitive overbalance leads to the double functioning –financial service deliverer, as well as, broker-the service distributor of financial institutions: banking, insurance or brokers. On the way of their activities, one can notice the principle that – ‘*Clients don't care where the products are from. They are to meet their needs.*’ [<sup>7</sup>]. The example of such strategy is bank *Egg.com* – on-line company which belongs to British financial Prudential Assurance Co. which assembles about 3 mln clients in the 4<sup>th</sup> areas: banking, insurance, capital market, and on-line shopping. The other example is *First-e* which is the broker, the distributor of products and other institutional services. It's

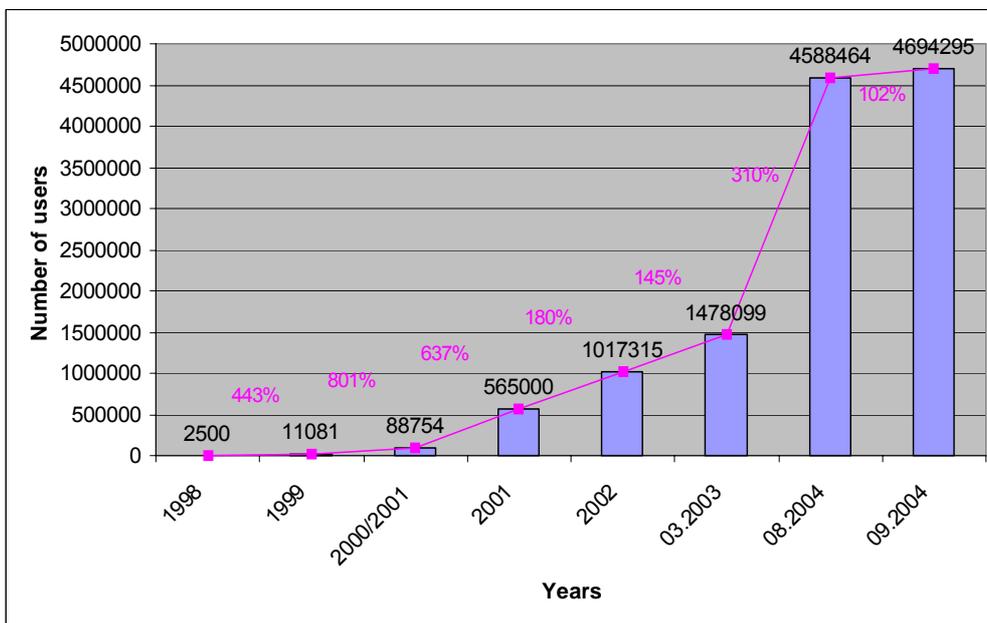
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<sup>7</sup> Pietrzak J.: „Wpływ modelu dystrybucji na konkurencyjność banku”, *Bank i Kredyt*, nr 3, str. 35-43, marzec, 2002

functioning as portal, directing clients to the best products, transactions, mortgage credits, credit cards and stocks and shares.

The success of internet banking in the world was the stimulator of banking development in Poland. The growing commonness of internet thanks to improving Teleinformation, infrastructure, as well as, the changing law regulations. In the last 6 years 1998-2004 the number of clients using the access to bank by internet increased by 1835 times which yearly average amount is 400% Fig. 7. The biggest pace of the increase of the e- banking clients was between 1999 and 2000/2001 - 801% and 637% between 2000 and 2001. At present, in Poland there are 18 banks rendering internet banking services with 4694295 clients<sup>8</sup>.

**Figure 7 The number of e-banking clients in the years 1998-2004**



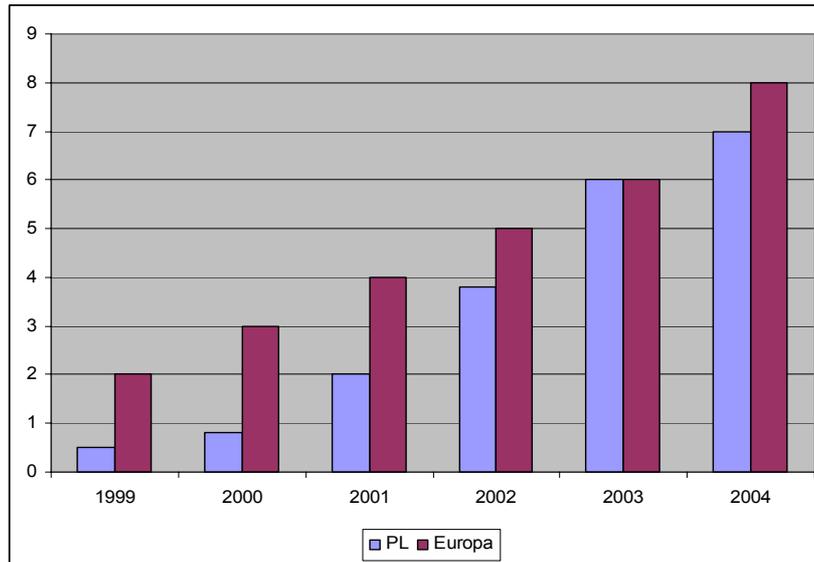
*Source: Own elaboration on the basis of E-Banking Committee*

The measurable benefits of using on-line banking caused the situation in 2002 that every invested zł was the result of internet being used and according to K. Pietraszkiewicz until 2005 the number is supposed to double. In spite of the great interest of internet service, Poland is still on the further position against the background of Europe. Fig. 8. One should indicate that

<sup>8</sup> VIII Forum bankowości elektronicznej, pp. 34, Warszawa 2004

the pace of the changes is one of the biggest among new admitted European Union countries.

**Figure 8 The percentage of clients using e-banking by internet / mobile**



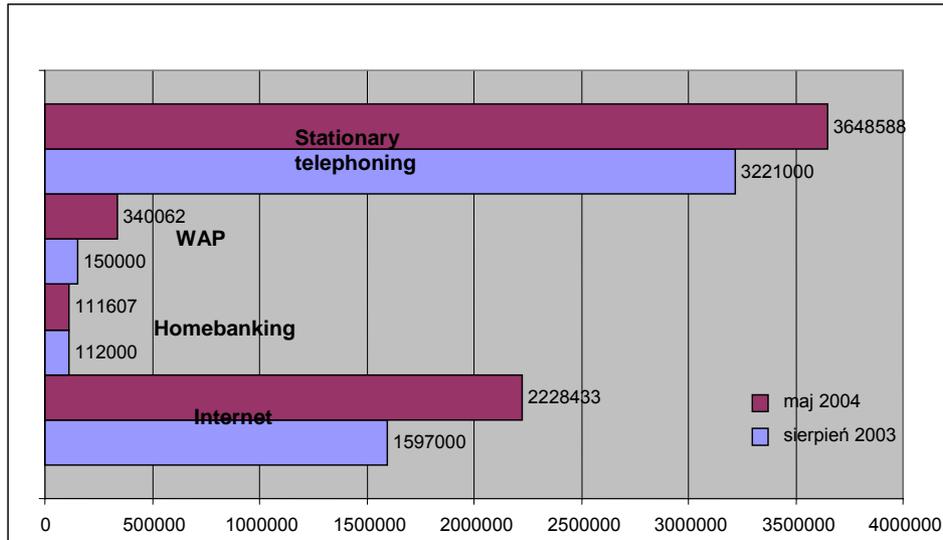
Source: Own elaboration on the basis of<sup>9</sup>

Such great growth in internet banking sector results from the comfort of using banking services on-line, as well as, the growing clients' consciousness, the growth of security, beneficial financial conditions and the improving technical conditions. Along with internet banking development, the other accessible channel is spreading out, Fig.9

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<sup>9</sup> Stryczyński Jacek, Zarzyki Tomasz, *Raportu EDS „Bank ery gospodarki elektronicznej”*, Bank 09/2000, pp 57

**Figure 9 The changes of the clients number using e-banking**



*Source: Own elaboration on the basis of ZBP data*

It takes place due to economical regards e.g. the decrease of expenses in traditionally managed banks, as well as, the increasing number beyond banking field. Teleinformation users e.g. mobile telephoning or WAP. At present about 80% of the net clients are using mobile telephones<sup>10</sup>. In Poland, from August 2003 until May 2004 mobile telephoning WAP indicated the biggest growth. (the increase of clients 'number using internet banking amounts 126,71%, the increase of zł transactions amounts 112, 55%, and the average amount of transfer is 58,37%). However, mobile banking didn't succeed so much in spite of optimistic surveys and banks' efforts in offering their service. According to Forrester Research in 2002 in Great Britain only 100 thousands out of 300 mln WAP users used mobile banking.. Such phenomenon one can observe in Scandinavia, with the biggest mobile telephones market in the world. However, in the USA there are 800 thousands cordless banking users. PDA and PalmTop –other mobile devices are included in this number.

The phenomenon of low interest, as far as mobile banking is concerned, caused the resignation from using WAP by internet banks and revival to traditional, popular forms of contact such as: SMS. The main cause of not using functional WAP and UMTS technologies results from inappropriate level of mobile telephoning development. It is estimated that there is 2-years -lateness in case of Europe in relation to Japan and South

<sup>10</sup> Górski P.: „E-banking dla Kowalskiego”, e-Fakty – wszystko o gospodarce elektronicznej” nr 4, Instytut Logistyki i magazynowania, str 22, 2004

Korea, where 3G telephoning is successful and mobile banking is massive. In the western Europe the short-term reduction of investment is planned in such places where there is lack of rapid investment development. There is a reduction tendency, as far as the number of clients is concerned, in case of Homebanking – 0,35%. It may result from technological restrictions and increasing costs ( in a bank), Table 3.

**Table 3 Changes of particular accessible channels.**

Accessible channel	August2003	May2004	Growth
<b>HOME BANKING</b>			
The number of clients using e-banking	112.000	111.607	-0,35%
The number of monthly transactions	9.370.000	9.637.289	+ 2,85%
The amount of transactions in zł	64.484.656.000	84.250.295.251	+ 30,65%
Average amount of payments in zł	6.882	8.742	+ 27,03%
<b>INTERNET</b>			
The number of clients using e-banking	1.597.000	2.228.433	+ 39,54%
The number of monthly transactions	2.579.000	5.696.185	+ 120,87%
The amount of transactions in zł	6.327.100.000	10.018.233.859	+ 58,34%
Average amount of payments in zł	2.453	1.758	-28,33%
<b>STATIONARY TELEPHONING</b>			
The number of clients using e-banking	3.221.000	3.648.588	+ 13,28%
<b>MOBILE TELEPHONING– WAP</b>			
The number of clients using e-banking	150.000	340.062	+ 126,71%
The number of monthly transactions	2.327	2.685	+ 15,38%
The amount of transactions in zł	2.043.000	4.342.355	+ 112,55%
Average amount of payments in zł	1.021	1.617	+ 58,37%

*Source: Own elaboration on the basis of ZBP*

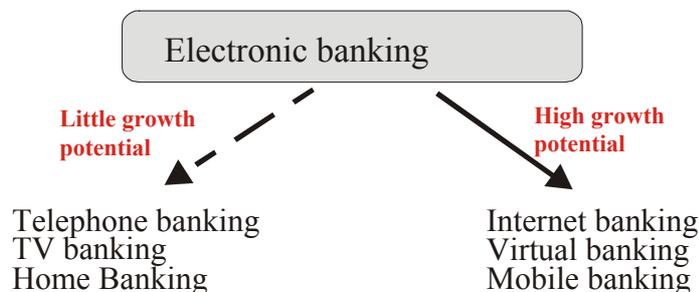
One of the newest solutions in the field of communication between client and bank is TV banking, with the usage of satellite TV, cable TV, telenewspaper and telephoning. The client may check his account in the telenewspaper. However, it should be proceeded by telephone contact with bank. After giving the account password, the client receives the number of page in the telenewspaper or by sending coded data by digital TV ( decoder is necessary in this case. Those who already possess such device are able to contact with bank in this new way (satellite TV and telephone). However, it will depend on the percentage of the amount in the account. The commonness of this channel depends on whether the client possesses interactive digital TV, the device which is still quite limited. According to Forrester Research, the growth of digital TV in European Union is expected up to 44 % in 2007 in comparison to 2002 when it was only 11%. The example of the country in which TV banking is popular is Great Britain,

where more than 770000 digital TV users take advantage of bank service. The most popular bank is *Egg bank* and *Sky TV*. Because of technological and economical barriers such communication is still not popular in Poland. The only Polish bank which offers TV banking is InvestBank within *Invest-Account channel*. The client may receive information about his balance, operations within basic service whereas within interactive service one can do transfers or become the user of lawful regulations. Technological barriers and little clients' interest stop the development of such services in EU countries and in Poland as well. TV banking is rather only treated as technological piece of information and banks investments should be limited until digital TV becomes a giant.

TV transmission with the bank's consultant and real-time services e.g. chat banking belong to new communication solutions. (Chat is a real-time conversation with the bank's worker on a special channel proceeded with login of the client). Such solution is mostly used by bank in order to give a piece of advice.

The participation in e-banking differs and depends on the access to technology, the infrastructure development, lawful-administrative regulations, banking culture, e-banking culture and the costs of exploitation. Such factors influence distributive channel groups with a different growth potential. Little growth potential: little functioning, (telephone banking) or high cost of exploitation ( TV banking and Home-banking), as well as, high growth potential: ( internet banking, virtual banking, mobile banking ) with low exploitation costs. Fig.10.

**Figure 10 E-banking access channels and their growth potential**



*Source: own elaboration*

New technological solutions qualified the characteristics of clients' behaviour. Getting to know clients' needs made it possible to adjust the kind

of offered service in case of communication. In the result, the bank organisation changed from interactive, where the contact with the client was limited into proactive, thanks to which the client is supported<sup>11</sup>.

## **6. E-banking services**

Thanks to multiplicity of channels, banks use multichanneled strategy which offers many distributive channels to clients along with financial service which seems to be attractive. The level of complicated service changed from simple marketing service into complicated interactive service thanks to new information technologies and information techniques. It also influenced bank functioning from interactive into proactive, supporting the client (the concept of partnership e-banking). The changes of e-banking led to creation of new e-services dependent on used accessible channel such as:

- Bills payments,
- Funds transfer among accounts ,
- Orders instructions,
- stocks and shares trade,
- credits acceptance,
- accepting credit cards applications,
- reviewing the calendar of dates and deadlines,
- reviewing the history of carried out operations,
- tax accounts,
- sending orders and messages by means of text message system,
- aggregation of financial services

as well as associated financial services i.e. insurance, leasing, investment or retirement services. Table 4.

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<sup>11</sup> Ozimek W., „Jaki powinien być bank partnerski?”, Gazeta Wyborcza

**Table 4 Classification of chosen e-banking services on on-line offer**

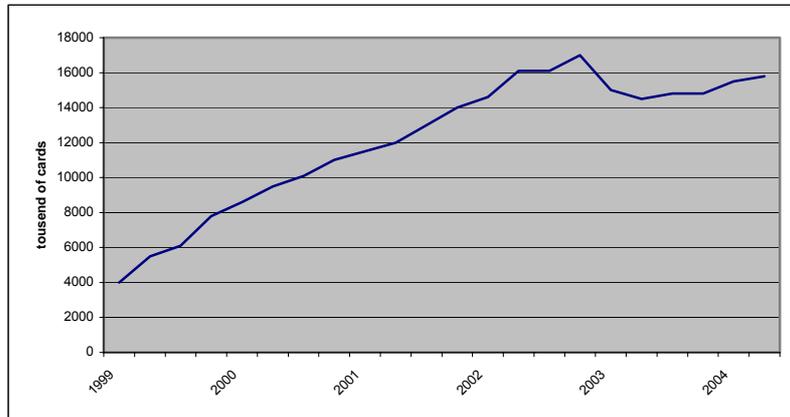
Products improving comfort	<ul style="list-style-type: none"><li>– Mobile banking</li><li>– Mobile payments</li><li>– SMS alerts</li></ul>
Services for third parties	<ul style="list-style-type: none"><li>– Internet payments</li><li>– Payments of taxes <i>on-line</i></li><li>– Payments of bills</li></ul>
Other financial products	<ul style="list-style-type: none"><li>– Life insurances</li><li>– Vehicle insurances</li></ul>
Investment products	<ul style="list-style-type: none"><li>– Opening and managing deposit accounts</li><li>– Purchase/sales of investment funds securities</li><li>– Purchase/sales of bonds and other investment instruments</li></ul>
Bank loan products	<ul style="list-style-type: none"><li>– Bank loans applications</li><li>– Credit cards applications</li></ul>
Simple banking products	<ul style="list-style-type: none"><li>– Opening/closing/managing an account</li><li>– Domestic and international money transfers</li><li>– Standing orders</li><li>– Direct debits</li><li>– Debit cards applications</li></ul>

*Source: Centeno, C. Adoption of Internet Services in the Enlarged European Union from the Internet ranking case. June 2003.*

With the development of e-economy new payment instruments were introduced on the market. These new instruments made it possible to conduct transactions on the Internet and in the mobile environment. In Poland the market of pay cards was created only in the 90ties of the last century following the reforms initiated after the change of political system in 1989. These reforms radically transformed Polish banking sector. In this initial period demand for modern payment instruments was moderate. There was no sufficient technical infrastructure which would accept electronic payments. The year 1994, however, saw considerable increase in demand which was a result of rapid changes on Polish financial market and was determined by potential customers' needs.

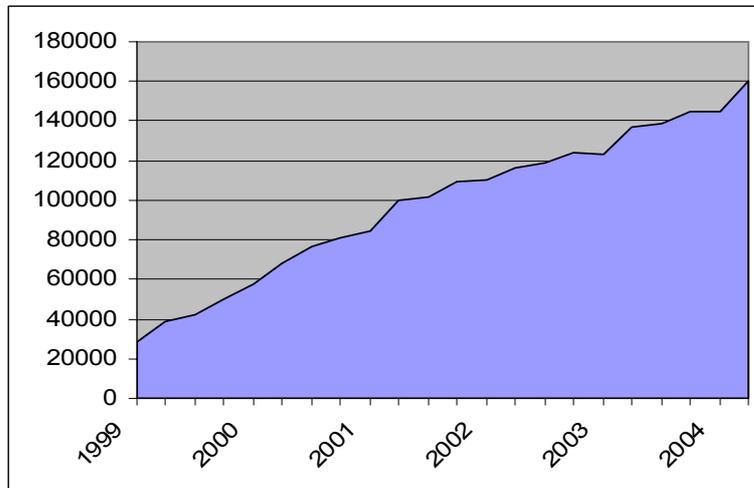
In the second quarter of 2004 the number of issued cards amounted to 159400 and there was 16044930 transactions made with them. All these transactions were worth 38480800 PLN. 80% of them were withdrawals from cash machines. The number of cards issued between 1999 – 2004 together with the number and value of transactions made with them is shown in Figs. 11, 12 and in Fig. 13.

**Figure 11 Number of cards issued between 1999-2004**



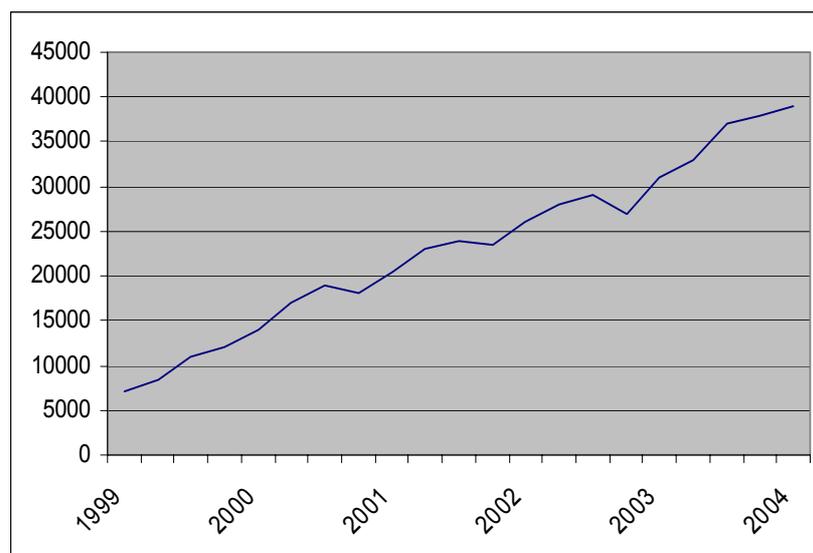
*Source: VIII Forum bankowości elektronicznej, Warszawa 2004 (8th E-Banking Forum, Warsaw 2004)*

**Figure 12 Number of transactions 1994-2004**



*Source: VIII Forum bankowości elektronicznej, Warszawa 2004 (8th E-Banking Forum, Warsaw 2004)*

**Figure 13 Value of transactions made in 1999-2004**



*Source: VIII Forum bankowości elektronicznej, Warszawa 2004*

The future of banking and financial services is associated with EMV microchip card. Currently in the EU there are 25 different kinds of electronic money based on microchip cards. In Poland there are no such systems but there are attempts at creating a system based on a central institution of electronic money. The big asset of microchip cards is greater level of transaction security when compared with cards with magnetic strip (better protection against “Freud” and functions giving access to banking and non-financial services). Such cards can be used in health care, transport or e-Government. Another important factor is the microchip potential to process information and store a few thousand times more information than a magnetic strip. Having recognised these new areas of EMV cards application the EU is currently promoting activities aimed at popularising microchip card solutions making it a priority of Europe programme.

A solution gaining big popularity in Europe (especially in Belgium and Luxembourg) is the so called electronic purse. It is an intelligent chip card used *off-line*, by means of which it is possible to settle small payments for services worth less than 10 USD in cashless way (in Poland from 1 grosz to 100 PLN).

The European Committee claimed e-purse proves to be essential in creating the Economy and Currency Union. It was also pointed out that thanks to low costs electronic payments can replace cash in member states

where the local currency is weak. E-purse standard is being created in co-operation with CEPS (*Common Electronic Purse Specification*), VISA, Proton and a number of European financial institutions. This project is partly stimulated by introduction of the European currency Euro. It is expected that all national enterprises connected with e-money wanting to go internationally will join CEPS. Combination Euro-CEPS can be the greatest driving force towards adoption of e-money.

Another solution based on e-money concept is a credit card:

- a) *post-paid-cards*: the issuer covers the costs incurred by the card holder for purchasing goods or services. The card holder can purchase goods or services by means of his credit card and its authorisation in *Authorisation Centre* before he actually pays for them. If the payment is settled through the Internet, the card holder must provide his card number as a part of the crypto-graphic procedure.
- b) *prepaid cards* with determined credit value reflected only on central server. Payments are settled anonymously (registration is not required).

Popularisation of the Internet Channel in business activity created a demand for payment instruments adjusted to network environment – network money and software money. There are two kinds of network money:

- c) money on a microchip card whose reading is carried out on a PC of its holder. The PC, however, must be equipped with a special programmed reader (i.e. pre-paid card- e-purse).
- d) Money on a computer disc: E-Cash, DigiCash<sup>12</sup>, stored on the hard disc and used in networks (e-cash is of single-use type which means that once a banknote with a given number has been used it is invalidated by a bank).

These systems are similar to the solutions used a cash card or money transfer. Their special feature is innovative opportunity to send money by SMS, e-mail or Internet websites. Taking as a criterion the addressee of the payment the systems can be divided into two groups:

- systems which allow to make a payment only to a business person (person to merchant);
- open systems allowing for transferring payments between market users (person to person). To these open systems belong banking institutions and other non-banking subjects.

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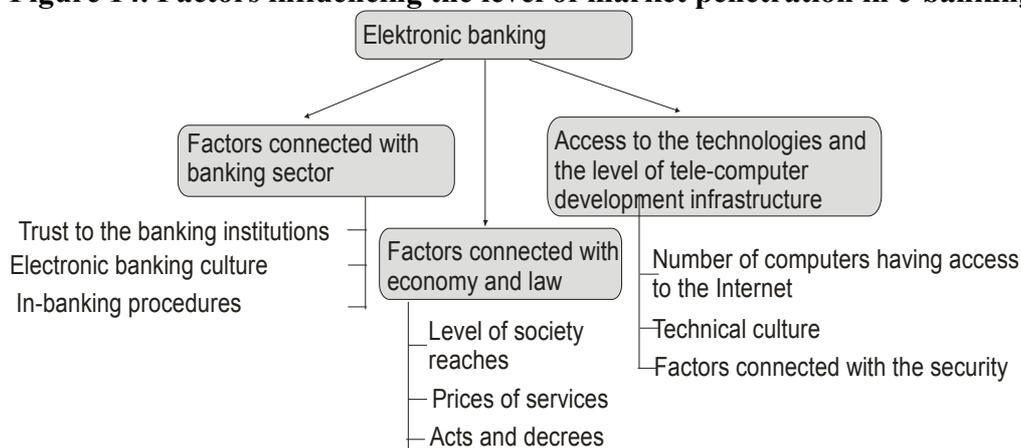
<sup>12</sup> DigiCash was the first company which offered e-cash Internet technology.

These opportunities are used by PayPal – the Internet payment system. There are not many similar solutions on the European market. It is used by a Dutch bank ING – product Way2Pay, Robobank – system Minitix. In Poland system PayU is getting more and more popular. There are however some barriers of legal nature. Polish legal system does not recognize systems based on central server as e-cash systems. Consequently it creates a situation in which this payment instrument is treated as a instrument different from e-cash instrument.

## 7. Factors influencing absorbing of e-banking services in the world and in Poland

E-banking is not developing evenly. The pace is different in different countries of the world. It does not entirely depend on the economic development of a country, it is rather an outcome of many factors influencing absorbing of these services but also of many barriers which arise in the context of new electronic technologies and related risks and illegal activities such as dirty money washing, selling non-existing bonds and hacker activities. Hence, this issue being a very complex one should be analysed from three points of view (Fig. 14), taking into consideration such factors as the total number of users of e-banking, level of market penetration as a percentage of all clients of a bank, level of market penetration as a percentage of the population and finally level of market penetration as a percentage of the Internet users.

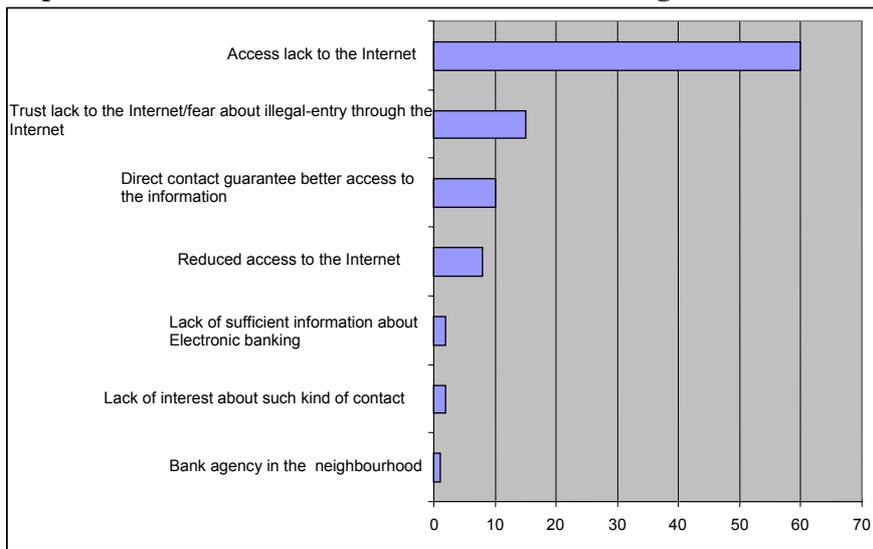
**Figure 14. Factors influencing the level of market penetration in e-banking**



*Source: own work based on*

The basic factor influencing absorbing the services is the access to technologies and the level of development of tele-computer infrastructure. This development is closely connected with the wide availability of Personal Computers and the Internet Channels which, in turn, has an impact on technical culture of information society. This was confirmed by Mentor-Telebus research which showed that the lack of access to the Internet creates a barrier and the reason to reject e-banking methods for nearly 60% of respondents, Fig.15.

**Figure15. Reasons for lack of interest in e-banking among Polish respondents who do not use the Internet banking**



Source: Mentor-Telebus, April 2003<sup>13</sup>

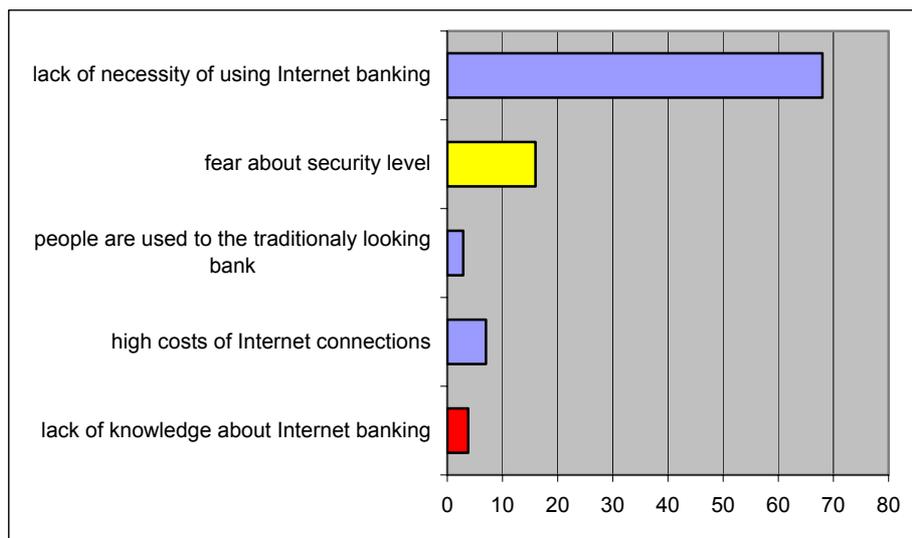
The indirect factor of e-banking services absorption are costs related to creating the access to new developments in technology, mainly using the telephone line and wide-wavelength access to the Net. Another salient issue is the so called level of saturation of the access to the internet. The critical point is 30% saturation of Internet services, after which a considerable rise in interest in Internet banking can be observed. We cannot speak, however, of free Internet access to use e-banking services without liberalisation of telecommunication market. In new EU member states it creates the greatest barrier for e-banking development together with low availability of the Internet. The liberalisation process helps create new measures in telecommunication sector such as: competition, implementation of new techniques and convergences, increase in demand for services and

<sup>13</sup> Szyszka G, Śliwczyński B at al., *Elektroniczna gospodarka w Polsce*, Poznań 2004

globalisation processes. The acceleration in development of telecommunication sector and economy in general through breaking up the monopoly and the presence of new operators caused many positive phenomena such as: price reduction for telecommunication services, increase in the number of services delivered, higher quality of services, their flattening and postalisation of tariffs. The above mentioned phenomena has a considerable influence on e-banking development.

Another important issue is the trust customers have in e-banking services. According to Forrester Research the fear of using the Internet banking is diminished with the time of usage of the Internet channel. The number of e-banking users who were previously Internet users consists of 50 % after 5 years of experience with the Internet channel and only 19 % after 2 years. It may be the outcome of growing awareness of depositing financial resources in the so called “invisible bank”<sup>14</sup>, growing technical culture of customers and lack of information on the scale of losses banks have as a result of Internet crime. This statement can be confirmed by research in which 15% of respondents share this opinion<sup>15</sup>, Fig. 16.

**Figure 16 Reasons limiting e-banking development among the Internet users.**



*Source: own work based on I-Metria, lipiec 2003.*

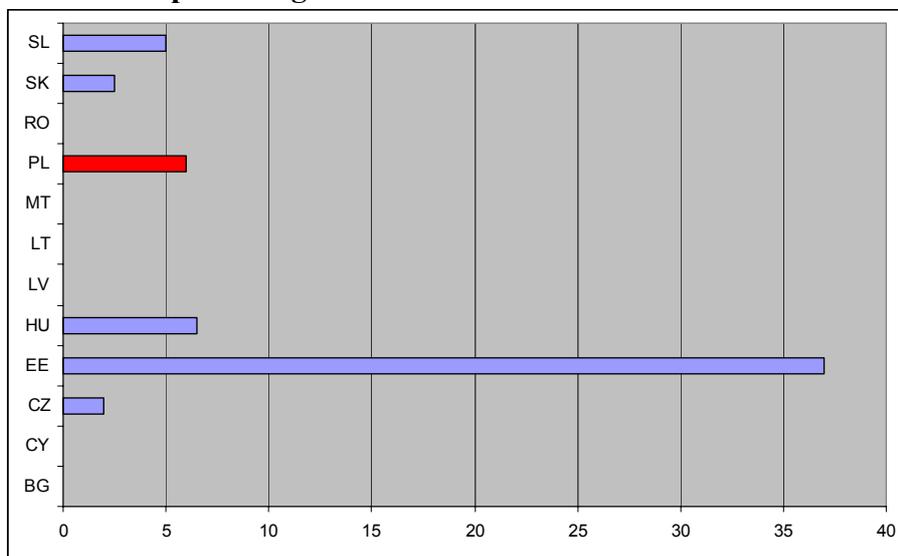
<sup>14</sup> J. Stryczyński, T. Zarzycki, „Bank ery gospodarki elektronicznej”, Bank, nr 9(96), 09.2000

<sup>15</sup> Mentor-Telebus, 04.2003

Another group of factors connected with penetration of Internet banking services are: confidence to financial institutions, electronic banking culture and internal procedures of banks' operations. However, Internet banking is frequently used in those countries where bank transfers are more popular.

Various researches show that confidence to banks and culture of electronic banking vary a lot. In Poland, due to significant technological backwardness, technical culture of Polish clients is not high. As compared to other EU countries, the ratio between a number of Internet banking users and a total number of bank account owners places Poland on the third position, after Estonia and Hungary, Fig. 17.

**Figure 17 Penetration of electronic banking in new-accessed EU countries in percentage relation to a total number of bank clients**



*Source: ECB 2002b, 2001 data for CY, MT, RO, SK, SL, Albassera, Sep 2002 for CZ, HU, PL Bank Association, 2002 for PL, HansaBank, 2002 for LV, LT, UNCTAD, 2002 for EE; Population 2000; Eurostat.*

The third group includes the following economy factors: service prices, level of clients' affluence, scale and pace of society education. However, using systems and ICI tools in operations of financial institutions, including banks, are regulated by according law acts and rules, for instance:

- act of 18 July 2002 about performing services by electronic means (operative since 10 March 2003), which institutes the European

Parliament and Council of European Union directive, number 2000/31 of 8 June 2003 (directive concerning electronic trade)

- act of 12 October 2003 about electronic paying tools. The act meets the European Union standards in respect to consumers' protection regarding bank services and limits clients' responsibility in case of a theft or loss of a card. The main part of the act is connected with using paying cards. It also touches electronic banking regulations and puts an obligation on banks to provide proper security and confidentiality when conducting operations.
- act of 18 September 2001 (operative since 08.2002) about electronic signature.

Apart from exemplary law acts many ordinances have been decreed, for instance:

- Ordinance of the Cabinet of 25 February 2003 concerning the rules of making, recording, storing and securing bank documents made on electronic means of information.
- Ordinance of Finance Minister of 24 September 2003 concerning the way, scope and time-limits of storing electronic money by institutions and banks as well as data on issuing electronic money. This ordinance is an addendum to the law act of 12 September 2002 about electronic paying tools and the way, scope and time-limits of transferring data to the National Bank of Poland.
- Ordinance of Finance Minister of 24 September 2003 concerning the way, scope and time-limits of transferring data on paying cards issued by competent institutions.
- Ordinance of Finance Minister of 24 September 2003 defining security procedures, permissible risk of operations of Electronic Money Institutions and area of its use. It also defines types of financial tools and regulations with respect to investing funds coming from obligations assumed while issuing electronic money, as well as other rules applicable while reducing risk.

It must be pointed out, however, that the above mentioned factors can also hinder development of electronic banking services. In many cases law acts do not follow the pace of electronic economy development and are not precise enough. In Poland two ordinances of Ministry of Finance can serve as the examples:

- Ordinance of 5 December 2000 concerning the way of collecting payments and returning tax payments as well as the way of conducting tax payment registration which do not allow making these payments by electronic means. This ordinance is in contradiction to:

Administration Procedure Code, Section II, Chapter I, Article 63, Clause 1, and Electronic Signature Law Act that aims at introducing electronic document in administration and economy.

- Ordinance of 15 September 2001 concerning definition of “cash payment form specimen and tax office money transfer form”. While introducing a new payment/transfer form, the legislative board overlooked the fact that almost all small, medium and large businesses make their payments via electronic transfer.

Another normative act that includes wrong regulations, contradicts the Polish Constitution, and the European Union Law, and hinders introducing necessary ordinances is the act of electronic signature of 16 August 2002. According to the PIIT opinion, wrong regulation says that the certificate document can be issued exclusively by institutions co-owned by the National Bank of Poland, which leads to the monopolization of the market (in June 2002 these condition were fulfilled solely by Contrast). PIIT representatives also believe that banks aim at gaining areas that are not strictly connected with their activity. It concerns, for example, limiting electronic money clearings (changing money to electronic impulses collected on cards) only to bank authorities, and hinders such operations from other companies. Banks conditioned exclusivity to clearing operations for the period of a year from the moment of issuing the regulations about electronic payment tools.

In practice it means complete lack of possibilities of issuing parking cards or public transport tickets by other companies but banks. Also, some other proposed changes in telecommunication regulations dealing with service prices at “a moderate price”, yet based on real costs, arouse concern among PIIT representatives.

The second group of factors that have a restraining effect on development of electronic banking consist of internal banks’ procedures that are not tailored to substantial, organizational and time aspects.

Development of modern bank services is also hindered by lack of unified security standards used by bank institutions. Each bank has its own systems, which is costly and time consuming. The solution to the problem might be the use of electronic signature that according to the law act guarantees:

- confidentiality of documents through their ciphering and at the same time their inaccessibility by third parties,
- integrity of documents so that their contents cannot be changed or counterfeited,

- authorization of a sender through exclusivity for his signature
- affixed electronic signature put down on a document becomes unquestionable fact.
- civil law aspect – the rule of equipoise of legal consequences as regards electronic signatures based on qualified certificates with manual signature is in power (except for some legal actions requiring particular form such as notary acts)

According to bankers and researches conducted by OBOP, development of services is also hindered by lack of Internet access and customers' habit of using traditional channels of bank services distribution.

## **8. Conclusions**

The end of the 20th century is the period of impetuous changes ongoing in the way of functioning in Europe and in the world. This is a period of continuous challenges, economic co-operation and implementation new ways of management. The changes include reducing time of carrying out business processes, their wider scope, more flexibility and reliability of operations, and increasing level of client service. In the near future, e-economy will revolutionize business activities in almost all sectors of economy. It has already marked its presence in financial services sector, including banks and, therefore, proves that further, comprehensive development of electronic bank services is inevitable. It leads to a necessity of bank strategies modification imposed by costs reduction, change of clients' consumption patterns, dynamic development of new technologies, and polarization of clients because of their ability to use the Internet and positive attitude towards electronic media. As a result, clients will gradually change their perception of bank sector institutions. A new quality of bank services is being provided, where a client becomes a subject and not an object as it used to be in traditional banking.

Modern e-banks take a particular place in e-economy. Their importance for development of new economy has been emphasised in the e-Europe programme, that is one of the Lisbon Strategy principles. E-banking makes it possible to perform such services as: electronic tax clearings, unemployment benefit or scholarship payments.

According to many Polish bankers, there is a strong belief that multi-channel activities and modern technological solutions will contribute significantly to the improvement of profits coming from banking operations. It means that the importance of both Internet and virtual banking on financial markets will be gradually increasing. The researches led by IPSOS show that

about 84% of the banks plan to introduce new solutions to bank-client relationship management. Other key enterprises of banking sector include: popularisation of mobile banking technology based on GSM technology with main access channel via Short Message Service –SMS (on a smaller scale, via WAP) and introducing Straight Through Processing Systems (STP).

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# CHANGES IN USING OF PAYMENT INSTRUMENTS IN THE EUROPEAN UNION

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## **Abstract**

*In view of the European Union accession, a large number of reforms are taking place in the member countries, especially in the “new” members. It is one from the priorities to develop modern, robust and efficient payment systems. Bodies, which are interesting in this goal are among others the central banks of the members countries, including the European Central Bank. The process of building of the new methods, used in the payment systems is influenced by changes in using of payment instruments. These changes are evoked not only as a result of changes in the legal, regulatory and institutional environment, but as a result of the national traditions and of the historical reasons, too. More than ten years, which has flowed from the beginning of the negotiations about the accession of the European Union, has influenced the development in the accession countries. There are not differences between payment systems and payment tools used today in the “old” and “new” members; there are differences in level of using of common instruments and tools. The development in the both parts of the European Union is today very similar.*

**Keywords:** *payments, cheques, credit transfer, payment card, direct debit*

## **1. Introduction**

This speech focus on the use of various payment instruments in the European Union. The main source of it is possible to find in the ECB statistics, especially in publications, which are named „Payment and securities systems in the European Union“ and „Payment and securities systems in accession countries“. Short name, used for these two publications and its addendum incorporating the last figures is „Blue Books“. In these publications is possible to find many informations about payment systems in all Member States and in countries, which were preparing for membership in the EU, ten of which have since become Member States of the European Union .

What is the aim of this speech? To compare data about using payment cards, cheques, credit transfers and direct debits in part of members of the European Union and to describe differencies and/or resemblances between old and new members of the Euroiepan Union in the field of payments.

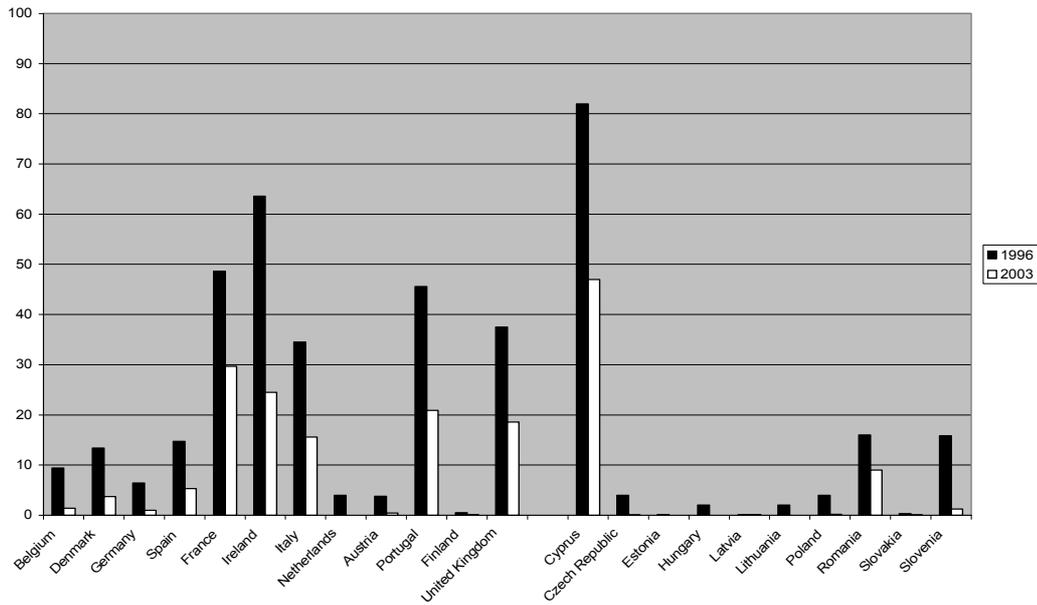
There are two reasons, why figures are not done for all Member States – data are not available for all countries in all categories and all years and the methodology is changing in some countries during time.

## **2. Cheques – traditional payment instrument**

In next two bar charts the data about using cheques are shown. The term “cheque” includes traveller’s cheques, eurocheques and bankers’ drafts. Commercial bills are included only if funds transfers can be made on the basis of these, without using another medium. The first of picture show us figures, which give us information about volume of used cheques in comparison with other payment instruments, the second one give us information about value of used cheques in comparison with other types of payment instruments.

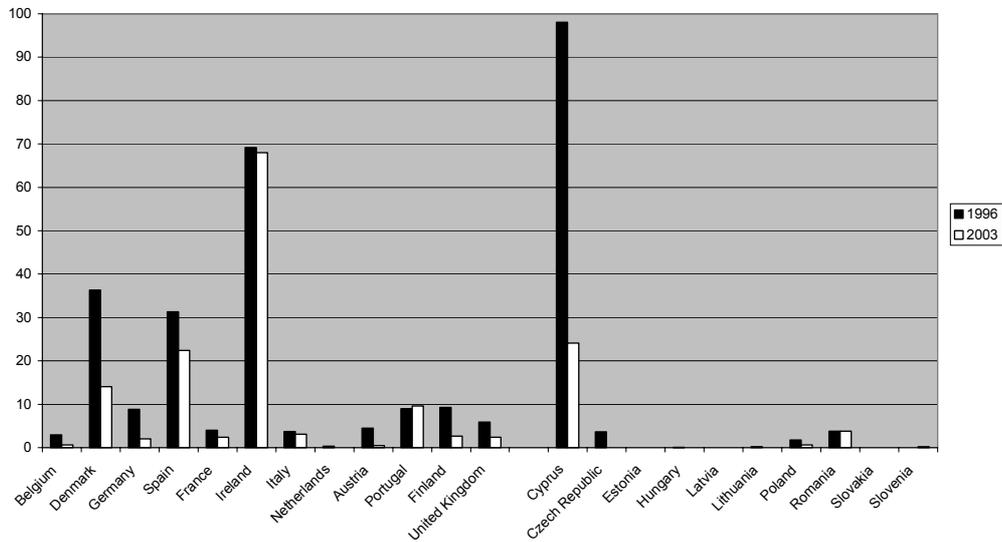
Cheques were traditional payment instrument in many countries. Cheque as payment instument has many advantages – it reduce using of cash, necessary for bussiness making. Customers consider them easy to use, either for remote payments or face-to-face transactions, and they are free of charge for the drawer. The cheque is still the most widely used payment instrument in some countries, as for example in France, Ireland or Portugal. Facing it – in other countries, as for example in Germany, Austria or Finland cheques has never become as important as in many other countries of the western world. In new member countries using of cheques had never tradition and nowadays this instrument is not using in any new members, excluding Romania (which are going to be a member of the EU very soon).

**Figure 1 Relative importance of cashless payment instruments - cheques  
(% of total volume)**



Source: Author's calculation according to Blue Books

**Figure 2 Relative importance of cashless payment instruments - cheques  
(% of total value)**



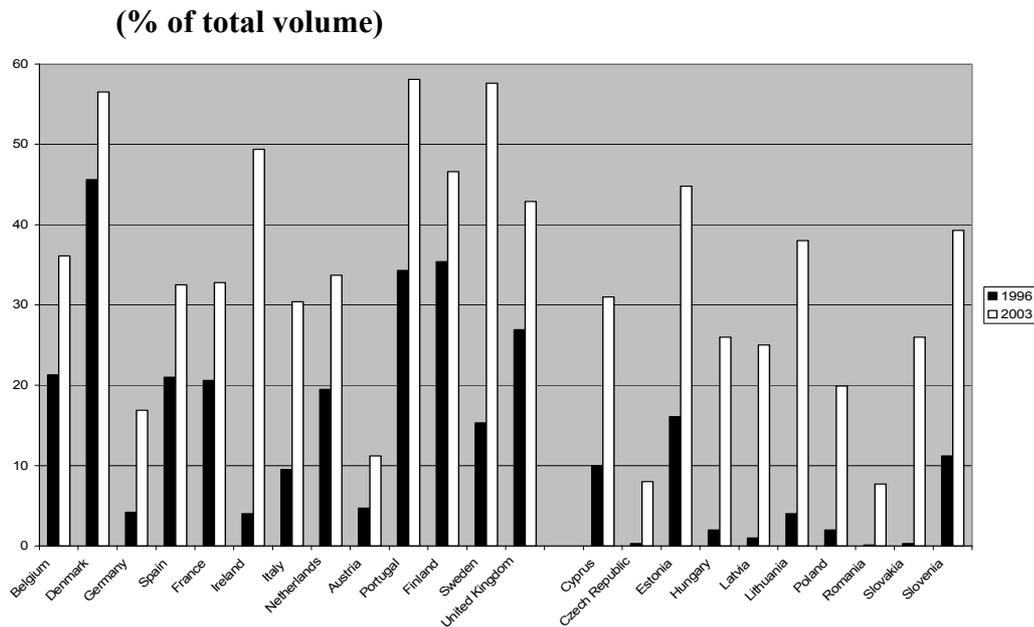
Source: Author's calculation according to Blue Books

One interesting moment is possible to explore in previous graphs – if number of using cheques makes from this instrument in some countries relatively important part of portfolio of payments instruments, the value of payments executed by cheques is higher only in four evaluated countries and only in Ireland the importance of cheques should be higher in future. In this four countries using of cheques has long tradition. In other countries, with the automation of cashless payment transactions, the fact that a cheque is a payment instrument which is payable at sight has proved to be one of its key disadvantages – above all the fact, that cheque must always be collected and presented in paper-based form.

### 3. Credit cards – a new dimension of payments

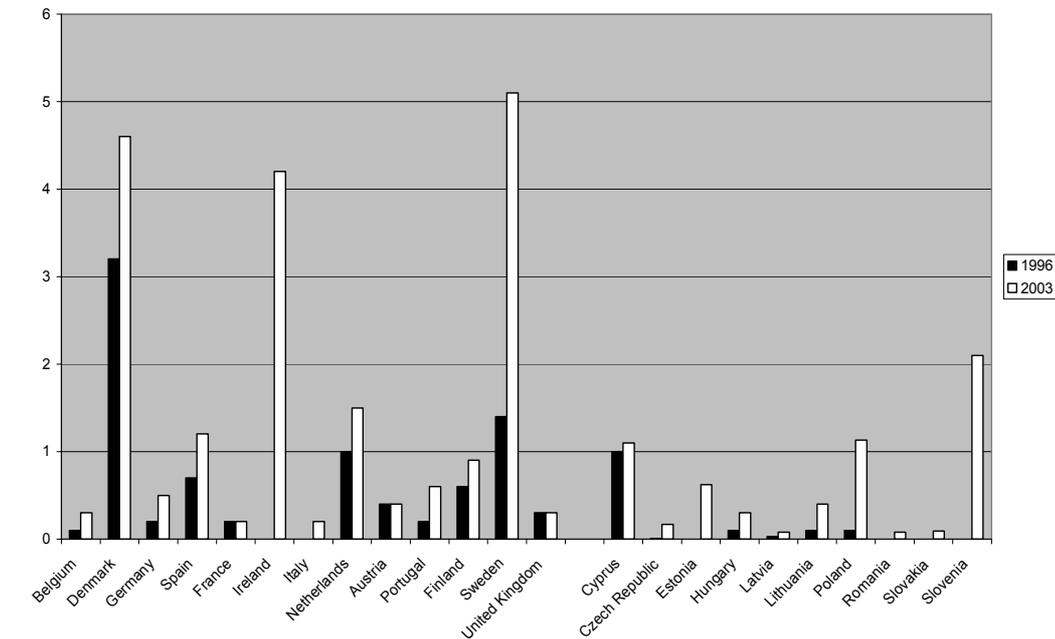
Payment cards in any possibilities (credit cards, debit cards, charge cards, elektronik purses and so on) plays more and more important role in payments in all countries. Relative small percentage of used credit cards in some countries can be influenced by specific factors – for example, in the Czech Republic play (see figures 7 and 8 ) big role direct debits. In absolute figures the number of payment operations with cards is the same as in other new member states, in relative figures it seems to be less.

**Figure 3 Relative importance of cashless payment instruments - payment cards**



Source: Author's calculation according to Blue Books

**Figure 4 Relative importance of cashless payment instruments - payment cards**  
(% of total value)



Source: Author's calculation according to Blue Books

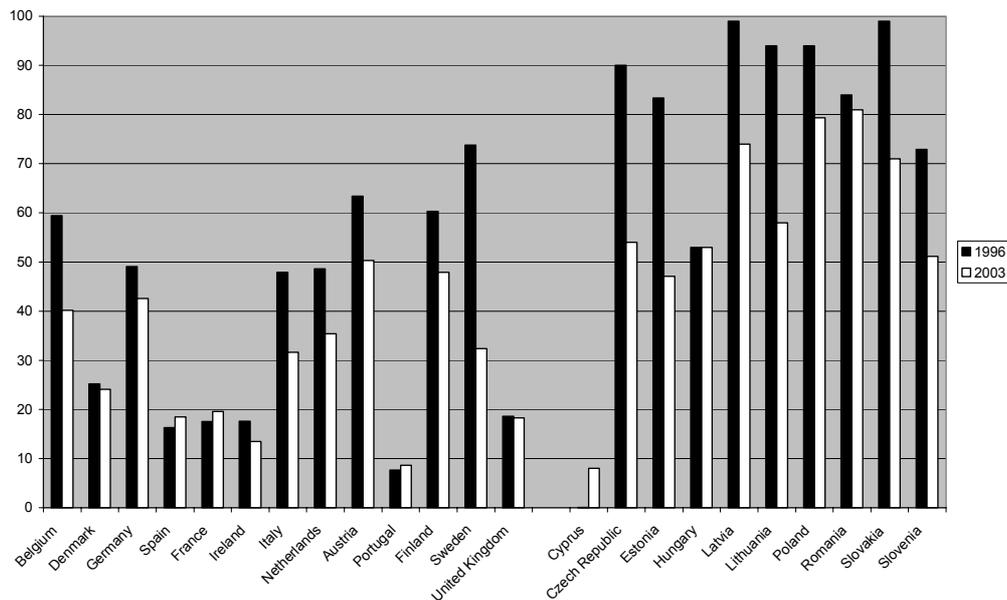
Figure 3 has shown us information about volume of cards in comparison with other payment instruments, the second one has given us information about value of used cards in comparison with other types of payment instruments.

Payment cards played bigger role ten year ago in old part of the European Union. In the eastern part of Europe using of small pieces of plastic, called payment cards, was in beginning. But after seven years the situation has rapidly changed. The figures, which inform us about volume and value of using cards in new Member States are similar to figures in old part of the EU. One notice is possible to say now. If cheques are used in bigger volumes in a few countries, cards are typical retail instrument, used by small clients for personal payments. Maximum level of percentage of using cards (if we compare value of operations with cards) is between four and five percent in three countries. In the other countries cards are used only in one percent of value of payments. One from the reasons of this fact should be found for example in small limits, which are given for majority of cards for its day or weeks using.

#### 4. Credit transfers – tradition with long future perspectives

Credit transfer is a payment order or possibly a sequence of payment orders made for purpose of placing funds at the disposal of the beneficiary. It is really traditional payment tool. Credit transfers have traditionally been the predominant form of payment transaction. However, their share of the total volume of payment transactions has decreased in recent years because more suitable payment instruments are used for certain purposes.

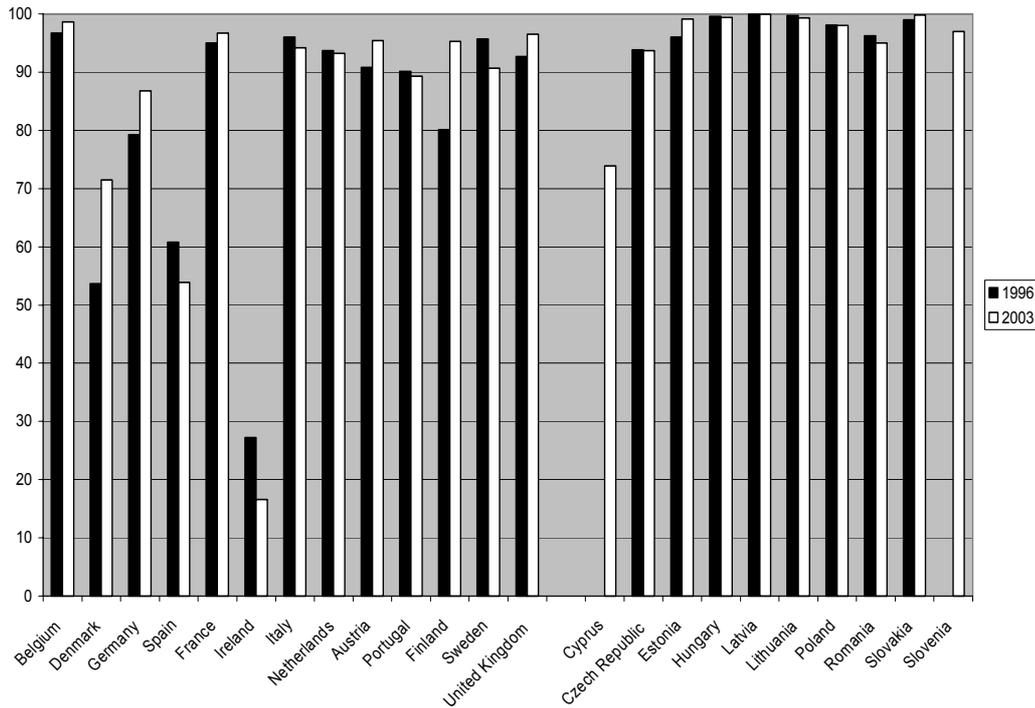
**Figure 5 Relative importance of cashless payment instruments - credit transfers (% of total volume)**



*Source: Author's calculation according to Blue Books*

In last decade has grown the role of one new product, which support the using of credit transfers – e-banking. A significant development can be seen in the growing popularity of electronic forms of payment orders made by customers in parallel with the growing popularity of self-service banking and home banking products. More and more clients, including big firms, are communicating their payment orders via magnetic media or telecommunications. It should be the reason for big percentage of value of payments, done by credit transfers.

**Figure 6 Relative importance of cashless payment instruments - credit transfers (% of total value)**



*Source: Author's calculation according to Blue Books*

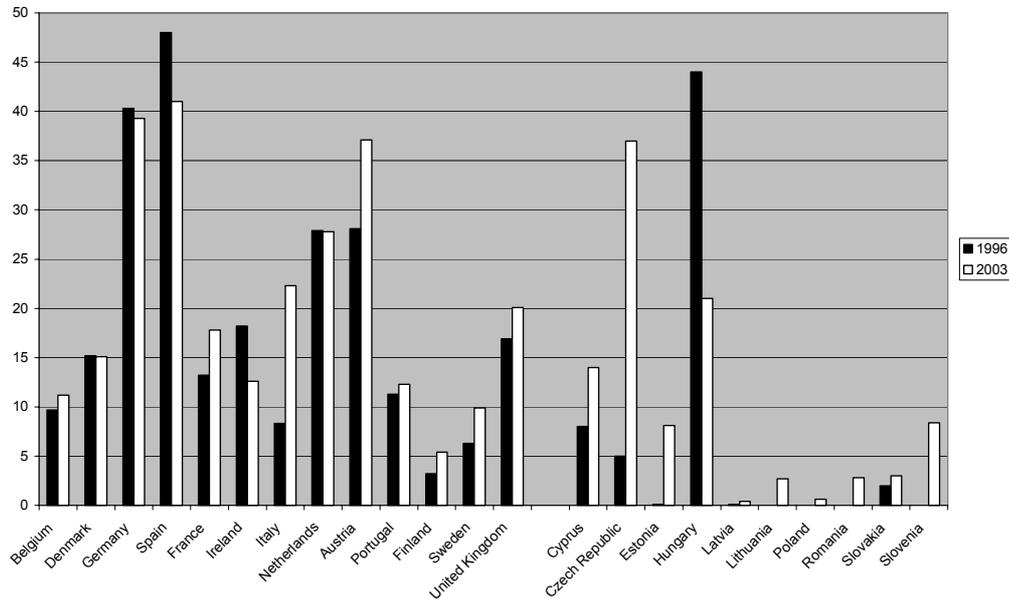
## 5. Direct debits – last but not least

The term „direct debit“ means a pre-authorised debit on the payer’s bank account initiated by the payee. Initiators of direct debits must be approved by a bank. They must also obtain signed authorisation from the payer, which is then moved to the payer’s bank.

Direct debits are used generally for recurrent payments such as electricity, gas, telephone and water bill payments, and for monthly income tax payments, mainly in the larger urban centres. Direct debits offer advantages to bank (processing costs are relatively low thanks to automation), as well as to the utility companies (by simplifying their accounting administration) and to individuals (by simplifying the payment). Legislation in some countries make possible „legal“ direct debits – i.e. direct debits on the basis of legally valid and enforceable decisions of courts, court executors and administrative bodies of the state budget – as well as direct

debits for the payment of interest or charges for banking services. The use of direct debits is in average increasing.

**Figure 7 Relative importance of cashless payment instruments - direct debits (% of total volume)**



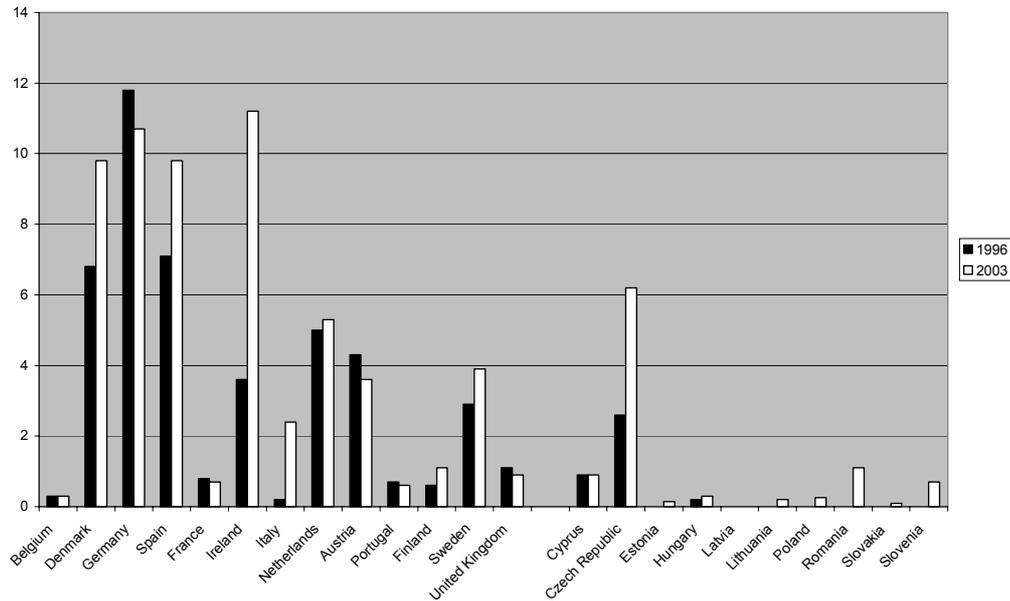
Source: *Author's* calculation according to Blue Books

Two partial conclusions is possible to do, if the statistical data from individual countries are compared.

At first – direct debits are very often used in most of old mebers of the European Union. In a new part of the EU this type of transactions is not so popular and so frequently used (with one exception in the Czech Republic). The reasons can be different. For example, in Poland direct debits were introduced by the National Bank of Poland in October1997 and the first transactions were effected I July 1998, its use is increasing, but this instrument still plays a marginal role in retail payments. The similar situation is in Romania, Latvia or Lithuania.

At second – direct debits are used for big volume of payments, but average value of these payments is very small. It's a reason, why – for example – 45 % of volume of payments in the Czech Republic reperesents only 6 % of total value of payments in 2003. The value of regular direct debits is influenced by its purpose and probably will not change in a future.

**Figure 8 Relative importance of cashless payment instruments - direct debits (% of total value)**



*Source: Author's calculation according to Blue Books*

## 6. Conclusion

Two big groups of countries existed a few month before the best change in history of the European Union. One of them was group of 15 „old“ members from which 12 countries have created Eurozone with one currency. Second group was created by twelve accession countries, ten of which have since become Member States of the European Union .

It is possible to say, that it was a symbolic situation. Fifteen years ago majority of this groups were enemies. First changes started as a result of political changes. West and East Europe have started to cooperate. But differences between these two groups of countries were so deep, that ten years were not enough for their covering. Aproximately ten years ago the negotiations about accession to the European Union have started. Influence of that fact is probably the main factor, which caused, that now accession countries use the same instruments and methods as are common in the EU. Differences of course still exist. But what is important, that there are differences in level of using of common instruments and tools in common systems and that these differencies are going to be lower and lower during

the years. There are not differences in using systems and it is reason for optimistic view to common Europe future.

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# SYSTEM OF PAYMENT AFTER THE ENTRY OF THE CEZCH REPUBLIC TO THE EUROPEAN UNION<sup>1</sup>

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## **Abstract**

*Implementation of the European legislature into the Czech system of law in connection with preparation of the Czech Republic into the European Union and its own entry on May1, 2004 participated on changes in the legal frame of the system of payments. This contribution is focused on considering benefits of related changes for clients –a consumer of the system of payment services (domestic and foreign) and a holder of electronic means of payment. Except the indisputable importance, which harmonizing legal regulations have for improving the legal position of a client, possible financial benefits resulting from this process not only for a small client, but also for small and middle firms are reviewed. Concretely it concerns the amount of charges for cross-frontier payments and reduction of the responsibility of a credit card holder for financial losses arising in connection with its loss or theft.*

**Key words:** *implementation; law on the system of payment; cross-frontier transfers; financial arbitrator; electronic means of payment;*

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## **1. Introduction**

Cross-frontier system of payment specification in terms of the European Union is modified mainly by the Directive of the European Parliament and the Council no. 97/5/ES on cross-frontier transfers of assets and the Directive 98/26/ES on irrevocability of settlement in the systems of payment and in the systems of settlement of securities dealings. Orders of the European Parliament and the Council (ES) no. 2560/2001 on cross-frontier payments in EURO, which by May 1, 2004 has become the part of the system of law of the Czech Republic without the necessity of its transposition modifies rules for cross-frontier transfers, which are denominated in EURO and Swedish crowns.

Regularization of issuing and using electronic means of payment comes out of the Directive 97/7/ES on protection of the user in case of a contract concluded at a distance, the Recommendation 97/489/ES on transactions carried out by electronic means of payment and the Directive 2000/46/ES on approach to the activity of institutions of electronic money.

Mentioned European legal rules emphasize the protection of the user and of system of payment regulation. Their importance consists in the fact that transfers are the most used service in the domestic and foreign system of payment. Electronic means of payment as well, namely credit cards, admitted also considerate expansion.

## **2. Law on the system of payment**

By January 1, 2003 the Law no. 124/2002 Coll. on transfers of finances, electronic means of payment and systems of payment (the law on the system of payment) as amended by changes under the Law no. 257/2004 Coll. came into force. By May 1, 2004 those provisions of the Law, which were as for the time bound with the entry of the Czech Republic to the European Union, came into force.

### ***2.1 The subject of adjustment***

The Law adjusts

- a) carrying out transfers of finances on the territory of the Czech Republic in the Czech currency (domestic transfers in crowns) and carrying out cross-frontier transfers, regardless the currency in which accounts of an ordering customer and a beneficiary are conducted,
- b) issuing and using electronic means of payment,

- c) origin and carrying out systems of payment .

## ***2.2 Domestic and cross-frontier transfers***

The second part of the Law implements the Directive 97/5/ES on cross-frontier transfers. The aim of the Directive and even the Law as well is the protection of a small user. The cross-frontier transfer means the transfer of finances from one member state of the European Union or from the state making the European economic space to another member state of the European Union or the state making the European economic space in the domestic currency of any member state of the European Union or the state making the European economic space up to the equivalent amount of 50 000 EURO. Restriction of the sum of the transfer to the amount of the equivalent of 50 000 EURO was taken from the directive only for the cross-frontier transfers. The directive does not apply on domestic crown transfers, and therefore the Law insures the same terms of transfers and further obligations regardless of the amount of the sum of the transfer.

The Law regulates only settlement form of payment and it does not imply to the collection form of payments. Rules for providing collection forms of payments are set by the Regulations of the Czech National Bank no. 62/2004 Coll., by which the way of providing the system of payment between banks is set, accounting on accounts at banks and technical, procedures of banks at corrective clearing.

### **2.2.1 Informative duties**

To insure transparency of conditions of providing transfers and improving informedness of a potential client the Law sets the transferring institution the duty to publicize introductory information on basic conditions on which transfers are provided. The Law also sets the transferring institution the duty to announce the following information after realization of the transfer unless a client renounces a claim on this information.

The transferring institution informs the public clearly and comprehensibly in a written way in its premises whereas information must always include:

- a) the term necessary for putting a sum to the credit of the account of the beneficiary's transferring institution,
- b) the term necessary for the sum of this transfers to be credited for the benefit of the beneficiary's account,
- c) the amount or the way of setting the amount of the price, which the client will settle for providing transfers,

- d) procedures for settling complaints including all information on procedures for solving conflicts.

The bank has a duty to give the client introductory information on the price of the transfer or the way of setting its price. At the domestic transfer such information is available. By the entry of the intermediary institution at the cross-frontier transfer the amount of charges becomes uncertain. According to the explanation of the Czech National Bank transferring institutions will fulfil informative duty sufficiently, provided it is stated in conditions that the price composes of the price, which is counted by the institution and further from prices of all intermediary institutions, which are not known, and a client will be charged at the concrete transfer. This way is valid for the way of payment so called OUR, when the ordering customer covers the price of all transfer and the sum must be credit in full amount to the beneficiary.

### **2.2.2 Terms of providing transfers**

Provided the transferring institution of the ordering customer carries out the transfer on the territory of the Czech Republic in the Czech currency:

- a) among different transferring institutions, it is obliged to ensure putting the sum of the transfer to credit for the benefit of the beneficiary's transferring institution account at the latest the following bank working day after the day of force of the transfer order, unless a shorted term has been agreed on,
- b) within the same transferring institution it is obliged to provide the sum of transfer to the beneficiary on the day when the force of the transfer order took effect or the following bank working day,
- c) provided the transferring institution of the ordering customer carries out the cross-frontier transfer, it is obliged to ensure putting the sum of the transfer to the credit for the benefit of the beneficiary's transferring institution account in the term agreed on by the ordering customer and provided such term is not agreed on, within 5 bank working days from the day of force of the transfer order.

The beneficiary's transferring institution will put a sum of the transfer to the credit for the benefit of the beneficiary's account at the latest the following bank working day after the day when the sum of the transfers was put to the credit of its account. This term is cogent and relates to both domestic and cross-frontier transfers.

Mentioned terms are obligatory even in cases when a transferring institution provides conversion between the currency of the transfer and the currency of the ordering customer's account or the beneficiary's account. Terms

set by the law for domestic crown transfers are cogent and cannot be prolonged by the contract.

Terms of cross-frontier transfers are dispositive, the agreement of contracting parties has the preference. Provided only the term is not agreed on, the law sets the five-days term of the cross-frontier transfer.

### **2.2.3 Ban on transacting deductions from transfers**

It concerns only transfers, at which the price of transfers is covered by the ordering customer of his transferring institution, that is so called payments OUR. Provided the ordering customer does not set the price for the transfer or its part is covered by the beneficiary (so called. payments BEN, SHA), the transferring institution is obliged to use the way of charging OUR. The objective is to prevent double charging.

### **2.2.4 Obligation in case of unsuccessful transfer**

Provided the transfer is not realized in the set term after the force of the transfer order, not even the sum of the transfer was returned, and the ordering customer asks for that, the transferring institution will provide him the sum of the transfers and further the punitive interest and from the price for transacting the transfer which the ordering customer has already paid. The institution will satisfy the obligation within fourteen bank days from the day of delivering the request of the ordering customer.

Another procedure is valid for the cross-frontier transfer. In case of the cross-frontier transfer the mediatory transferring institution is obliged to return the transferring institution, which gave it an instruction to carry out the transfer, the sum only to the equivalent of 12 500 EURO and further the punitive interest and the price for providing the transfer, which it received. Settlement of the remaining sum over 12 500 EURO is solved according to the Czech system of law.

### **2.2.5 Solving conflicts**

The provision comes out from the article 10 of the Directive97/5/ES, which placed the member states a duty to ensure appropriate and effective procedures of handling complaints and redressing conflicts between clients and transferring institutions. With conflicts arising between transferring institutions and their clients at carrying out transfers of finances according to the law clients can appeal to institutions for solving conflicts effecting under the special legal regulations. In the Czech Republic it is a financial arbitrator. The right of the client to appeal to the court is not violated.

### **3. Prices of cross-frontier transfers**

Cross-frontier transfers, however, only those which are denominated in EURO and Swedish crowns, except the law on the system of payment are modified also by the Enactment no. 2560/2001/ES, which is the part of the Czech system of law.

The Article 3 of this enactment establishes the principles of equality of prices for domestic and cross-frontier payment operations:

- 1) With force from July 1, 2002 prices charged by institutions for cross-frontier electronic payment operations provided in EURO up to the amount of 12 500 EURO are the same as prices charged by the same institution for corresponding payments in EURO carried out in the member state in which the institution carrying out the cross-frontier electronic payment operation is settled.
- 2) With force from July 1, 2003 this enactment is valid for all cross-frontier transfers, regardless to the form of giving the transfer order.
- 3) With force from January 1, 2006 the amount of 12 500 EURO increases to 50 000 EURO.

For the practical transaction of the cross-frontier system of payment it is important the provision of Article 5 par. 2 of the Enactment, which sets that the bank can charge additional prices provided the client does not use IBAN (International Bank Account Number) of the beneficiary and BIC (Bank Identification Code – swift code) of the beneficiary's bank. IBAN is an international standardized format of the account number and its implementation supports making the foreign system of payment and its automation more efficient. The Code BIC serves for the correct routing of payments in the international system of payment.

#### ***3.1 Price of cross-frontier transfers in the CR***

Prices for cross-frontier payments in EURO are not in any way related to prices for domestic payments in Czech crowns. However, it is the reality that approximately 70% of accepted and transmitted foreign payments is denominated in EURO and a decrease of related charges has importance for clients and mainly for small and middle enterprises trade intensively with foreign partners. The condition is not to exceed the sum of 12 500 EURO in one payment and correct setting of codes IBAN and BIC.

Československá obchodní banka decided as the first to accede to advantaging this category of payments, Komerční banka and Česká spořitelna

followed. In the course of the year 2005 other banks joined gradually. From the chart 1 it is obvious that not all the banks did so and the difference in charges charged in single banks is so distinctive.

Some banks, namely Česká spořitelna, ČSOB, GE Money Bank, Komerční banka and Raiffeisenbank, define types of transfers, to which price advantaging applies, by the comment in the price list.

**Table 1 Prices of cross-frontier transfers of chosen banks**

<i>Bank</i>	<i>Position of a client</i>	<i>Charge [CZK]</i>	<i>Price of the transfers of the sum 12 500 EURO</i>	
			<i>[CZK]</i>	<i>[EURO]</i>
<i>Citibank</i>	ordering customer	1% (min. 300,- max. 2 000,-)	2 000,-	66,70
	beneficiary	free of charge	free of charge	free of charge
<i>Česká spořitelna</i>	ordering customer	220,-	220,-	7,30
	beneficiary	100,-	100,-	3,30
<i>Československá obchodní banka</i>	beneficiary	250,-	250,-	8,30
	beneficiary	150,-	150,-	5,00
<i>eBanka</i>	ordering customer	1% (min. 200,- max. 1 500,-)	1 500,-	50,00
	beneficiary	1% (min. 100,- max. 1 000,-)	1 000,-	33,30
<i>GE Money Bank</i>	ordering customer	220,-	220,-	7,30
	beneficiary	220,-	220,-	7,30
<i>HVB Bank Czech Republic</i>	beneficiary	250,-	250,-	8,30
	beneficiary	200,-	200,-	6,70
<i>Komerční banka</i>	ordering customer	225,-	225,-	7,50
	beneficiary	225,-	225,-	7,50
<i>PPF banka</i>	ordering customer	1% (min. 200,- max. 1 200,-)	1 200,-	40,00
	beneficiary	1% (min. 100,- max. 1 000,-)	1 000,-	33,30
<i>Volksbank CZ</i>	ordering customer	1% (min. 300,- max. 1 700,-)	1 700,-	56,70
	beneficiary	0,5% (min. 100,- max. 750,-)	750,-	25,00

<i>Raiffeisenbank</i>	ordering customer	220,-	220,-	7,30
	beneficiary	220,-	220,-	7,30
<i>Živnostenská banka</i>	ordering customer	0,8% (min. 200,- max. 1 500,-)	1 500,-	50,00
	beneficiary	1% (min. 200,- max. 1 500,-)	1 500,-	50,00

*Source: Tariffs of mentioned banks.*

*Commentary to the Table:*

- 1) *For the calculation it is used approximate conversion 1 EUR= 30 CZK (even on ten cents).*
- 2) *Data are taken from the price list of in October 2005. There are charges for transfers ordered by the bank offered forms of direct banking.*
- 3) *In case of different rates in dependence on the size of the client and dividing expenses between the ordering customer and the beneficiary the chart shows charges for natural persons, respectively small and medium firms with the variation SHARE.*

#### **4. Issuing and using electronic means of payment**

The third part of the Law implements in the introductory stated European legal regulations. Principles and rules included in the Recommendation 97/489/ES are included in the Exemplary business conditions of the Czech National Bank (Česká národní banka), which contain the adjustment of mutual rights and obligations of issuers and holders at issuing and using electronic means of payment. Exemplary business conditions do not have the character of legal regulations, but recommendations of the central bank issued by it with the aim of increasing the protection electronic means of payment holders. In the introductory provisions of its business conditions the insurer is obliged to inform explicitly whether the conditions correspond to exemplary business conditions of the Česká národní banka, and what is the content of possible divergences.

##### **4.1 The holder's responsibility**

The article VIII of Exemplary business conditions of the Česká národní banka determines the holder's responsibility for financial losses suffered in consequence of loss or theft of the electronic means of payment. It sets the deductible limit of the holder on the existing financial loss and also the moments of the transfer of responsibility from the holder to the issuer of electronic means of payment. Specifically this problem is solved by the Exemplary business conditions of the ČNB as follows.

- 1) The holder bears the responsibility up to the moment of reporting loss or theft that is in maximum up to the amount of 4.500Kč. In case when the

holder committed gross negligence, he violated contractual obligations or dealt fraudulently bears loss with in full amount.

- 2) The holder does not bear any responsibility after the moment of reporting loss or theft of electronic means of payment, with the exception of cases, when he acted fraudulently.

As it is obvious from the chart, mentioned banks limit in various ways the moment of the transfer of the responsibility from the client to the bank. Some banks prolong the interval of the client's responsibility even after the moment of receiving the report of loss or theft of the card. They all accord in the fact that to the decisive step the client bears the responsibility for loss in full extent. Identically they also insist on the fact that the owner bears all responsibility for transactions carried out by lost, stolen or misused card provided PIN was used at these transactions.

**Table 2 The moment of transfer of the responsibility from the client on the bank**

<i>Bank</i>	<b>Responsibility transfer</b>
<i>Citibank</i>	To the moment of reporting loss or theft of the card in full amount. In case of an electronic card then even to passing one hour after reporting loss or theft, again in full amount.
<i>Česká spořitelna</i>	Till the moment of reporting the card into the file of bans.
<i>ČSOB</i>	Immediately after the telephone announcement with the exception of transactions at which the transaction time from the receipt or from the authorization systems is not ascertainable. At this type of transactions the responsibility of the account owner expires at 24:00 hours of the day when the event was reported by phone.
<i>eBanka</i>	In case of the credit card Maestro/Elektron in the course of an hour after reporting loss or theft. In case of the credit card Standart/Classic, Business or Gold till 24:00 hours of the day of reporting loss or theft.
<i>GE Money Bank</i>	Till the moment of reporting theft or loss of the card in full amount.
<i>HVB Bank Czech Republic</i>	<i>Till the end of the day in which he bank received the instruction carrying out the blockage of the card fulfilling al specified requirement.</i>
<i>Komerční banka</i>	Immediately after receiving the order for introducing the card oh the stop list of the KB head office, except the transaction at which the transaction time is not ascertainable from the receipt or from the authorization systems. At this type of the transaction the cardholder bears the risks of damage until the following calendar day (that is till the midnight of the day of reporting loss/theft).
<i>PPF banka</i>	Identically with the ČSOB.

<i>Volksbank CZ</i>	After passing the calendar day in which the theft or loss was reported. At credit cards MasterCard the cardholder deductible even for the transaction carried out after reporting loss/theft of the card that is in the amount set by the Scale of charges up to 10.000, -Kč.
<i>Raiffeisenbank</i>	Till the moment when theft or loss or misuse of the card was invincibly reported. .
<i>Živnostenská banka</i>	By the beginning of the calendar day which follows the day in which theft or theft of the card was reported to the bank..

*Source: Business conditions of the bank*

## **5. Law on the financial arbitrator**

The institution of the financial arbitrator of the Czech Republic is a special body out of court settling conflicts, which can occur between providers of the system of payment services and their clients or between the issuers and users of electronic means of payment. It was established within harmonisation of the law of the Czech Republic with the European Union countries, as the Directive no. 97/5/ES on cross-frontier transfers requires ensuring rapid and effective settlements of clients' conflicts with transferring institutions by extra judicial way. The objective is a higher protection of a client – a user. Member states of the European Union and other states (USA, Canada, Australia) have ombudsmen and other extra judicial bodies and institutions with variously broad competence and responsibility.

The Law no. 229/2002 COLL. on the financial arbitrator was amended by the Law no. 558/2004 Coll. with the legal force from January 2005. In his activity the financial arbitrator is bound by the Law no. 124/2002 Coll., on transfers of finances, electronic means of payment and the system of payment (the Law on system of payment).

The financial arbitrator decides about arguments occurring between institutions and their clients. They are conflicts occurring at implementation of domestic and cross-frontier system of payment and conflicts between holders and issuers of electronic means of payment. Especially it concerns abidance of by the law provided terms and conditions for accounting of single system of payment transactions. The amendment of the Law on the financial arbitrator extended its force on adjust accounting and the collection form of payment on the territory of the Czech Republic which are modified by implementery legal regulations to the Law on the system of payment, namely by the Edict no. 62/2004 Coll., by which the way of providing the system of payment between banks, accounting on the accounts of banks and technical procedures at adjust

accounting is set. From the Law the financial arbitrator is authorized to solve conflicts at cross-frontier transfers up to the equivalent amount of 50 000 EURO. This competence of his began to be valid by the moment of the entry of the Czech Republic to the European Union.

The advantage of the client at making the complaint at the financial arbitrator is quick and simplified hearing. From the Law it implies among others the obligation to provide the submitter with the right to lead the proceedings in the language in which his contract was drawn and which was used in the mutual contact between him and the transferring institutions, namely an insurer of the electronic means of payment. Proceedings between the financial arbitrator is free of charge. Only expenses on interpreting and translating are paid by the aggrieved transferring institution. Other expenses of the proceeding before the financial arbitrator are born by every party separately. On the request of the submitters the financial arbitrator gives them help at drawing, submitting or completing the petition.

### **5.1 Results of the activity of the financial arbitrator**

In the year 2004 the financial arbitrator solved altogether 130 cases compared to 66 cases solved in the year 2003. In the year 2004 the number of justified cases increased to 77 cases compared to the previous year, when there were only 27. In the year 2004 the financial arbitrator issued 42 findings in total from which whole 69%, that is 29 findings, were issued for the benefit of the institution. Remaining 31%, that is 13 findings, were issued for the benefit of the submitter.

**Table 3 Justified cases solved by the financial arbitrator**

Spheres of conflicts of solved cases	<b>2003</b>	<b>2004</b>
<i>Finances transfer</i>	9	18
<i>Misuse of electronic means of payment total</i>	18	59
<i>from that - using electronic means of payment in ATM</i>	--	28
<i>- using electronic means of payment by businessmen</i>	--	19
<i>- other problems with electronic means of payment</i>	--	12
<b>Total</b>	27	77

*Source Annual reports of financial arbitrator years 2003, 2004*

## 6. Conclusion

It is obvious that acceptance of new regulations and amendment of existing ones governing the sphere of system of payment services, brought many beneficial changes, evoked especially by the obligation of the Czech Republic to harmonize the system of law with the law of the European Union. Especially the level of transparency of offered services increased and the legal position of the client when using these services was reinforced. Also certain financial benefits of clients indirectly resulting from this process were recorded. On the contrary the degree of the client's responsibility for financial losses resulting in connection with misusing electronic means of payment remains relatively high.

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# NEW ASPECTS REGARDING THE IT BASED BANKING TECHNIQUES IN ROMANIA

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## **Abstract**

*The book keeping is presently IT based, including the correspondence with the clients. The traditional tools are also IT based and new techniques are emerging such as: the ATM and home banking. The beginning of the 3<sup>rd</sup> millennium is highly influenced by the expansion of the Internet used as tool for communication affecting also the relations between the banks and their clients. The lack of a banking service represents a handicap for the banks intending to gain corporative clients and, in the perspective for those specialized in development of retail services. As banks expand their service channels to include Internet service, call centers, and mobile banking through wireless devices, they can easily be drawn into piecemeal solutions which impose a penalty in quality of service and in cost of deployment. There is a strong competitive advantage in acquiring solutions that integrate the channels used and enable a unified management view of customer interactions for all bank services.*

**Keywords:** *IT Banking, Romania, ATM, home banking, Internet banking*

## 1. Introduction

Credit institutions through their activities are offering a wide range of banking products and services so that a better mobilization of the temporary available capitals in economy should be achieved followed by their transformation in borrowed capital.

The banking product represents the basic element of the bank's activities and operations, its lack leading to the elimination of the credit institution itself. The credits and the bank deposits are the main banking products, used by the credit institutions to borrow capital.

Banking services are completing the banking products as their components in the operations accomplished by the banks at clients' request such as: accounts receipts and payments, currency operations, etc. or are independent of the capacity of banking product such as financial-economics consulting operations.

The separation between the two banking assets, products and services, imposes from the point of view of the understanding the credit institutions within the economic and financial system as well as from the point of view of the interpretation and assessment of the activities and the functioning of the credit institutions in economic environments. The products of the bank (the banking products) are offered by the banks to their clients and the services are the goods requested by the clients to the credit institutions.

The range of the banking products is very wide, some of these being given as an example in that follows:

- Loaning short, medium or long time secured credits, for the needs of the clients, of the economic agents or the natural persons;
- Formation of the sight, notice or collateral deposits;
- The placement of stocks and shares
- The release of the deposit certificates or savings books
- Performing the carrying over operations with titles of the financial market, etc.

As being banking services some operations are included:

- Operations in current accounts, transfer settlement
- The emission and the acceptance of the payment documents;
- Currency services

- The emission and the acceptance of coverings
- The emission of the banking guarantee letters on different purposes
- Banking and financial consulting
- Credit card issuing

The diversification of the banking products and services is determined mainly by the subjects to who are addressed to: natural persons, legal persons, financial institutions other than banks, other credit institutions and the state. Comparing the credit conditions for natural persons and those for the legal persons, one can say that for the latter there is no standardization. Generally, the time interval for what the credit is loaned, the amount of money and the grace period are depending on the credit time length: short, medium or long time credit.

Specialized credit institutions offered a single product or banking service till now, presently are diversifying continuously their activities, offering new products and banking services to better meet the needs of the clients. Also, there are attempts to penetrate new markets where previously the credit institutions had no access. The credit institutions, similar to any other institutions, are expecting short-time results, the development being imposed by new client segment conquest and the reordering of the items that are implied in profit.

Given these conditions, the signals coming from the clients and the potential business partners of the credit institutions, the intensification of the competition have reoriented the activities towards new products and banking services such as: leasing, factoring, the credit account, monetary cash money transfer, inter-banking compensation, client's reliability assessment services, bank deposits and credits for pupils, the transmission of information using modems, phone and computer banking services, etc.

Despite all affirmed above, the products and banking services very present in the activity of a bank are: the credits, the bank deposits, the incomings and payments in accounts, performance bonds, currency operations, deposit certificates or savings book. The increase of nongovernmental loaning in the products portfolio addressed to the clients by the credit institutions operating on Romanian market meant a diversification of the loaning. The balance sheet for the first 6 months of the year 2003 shows that, for the structure of the credits loaned in the Romanian banking system, the main credits are the consumer credits, loaned to the economic agents for the usual activities followed by those for the industry and service companies. The private sector receives 75% from all credits and 25% goes to

the state companies. The highest growth rate is recorded for the real estate credits. From the dynamics point of view but also as percentage in the structure one can notice that the interest of the credit institutions is to loan the building and trading domains.

The credit institutions cannot elude the problems of the financial equilibrium. The increase of the interest caused by the inflation, obtaining the resources and using the placements are redefining the management techniques and also sectors of the banking strategy.

In competition conditions, the fight is engaged within the banking market mainly on the clients generating high interest and commissions.

The last studies made by National Bank of Romania regarding the internal market of banking services and products have shown that a part from the bank offer is at a basic stage of development as follows: investment credits, agricultural credits, the credits for Public and Local Administration, credits for Small and Medium Sized Enterprises and derivative financial instruments.

## **2. Factors that are slowing down the development of banking services and products**

The credit institutions are facing presently with some factors that are slowing down the development of the services and banking products such as:

The instability of the macro economical environment, impeding the activities of the economic agents and therefore of the credit institutions in assessment the business plans with a low degree of credibility from the point of view of the creditor.

The legal inadequate environment has a negative impact on the financing activity

The behavior of the participants on the market: lack of transparency regarding the real situation of the patrimony of the economic agents, the low level of the background in economy and especially in banking of the effective and potential consumers, the inexistence of professional background of the credit institution's personnel impedes the achievement of a highly efficient communication between the two parts;

The macro economical instability has impeded the long time assessment of the results that will be generated by the investments for what credits are requested, leading to the limitation the possibility to loan credits for investments under high security conditions. The volatility of the economy, the uncertainties related to the correct assessment of the

RON/USD, RON/EUR exchange ratio, high levels of the interest rates represented major obstacles in the augmentation of the credit portfolio for medium and long term. The unfavorable macro economical conditions have an impact on the credit institutions regarding the medium and long term deposits in national currency that generated the decrease of the credit financing sources volume for the investments, credits loaned in national currency and of the mortgage credits. The main factors that contributed to the decrease of the number of credits for the agriculture were, principally, the low efficiency and productivity in agriculture, the delayed reformation of this sector, but also the very poor implying of the state in the unfavorable situations. Also, one can notice a poor representation in the offer of the credit institutions of the long term credits loaned to the SMSE, having as possible causes the macro economical instability (the inflation rate), the high degree of uncertainty regarding the life expectancy of the SMSE and the lack of the long term financing sources.

The presence of an undeveloped legal environment and also of costly and time consuming legal procedures for the recovering of the claims through the execution debt enforcement has a negative impact over the funding activity. The inexistence of a legal protective environment for the credit institutions in the case of the guarantees compulsory sale, the high amount of time and slow procedure to force sale collateral stopped the mortgage credits. The mortgage credit weight in the total amount of the credits loaned by the credit institutions has recorded very low levels due to some limitations imposed by the law, as follows: the computing method of the reference index of the interest for the mortgage credits had to be established by the Government, fact that never materialized, thus the mortgage credits were loaned in national currency only and the minimum term for the population was 10 years. These malfunctions have been solved through a government resolution for the changing of a law referring to the mortgage credit for the real estate investments. The approval of the law package due to that the agricultural producers took benefit of credits with the interest supported by the state had a negative impact over the evolution of the agriculture credits.

It has been observed that among the most important factors that have stoooped the development of the products and banking services is the behavior of the market competitors.

The credit institutions are not willing to face with the risks resulting from the medium and long term credits, preferring to loan short term credits. Usually, short term credit refers to the funding of the current activity of a company and those with medium or long term are reserved for the investment funding. The lack of long term crediting resources determined the apparition in the balance sheets of a miscorrelation among the maturity of the mortgage

credits (generally long and medium term credits) and the funding sources of those credits (mainly short term sources such as banking deposits having the due term within 1 year).

The existence of this miscorrelation implies the bank to assume high risks, especially referring to the interest rate risk and liquidity risk, justifying the prudence of the credit institutions in loaning mortgage credits.

In addition, the investment plans and reliability studies presented to the credit institution are not properly made and aren't taking into account all the investment costs, thus influencing the sizing of the financial resources needed to implement the investment projects. Under this conditions the banks are preferring to train and use their own raters in order to analyze the feasibility of the businesses and to asses the mortgage guarantees of the credit applicants and to offer consultancy services to the clients, that implies supplementary costs (for the investment credits or mortgage credits). The availability and the volume of the credit financing funds depends on the agreements between the Romanian credit institutions and the international financial institutions (BERD, BEI, PHARE), the majority of the credits of the type being sustained through external financing, implying supplementary eligibility conditions for the final beneficiaries (activity sector, the duration of the projects, co-financing percentage) and much rigorous assessments made by the banks. For instance, the crediting programs for the SMSE aren't unreled by all the branches of a credit institution. These limitations of the banking infrastructure are hardening the access of the SMSEs to this financing manner, generating in some geographical areas a lack of competition among offerers with direct implications over the crediting cost supported by the SMSEs. The credit institutions are facing with a crisis of information referring to the business behavior of the clients, situation which is generated especially by the inexistence of the records describing the prior relations with creditors.

On the other hand, the clients of the credit institutions are reticent referring to the credits, due to the following aspects: high interest rates, low level of the banks popularity in Romania, the majority of the business community considering the banks not being potential partners and consultants.

### **3. Measure to be taken in order to stimulate banking activity**

Starting from the causes that are slowing down the development of the services and banking products, the National Bank of Romania identified the possible measures to be taken in order to stimulate the banking activities, such as:

- The acceleration of the reform in the real sector of the economy so that the healthy weight of the economy to increase, the only part that can be credited by the credit institution in safety conditions;
- The modification of the legal environment in order to protect to a greater extent the rights of the loaners
- The increase of the training in economics of the persons that request the loaning of a credit, developing the training centers for entrepreneurs and the programs offering consultancy in order to elaborate business plans to loan credits
- Taking drastic measures in order to penalize banking frauds, taking into consideration the impact of those frauds over the banking system;
- The improvement of the macro economic system, under predictable conditions, so that the degree of thrust of the business plans to increase from the point of view of the funding person as well as from the point of view of the beneficiary and the funding to be carried on under high security conditions.
- The increase of the competition in the banking system and the finalization of the privatization for the banks suited for this process

The attitude of credit institution on the market, under the conditions of high competition among banks must be offensive and not be limited to the passive expecting of the demands of the clients but to promote constantly new products and banking services. Through the extension of a range of such products and services, the credit institution will be able to respond much better to the options of the economic agents, evolving in connection with the market demands.

Breaking of new banking products has on the basis studies, information referring market situation, the conditions under what the credit institution, that offers the product, carries on the activity. A determination of the capability of the credit institution to use at maximum its capacity to make this product and to sell it has to be done. The promotion of new banking products implies a very complex activity including the digitization of the accounting information, products trading, attracting a high number of clients, promoting using advertising of a favorable image. In addition it is necessary to establish the priorities lying at the basis of the activity of the credit institution with new products and banking services. These priorities refer to

the profit, the degree of satisfaction of the clients, the risk, the quality of the products and impose the reorganizing of the functional structure and the increase of the capacity to react to changes.

#### **4. New banking products in Romania**

Much and much credit institution are intending to extend their crediting activities by means of new instruments such as the credit cards. This market has a huge potential of development. It till 2002 were only five card types issued by four credit institution, now there are eight types of such instruments, issued by seven credit institutions. The potential of the market is the main reason that determined other credit institutions to include new products in their offer.

The year 2003 affected the overall market cards, the number of the cards in Romania being twice greater than the cards issued in 2002. Despite all these, from the total of 4,2 million cards, only 200.000 are credit cards.

In Romania, there are several payment systems with cards having magnetic stripes or chips, such as:

- The CardAvantaj card (with magnetic stripe) issued by the Finansbank bank (Romania), card with a loyalty program, allowing shopping from the Bucuresti Mall complex store, the credit being covered in monthly rates.
- The chip PetromCard card, issued by the Petrom company, dedicated to the legal persons (company card). With this card you can buy gas only from Petrom oil station.
- The Fill&Go card issued by the Rompetrol company is a credit card with chip and pin code for the legal persons carriers which can buy gas, products and services only from Rompetrol stations, within the framework of much complex service package.

On the other hand, all card operations are financial loss risk generators, frauds and disputes over the transactions.

The financial loss risk appears to all the actors implied in a card transaction: the card owner, the trader, the issuing bank and the bank that accepted the card.

Current frauds are: using a lost or stolen card, the cloning of the card, on purpose denying of the transaction or the denying that the person has received the product. Frauds can be generated also by the personnel of the

bank that has access to confidential data and can use this data in order to clone cards or to obtain a different identity.

In the present days, only 5-10 percent of the card owners from Romania use these payment instruments to buy from the goods. If the cards are not going to be used the card will be an investment not very rewarding.

In order to support the use of the credit card as payment instruments, the government of Romania took a series of decisions, for instance the resolution no. 193/2002 that stipulates that economic agents that are supplying services of public interest, the public institutions that are cashing impositions, taxes, surcharges, interests, penalties and other payment obligations, and also the traders with turnover greater than 1000.000 euros are forced to accept cashing through debit cards and credit cards from the natural persons.

Even if Romania is high in the top of the credit card owners, having a 15% quota, a full development is estimated in the following 3 or 4 years.

In Romania, in the year 2003, the number of Internet users represented 24% of population, the number of PCs was 2,1 millions and the number of Internet services providers is 400. These data indicates the existence of an impressive infrastructure capable to offer the services needed for the development of the e-Commerce in Romania.

The payment instruments used in electronic commerce are the bank cards, electronic drafts, electronic credit letters and electronic transfer orders.

The e-Commerce developed in Romania in the last few years having two main forms:

- Internet products traders with the payment on delivery: impose the existence of a product catalogue with descriptions and prices, each client having a shopping basket. The products are delivered at home and the payment is done at the delivery of the products with cash, draft, banking transfer, using cards, using mobile POS, etc. This is the first form of electronic commerce that was used in Romania.
- Traders accepting real time card payments using 3-D Secure protocol. In order to be able to use this system, the traders must underwrite an Internet trader contract with a bank and the owners of the cards issued by the Romanian banks willing to use shop anywhere in the world using these system, must be registered in the system.

The year 2003 marks the apparition of the remotely accessed payment instruments, such as internet – banking and mobile banking, allowing the clients to use from distance the services of the credit institutions. Presently, 19 banks have 1 year authorizations for the use of remotely accessed payment instruments; other 2 banks have temporary authorizations. The offer is often varied the client being able to choose the most advantageous solution for his needs, taking into account the status of legal or natural person. Through these remotely accessed payment instruments the clients save time and money, performing operations that are usually made on the spot but with commissions 50% smaller.

Internet banking is a service available to every person, allowing to perform banking operations through Internet. The service is made especially for the natural persons and it's offered free of charge by the majority of the credit institutions.

In order to use this service the Internet site must be accessed and the option Internet banking has to be chosen.

The vast majority of the firms prefer the home-banking services, because it allows to many people within the same company to use the service, having different access levels. To benefit from this service the firms must have a direct connection with the credit institution through a regular phone line or through a modem.

Mobil banking is a service that allows the user to obtain financial-banking related information, no matter the day or the hour of the day, using only the mobile phone, the user not being forced to go to the credit institution, to an ATM or forced to use a computer connected to the Internet. For the activation of this service an adaptation of the mobile phone is needed, that implies the replacement of the SIM card a contract with the credit institution that offers the service.

## 5. Conclusions

The credit institutions offering presently almost the whole range of products that can be commercialized, products adapted to the development stage of the local economy. From the clients point of view the Romanian banking market is limited. There are still a lot of Romanians that are not working with the banks. The explosive development of the loaning especially of the consumer credit is a sign of development of the consumer society.

The diversification of the product and banking services offer in order to cover the whole range of needs of the economic agents, no matter there the size of the enterprises (corporations or small and medium sized enterprises) is a constant preoccupation for the credit institutions. Given, on the one hand, the complexity of the offer for legal persons and on the other hand the increase competition among the credit institutions operating on the market with services for natural persons, the credit institutions focused on the latter.

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# E-BANKING IN SLOVAK COMPANIES

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## **Abstract**

*The increasing presence of the Internet in every day's life changes the way business, including banking, is done. This applies also to the business practice in Slovakia. The aim of the article is to present the research results of the e-banking usage in Slovak companies in years 2003 and 2004. It was measured on the sample of 117 companies in 2003 and on the sample of 390 companies in 2004. The research was conducted by means of questionnaires. The usage was studied according to the company size (measured by the number of employees) and in year 2004 also by sectors and legal form of companies. Their impact on the e-banking usage was analyzed by the logistic (multinomial) regression. Both bivariate and multivariate approaches were used. The article offers some possible explanations of the results and ideas for the further research.*

**Keywords:** *e-banking; empirical research*

## **1. Introduction**

The Internet is still more present everywhere including Slovakia. Its increasing presence changes also the way business is done. The banking is no exception. More on payment systems can be found e.g. in (Delina, Vajda, 2005, pp. 100-116). The euphoria witnessed towards the end of last decade surrounding the use of the Internet in service provision was based primarily on the notion of infinite scalability (the ability to serve increasing numbers of customers at low incremental costs). This notion justified high valuations of Internet firms from venture capitalists. E-banking within the information-based environment of financial services made infinite scalability appear even more promising compared to other types of e-commerce.

The often unrealistically optimistic projections regarding Internet use, however, led to the dot.com shakeout that came with the dawn of the new millennium (Mahajan, Srinivasan, ind, 2002). One example for such a dot.com failure is the Irish internet-only bank “first e” that filed for bankruptcy at the end of 2001 with the customers being unable to access their money for days. In the US, at the end of year 2000 only 19 % of the US commercial banks and savings institutions offered e-banking services, a number that shrank even further in 2001.

However, a number of success “survivor” stories make it clear that e-banking is here to stay. What is needed are new business models that suit the new business environment. The Internet has become a part of everyday life with tens of millions online every day engaging in various Internet activities, 50 % of which include e-commerce. (See a special issue of *American Scientist*, 2001, and of *Communications of the ACM*, 2001, for trends and statistics.)

The article presents the research results of the e-banking usage in Slovak. The research was conducted by questionnaires on the sample of 117 companies in years 2003 and on the sample of 390 companies in 2004. The usage was studied according to the company size and in year 2004 also by sectors and legal form of companies. Their impact on the e-banking usage was analyzed by the logistic regression in case of one factor and by multinomial regression in case of more than one factor. Both bivariate and multivariate approaches were used.

## **2. E-banking usage in Slovak companies**

The impact of several factors on e-banking usage will be discussed in the following subchapters. The factors are company size (measured by the number of employees), sectors and legal form of companies. The test and

confidence intervals are calculated and interpreted on the confidence level  $\alpha = 0.05$ . The confidence intervals are not symmetric since the exact formula (not the approximation using normal distribution) was used.

## 2.1 Company size

There are more possibilities to measure company size. Obviously, the simplest one is according to the number of employees. This could be also combined by the profit or the turnaround of the company. Since we tried to keep questionnaires as anonymous as possible and because of the previous experiences, we decided to divide companies only by the number of employees. Actually, there will be presented two divisions throughout the paper. The first one is compatible with the Statistical bureau (tables 1 and 3) and the second one is according to the Slovak law no. 231/1999 (tables 2 and 4).

E-banking usage was measured on the sample of 117 in 2003. The results according to the organizational statistics are presented in the table 1.

**Table 1 E-banking by organizational statistics (2003)**

	<i>yes</i>	<i>no</i>	<i>percentage</i>	<i>confidence interval</i>
<i>up to 9</i>	12	10	54.55 %	$\langle 32.21 \% ; 75.61 \% \rangle$
<i>10-19</i>	11	6	64.71 %	$\langle 38.33 \% ; 85.79 \% \rangle$
<i>20-49</i>	14	3	82.35 %	$\langle 56.57 \% ; 96.20 \% \rangle$
<i>50-249</i>	30	2	93.75 %	$\langle 79.19 \% ; 99.23 \% \rangle$
<i>250-499</i>	10	1	90.91 %	$\langle 58.72 \% ; 99.77 \% \rangle$
<i>500-999</i>	6	1	85.71 %	$\langle 42.13 \% ; 99.64 \% \rangle$
<i>1000+</i>	11	0	100.0 %	$\langle 71.51 \% ; 100.0 \% \rangle$

*Source: Author's calculation*

There are statistically significant differences in e-banking usage among the groups in this table (p-value = 0.002 413). These are the differences between the companies with less than 10 employees on the one hand and companies with 50-249 (p-value = 0.001 003) and with 1000+ employees (p-value = 0.012 902) on the other hand. The third difference is between the companies with 10-19 and 1000+ employees (p-value = 0.015 045).

The data as in the table 1, but according to the Slovak law no. 231/1999, are presented in the table 2.

**Table 2 E-banking by law no. 231/1999 (2003)**

	<i>yes</i>	<i>no</i>	<i>percentage</i>	<i>confidence interval</i>
<i>small</i>	37	19	66.07 %	⟨52.19 %; 78.19 %⟩
<i>medium</i>	30	2	93.75 %	⟨79.19 %; 99.23 %⟩
<i>large</i>	27	2	93.10 %	⟨77.23 %; 99.15 %⟩

*Source: Author's calculation*

Obviously, statistically significant differences exist also here (p-value = 0.000 638). They are between small companies on the one hand and medium (p-value = 0.003 690) and large companies (p-value = 0.007 219) on the other hand.

The research was repeated in 2004. There were 390 companies in the sample but only 383 of them supplied the number of their employees. The results according to the organizational statistics are presented in the table 3. There are again statistically significant differences between groups (p-value = 0.035 002).

**Table 3 E-banking by organizational statistics (2004)**

	<i>yes</i>	<i>no</i>	<i>percentage</i>	<i>confidence interval</i>
<i>up to 9</i>	65	25	72.22 %	⟨61.78 %; 81.15 %⟩
<i>10-19</i>	49	8	85.96 %	⟨74.21 %; 93.74 %⟩
<i>20-49</i>	61	11	84.72 %	⟨74.31 %; 92.12 %⟩
<i>50-249</i>	70	11	86.42 %	⟨77.00 %; 93.02 %⟩
<i>250-499</i>	19	5	79.17 %	⟨57.85 %; 92.87 %⟩
<i>500-999</i>	21	2	91.30 %	⟨71.96 %; 98.93 %⟩
<i>1000+</i>	34	2	94.44 %	⟨81.34 %; 99.32 %⟩

*Source: Author's calculation*

These are the differences between the companies with less than 10 employees on the one hand and companies with 50-249 (p-value = 0.025 260) and with 1000+ employees (p-value = 0.007 092) on the other hand.

We may want to compare the differences of e-banking usage also in time. The multinomial regression model with the year and the size is significant (p-value = 0.000 499). But the only significant factor in it is the size (p-value = 0.000 277). The effect of the time is not significant (p-value = 0.316 420).

The same data as in the table 3, but according to the Slovak law no. 231/1999, are presented in the table 4. But the differences between the groups do not seem to be significant (p-value = 0.100 132).

**Table 4 E-banking by law no. 231/1999 (2004)**

	<i>yes</i>	<i>no</i>	<i>percentage</i>	<i>confidence interval</i>
<i>small</i>	175	44	79.91 %	⟨73.98 %; 85.01 %⟩
<i>medium</i>	70	11	86.42 %	⟨77.00 %; 93.02 %⟩
<i>large</i>	74	9	89.16 %	⟨80.41 %; 94.92 %⟩

*Source: Author's calculation*

When we use the multinomial regression model with the year and the size, it is significant (p-value = 0.002 157). The only significant factor is the size (p-value = 0.000 865). The effect of the time is not significant (p-value = 0.302 846).

So, in both models there is enough evidence that there are differences in e-banking usage according to the size of the company but there is not enough evidence about the change between years 2003 and 2004.

## 2.2 Sectors

There was a closed question on sectors in the questionnaire. There were the full names of sectors according to the Slovak classification called OKEČ. The names were shortened in the table 5 in order to fit the table. 380 (out of 390) companies supplied data on the sector.

**Table 5 E-banking by sectors (2004)**

	<i>yes</i>	<i>no</i>	<i>percentage</i>	<i>confidence interval</i>
<i>agriculture</i>	6	3	66.67 %	⟨29.93 %; 92.51 %⟩
<i>forestry</i>	1	2	33.33 %	⟨0.84 %; 90.57 %⟩
<i>mining</i>	2	1	66.67 %	⟨9.43 %; 99.16 %⟩
<i>industry</i>	74	7	91.36 %	⟨83.00 %; 96.45 %⟩
<i>energy</i>	4	1	80.00 %	⟨28.36 %; 99.49 %⟩
<i>construction</i>	35	11	76.09 %	⟨61.23 %; 87.41 %⟩
<i>commerce</i>	71	18	79.78 %	⟨69.93 %; 87.55 %⟩
<i>transportation</i>	22	3	88.00 %	⟨68.78 %; 97.45 %⟩
<i>finance</i>	9	0	100.0 %	⟨0.00 %; 33.63 %⟩
<i>insurance</i>	6	2	75.00 %	⟨34.91 %; 96.81 %⟩
<i>other</i>	81	17	82.65 %	⟨73.69 %; 89.56 %⟩

*Source: Author's calculation*

In case we consider the possibility "other" to be a sector, there is not enough evidence that there are statistically significant differences between groups (p-value = 0.055 211). But since "other" represents a mix, we suggest not to include it as a sector. Then there is enough evidence that there are statistically significant differences between e-banking usage by sectors (p-

value = 0.035 407). These differences are between industrial and construction companies (p-value = 0.031 668); between industrial and commerce companies (p-value = 0.049 574).

### 2.3 Legal form

There was a question on legal form of companies in the questionnaire. 378 (out of 390) companies filled supplied data on the legal form. E-banking usage according to the legal form is presented in the table 6.

**Table 6 E-banking by legal form (2004)**

	<i>yes</i>	<i>no</i>	<i>percentage</i>	<i>confidence interval</i>
<i>v.o.s.</i>	6	0	100.0 %	⟨54.07 %; 100.0 %⟩
<i>k.s.</i>	1	0	100.0 %	⟨2.50 %; 100.0 %⟩
<i>s.r.o.</i>	158	24	86.81 %	⟨81.02 %; 91.36 %⟩
<i>a.s.</i>	93	12	88.57 %	⟨80.89 %; 93.95 %⟩
<i>cooperative</i>	3	2	60.00 %	⟨14.66 %; 94.73 %⟩
<i>sole entrepreneur</i>	55	25	68.75 %	⟨57.41 %; 78.65 %⟩

*Source: Author's calculation*

There are statistically significant differences in e-banking usage among the groups in the table (p-value = 0.003 000). These are the differences between the sole entrepreneurs on the one hand and s.r.o. (limited companies, p-value = 0.000 754) and a.s. (publicly traded companies, p-value = 0.001 385).

### 2.4 Summary

Data from the research conducted in 2004 were analyzed only by the bivariate approach in the previous subsections. Generally, one could expect that the bigger the company the more probably it uses e-banking in conducting business. Maybe someone would expect, since industrial companies have historically more experience with automating their processes, that they will automate also banking in greater extent than companies in other sectors.

And actually, all the factors seemed to be fairly significant. But the factors are not independent. All the commerce companies are small and medium enterprises. Every insurance company and bank has to have a legal form of a.s. Industrial companies are rather large and so on. Therefore it is important to use a multivariate approach to identify the really significant factors.

In case we use the organizational statistics in measuring the company size, the multinomial regression model (data on 276 (out of 380) companies

(rows in data table) because only they supplied all the required information, 97 (out of 276) rows are unique) is significant (p-value = 0.033 229) but none of the factors is significant (p-value of the size = 0.816 450, p-value of the sector = 0.218 832 and p-value of the legal form = 0.129 954).

In case we use the Slovak law no. 231/1999 in measuring the company size, the multinomial regression model (data on 276 (out of 380) companies because only they supplied all the required information, 71 rows are unique) is significant (p-value = 0.015 745) but only the legal form is significant as a factor (p-value = 0.034 595). Other factors are not significant (p-value of the size = 0.842 960, p-value of the sector = 0.178 129).

So, the legal form is probably the main factor influencing the usage of e-banking by Slovak companies. But it has to be noted that only three factors were analyzed. There are certainly many more relevant factors. The suggestion for the future research in this area is to try to add at least the proportion of foreign equity. Because the factor seemed to be about as important as the legal form in the research of decision support system usage (Sudzina, 2005).

### **3. Conclusion**

Since banks all over the world invest billions in the Internet infrastructure (for example Deutsche Bank invests approximately half a billion USD per year), customer satisfaction and customer retention are increasingly developing into key success factors in e-banking. From the bank's point of view, profitable e-banking requires a strong focus not only on the acquisition of new customers but also on the retention of existing customers, since the acquisition costs in online banking exceed that of traditional off line business by 20-40 % (Reibstein, 2002; Reichheld and Scheffer, 2000). Consequently, establishing long-term customer relationships is a prerequisite for generating positive customer value on the Internet.

During the last few years, these findings have led to the development of simple banking web sites into comprehensive e-banking portals offering a great variety of services in addition to traditional bank products and thereby enabling customers to gain financial advice from merely one source. Thus, the user ideally no longer needs to make use of several different web sites. The great variety of portal resources available also creates incentives for longer site visits during each use.

Offering a broad range of financial services and features at one single site has been noted as the most important development in e-banking (Jun and Cai, 2001; Strieter, Gupta, Raj, Wilemon, 1999). According to Jun and Cai

(2001), most Internet banks are still lagging behind their customers' quality expectations. In order to enhance customer loyalty, portals are required to put a strong emphasis on their customers' quality demands, which are steadily increasing over time due to the growing competition in the internet banking industry (Jun and Cai, 2001). Most importantly, loyalty has been recognized as a key path to long-term profitability. These findings hold especially true for the financial service sector, where reducing the defection rate by 5 % can boost profits by up to 80 % (Reichheld and Sasser, 1990).

Our findings suggest that the most important target customer for acquisition in case of Slovakia is a sole entrepreneur since they use e-banking the least (69 % compared to 87 % at s.r.o. and 89 % at a.s.). Other discussed factors are not significant. In case the research is repeated, we suggest adding the proportion of foreign equity as another factor. We assume that the effect of time can be significant in the case of bigger research samples.

Based on what was mentioned before, we suggest to evaluate also the quality of e-banking portals through the customer satisfaction measured e.g. by the Likert scale. This means also adding a question to identify which bank's service is used.

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# **ELECTRONIC PAYMENT SYSTEMS, COMPENSATIONS AND SETTLEMENTS – INTERNATIONALLY SPEAKING**

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## **Abstract**

*Nowadays, a time of massive banking in which the great majority of people and of economic agents has become the banks' clients, on terms of the amplification of bank operations and of the development of the subsidiaries and agencies network, the banking activity implies the large-scale use of computer science and telecommunication. Within the present development phase of electronic trade, certain banks take on a positive attitude towards e-banking services, while some others remain reserved. Any bank willing to invest in e-banking services must make sure that introducing a new distribution channel of e-banking services is possible and viable.*

**Keywords:** *electronic payment, e-banking, computer science, telecommunication*

## 1. Introduction

In close connection with the expansion of commerce and international investments, the financial-banking activity has become one of the peak fields of the globalization process. The globalization of commerce is accompanied by the development and institutionalization of banking institutions. Actually, the internalization of the banking activity takes place on two plans:

- on one plan, institutionally, the commercial banks and business banks develop their operational network by setting up new units on the territory of other states.
- on the other one, at an operational level, the products and services are also offered in other currencies except the national one.

As the society has grown, the banks have evolved from the emission bank to the transfer, deposits, business banks, from a regulation institution to the electronic bank. Traditionally, the commercial banks' activity consisted mainly in three main spheres: the attraction of deposits, credit granting and the monetary transfers' operation. Gradually, banking transfers diversified by engaging in some operations, once under the management of other specialized banks or financial societies and by performing new services existing in the neighboring area with other financial operators<sup>1</sup>.

The unfolding of the payment flow, their appropriateness, slowing down and speeding up actually depend on:

- the payment capacity of the entities;
- the policy of making payments carried out by the economical entities;
- the efficiency of technologies and the organizational abilities of the payment systems carried out through banks<sup>2</sup>.

Under the present conditions, in developed countries it is noticed that there ended a long time ago "the banking" process, process in which the largest majority of companies and persons have opened accounts in banks, which allows making payments through banks, by transfers or virements among banking accounts respectively.

In the process of the introduction of the new technologies based on telemathics, information technology, there have been reconsidered the traditional payment tools: the cheque and the bill of exchange, by their adjusting to the electronic transfer demands of funds. The evolution of the payment instruments is characterized by the accelerated decrease of base

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<sup>1</sup> Basno, C., Dardac, N., *Payment system, compensations and settlements*, Publishing House, Didactica si Pedagogica R.A., Bucuresti, 2003, I.S.B.N. 9730-30-274103, p. 33

<sup>2</sup> Basno, C., Dardac, N., *Payment system, compensations and settlements*, Publishing House, Didactica si Pedagogica R.A., Bucuresti, 2003, I.S.B.N. 9730-30-274103, p. 5

paper documents and the rapid increase of dispositions and payment orders expressed in electronic messages.

Nowadays, the human society meets the most profound transformations from its entire existence, in which information technology plays a determinant part and has begun to transfer to the networks most of the common activities. We can talk at present of teleconferences and workgroups going on by the intermediary of computer networks, newspapers distributed in networks, funds' transfer systems and network commerce, all these services being a reality of the biggest and more impressive means of communication between people which has become the Internet.

Along with the entrance in the Internet and in the e-business age, of the new economy, in general, certain fundamental transformations of the social-economical structure are produced.

The development of the interconnectivity of computers in the internet, in all segments of society, has led to a more obvious tendency of companies to use these networks in order to carry out a new type of commerce, the electronic commerce, through the internet<sup>3</sup>.

The new economy or the digital one, resulting from the interaction between the personal computer, telecommunications, Internet and electronics, is characterized by a range of features completely different from the traditional economy and is subjected to the principle according to which "*the more people involved the bigger the benefit for everyone involved*". The micro and macro economical effects of the new economy have as foundation the general principles of its development, which are<sup>4</sup>:

- awareness;
- accessibility;
- availability;
- affordability;
- appropriateness.

The electronic commerce (e-commerce) offers the consumers and the companies alike information regarding the merchandise and the services available in the whole world, prices and sale conditions, giving them the option to take the best decisions in management.

The internet can be used in commercial transactions, either in business to business transactions, that is between companies or from company to company or from business to consumer, because a commercial transaction

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<sup>3</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 303

<sup>4</sup> [www.gandul.info.ro](http://www.gandul.info.ro)

can be divided in three main stages: the advertisement and research stage, the contracting and payment stage and the delivery stage, and any of these may be accomplished successfully through their intermediary.

This new type of commerce has stimulated nevertheless the demand for new appropriate payment methods. The development of the communication network between computers, into what some people call “*the global village*”<sup>5</sup> allowed the introduction and use on an ever larger scale of electronic payment systems. The electronic commerce offers the possibility of doing network commerce by consulting electronic “on” catalogues on the WEB or “off” catalogues on CD-ROM and by paying with credit cards or electronic wallets.

The convenient, fast and safe transfer of the money has become one of the fundamental demands of viability of the new concept of the electronic system of payment. The replacement of the traditional cash forms with the e-money offers a better flexibility to the payment systems, in the conditions of the increase of the safety level of all participants in the system. The replacement of coins and bills with electronic money leads to the lowering of costs involved by the issuance and maintenance in circulation of the cash<sup>6</sup>. In the electronic payments systems, most of them working online, the payer and the beneficiary communicate with banks during the payment transactions.

Using the electronic money, electronic cheque and the unfolding of the repeated exchanges of data through the networks, makes it compulsory to insure the confidentiality of transactions, by the safe authentication with digital signature and certificates.

Until recently, the banking branch was considered the only delivery channel for the banking services. Despite that, during the last few years the unconventional channels have won over the customers’ preferences because of :

- the increased costs for the building of the banking branches;
- large delivery costs for the conventional channels;
- the decrease of the communication costs and of equipment;
- the increased demand for better and easier services.

According to the covering quota of the banking business, the distribution channels also include<sup>7</sup> :

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<sup>5</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 303

<sup>6</sup> www.byte.ro

<sup>7</sup> Mihai, I., *The technique and the management of banking operations*, Publishing House, Expert, Bucuresti, 2003, I.S.B.N. 973-8177-91-X, p. 344

- Telephone banking and home banking, covering a larger business quota;
- Internet banking, characteristic to payments for standardized products and services;
- Mobile Banking- little used variant.

The physical and the juridical persons alike have the freedom of choosing from an entire range of channels such as: the ATM, the telephone, the terminal at distance, the mobile phone, the internet.

The advantages of the e –banking use are:

- for the effectuation of different operation the client doesn't have to go to the bank;
- the removal of the manual preparation of documents;
- the automatic processing of the payment orders;
- the payment orders are valid, the electronic signature being guaranteed by the bank;
- the access to the e-bank can be made every 7 days, 24 hours a day.

Mobile Banking is destined to the clients of the bank that own credits and are mobile phone users and presents the following advantages:

- comfort and time saving by the use of the telephone in order to connect with the bank;
- the access to information about credit card and the transactions made by ATM;
- the safety and confidentiality of operations;
- financial-banking information on-line.

The EU Banks have as central strategic objective the reduction of costs in order to improve the results by the reorganization of activities and the bringing outside of bank of the support activities (information activities, card processing). Another European banking strategy represents the maintaining of the various distribution channels (the network of unities especially), to the detriment of the Internet Banking, which continues to develop and to represent a solution of decreasing of costs and increase of the operational effectiveness<sup>8</sup>.

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<sup>8</sup> Mihai, I., *The technique and the management of banking operations*, Publishing House, Expert, Bucuresti, 2003, I.S.B.N. 973-8177-91-X, p. 344

### ***1.1 The payment and discount systems in EU, USA and Japan The UE:TARGET payment system [Trans European Automated Real-Time Gross Settlement Express Transfer]***

The payment systems of the EU countries are very diversified at present there existing more than 25 payment systems, while in the USA there are only two, CHIPS and FEDWIRE.

TARGET [Trans European Automated Real-Time Gross Settlement Express Transfer] represents a system stipulated in the Maastricht Treaty by which it is realized the transfer of the euro resources among the accounts from the central banks. TARGET is formed of a communication network and a whole range of common procedures that insure the effectuation of payments.

TARGET contributes to the integration of the monetary market and by this to the implementation of the unique monetary policy in Stage III of the European Monetary Union. The objective is to allow the payments in the euro region (especially the ones closely linked to the monetary market) to be realized at low costs, at a minimum risk and in a very short processing time<sup>9</sup>.

In the USA there are two funds transfer systems of great value<sup>10</sup>:

- a) The transfer system of the FEDWIRE funds, operated by the Federal Reserve System which is a system of interbank funds transfer, in real time with gross settlement and connects 12 Federal Reserve banks to the participant financial institutions and to federal governmental agencies;
- b) The CHIPS system( Clearing House Interbank Payment System) operated by the New York Clearing House Interbank Association (NYCHIA), a transfer system of the credit payment instruments, but which clears many-sidedly the funds transfers and settles at the end of the day the net calculated positions. The participants to this system are the commercial banks, certain corporations, investment companies or banks affiliated to a commercial banking institution that has its headquarters in New York.

The Japan banking system offers a large variety of payments, services which operate in more institutions for the establishment of some internet networks, such as<sup>11</sup>:

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<sup>9</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p.85

<sup>10</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p.87

- a) The local clearing houses of bills and cheques;there functioning around 700 local houses;
- b) The Zengin Data Telecommunication System which is managed by the Tokyo Bankers Association and is organized on two separate operating centers, Tokyo and Osaka respectively;
- c) The Foreign Exchange(Gaitame) Yen Clearing System (FEYES).The system is operated by the Bank of Japan as part of BOJ NET which performs the settlement and clearing of transactions;
- d) Bank of Japan Financial Network System (BOJ- NET) is an online system introduced in 1988 for electronic fund transfers to the financial institutions, including the Bank of Japan, which manages this system and establishes its regulations.

### ***1.2. International Payment Modalities and Instruments***

The international payments are realized by banks which hold and transfer the sums in corresponding currencies for the extinguishing of the payment obligations from the concluded commercial contracts.

The payment modalities comprise the banking procedures, the mechanisms and the techniques, by which the importers transfer the sums in foreign currency corresponding to the received goods or to the carried out services<sup>12</sup>.

#### ***The international settlements by SWIFT and MONEW GRAM***

SWIFT is a commercial society created in 1973 by American, Canadian and European banks in order to accelerate the international payments by processing the information with the help of information systems.

The transfer represents the most used payment modality in international transactions among the companies from the developed countries. The classical means used by banks to realize the international funds transfers were the courier and the telex.

The unfolding of an operation by payment order supposes the existence of a document, typified form. Its remittance by the principal bank to the paying bank can be made<sup>13</sup>:

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<sup>11</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 96

<sup>12</sup> Voinea, GH., *The mechanism and the international exchange and financial techniques*, Publishing House, Sedcom Libris, Iasi, 2004, I.S.B.N. 973-670-067-4, p. 185

<sup>13</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 120

- by letter-when the payment can be made on the basis of the standardized form;
- by telegraph-when the payment is made on the basis of the instructions received in a telegram;
- by telex or SWIFT- represents the most modern and the fastest way.

The international settlement by SWIFT (Society for Worldwide Interbank Financial Telecommunications) presents the following advantages<sup>14</sup>:

- contributes to the reduction of the settlement time;
- the means of information processing are equipped with detection and error correction programs;
- the international settlements by SWIFT involve more reduced expenses;
- the messages exchanged among the accumulators at a national level and the processing centres are recorded on computer.

The Money-Gram Service represents a fast and safe modality to send and receive money in any country by its own network of agents. This service is available in banks, exchange houses, tourism agencies, postal offices and in some countries in the supermarkets, airports and railway stations.

The Western Union System carried out through the Eurogiro network insures the safe transfer of the sums of money in any corner of the world where its own agents operate. The Euro-Giro system is a form of cooperation mainly between the postal organizations and other organizations and credit institutions interested in the funds transfer at the international level<sup>15</sup>.

The following settlement means can be used in the international payments: the letter of credit, the documentary incasso, the cheque, the card and others.

**a) The letter of credit-** represents the firm commitment assumed by a bank, at the order and in its client account, the importer, to pay a sum to the exporter, against the documents attesting the fulfillment of obligations by the latter, at the terms established by the importer<sup>16</sup>.

The unfolding mechanism of the payments through the letter of credit is regulated in the brochure “Uniform Regulations and uses regarding the

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<sup>14</sup> Voinea, GH., *The mechanism and the international exchange and financial techniques*, Publishing House, Sedcom Libris, Iasi, 2004, I.S.B.N. 973-670-067-4, p. 211

<sup>15</sup> Basno, C., Dardac, N., *Payment system, compensations and settlements*, Publishing House, Didactica si Pedagogica R.A., Bucuresti, 2003, I.S.B.N. 9730-30-274103, p. 213

<sup>16</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 182

letters of credit” elaborated by the Chamber of International Commerce from Paris, modified in the years 1983 and 1993 and issued under the name Publication no.500.

In connection with the other settlement means, the letter of credit represents the preferred modality both by the letter of credit principal and by the beneficiary because it is a form of guaranteed settlement, the bank being the guarantor. Even though the exporter is the one who profits first of the advantages of the letter of credit, as settlement modality, this insures the importer as well a protection measure, taking into account that the exporter will be paid only after presenting the documents that certify the goods’ delivery conforming to the terms and conditions of the letter of credit.

**b).The documentary incasso** is a settlement modality that is based on the payment modality of the buyer assumed by the commercial contract, without presenting a payment commitment from the banks involved in the unfolding of the operations<sup>17</sup>.

As a payment modality used in the international economic exchanges, the incasso is regulated in the document entitled “Uniform regulations for the incasso”, known under the name Publication 522, revised in 1995 with practicability from 1996.

The payment mechanism by incasso can be used in the case in which the exporter trusts the reliability and the correctness of the importer, or if there exist certain interdictions in the legislation of the importer’s country or due to some common practices on certain markets. Because the payment by incasso doesn’t suppose any obligation or payment guarantee, beside the obligations assumed by the buyer through the commercial contract, the conclusion would be that the incasso is a risk source not to be ignored by the seller.

In the common practice, the risks of the unfolding of the payment operations by incasso documentary are: the risk at the payment delay, the risk of not being paid, the risk of the diminution of the cashing, the risk of the goods’ loss<sup>18</sup>.

**c) The cheque** represents a written order given by a client (credit holder) to his ban by which he requires this one to pay a certain amount,

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<sup>17</sup> Mihai, I., *The technique and the management of banking operations*, Publishing House, Expert, Bucuresti, 2003, I.S.B.N. 973-8177-91-X, p. 132

<sup>18</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 182

either to him for the cash withdrawal, or to a person specified by the client, for the payment of a debit<sup>19</sup>.

The cheque is a payment instrument which links, in the process of its formation, 3 persons: the drawer who issues the card, the drawee who pays the cheque and the beneficiary that is the legitimate owner who cashes the cheque.

In the specialized literature there are more criteria of cheques' classification: from the point of view of the beneficiary (nominative cheque and bearer cheque), from the point of view of the cashing modality (uncrossed cheque, crossed cheque, transfer cheque); other types of cheques: circular cheque, traveller's cheque, the eurocheques.

In addition to its advantages (simple use, operativity), the cheque presents also a series of risks (doesn't present guarantee against the commercial risks, can be without covering).

The electronic cheque represents an electronic payment instrument which removes the existence of paper support in the settlement of the international transaction, replacing the traditional cheque with an electronic equivalent. These were developed in a project of FISC – Financial Services Technology Consortium – a group of international financial institutions that suggested the creation of a project: E-Checks. This project improves the safety of settlements through the classic cheque as it follows<sup>20</sup>:

- because of a system of information encoding, the participants to the transaction benefit of the confidentiality and increased safety;
- the reduction of the transaction duration and the clearance terms.

The electronic cheques are created in order to realize payments and other financial functions of the paper cheques; by the use of the digital signatures and encoded messages, on the Internet network support. For protection against theft and illegal utilization of the electronic cheque, a smart-card is also used.

As a debit transfer instrument, the cheque involves, in addition to the credit institutional risk the risk that the payer might not have sufficient monetary funds in his banking account in order to cover the cheque value. If the cheque is not guaranteed in any way, the financial institution of the payer might not honor it, so the payment might not be realized. A research performed by The International Regulation Bank on the use of the

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<sup>19</sup> Basno, C., Dardac, N., "*Payment system, compensations and settlements*, Publishing House, Didactica si Pedagogica R.A., Bucuresti, 2003, I.S.B.N. 9730-30-274103, p. 108

<sup>20</sup> Paraschiv, M., D., "*Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 131

international payment means utilization points out the fact that the two countries from the top of the four first countries with the biggest non-cash payment level on inhabitant-USA and France-use to the largest extent the cheque for the purpose of carrying out of the payments. In Germany the transfer is preferred (45%) to the cheque (10%).

*d) The card* is a payment instrument without cash by which the authorized holder can settle the equivalent value of the goods bought from the tradesmen, or can benefit from the services carried out by third parties and who are empowered to accept it and use it and also allows the acquiring of liquidities from the issuing bank, managing in fact the current account of the credit holder<sup>21</sup>.

The banking cards fulfill multiple functions, the most important ones being the following<sup>22</sup>:

- e) the function of funds withdrawal;
- f) the payment function;
- g) the credit function;
- h) the guarantee function.

The largest majority of the banking cards fulfil multiple functions of funds withdrawal, payments, credit and guarantee.

The credit market as an integrant part of the world finance is subjected more than any other activity, to a rapid globalization process, in addition to the two great payers (VISA International and Master Card International), an active role in the globalization of the credit market plays Europay International as well, American Express, Dinners, Club International, JCB (Japan Credit Bureau)

The itinerary covered from the full-bodied currency, with intrinsic value, to the paper currency has been incomparably longer than that from the paper money to the electronic money, which was achieved in a very short historical period of time.

On the mature markets (The West European market, American market) and on younger markets as well (The Central and East-European markets, to which there belongs also Romania) there is a multitude of card types, which are basically nothing more than variations of the three fundamental credit types: the debit card, the credit card and the charge card overdraft.

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<sup>21</sup> Basno, C., Dardac, N., *Payment system, compensations and settelements*, Publishing House, Didactica si Pedagogica R.A., Bucuresti, 2003, I.S.B.N. 9730-30-274103, p. 121

<sup>22</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 153

The e-money represents the value stored electronically on a device, either in an electronic support, or in the computer memory, and which can be recharged, with the possibility of its use to a multitude of goals<sup>23</sup>.

The beginning of cards in Romania goes back to the year 1997, when the unresiding foreign persons visiting the country had the privilege that at certain hotels, restaurants, shops, stores, to use as a payment means, the card. Once with the passing to the market economy the Romanian commercial banks began to issue their own cards. During the last years the cards market in Romania has known a rapid development, being currently in full maturization process in all its segments.

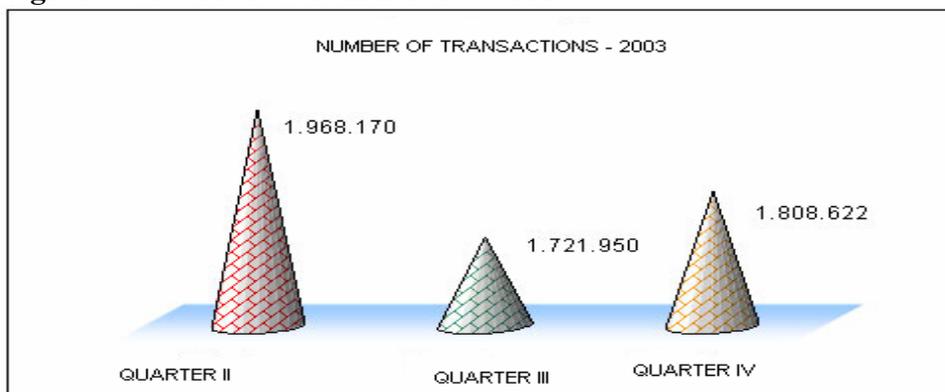
Conforming to a statistics drawn up by the National Bank of Romania, the situation of the number of cards users and the number of transactions performed by the intermediary of cards in the years 2003, 2004 and 2005 is presented in the following tables and graphics:

**Table 1 The situation of the number of transactions performed by card in the period 2003-2004**

QUARTER	YEARS		
	2003	2004	2005
QUARTER I	-	1.633.228	2.205.299
QUARTER II	1.968.170	1.998.148	2.590.994
QUARTER III	1.721.950	1.942.992	-
QUARTER IV	1.808.622	2.244.994	-

Source: [www.bnr.ro](http://www.bnr.ro)

**Figure 1 Number of transactions in 2003**

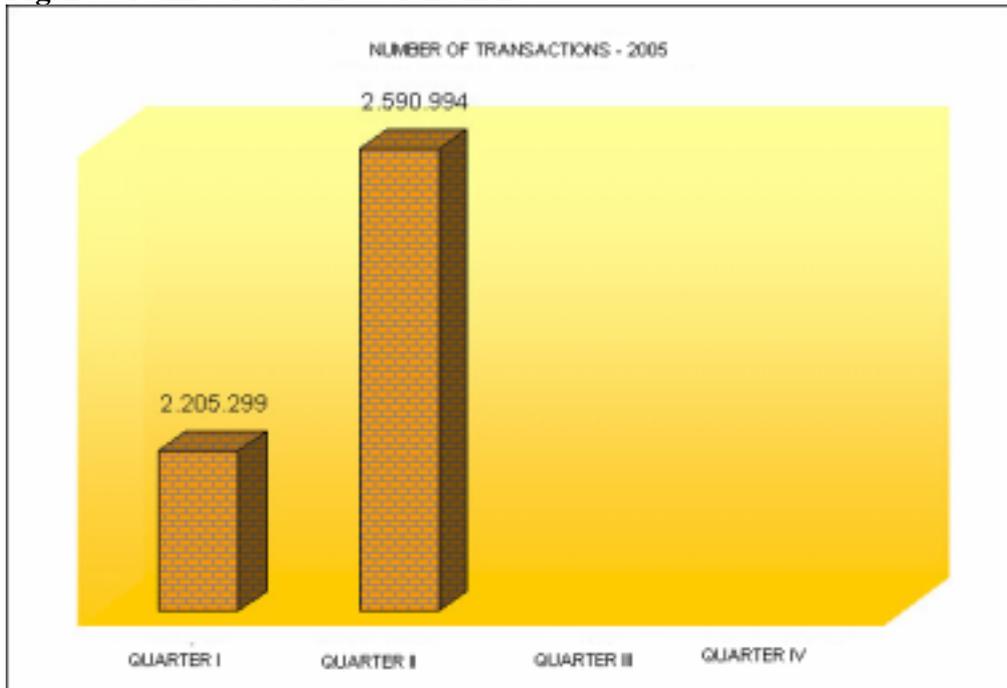


<sup>23</sup> Mihai, I., *The technique and the management of banking operations*, Publishing House, Expert, Bucuresti, 2003, I.S.B.N. 973-8177-91-X, p. 336

**Figure 2 Number of transactions in 2004**



**Figure 3 Number of transactions in 2005**

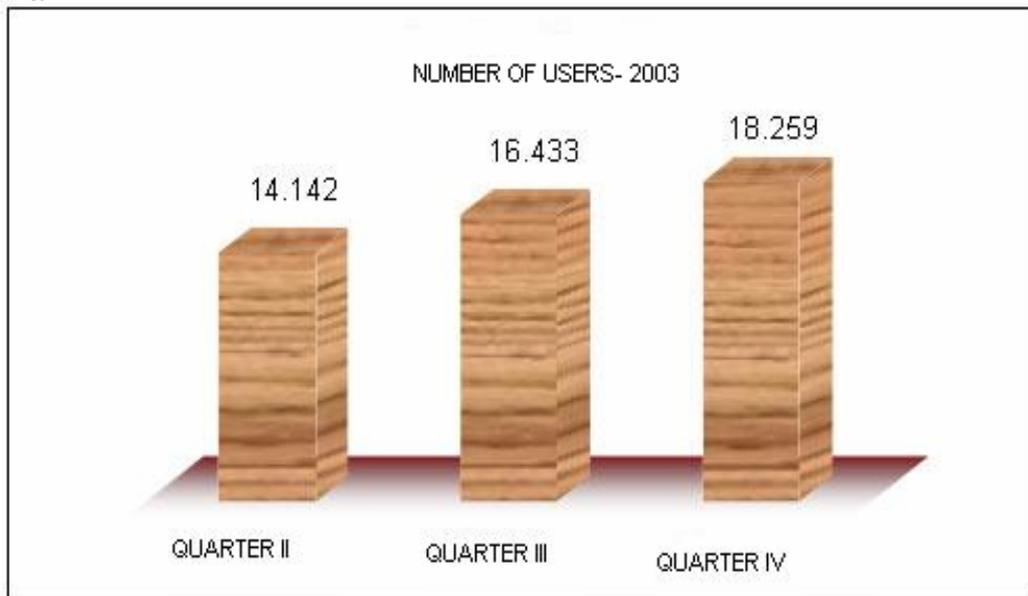


**Table 2 The situation of the number of cards users in the period 2003 – 2005**

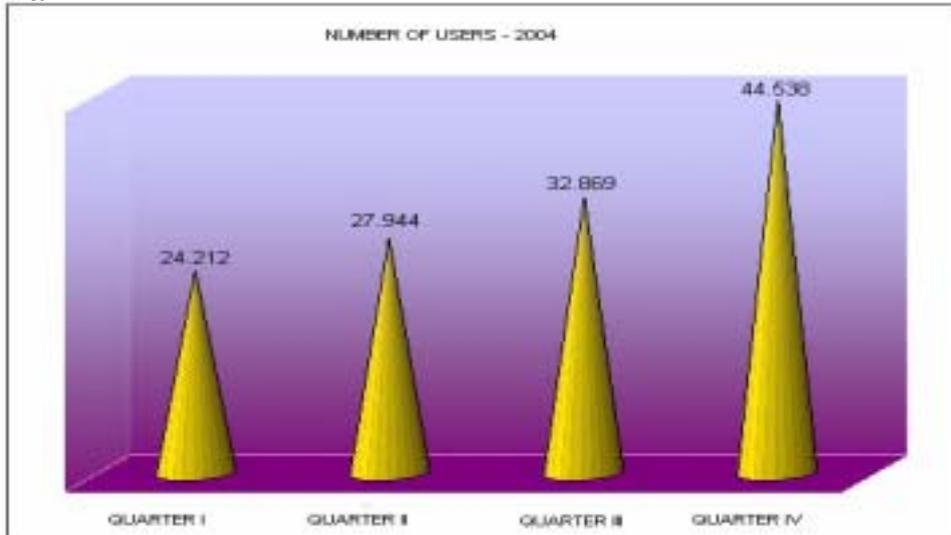
<i>QUARTER</i>	<i>YEARS</i>		
	<i>2003</i>	<i>2004</i>	<i>2005</i>
<i>QUARTER I</i>	-	24.212	56.087
<i>QUARTER II</i>	14.142	27.944	66.062
<i>QUARTER III</i>	16.433	32.869	-
<i>QUARTER IV</i>	18.259	44.538	-

*Source: www.bnr.ro*

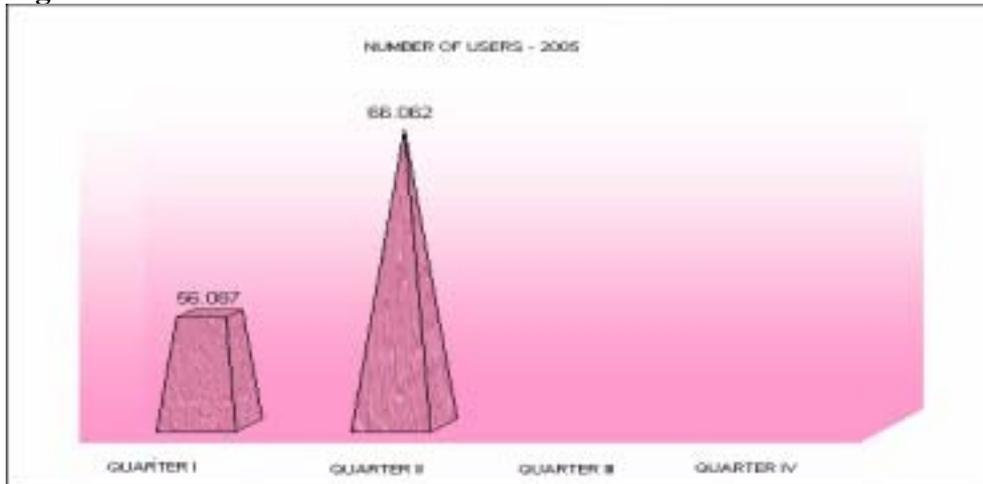
**Figure 4 Users number of cards in 2003**



**Figure 5 Users number of cards in 2004**



**Figure 6 Users number of cards in 2005**



Starting from the fact that the smart-card is the card offering the possibility of processing and stocking of the value units by the means of an integrant processor (chip) and, by comparison with the magnetic band card, this one can effectively store funds transferred from a banking account or from another smart-card(card to card operation), as well as information regarding the balance due , the payment realized with this type of card being realized on the spot, we can assert that the future belongs to the smart-card.

Expression of the technological progress, the card, instrument of economic and social identity of the person within the systems that insure the

globalization of payments by cards, is subjected to a continuous improvement process.

## **2. The mobile financial services**

The Internet economy is already a reality, a fact of everyday life and is in continuous progress in Europe, being estimated an increase of the Internet users number of over 200 million in 2008.

The extent of the electronic commerce in Europe will be slightly different from that of the USA. Reflecting the penetration factors of personal computers, mobile phones and cable TV, there will be carried out in a proportionate way in Europe more transactions on non PC type devices, such as for instance the mobile phones, other portable equipments and web connected television

At a world level, the mobile communications represent the latest distribution channel of financial services which is estimated to have a huge impact in the future over the way in which the consumers will use and manage finances.

The m-banking applications will comprise from the simplest mobile banking operations to the possibility of effectuating financial operations for any transaction of the e-commerce type by the intermediary of a portable device. The analysts estimate that the base services of the retail-banking type will be followed by complicated applications of mobile financial services, as well as by stock market operations and financial facilities of transaction and commerce.

The users of the mobile financial instruments benefit from services such as the possibilities to make payments and to check the banking account balance.

The mobile telephony operators will confront in the future with a dramatic decrease of the income on user if they remain within the framework of the present services(voice services), and for this account they try to conclude partnerships with different institutions in view to diversify the services in order to maintain the income level or for registering an increase of these ones.

Before the future Internet banking expansion, the mobile banking offers very simple services, such as informing the client through his own mobile telephone about the situation of the current account balance, of deposit or of card accounts, through the sending of SMS messages.

The reasons for which the telecommunication companies need the financial institutions in the on-line sector/mobile banking are: the lack of the know-how and the absence of the mark image in the banking field. On the other side, the financial institutions pursue the attraction of new clients, a very attractive segment being the clients of the telecommunication companies eager to enter direct banking relations.

### ***2.1. The mobile financial services (m-banking and the interactive television (ITV banking)-alternatives for Internet Banking***

The main reason for which the Romanian large banks launched harder Internet-Banking services is the reduced number of potential clients, because of the weak penetration of Internet services.

The reduced number of personal computers in Romania and the relatively high cost of telecommunications generated that situation that leaves space to new alternatives to Internet access such as : Interactive TV (ITV) and mobile Internet.

The offer of e-banking services on all he three platforms (m-banking ITC and PC based internet) will allow a bank to attract clients using more platforms in order to carry out their transactions.

In the Western Europe it is estimated: an average increase of 140% yearly for the exclusive ITV users and of 221% for the m-banking users, increases which are clearly superior to the average increase ratio of the PC based e-banking users.(37%)<sup>24</sup>.

Nevertheless, a TV is a good used by the entire family, without existing a sufficient confidentiality level for the operations performed using the ITV-banking operations. This distribution channel for the e-banking services is a channel for the customers for which the cost of the access to these services has a great importance and for the regions with a relatively low number of Internet users. In Romania the potential of development of this type of services is extremely promising because the Romanian market is price –sensitive and there is a great numbers of users of TV channels.

The mobile financial services (m-banking) give the clients the possibility to realize transactions anywhere and anytime, and the size of the screen and the fact hat the mobile phone is a personal use object insures a maximum confidentiality degree to this e-banking service. The m-banking services will have a much larger number of active users and the transaction

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<sup>24</sup> Paraschiv, M., D., *Technique of international payments*, Publishing House, Economica, Bucuresti, 2003, I.S.B.N. 973-590-932-4, p. 268

volume will top clearly the volume of transactions for the ITV users and even PC-based e-banking.

Conforming to a certain opinion the e-banking services involves risks which the Romanian banks are not ready to face<sup>25</sup>:

- conformity risk
- strategic risk;
- operation risks (among which the piracy);
- Crediting risk (accentuated by the client recognition);
- The liquidity risks, of interest rate, and of market volatilisation);
- Th reputational risk.

It is essential for any bank eager to invest in e-banking services to be able to offer these services on any of the three platforms. Even if at present the PC based e-banking potential users are the most important ones, this situation is about to change in the near future, and the banks must insure that the introduction of a new distribution channel of e-banking services is possible and viable.

These new payment procedures allow the convenient, safe and very fast transfer of the money among the business partners. In addition to this, the replacement of coins and paper money with electronic money leads, apart from the reduction of issuance costs and maintaining in circulation of the cash, to the increase of flexibility and safety of the payment systems.

### **3. Conclusion**

Any of the payment modalities presented hereby involves risks and in order to insure themselves against these, the involved parties must get to know very well these payment modalities, their unfolding mechanisms and the documents necessary to be requested. Apart from the banking regulations, the successful carrying out of the transactions requires good faith from the part of everyone involved.

The continuous evolution of the payment means and the passing to the electronic money (e-money) can be considered a revolution, because they generate changes within the banking system (modern services, the legal financial frame adjusted at the international level. The Romanian banking system is subjected to a reorganization process, characteristic, in fact, to the entire national economy in transition not only to the market economy, but also to the Internet economy or new economy.

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<sup>25</sup> Turcu, I., The operations and banking contracts, 5th edition, Publishing House Luminalex, Bucuresti, 2004, ISBN 973-588-824-6, p.173

It can be noticed that the payment means are in a permanent evolution determined by the economical development and the appearance of the new technologies, the money preserving, however, their essential functions. The passing to the electronic money causes changes both at the level of the banking infrastructure and at the level of the consumer behaviour as well.

*Motto: "The computers are useless. They can only offer you answers", said Pablo Picasso. The utility levels of the electronic currency and what we will offer ourselves by its mediation is about to unveil the future for us.*

*The world of money is a world of caution and any hidden thing (a code, an address), can generate suspicion.*

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\*\*\*GOVERNEMENT BILL NR.118 from 2004 regarding the notification procedure of the payment instruments with distance access of the type of the Internet banking, home-banking and mobile-banking applications

\*\*\*[www.gandul.info.ro](http://www.gandul.info.ro)

\*\*\*[www.byte.ro](http://www.byte.ro)

# **BANK-CLIENT RELATIONSHIP: ROMANIAN EXPERIENCE**

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## **Abstract**

*The main purpose of all economic activity is to satisfy the clients' needs. Everything that happens in connection with the bank must follow this objective. If certain banks neglect their clients' needs, then certainly it will be the rival banks to take care of them. We consider that success is always on the side of the bank that manages to find the answer to the question How can we improve the bank-client relations? Since 1990, numerous changes have taken place in the Romanian financial-banking system. The banks have opened for the public as well, they have introduced numerous new products and services, new processes have been established, new regulations have appeared, the foreign banks have opened new branches, the informational technology has been updated. Under these circumstances, it is vital that the banks be to a greater extent marketing- and management-oriented, more precisely client-oriented. They must be aware of the rapid changes in the banking environment and to be able to adapt and change their plans and strategies, to introduce products and services compatible with the new demands and transformations. The practical activity tells us that the banks offer services similar to those of their competitors'; that is why, in order to be more competitive, a bank always needs to find something to differentiate it from its rivals. Always situating the client as the first priority, anticipating his needs and problems, responding to the services that he requires are the strategies with this result. We must also mention that, as the clients' expectations increase and as they become more and more demanding with every service granted, the bank must be always ready to comply.*

**Keywords :** *the bank-client relations; Romanian banking system; competition*

## 1. Introduction

The main purpose of all economic activity is to satisfy the clients' needs. Everything that happens in connection with the bank must follow this objective. If certain banks neglect their clients' needs, then certainly it will be the rival banks to take care of them. We consider that success is always on the side of the bank that manages to find the answer to the question *How can we improve the bank-client relations?*

In the countries with a tradition in the field, one can observe the tendency of the clients to appeal to several banks—a phenomenon called multi-bankarization, the tendency to recede from the banks when it comes to savings products (resorting to insurance products, financial products offered by the monetary authorities or to derived products). Under these circumstances, the administration of the institutions, the personnel and, in general, the businessmen implied in financial-banking services activities have shown particular interest in knowing as many aspects as possible concerning the domain in which they evolve.

Since 1990, numerous changes have taken place in the Romanian financial-banking system. The banks have opened for the public as well, they have introduced numerous new products and services, new processes have been established, new regulations have appeared, the foreign banks have opened new branches, the informational technology has been updated. Under these circumstances, it is vital that the banks be to a greater extent marketing- and management-oriented, more precisely client-oriented. They must be aware of the rapid changes in the banking environment and to be able to adapt and change their plans and strategies, to introduce products and services compatible with the new demands and transformations.

The human society is confronted at the beginning of the third millennium with a series of vital and unprecedented issues. That is how the Romanian banking system finds itself in a transition process that creates the conditions for a turbulent environment for the banks functioning in the system. It is likely that this environment will continue to exist for a period of time while the economy continues to develop.

As a natural consequence, the competition in the banking system will increase. Several well-known foreign banking corporations have entered the banking market, new private banks have appeared and a part of the banks in the Romanian state sector have undergone a process of privatization. In this context, satisfying the clients' interest by offering a variety of banking products and services has become a must. This will lead to an increase of the

clients' loyalty and of the reputation of the bank, thus insuring the clients' fidelity and stability.

The practical activity tells us that the banks offer services similar to those of their competitors'; that is why, in order to be more competitive, a bank always needs to find something to differentiate it from its rivals. Always situating the client as the first priority, anticipating his needs and problems, responding to the services that he requires are the strategies with this result. We must also mention that, as the clients' expectations increase and as they become more and more demanding with every service granted, the bank must be always ready to comply.

## **2. Conditions specific for Romania**

### ***2.1 Limits of development of the banking market and of the relationship bank-customer. Macroeconomic conditions***

The instability of the macroeconomic environment represents an obstacle for the well development of the activity of the economic agents (especially in the case of the entrepreneurs), but also of the banks, through the fact that, in much less predictable conditions, the business plans, which are at the basis of lending, have a lower degree of credibility from the financier's point of view.

Also, the still significant gravity of the inefficient companies diminishes the degree of safety of the lending activity. Thus, the delays registered in the restructuring of the actual sector determine many of the economical agents not to be eligible for granting credits.

### ***2.2 The inadequate, insufficiently developed legal environment***

The existence of an inconsequent and incomplete legal environment, as well as of some judicial and extrajudicial procedures for recovering the debts by forced, expensive and long lasting execution, has a negative impact over the financing activity.

### ***2.3 The behaviour of the market participants***

The partnership bank-customer has to suffer because of:

- the lack of transparency of the real situation of the patrimony of economical agents, which allows correcting the performance indicators afferent to their activity within the solvency analyses

for granting the solicited funds. In this context we must mention the embellishments produced by annulment, re-phasing of the debts of state companies, without taking into consideration the objective principles such as competition ;

- the non-promotion of the corporate management;
- the weak use of the instruments specific to risk management.

Moreover, the reduced level of economical and especially banking education, of the actual and potential consumers of products/banking services, as well as the professional training, which is still adverse, as an average in the banking system, of the staff of the credit institutions hinders the achievement of an efficient communication between the two parties. Thus, on one hand, many economical agents with funding necessities do only appeal to banks as a last resort, and on the other hand, there are still banks which do not give sufficient importance to the aspects regarding the introduction in their offer of consulting services for their customers.

The analysis pointed out the fact that, regarding the efficiency of the activity in the banking system, as an ensemble, supplementary efforts are necessary on behalf of credit institutions in order to be able to handle the level of competition in the European Union.

Thus, the degree of banking intermediary in Romania, expressed as banking assets/inner gross product, represented at the end of 2002 only half of the level registered in Poland and a quarter of the one reported by the National Bank of the Czech Republic in the same period. Regarding the productivity of the banking activity (banking assets/employees in the banking section) this was in Romania, in the previously mentioned period, three times smaller than in Poland and six times smaller than in the Czech Republic.

### **3. Customers for Romanian Banks. General characteristics**

The principal goal of any economic activity is satisfying the customers' needs. If the organizations do not take care of their own customers, then their competition will. The bank must understand its customers' necessities and the process of their decision taking.

The analysis of the customer's behaviour is a key component of marketing research. By understanding this behaviour, the Romanian banks anticipate the probable reaction of a customer and can influence the structure and planning of the services provided by the bank. The customers represent the most obvious barometer in the evolution of a bank. The presence of an increasing number of commercial companies or individual entities in the offices of the bank, confirm the quality of the bank's services, while the

migration of the same customers to other banks serves as proof for the unit's weaknesses.

In a broader acceptance, a customer is defined as a legal or individual entity, who frequently or sporadically asks for the services of the bank in order to satisfy their needs and producing economical effects on the bank.

In a limited acceptance, a customer is defined as a legal or individual entity, with one or more open accounts at the bank, a clear name, well-defined headquarter or residence, legal judicial status, who constantly and frequently resorts to the products and services of the bank satisfying some of its needs and producing economical effects on the bank.

In the case of commercial banks in Romania, the high dynamic of their customers confirm the trust they have in the capacity to work of some banking units, in the quality of the staff and of the offer of products and services.

At the present time, among the customers of the banks there is an important number of commercial companies with state capital, different autonomous administrations, budgetary institutions, commercial companies with private capital, as well as individual entities.

In the last years, the counters of the banks have been assaulted by a big number of individual entities, especially for the fruition of the available funds, either by open deposit accounts, or by the deposit certificates, a very tempting capitalization instrument.

The bank's customers desire an ever better quality of the services and a diversified range of products. This is why competition becomes stronger together with the continuous development of the economy. It is vital, for any bank, that its products and services to be presented on the market successfully in order to obtain the increase, development and power in the financial-banking sector.

The relationship between the customer and the bank is very important and needs to be maintained in order to assure the loyalty of the customers and to develop long term relationships with them.

Attracting new customers can be more expensive than keeping the existing ones. It is universally known that, in market economy, the price for attracting new customers is four or five times bigger, in financial costs and effort, than developing and maintaining the relationship with the existing customers. For this reason, maintaining the existing customers content is a crucial side of the marketing strategy. The strategy must contain a component which is directed in maintaining and developing this customer content, by satisfying their needs.

Both actual and potential customers are important for the economic activity; losing one customer could not be very important, but losing more the bank would really have problems.

The quality of the services and the concern for the customer inevitably remain the key elements of the total offer of services, but conditioned by the constraints imposed by the cost control and maintaining the competition regarding prices.

The key of maintaining the customers' loyalty is to keep them satisfied. If a customer is satisfied, he will wish to continue the relationship with the bank, he will use more and more services to satisfy his needs and will recommend the bank to others.

Long term loyal customers will guarantee the income of the bank. The customer's loyalty improves the image of a bank and can be an excellent source of advertisement. The bank's customers will not wish to work with the bank's competition for similar services, even if sometimes they may offer cheaper services or may offer attractive interest rates.

Customers want consultancy regarding the ever bigger number of services and the best solutions for their objectives. The employers of the bank have the obligation to give the customers the best consultancy and clear information concerning the services which best satisfy their needs and demands.

The customers which are individual entities and legal entities have different needs and expectations from the bank they work with. Banks must give the customer – individual entity consultancies for the services they need and help him in organizing his personal incomes.

The customer - legal entity will need consultancy in preparing the business plans, adequate services for solving his business needs, money transfer services, etc.

The bank is interested in attracting its customers from the market and maintaining a relationship of long term collaboration with them. In this sense, performing financial consultancy services (free of charge) the bank must:

- strengthen the image of professionalism of the bank;
- eliminate the psychological barriers (preconceived ideas) of the customer;
- obtain as much information as possible about the customer, free of charge.

At the present time, serving the customer is the decisive starting point for many organizations and will become vital for the strategy of the Romanian banking system, while the competition becomes stronger and more

services are created. Any organization, which is aware of the quality of the services, aspires to overcome a minimum level of satisfaction and offer the customers more than they ask for. In the last decades the quality of the services has become such an important matter for banks, that none of them can neglect this aspect, as long as the others improve the level of their services.

It is important for those who deal with the marketing activity to understand the customer's behaviour and how the final buying decision is made. In the financial – banking service, the customer does not only choose the product, but also the bank he wishes to do business with. The understanding of the customer is vital for any marketing department.

The factors which influence the customer's behaviour (as a buyer) in relation with the bank are:

- trust in the banking system;
- the accessibility to acquisition of services;
- the reputation of the bank;
- the range of products and services;
- the quality of the services;
- the tariffs for the services;
- easy spotting the bank;
- the possibility to satisfy the needs regarding the financial-banking services;
- the presence of a friendly and capable staff.

In Romania competition continues to grow, new banks are founded, and this is why customers have the possibility to choose from the banks the one which satisfies their specific needs concerning the financial-banking services. Within the financial-banking department, the services and products are alike due to their effect, for this reason, a bank must maintain its competitive advantage. The quality of the services is a domain in which an organization is capable of acting and is the key for a future development. One of the secrets of guaranteeing the customer a good service is to understand his needs and wishes.

The commercial sector is the most complex in a bank. Despite all this, for many of the small businesses, accounting is made by individual persons and for this reason, the personal factors will probably have a bigger influence in their decisions, than in business confidences. It is important not to ignore the attitudes of the persons in large organizations, because they can influence the bank where the account is opened and which provides the services.

Reconsidering the preoccupation towards the customer implies:

- the concern for the granted time
- the concern for the moral values of the customer
- the concern for educating the customer (helping him in understanding the responsibility of the customer and the preoccupation of the bank for his needs)
- rough concern (identifying the moment when and how to say NO)

Today in marketing the accent begins to fall on keeping the clients in order to defend the market quota. The client is a productive resource, has its own contribution to the creation of quality, value and satisfaction and it also appears as a competition to the company.

If in the beginning of its activity, the bank offered its clients a reduced range of bank products and services, this confining to performing the cashing and payment operations through the bank accounts and giving credits to the economic agents and individual persons; as new products and new banking services were created, the range of clients has expanded, their number and the number of the accounts have increased from year to year.

The clients develop most of their activity through accounts opened at the bank. Their accounts and evolution provide an image on the banking activity. The evolution in time of the customers is crucial for two essential aspects: first of all because their interest towards the bank's services, the trust in the stability and safety that the bank provides and then the impact of these customers on the bank's resources, as a result of receiving an important number of Lei and foreign currency. The customer segment that had known the biggest development, both as number and as resources brought to the bank, is the population. Though the products and services especially created for this type of clients, the individual persons have manifested a great interest towards banks, this because of the reorientation of the population's economy to the bank deposits and as a result of the deponents' change in point of view, and that is, that the value of the earning is less important than the safety of the investment.

A client – individual person can be described as a person that holds a bank account for his/her personal use. This type of clients must respect the existing regulations, and the bankers must make sure that these people do not open nor use bank accounts for illegal purposes. The persons can open accounts only in their own name, with the possibility that the account holders authorize other persons too for the account signature. In other countries, the joined accounts (opened in two names), are very frequently encountered (for example, in a family, the husband and wife can open an account on both names).

Regarding the individual persons, the only thing that the banks must take into consideration, is the age of the persons that wish to change an account. It is taken into consideration that very young persons might not entirely know the consequences of operating certain transactions with the banks, and therefore, such persons are protected, in order not to be taken advantage of.

Also, it wouldn't be wise for the banks to engage in complex loan agreements with too young persons. Even if the law is not very clear at this point, the banks can have their regulations regarding the minimum age of the clients. In Romania as in most countries, beginning with the age of 18 individuals have the full exercise ability, and as such, can exercise their rights and they can assume the respective obligations to the legal reports that they close.

### ***3.1 Conditions for keeping the clients***

The clients that were admitted by the bank as a result of fulfilling some criteria, and that enter a normal and current relationship with the bank, will be permanently observed in the purpose of establishing to what extent they are keeping, enlarge or reduce their initial performances. In this way, during the business development and the different connexions with the bank concerning the clients, the following possibilities may occur:

- The clients maintain or enlarge their basic qualities, which were approved through the acceptance criteria. These clients are recommended as being very good, with high performances and, in these conditions, the bank and its regional units shall actively approach him/her.
- The clients change their performances, in the sense that they register low profitableness, the fixed assets are not in a very good situation (too big) towards the own capitals and the long term resources, they appeal to few of the bank's products and services, the customer indexes will be accepted continuously in a passive way and will be carefully followed and supported in order to be able to improve the general state in which they find themselves.
- The clients no longer qualify for the criteria they were accepted, no longer perform a profitable activity, have liquidities and a debt level no longer admitted, their activities and products are no longer accepted on the market, generally they find themselves in a determined situation which promises no future improvement.

The legal persons have always been encouraged and sustained by the banks in their efforts for productivity modernizations and change of the technology by granting a various range of credits in Romanian and foreign currency, that came in the completion of their own resources used in this purpose. In the course of their activities, the banks have given a special attention to the state enterprises that have not yet undergone privatization, as well as to the foreign investors that have shown interest in investing in economical activities undergone on the Romanian territory. The growth of the customers' number will be followed in parallel with the growth of the quality of the offered services, so that the clients' interest is satisfied by the bank in mutual convenient conditions. The client will still occupy the central place in the bank's activity, enjoying a special attention from its behalf, the bank pursuing the keeping of profitable clients' base and its expansion at maximum length, through attracting other big regional agents.

The place and the role of the client will be still kept in the centre of the bank's attention, observing its behaviour in accordance with whom the bank can better organize its activity. All this will be accomplished because for the employees of the bank, the clients represent a permanent priority, them being the most important part of the banking activity, those who put in motion the bank resources and without whom the bank would not exist.

#### I. The Conditions and the contents of the research

A group of professors (the co-authors of the paper) have realized a research project which was selected by the National Council of The Scientific Research of the Superior Education from Romania, as being part of the priority fields in research and developing regarding the Romanian integration in the Euro-Atlantic Structures.

In the project entitled **“Study regarding the banking environment in Dolj County and the identification of the improving possibilities of the bank-client relationship”** we proposed to make an analysis of the bank environment from Dolj County, in order to identify the opportunities of improving the bank – client relationship in the context of the reorganisation of the banking activity in Romania imposed by the alignment at the European banking standards.

As part of the research we appealed to the elaboration of a questionnaire for analysing the bank-customer relationship. We have made a pole based on the questionnaire based on the following major directions:

- Attitude towards the bank;
- The degree of knowledge of the banks in the county;
- The utilization range of the banking products and services;

- The motivation of bank change.

Following the development and the interpretation of the data obtained through statistic methods, we have reached a series of conclusions which we present in the following.

#### **4. General conclusions**

The bank market in Romania has known in the last two years a more pronounced change of the power equilibrium in the bank –client relationship, on behalf of the supplier of banking solutions towards the client. This change is more accentuated on that part of cooperative clients, where the number of the clients is still small, and the competition is big, and less notable in the bank’s relationship with individual persons. In this respect, the commercial banks have diversified their range of products, have become more flexible in the relationship with the clients and have decreased the interest rates.

Different approaches for different range of clients have appeared, but in the same time the innovation on the bank market has been quickly imitated. In this way, the “innovative” products become “standard” in a high speed.

Predictable evolution, sustained dynamics, a very high grade of competitiveness are just a few of the basic characteristics of the bank market specialized in companies. It is the place where the clients gain the hardest way and these are maintained with efforts and quality at the highest standards. Regarding the evolution of the financing products, in the last year we have noticed closeness in the financing conditions from the structural markets, a relative relaxation of the granting conditions, following the use of rating techniques, as well as the division of the activity between two or three banks.

Furthermore, together with the favourable evolution of the country risk, with the improved financial situation of the companies and the economic growth, the bank’s appetite for long term finance has increased. In this way after a period when the companies had mostly access to the short term credits, nowadays an increase of the maturity in the corporate credits towards 7-10 years is noticeable. The credit activity is headed towards the field of productive investments on longer terms that exceed five years and the credits for commerce activities have diminished. Under these circumstances, the commercial banks have evolved from short time financers, who offered only working capital for their clients, to suppliers that offer complete financial solutions.

In this way an intensive growth of the bank's portfolio is being accomplished, in parallel with the increase of the clients' portfolio. So, the lending products have diversified and financing structures have appeared meant to circulate the company's financial flux and to make risks easier to control. Furthermore, the credits for project financing will be more and more used, and there will appear new approaches of the complex projects.

Regarding the currency in which the credit is given, a sinuous evolution has been registered in the past few months. The credit in a foreign currency dominated in the first months of the year, but through the accentuated drop of the interests, through the nature of the operations of many companies and the elimination of the exchange risk, the credit in Lei becomes competitive.

The evolution in the last year of the financing conditions has been closely connected to the growth of the competition in the banking system. In this way, the accentuation of the competition has been determined by the very aggressive target of the majority of the foreign banks in increasing their market quota. In order to accomplish this objective, the commercial banks were forced to offer the corporate clients more convenient conditions. In certain geographical areas, the banking service offer obviously exceeds the request – especially on the segment of big companies and with a low risk – so that the competition to earn clients has become stronger and stronger.

The credit still represents the most important reason for which a company chooses a bank or another. The current offer regarding loans is relatively various, and the diversification possibilities are multiple, not only in the field of the lending, but also in the field of the monetary and capital market. We consider that on the market in general, the Romanian companies take little advantage from the possibilities of the banking sector of offering derivate products or finances through emission of obligations or commercial papers.

Although the banking products directed to the companies are almost standard, some of the banks present on the Romanian market try to differentiate the offer towards the competitors, and the good news is that in Romania innovation in the banking field is still possible, both regarding the products, as well as the offer characteristics. The adjustability to the specific needs of the company, the consultant and partner attitude towards the client, as well as the quickness and professionalism in the implementation of the offered banking services are the main attributes that we consider that differentiate one bank from another.

On the other hand, there are no magic recepies through which the banks can handle when facing the competition especially that the Romanian

market companies become more sophisticated and professional clients. They want dedicated solutions, a pragmatic approach and closer to their necessities, as well as bank counselling.

If it succeeds in being close to the client and in understanding its need, banks has chances in imposing itself on the banking market and win the battle with the competition.

## 5. Specific conclusion

The research was elaborated on the basis of a questionnaire that contains 38 questions and is structured in four main parts. The main conclusions that come from the research are the following:

I. The perception towards the banking activity:

1.1. Name the banks that you most often use or you know of:

Question

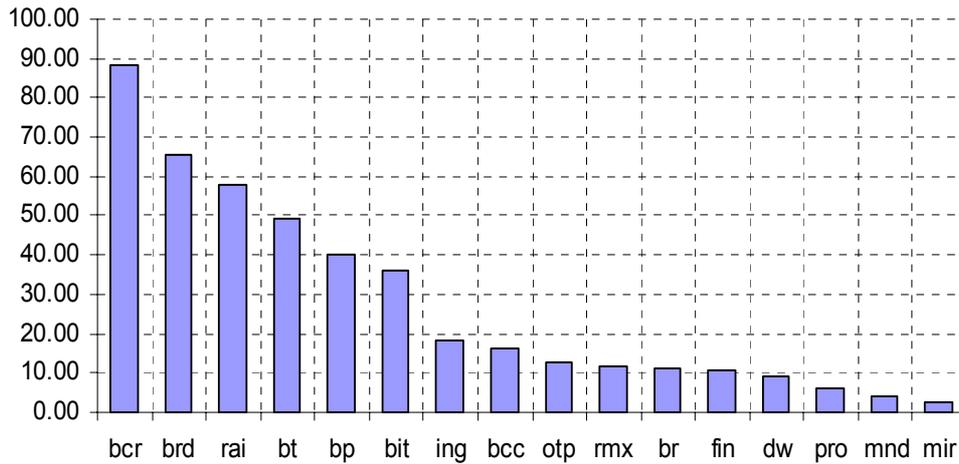
1.1.

No. of known banks

5

Banks' notoriety Ranking

position	1	2	3	4	5	6	7	8	9	10	Total
<b>bcr</b>	53	47	25	13	10	2	1	0	0	0	<b>151</b>
<b>brd</b>	17	30	15	26	13	9	2	0	0	0	<b>112</b>
<b>rai</b>	11	22	37	14	4	8	1	1	1	0	<b>99</b>
<b>bt</b>	9	18	15	15	14	5	7	1	0	0	<b>84</b>
<b>bp</b>	18	13	11	6	12	3	3	1	0	2	<b>69</b>
<b>bit</b>	15	8	13	11	3	8	1	1	0	2	<b>62</b>
<b>ing</b>	1	3	4	6	4	7	3	3	0	0	<b>31</b>
<b>bcc</b>	7	2	4	6	4	2	2	1	0	0	<b>28</b>
<b>otp</b>	10	5	2	3	0	1	1	0	0	0	<b>22</b>
<b>rmx</b>	8	3	3	1	1	0	2	1	1	0	<b>20</b>
<b>br</b>	1	3	2	1	4	2	1	3	2	0	<b>19</b>
<b>fin</b>	2	2	5	3	3	2	0	1	0	0	<b>18</b>
<b>dw</b>	9	1	0	0	2	2	1	1	0	0	<b>16</b>
<b>pro</b>	5	2	2	0	1	0	0	0	0	0	<b>10</b>
<b>mdn</b>	1	2	1	0	2	0	0	1	0	0	<b>7</b>
<b>mir</b>	2	0	1	1	0	0	0	0	0	0	<b>4</b>

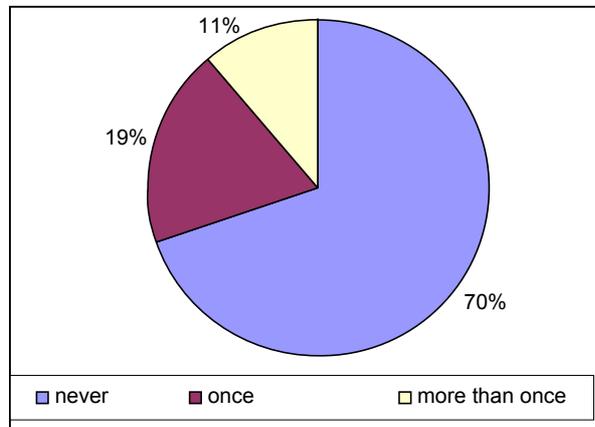


Thus, the degree of knowledge for ten banks, unassisted, places on the first three places the Banca Comerciala Romana (Romanian Commercial Bank), Banca Romana pentru Dezvoltare (the Romanian Development Bank) and Raiffaisen Bank

1.5 How many times did you change the bank you have been most frequently used in the last three years?

1. never;
2. once;
3. more than once.

1.5	
1	119
2	33
3	19
Non-response	0
Total	171

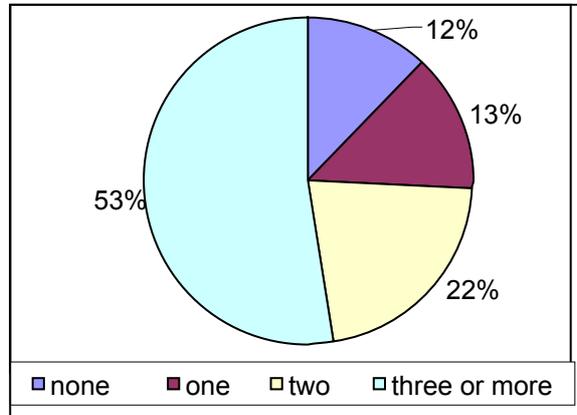


we discover that 70% of the interviewed clients have remained faithful to the bank they work with.

1.7. how many products or banking services do you use beside the running account:

1. none;
2. one;
3. two;
4. three or more.

1.7.	
1	21
2	23
3	37
4	90
Non-response	0
<b>Total</b>	<b>171</b>

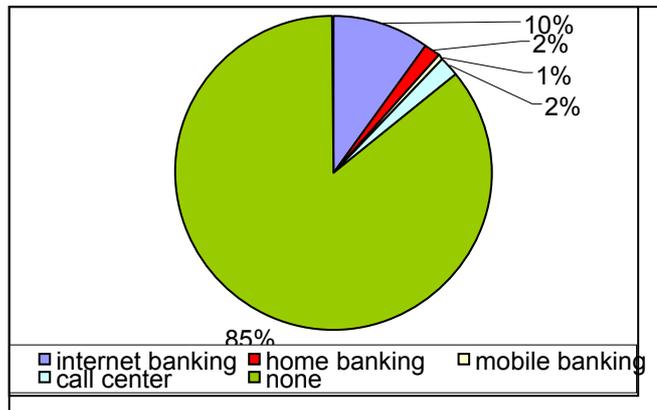


More than half of the interviewed persons specified that they use three or more banking products.

1.10. Which of the following products or services have you been using in the last 6 months?

1. internet banking ;
2. home banking ;
3. mobile banking;
4. call centre;
5. none.

1.10	
1	17
2	3
3	1
4	3
5	146
	170



Although the Romanian commercial banks spend important amounts of money to implement new products and services, we discover that 85% of the interviewed persons do not use not one even one of the new products.

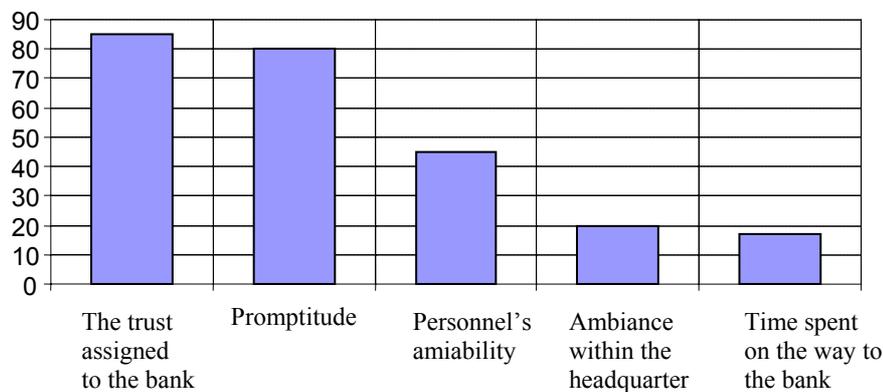
II. The attitude towards the banking services:

2.12. The greatest impact for you when choosing a bank is:

1. the trust you have in the bank;
2. the ambiance within the bank headquarter;
3. the amiability of the bank personnel;
4. the promptitude in solving your requests;
5. the time spent on the way to the bank.

2.12

1	85
2	20
3	45
4	80
5	17



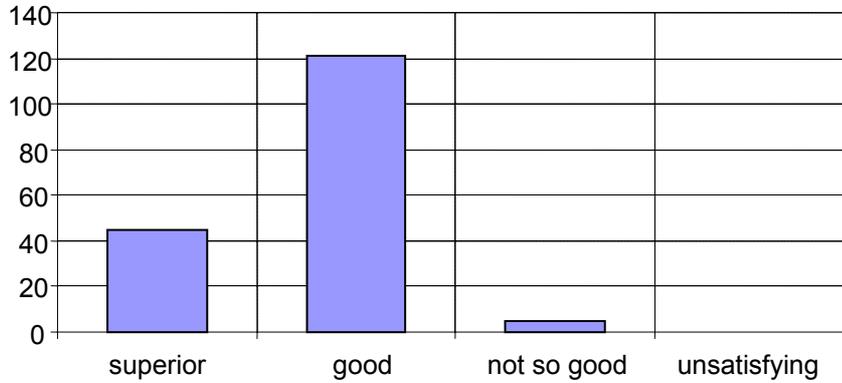
In Romania, when choosing a bank, the clients still take into consideration the trust they have in it.

2.20. You evaluate the efficiency of the process of solving your problems as:

1. superior;
2. good;
3. not very good;
4. unsatisfying.

2.20

1	45
2	121
3	5
4	0



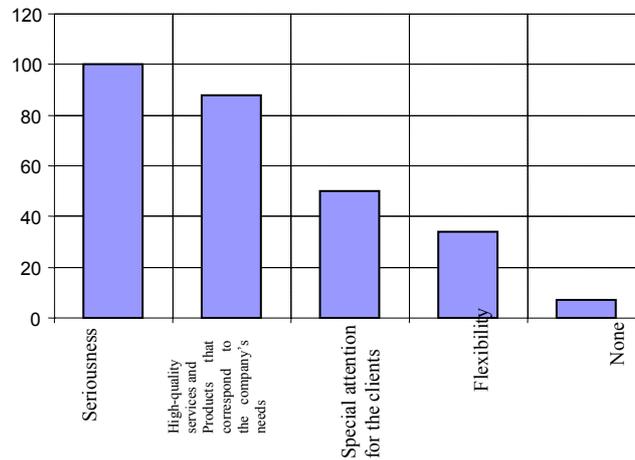
Although the banks make important efforts in order to improve the bank-client relationship, only 70% of the clients appreciate their relationship with the bank as good and only 23% of them consider it superior

2.21. Which of the following qualities match your bank:

1. seriousness;
2. high-quality services and products that correspond to the needs of my company;
3. flexibility;
4. special attention for the clients
5. neither.

2.21

1	100
2	88
3	50
4	34
5	7

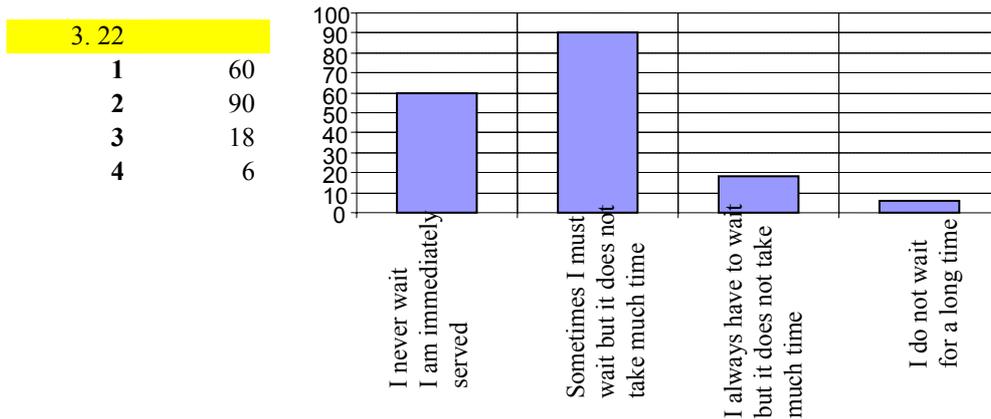


The main qualities appreciated by the clients are seriousness and high-quality services.

### III. The quality of the services and products

3.22. How do you characterise the waiting time at the bank:

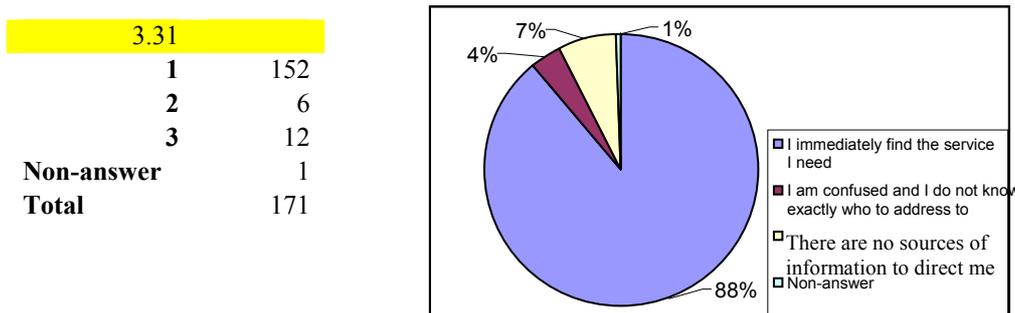
1. I never wait, I am immediately served;
2. sometimes I must wait, but it does not take much time;
3. I always have to wait, but it does not take much time;
4. I wait too much.



More than half of the interviewed clients consider that they sometimes happen to wait at the bank window, nevertheless, not for a long time.

3.31. How well are the signs and the posters directing you when entering the bank:

1. I immediately find the service I need;
2. I am confused and I do not know exactly who to ask for directions;
3. there are no sources of information to guide me, therefore I ask an employee for information.

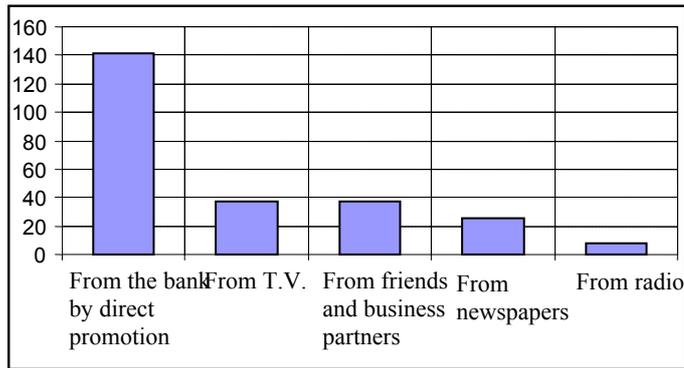


The clients can easily enter the locations where the services are performed, 88% of them being satisfied of the way the posters and signs within the bank direct them towards the services or the products they need.

3.33. You learn new information about new the banking services and products from:

1. the bank throughout direct promotion;
2. television;
3. radio stations;
4. newspapers;
5. friends and business partners.

33	
1	141
2	37
3	8
4	26
5	37



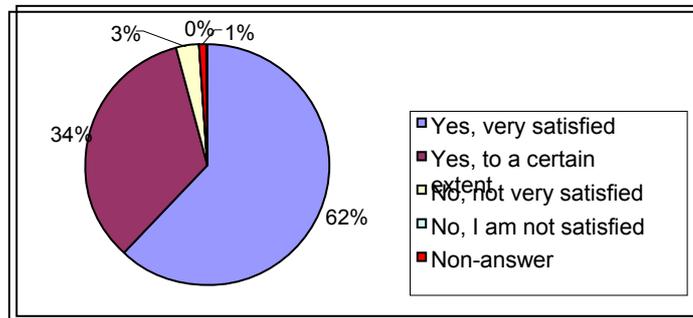
With the exception of the direct promotion, we find that a large number of clients learn about the banking services and products promoted by the banks from their friends and business partners.

IV. Clients' fidelity.

4.34. Are you satisfied by the bank-client relationship:

1. yes, I am very satisfied;
2. yes, to a certain extent;
3. no, I am not very satisfied ;
4. no, I am not satisfied.

4.34	
1	106
2	58
3	5
4	0
Non-answer	2

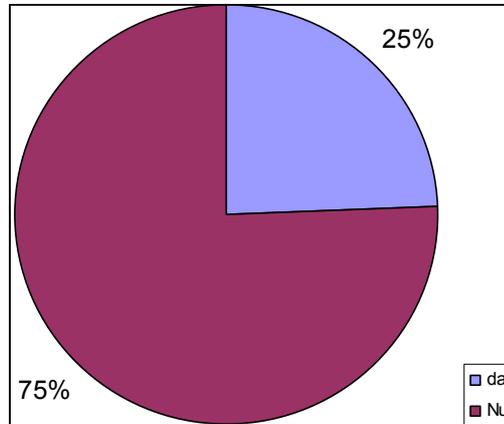


From the study we understand that most of the clients are satisfied about their relationship with the bank.

4.38. Did you know that there is a standard, respectively ISO 9004-2, that recommend the clear definition of the requests concerning the banking services:

1. yes, I did ;
2. no, I did not.

4.38	
Yes, I did	42
No, I did not	129
Total	171



As expected, the quality standard is familiar to approximately 25% of the interviewed persons; had the research extended also to the natural persons we consider that this degree of knowledge would have been even more reduced.

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# THE ADOPTION OF ELECTRONIC BANKING SERVICES IN DEVELOPING COUNTRIES – THE ROMANIAN CASE

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## **Abstract**

*The developments taking place in information and communication technology are affecting the financial institutions worldwide. This evolution had transformed the way banks deliver their services, using technologies such as automated teller machines, phones, the Internet, credit cards, and electronic cash. In this spirit, banking in Romania has been undergoing some changes. Many banks have been investing in Internet technology in order to maintain a competitive edge. This paper presents various aspects regarding the application of information and communication technology in the context of a developing nation.*

**Keywords:** *electronic financial services, electronic banking, Internet*

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<sup>1</sup> Grant TD 122 CNCSIS 2004 Romania, Grant TD 11 CNCSIS 2004 Romania

## 1. Introduction

In the financial sector, the last century has been under the sign of continuous liberalization and modernization. *The democratization of finances* (in an expression of Thomas Friedman) has been based in the first place on the development of the market of “commercial papers”(commitments that, since 1960, are sent to the public by corporations or even nations, introducing a sense of pluralism in the financial world and reducing the monopoly of banks). The democratization of investments has also been intensified on an international level when the set exchange rate and the strict control of cash flow system, that was founded in Bretton Woods after World War II, have disappeared at the beginning of the 1970’s. The moment when this system became more pliant, the developed countries democratized their financial markets, by opening them to the foreign participants, and the countries in the process of development followed the same example.

One of the most important revolutions “lived” by the banking sector has been set off by ... the new informational and communication technologies, “under the guidance” of the Internet. Under the impact of the new technologies, new types of banking services rose, the financial markets became more fluid and more efficient, and the consumers were able to choose from a number of offers – that often also come from other organizations than the banking ones.

The success of informational and communication technologies was bigger in the inter-banking transactions. Since many of the operations that take place between banks are standardized, their “digitalization” proved to be easy. In time, the important banks have developed their own ICT departments, have devised advanced networks and brought the informational operations that used to be externalized “in house”.

In the retail area, the ever growing power of the customer had the following effects:

- the ever growing variety of banking products;
- the cut in prices in the banking services;
- the increase of the quality of banking services etc.

All this came as a follow-up of the change of optic of the banking institutions, that have had to give up their traditional “pride” and become flexible, interactive, adaptable to customer’s demands.

But the ICT impact was not as large as in the inter-banking discount area. To choose a banking service is a complex decision, one that is hard to

make without direct contact with a bank employee. As a result, ICT have only been used by individual body customers in repetitive operations, such as taking out cash or visualizing the available sum in the bank account.

## **2. E-banking. General factors**

The financial-banking domain has known an uncommon evolution in the last few years; the increase in volume of the transactions in this field has been accompanied by a diversification of the services offered by the institutions in the branch. Under these conditions, the use of some IT solutions that were able to answer some more and more specific needs became a mandatory requirement for the growth of operational efficiency of financial institutions.

The banking service market is not exactly new. In Romania “electronic banking” was introduced since 1996, first by the foreign banks and then (starting from 1998-1999) by the local banks as well. The fact that since 2001 some of the banks have moved on to the implementation of “internet banking” could determine us to draw the conclusion that the Romanian market has matured and is offering services so as to cover the new needs of the customer. Even so, the obtained results do not come up to the expected level yet; practically, five years after the first home-banking service emerged in Romania, from the over six million customers of the banking system, the number of users of home banking services (whether we are talking about I-banking, e-banking, phone banking or mobile banking) barely comes close to 10.000<sup>2</sup>.

Because of the fact that the mass of banking service users in Romania is growing continuously, as are their skills in using Internet technologies, the expectations include modern services from the banks: accessible, with high performances and comfortable in Internet technology. The banks themselves need robust and advanced computing infrastructures that are able to integrate the existent applications, out of practical reasons, in an evolutionary rather than revolutionary manner. In Romania, right now, these tendencies are very much accentuated by the positive dynamics of the banking sector.

From a functional point of view, a high performance e-banking application should distinguish itself through easiness in navigation, meeting the customer’s demands, selective access to content based on needs/types of consumers, credit simulation and diagnostic tools and, of course, for the authorized customers, the whole set of banking operations for consultation and administration of the bank account and bank transfer.

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<sup>2</sup> <http://www.no-cash.ro/sti/stiric15.html>, accessed in September 2005

Technically, response time and system reaction, pertinence and selectivity of the search engine are the important ones. The last, but not the least, the security of the application operation and of the traveling information should be built, maintained and monitored in a manner beyond doubt. For the business to business applications, which serve the really important transactions in the banking activity, the requirements are made to match. These applications have to change with each other an impressive amount of data and, furthermore, to react to a standard number of events with standard functions.

### **3. Risks for e-banking**

The companies from the financial sector that were interviewed by the Gartner analysts have showed that they intend to invest about 10% on average from the total IT budgets in risk management products and services. The analysts consider that in 2006 the risk management will continue to situate itself in the top of the priority lists of the companies from the financial sector. And as this subject becomes more important, the responsibility to build some risk management strategies is attributed to a higher level of the organization's management. The strategic responsibility is shifted from the individual department's level to the corporation's level.

Although for the financial companies the risk is becoming an element that needs to be kept under control under any circumstances, in the case of implementation of some IT projects, risk management becomes a key to success. The risk may come from the direction of businesses, of people or of IT elements. While certain risk elements are obvious, others are more difficult to identify. The risks may vary during the life span of a project and are, in general more significant in the last stages of the project. Still, risk management, the active and continuous process of risk identification, of analysis and reply to the risk factors, must begin even before initiating an e-banking type project. The organizations have to recognize the fact that risk management is a repetitive process, and that's why it takes regular risk reevaluations. IDC considers that at the core of IT projects failure there are many causes that are not immediately obvious.

### **4. The interoperability of e-banking solutions and the Web service market**

The interoperability of e-banking solutions is a mandatory requirement for the bank-implemented solutions, and necessary for ensuring the connection of the existing applications at the level of a financial institution and for the interoperability with various systems of the partners.

According to the estimates, the global market of Web services and that of the solutions dedicated to application interoperability was estimated in 2004 to approximately 3,4 billion USD. For the next years an important evolution is estimated for this sector, Web services covering a more and more acute demand of IT system integration. Thus, in 2008 the market of solutions based on Web services is estimated to approximately 11 billion USD. A consolidation of the market of solutions based on Web Services for the 2004-2008 timespan is foreseen. The defining of some evolved standards, as well as their acceptance by an ever-growing number of companies will contribute to the adopting of this technology on a wider and wider scale. Considering the transmission of relevant business information through the Web, the use of methods which allow the implementation of an enhanced level of security and which ensure data confidentiality is absolutely necessary. The achievement of standards as comprehensive as possible in the Web service field is a priority for the next years. The future versions of the Web service standards, available for now in the testing phase, will allow the encoding of data transmissions and the use of digital signatures. For the SOAP protocol, extensions for the attachment of identification elements will be available, ensuring an efficient control of the identity of the users which make the connections.

An example of implementation of the interoperability of IT systems on a national level in Romania is the electronic payment system implemented by BNR (National Bank of Romania). The process of modernization of the system began in 1995 with the improvement of BNR's ability to implement the monetary politics, the modernization of the payment on paper system and the nearing to a society predominantly without cash. Through the second stage of the process, which takes place in this period of time, the facilitation of the development of economy is targeted through the enhancement of security and of the efficiency of the inter-banking payment system, the passage to a society predominantly without cash, as well as the establishment of a well founded legal base for the payment and discount system. The project is operational in this moment, ensuring the interoperability on the level of IT systems from different banking institutions.

## **5. Romanian data and realities regarding e-banking services**

If the "Internet Banking" service has its beginnings somewhere around 2002 here, on a global level it has emerged since 1990, when the "Wells Fargo" Bank in California, USA, introduced the first service of this kind in the world.

According to the statistics of the Ministry of Informational Technology and Communications, the number of users of electronic payment systems with access from a distance is over 56.000, representing a growth of 26% compared with 2004. Also, the value of the payments expressed in euro equivalents has increased from 6,9 billion euros in the first trimester of 2004 to 12,6 billion euros in the first trimester of 2005.

Internet banking is a service offered to the customers by the banks, a service through which online banking operations are facilitated, from a distance. All that it takes is a computer, no matter its location and a connection to the internet. The access to this service is ensured all year round, 24 hours a day, 7 days a week. Except for its high availability, this service also offers the advantage of simplicity. Generally, surfing on the Internet-Banking dedicated sites is simple and intuitive, most of this product's interfaces being "user friendly".

In Romania, for a bank to be able to provide its customers with the Internet-Banking service, it has to obtain an approval from the Ministry of Informational Technology and Communications (MITC). In the present moment, according to the information on the MITC site, a number of 30 Internet banking, mobile banking and home banking services are approved. Most of the sites for these services are secured and guaranteed by the Verisign company, so that the customers are able easily recognize and verify its authenticity. Without trying to promote certain bank names in Romania, we present in the following table a few e-banking type functional products, as well as their main security features.

**Table 1 – Internet Banking Services in Romania**

<i>Bank</i>	<i>Product name</i>	<i>Security</i>	<i>Customers</i>
<i>Alpha Bank Romania</i>	Alpha Web Banking	Electronic signature A/S 400 & Midas	Corporate body
<i>Italo-Romena SpA Italia Treviso Bank</i>	WirWeb	Firewall against unauthorized access Communication channel secured through the SSL protocol with a 128 bites length of the encrypting key. Digipass type device that generates unique access codes.	Individual body Corporate body

<i>BancPost</i>	Internet e-bank	The data exchange takes place under a SSL3 secured protocol that uses an 128 bites encrypting key and 3DES Firewall algorithm and intrusion detectors at Internet access level The customer authenticates himself/herself through a Digipass 300 (token) security device	Individual body Corporate body
<i>BRD Group Societe Generale</i>	BRD-NET	For the encrypting of the transmitted data the SSL 128 bites security protocol is used BRD-NET is provided with 80 connections that can be made with the same password	Individual body Corporate body
<i>HVB Bank</i>	Online Banking	Data encoding 128 bites SSL Three security levels access system Digipass 300 security device	

*Source: ComputerWorld Romania, May 2005, no.9 (268), p.13*

## 6. Conclusion

The Internet, phone, mobile or electronic banking offer on the Romanian banking market is in full development process, and the banks have to win the confidence of the individual and corporate body customers, taking into account the fact that the transactions that are made on the online system are perceived as incorporating a high risk factor. But the level of accessibility regarding the performing of banking operations straight from the company office or from home without depending on the opening hours of pay-offices determines a growing number of customers to resort to this kind of services.

A market is initiated and stimulated to grow and, in consequence, the banks have the role of getting involved in the forming of the future demand for this kind of services on the Romanian banking market, as the economy and the society develop. The role of banks is in this sense very important, consisting in the rise of the knowledge level in most modern practices, work techniques and in the adjustment of customers to these. In many cases, the Romanian customers do not resort to e-banking services because they are not familiar with them or because they don't understand them well enough.

On the other hand, the potential user's trust in the e-banking services is just one of the factors that influence the manner in which this market develops. Also here we can add the lack of information amongst the population, the legislation regarding the electronic signature, the national payment system.

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# MOBILE BANKING SERVICES IN ROMANIA<sup>1</sup>

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## **Abstract**

*The field of mobile technologies has been particularly dynamic during the past few years. The number of mobile phone users has grown permanently. Mobile operators are involved in launching new technologies which allow for an ever faster and better data exchange. The degree of expansion of the mobile phone networks, fast penetration rate of handsets and the emerging use of banking services via the fixed Internet are the main reasons for a strong anticipated growth of mobile banking, a mechanism with a number of unique advantages. This paper discusses mobile banking services aspects, with specific attention focused on the development of a new model for analyzing mobile banking solution. The proposed model focuses on the customer's motivation and preferences. Also, there are presented the results of an investigation regarding mobile banking services in Romania, in the framework of the new model of analysis.*

**Keywords:** *mobile financial services, mobile banking, mobile Internet*

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<sup>1</sup> Grant TD 11/2004, CNCSIS Romania, Grant TD 122/2004, CNCSIS Romania

## 1. Introduction

The fulminatory development of the last decades in the informational technology has created a context in which global market has become a relevant arena for the economic competition. The commerce, the electronic and mobile business – radical innovations which have the potential to drastically change the current products and processes- have as a support this informational technologies' evolution and are an important element in the enlargement of globalization's action sphere.

The evolution of informational technologies continues in the same astounding manner and their communication component becomes more and more obvious. A foresight form the specialized literature<sup>2</sup> says that until 2010, the data communications will rapidly develop and will become more important than even the computer processing. They have gone hand in hand until now, but we are slowly moving from a computer era towards a communication era. This affirmation is supported by a score estimated by ITU: the number of mobile telephony users exceeded 1, 5 billion persons (a quarter of the Globe's population), in the middle of 2004.<sup>3</sup> The rhythm of development of mobile telephony surpassed the fix telephony one: the wireless communications develop six times faster than the fix telephony services<sup>4</sup>.

In this context, the mobile devices and technologies will continue their evolution too. All the progresses registered until now hardly represent, according to literature, **the first step in acquiring mobility**. The successful combination between services applications with added value, the developing capacity of transmission, the more and more extended development area, the better and better quality of services continue to impose mobile telephony as an indispensable comfort.

The continuing development, the happy marketing approaches and the harsh competition lead to a permanent development of mobile telephony. The financial services have achieved an important position within the mobile industry.

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<sup>2</sup> Fitzgerald, J., Dennis, A., *Business Data Communications and Networking*, John Wiley & Sons, Inc., 2002

<sup>3</sup> „Biz”, nr. 98, 1 – 15 februarie 2005, p. 40

<sup>4</sup> Oprea. D., Meșniță, G., *Regula 4x20 în informatica ieșeană (The 4x 20 rule in the informatics of Iasi)*, in Meșniță, G. (coordinator), *Societatea informațională – Educație, cercetare, sisteme informaționale, tehnologii informaționale (Informational society-Education, research, informational systems, informational technologies)*, Tehnopress Publishing House , Iași, 2004, p. 26

## 2. The mobile financial services

**The mobile financial services** are a *sub-set of mobile commerce* and include *the financial transactions carried out through the agency of portable devices*. Metaphorically speaking, they represent “an important step towards a cashless society”<sup>5</sup>.

There are three main categories of financial services that have been adapted to the business development mobile environment:

- Stock exchange transactions;
- The payment of goods and services counter value;
- Bank services.

### 2.1 Stock Transactions via Mobile Phone

**Stock Transactions via Mobile Phone** are an extension of the type of transactions practiced on the Fix Internet. When the stock activity is carried on on-line, the presence of intermediaries isn't required anymore. Relevant information about actions, obligations etc. can be obtained directly, by searching on the Internet, and the persons interested can express the desire to invest through the agency of the Internet. The strong competition in the field, combined with small transaction costs, has strongly reduced the taxes afferent to the brokers' services. As a result, the number of on-line investors has grown and is continually growing. With the help of mobile communication services, it is possible for new services destined to investors who possess a mobile device to appear, such as:

- the transmission of alerts/notifications to the persons interested, based on predefined factors: at a certain period of time or at the quotations' fluctuations between certain margins;
- the transmission of personalized news , selected according to the persons' interest field and delivered to them by SMS or with the help of a WAP portal;
- immediate consultancy services, at the request of the beneficiary of such a service; the administration of the portfolio and the titles' quotation evaluation.
- the buying and selling of financial titles.

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<sup>5</sup> Hyun Jun Yong, BankOn LG TeleCom, in Ihlwan, M., *There's a Bank in my Phone*, „Business Week”, September 27 2004, p. 30

## 2.2 Mobile payments

With the help of mobile devices, both the goods and services acquired in the mobile environment, and also the goods and services acquired in the “traditional” manner can be paid. We continue by presenting a series of classifications of mobile payments, meant to help examining and classifying the concept from different angles.

According to the *moment* in which they take place, the mobile payments can occur immediately (from a debit account) and even previously (from a pre-paid sum) to the acquisition moment. According to the *type (nature) of the acquired goods*, the payments are divided into payments for physical (real) goods, for digital (virtual) goods or for different services. From the *geographical* point of view, the mobile payments can be national or international. Taking into account the *currency involved in the transaction*, the payments can be carried out in national currency, in one or several currencies.

A more technical classification divides the mobile payments according to the place where the beneficiary’s account information is stocked: on a server from the financial institution network or a telephony operator, in the user’s mobile device or on a card inside the mobile device.<sup>6</sup> By analyzing in more detail, we identify three ways of stocking the client’s financial information in his mobile phone<sup>7</sup>:

- Mobile with only one chip : a bank application is stocked on the SIM card (elegant solution, dependent on an a certain bank and on a certain operator. The SIM card has also WIM functionalities (Wireless Identity Module) and other supplementary functions;
- Two cards are inserted in the phone – the one belonging to the mobile telephony (SIM) operator and to the financial institution (WIM), foreseen with PKI<sup>8</sup> and one for the mobile devices.
- Dual Slot: the phone has two slots, one for the SIM card and one for a normal dimension card.; in this situation, the user places the bank card in a card reader and then pays with mobile phone (it is a rather awkward alternative for an usual

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<sup>6</sup> Telecom Media Networks 2003, *Mobile Payment: Money in Your Hand*, at <http://www.capgemini.com/tme/pdf/MobilePayments.pdf>

<sup>7</sup> Kalliola, M., *Mobile Payments*, la [http://www.tml.hut.fi/Opinnot/T-109.551/2005/reports/Mobile\\_payments.doc](http://www.tml.hut.fi/Opinnot/T-109.551/2005/reports/Mobile_payments.doc)

<sup>8</sup> PKI – Public Key Infrastructure

person but can be used in the B2C sector – for the use of ambulant sellers or the delivery personnel, for whom the transportation of a normal card reader would be difficult). The Dual Slot Mobile was used by the French system „Payment sur Mobile CB”.<sup>9</sup>

Some payments can also be made through SMS, with a usual mobile phone, provided with only one SIM chip. Some operators can provide SIMs with payment applications. There are also mobile phones foreseen with a special key, through which a menu dedicated to the mobile parts is activated (the NTT DoCoMo I-mode key of Japanese mobile phones).

The mobile payments systems can also be classified in *closed and open systems*.<sup>10</sup> The closed systems characteristic, which is of a majority, is that both the phone possessors, and the traders have accounts at the same bank, this being connected with the mobile telephony operator that intermediates the payments. With the less numerous open systems, several banks and mobile operators can participate, with their interconnected networks. The transactions are mediated, in this case, by a payment services provider (mobile operator, a bank or an independent entity).

According to their purpose, the mobile payments can be used in three main fields: in the mobile commerce, within the banking mobile services, and also in the mobile payments of bills (mBilling). The three fields are superposed.<sup>11</sup>

Among the most common classification criteria in the specialized literature, there are the payment value and the place of payment.

According to the *payment value*<sup>12</sup>, there are:

- Micro payments (with a value of 10 euros or USD);
- Macro payments (in which larger sums than 10 euros or USD are involved).

The distinction according to the payment value is important especially for security reasons: in the case of macro payments, stronger procedures of payer's authentication are necessary (PIN, user name and password or even authentication certificates), while in the case of micro payments, the

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<sup>9</sup> a description of this service can be founded at <http://www.jrc.es/cfapp/invent/details.cfm?uid=13>

<sup>10</sup> Vasilache, D., *Plăți electronice. O introducere (Electronic payments. An introduction)*, Rosetti Educational Publishing House, Bucharest, 2004, p. 225

<sup>11</sup> Vasilache, D., *Read Works.*, p. 227

<sup>12</sup> Mallat, N., Rossi, M., Tuunainen, V. K., *Mobile Banking Services*, in the magazine „Communications of the ACM”, May 2004, Volume 47, Number 5, p. 43

authentication can be made only according to the PIN checked by the operator or bank or can even be absent.

Taking into account the place of goods or the paid service, the following mobile payments categories can be identified:

- Local payments, to a device (POS <sup>13</sup> from a shop or a street automaton, provided with a special apparatus) found in the proximity of the mobile terminal's possessor. The user utilizes, most of the times, a prepaid account, of electronic pocket book type, and the discount is made between the bank that issued the pocket book and the accepting bank, that has the equipment to which the payment was made. A preliminary understanding is necessary between the network operator and the bank that issued the pre-paid accounts.
- Distant payments (through the agency of electronic networks). These payments are also called OTA payments (Over the Air). Distance mobile payments are made through the mobile operator, using usual telephony protocols (GSM, CDMA, GPRS etc.), SMS or the Internet access through WAP. The other actors are the issuing banks (that have control over the one who pays) and the accepting banks (where the traders' accounts are) and eventually, the intermediary (the payment services provider).

By combining the last two criteria we obtain several mobile payment categories.

The *micro-payments* made at the distance, through the agency of the telephony operator network, allow paying the informational content and the services acquired through the agency of a mobile device (different types of information, sounds, logos, digital format tickets for several events, participation at network games etc.) The micro payments to a POS found in the proximity of the user allow the direct or intermediated by a human operator payment of small value goods (newspapers, restaurant meals, goods offered by street automates etc.)

The issuing of immaterial shape tickets can be easily assimilated by the mobile payments. The person to person payment through the agency of the mobile phone is advantageous, for example, in the case of relatives who live in different countries.

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<sup>13</sup> Point-of-Sale

*The micro payments* are intended for the payment of great value goods and services, bought on the Internet or in the traditional manner.

The numerous classifications presented above foresee the fact that mobile payments have found ways of various materialization, such as:

- The adding of the counter value of goods and services acquired at the mobile phone bill, modality that has the advantage of being familiar to the user. For example, the seller contacts the mobile phone operator, who supplements the value of the user's bill (the m-play Vodafone service functions in this way). In this category the added value payment by SMS is also included.
- The deducing of mobile payments from the user's credit account (Mobile Payment forum works at a standard for this type of payment); the mobile phone works as a credit card; a variant of this type of payment is the extraction of the due sum from a buyer's separate account, meant for mobile payments (the risks are reduced, but the user has the supplementary concern to administrate a new bank account);
- Payments from virtual accounts or from pre-paid SIM cards- the virtual sums are in fact the proof of the previous payment of a sum of money to a person who gives such payment solutions. The "loaded" sum can be spent through the agency of mobile technologies, and of course rebuilt by previous depositions. The payments from virtual sums are especially used by persons who do not have a bank account (such as children and persons living in isolated areas). Their advantage is the low risk, for all the payments involved in the transaction. The main disadvantage consists of the fact that blocking a sum of money in a virtual account does not bring any profit to the user, but rather to the provider of this payment solution; moreover, the depositing of the sum is a step forward in a transaction whose main trump is simplicity;
- Other ways of payment: the transformation of loyalty points in currency for several acquisitions; the payment according to use session (in the case of video-games for example)

### **2.3 The mobile bank services**

*M-banking* can be defined as "that part of products and services, of relationships established between banks and their clients or between banks

and other banks, based on a mobile device or which use as a transmission support a mobile telephony network.”<sup>14</sup>

The *m-banking* services are generally modified versions of Internet banking services type, which suppose to serve the bank’s client from a distance, through the agency of Internet technologies. Both types of services have as an advantage the decrease of bank transaction costs (there are providers of mobile payments technologies who claim they have reduced the transaction cost below 1 cent, very small value compared to the cost of a transaction through ATM -27 cents or with a cash transaction- 1.07 USD<sup>15</sup>.) From the user’s point of view, mobile-banking means making bank operations from your own mobile device<sup>16</sup>. The bank services can be divided in two distinct categories: basic services and advanced services.

*Basic services* have the same functions as the one met in the case of Internet:

The visualization of account extracts, of recent transactions, of interest rate and of exchange currency, fund transfers, the bill payment. The simplest form of m-banking is interrogating your personal accounts’ sold by SMS. It makes use of the person’s natural interest regarding his financial situation, offering him the possibility to find out conveniently and immediately his own financial situation, no matter the place where he is or the moment of the day,.

The services belonging to the fix Internet field must be adapted to the restrictions of mobile devices by using predefined forms and processed with an established course.

*Advanced services* must be capable to increase consumers’ loyalty and to differentiate the rest of current bank services, being especially designed for mobile consumers. A few examples of such services are: account extracts sent when the account reaches a certain limit, notifications related to the credit line, installment simulators, instantaneous contracting of consume credits etc.

Generally, the access to advanced services is conditioned by the use of a “smart” mobile phone, with Java, WAP, GPRS incorporated facilities.

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<sup>14</sup> Butiri, A., Nițchi, Ș., *Mobile Banking*, in Vol. International Symposium Works „Specializare, Dezvoltare și Integrare” (*Specialization, Development and Integration*), S.C. Roprint S.R.L., Cluj Napoca, p. 179

<sup>15</sup> Dandapani, K., *Success and Failure in Web-Based Financial Services*, in the magazine „Communications of the ACM”, May 2004, Volume 47, Number 5, p. 32

<sup>16</sup> Butiri, A., Nițchi, Ș., *Read Works*, p. 179,

### 3. The stage of development of mobile financial services

As far as the **stage of development of mobile financial services** is concerned, we appreciate the fact that among the facts that determined the proliferation of mobile solutions use in the field of financial services, there are:

- *The impressive penetration of mobile phones at the world level*, in a relatively short period of time;
- *The personal nature of mobile devices*, which make them appropriate for the administration of your own money funds;
- *Positive experiences of use of informational technologies and of financial transactions communications* (Internet banking, home banking).

Although the number and variety of contemporary mobile financial services are impressive, many of these are in an early stage of development and haven't reached the number of users which can ensure their success and survival. And generally, the degree of mobile financial transactions' penetration is reduced, both compared to the number of mobile devices possessors and also compared to the number of persons who have a bank account.

We continue by presenting part of the reasons for the weak development of financial transactions in the mobile environment.

- *The limits of the current technologies*. If in order to receive bank information by SMS only a usual mobile phone is necessary, the complex financial applications require technologies of an improved data transmission (GPRS, Java). The promised step towards third generation technologies (3G) will allow the development of these services' application, which will become faster and more comfortable, cheaper and more standardized;
- *The immaturity and deficiency of mobile devices*. Very often, in order to activate a financial application, complex settings of phones are required. From another point of view, complex settings of phones are necessary. From a different approach, there are not enough automates provided with technologies such as infrared rays, identification based on radio frequencies (RFID – Radio Frequency Identification) or Bluetooth, which accept the payment from a mobile device. For small sums, because of the simple reason of comfort, the cash payment is

preferred. All these technologic difficulties make the evolution of mobile payments hard to foresee.

- *The existence of a “negative publicity” phenomenon.* The profile press, not to become too excessively enthusiastic from the boodot.com period has treated the newly-come mobile commerce with reserves.
- *Security problems.* The payment through the mobile phone seems safer than providing the details of the credit card to a human operator. The security mechanisms such as digital signature and PKI contribute to the creation of a safety feeling. Nevertheless, the attackers of information have easily adapted their methods for the mobile telecommunication sector. Together with interceptions or mobile viruses, already in circulation, dangers of the identity stealing type can appear (by phishing and phreacking). Moreover, many times, especially for micro payments, the implementation of some supplementary security mechanisms would be too expensive.
- *The lack of safe and interoperable standards for the mobile payments.* The phenomenon is paradoxical: although there are a multitude of forums and the consorts constitute in the purpose of standard formulation, a general accepted model delays to appear. In this context, constituting a mobile payment global market is difficult.
- *In the area of micro payments, persons are not willing to pay for the information that can be found on the “traditional” internet.* The psychological threshold of payment accepting has been overcome only in the case of digital products (such as sounds or logos that personalize the mobile phone) that could only be acquired by buying them, ever since they appeared. Even those who pay for the goods acquired by mobile phone prefer to do this periodically, by subscription. Moreover, there are not many products which can be sold in exchange of small sums of money. This thing can be changed if we take into account initiatives such as Google<sup>17</sup> that intends to create a huge on-line library, project for which they are already collaborating with famous names such as Harvard or

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<sup>17</sup> Hof, R., *Noua putere în tehnologie (The new power in technology)*, article „Business Week” taken in “Biz”, no 108, 8 - 20 July 2005, pp. 40 – 45

Michigan. Accessing information from virtual libraries or archives is made by payment, by using micro payments.

The estimation regarding the evolution of mobile payments is generally optimistic. It is estimated that towards the end of 2005 and the beginning of 2006, the effect of competition between Visa, American Express and MasterCard will be felt by the evolution of mobile payments, and in 2008 they will be adopted on a large scale in USA.<sup>18</sup> According to other previsions, in 2009 the incomes generated by mobile payments will be greater than 50 billion dollars.<sup>19</sup>

The immediate reality does not seem to confirm these expectations. While, according to the borings, more than a quarter of the Europeans are willing to pay with the mobile<sup>20</sup>, the USA banks have given up mobile services, because the number of users was not satisfactory. A possible indicator for the ulterior evolution of mobile payments is the current situation of North Korea- an excellent space of testing for the communication technologies. Here, tens of thousands of restaurants and shops have already terminals reading bank information from the phones, by infrared rays. The access to the subway or bus station is also paid by phone.<sup>21</sup>

#### 4. The place of mobile technology in the developing countries

The reality according to which different people, different cultures and areas within a nation do not have access in the same way to information and communication technologies, is referred to with the term *digital divide*-translated by “digital gap”, “digital disparity” or “digital division”. A term referring strictly to the differences between countries and regions on the globe regarding the access to TIC is *global digital divide*.<sup>22</sup>

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<sup>18</sup> Ganapathy Subramaniam, N., director executiv, Tara Consultacy Services, India, in Swann, J., *Mobile Payment Technology Could Hit It Big In The Remittance Market, But Adoption Challenges Remain*, „Community Banker”, Jan 2005, vol. 14, p46(2), online version at

[http://web3.infotrac.galegroup.com/itw/infomark/137/226/92002071w3/purl=rc1\\_SP00\\_0\\_A127433583&dyn=33!nxt\\_1\\_0\\_A127433583?sw\\_aep=uaic](http://web3.infotrac.galegroup.com/itw/infomark/137/226/92002071w3/purl=rc1_SP00_0_A127433583&dyn=33!nxt_1_0_A127433583?sw_aep=uaic)

<sup>19</sup> ARC Group, in Swann, J., *Read Works*

<sup>20</sup> AT & Kerney and Judge Institute of Management Studies, quoted in Muşătescu, M., *Schimbarea la față a mobilului* (The mobile’s change of look) „Business Magazin”, Nr. 23 (10/2005), 16-22 March 2005, p. 51

<sup>21</sup> Ihlwan, M., *Read Works*, p. 30

<sup>22</sup> Haag, S., Cummings, M., McCubbrey, D., *Management Information Systems for the Information Age*, 4th Edition, McGrawHill Irwin, 2004, p. 246

The phenomenon *digital divide* is persistently tackled in the specialized literature of the beginning of XXI century and is the object of concern for a great number of institutions.

The easiest way to “build a bridge” over the digital gap is providing the less developed countries with computers and the founding of consultancy centers. Samples of these initiatives can be found in great number in magazines such as “Business Week”, “The Economist” or “Harvard Business Review”. UNO, for example, has launched a “Digital Solidarity Fund” for financing the projects that address the “unequal use and distribution of TIC” and allow the “excluded countries and persons to enter a new era of informational society”<sup>23</sup>.

However, a contrary idea was recently discovered in the same magazines’ pages: providing persons with computers only builds a feeble bridge between the two margins of the imaginary gap. There still remain the serious discrepancies between incomes, the level of development and of education. The people from the countries in course of development have greater needs than those of desiring TIC, such as providing for food, taking care of their health and personal security.

Taking into account these fund elements, they reached the conclusion that mobile telephony has a much bigger potential of reducing the digital disparity than the more sophisticated calculation technique, because of the more reduced costs of devices and their use and of the fact that approximately 77 % of the world’s population already lives in areas covered by mobile telephony networks. The technologies of mobile data transmission seem to have a greater long term impact on the development of countries of the second world. In this respect, a study<sup>24</sup> of “London Business School” shows that an increase of 10 mobile phones per 100 persons has as a result an increase of 0,6 percentage points in the Gross Internal Product.

Their governments, who must support the free competition, are the first who can influence the development of mobile telephony in the countries in course of development. The device producers play an important role in providing the persons from countries in course of development with mobile phones. Although the biggest majority of their incomes result from selling sophisticated phones in the developed countries, the markets of these countries are becoming full. As a result, producers have oriented themselves towards the countries in course of development, offering rudimentary telephones, with long lasting battery independence, at very low prices. More sophisticated telephones also sell well in the poor countries, where they play

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<sup>23</sup> \*\*\*, *The Real Digital Divide*, in „The Economist”, March 12th 2005, p. 11

<sup>24</sup> \*\*\*, *Calling an End to Poverty*, in „The Economist”, July 9th – 15th 2005, p. 51

the role of a social symbol and supply for other devices, such as radios or PCs.

The next table presents the factors with positive and negative implications on the m-readiness level in Romania.

**Table 1 A possible appreciation of m-readiness level in Romania**

<i>Positive factors</i>	<i>Negative factors</i>
The rate of mobile telephony penetration in Romania in 2004 was of 48% of the country's population. The estimated increase for 2005 is of at least 10%. The rate is visibly higher than the penetration of personal computers.	The penetration rate is still reduced compared to the higher than 100% rate reached in the developed countries
The main operators have already launched (Connex) or are intending to launch (Orange) 3G advanced data services (video calls, Internet files download, games, music, live TV etc.) They also address the companies with offers such as IP Data services, point-to-point services, or the wireless Internet access. In the future, the operators intend to introduce Unified Messaging as well.	For the time being, the pre-paid services (the use of cards) are the most common in the entire operator's activity. This fact shows a reduced level of mobile telephony users' incomes and questions the use of devices for the transmission of Data (other than the rudimentary way of SMS)
The operators have signed partnerships with content providers such as MTV or UEFA Champions League.	
The phones with advanced functions sell better and better in Romania.	In 2004, only 1-2 % of the phones sold in Romania were smartphones. <sup>25</sup>

Concluding, we can appreciate that although Romanians are some of the most open consumers as far as mobile telephony is concerned, the national market is not yet ready to adopt data services on a large scale.

<sup>25</sup> Antohi, D., *Românii preferă telefoanele cu ecran color și sunete polifonice (Romanians prefer phones with colored screen and polyphonic sounds)*, în „Biz”, no. 101, 21 March - 4 April 2005, p. 34

The only mobile services which have reached a certain level of development are the financial ones, analyzed in the following lines.

## **5. Adopting mobile payments in Romania**

As it was previously shown, many economical organizations, traditional players on the market of financial services and not only, have identified opportunities and niches in this area and have proposed solutions to these issues. Among the numerous projects, launched in very short periods of time, many don't overcome the pilot stage. Few applications were rapidly accepted on a large scale by the mobile telephones possessors (an example is the payment of small value digital goods by the mobile phones possessors by SMS). Because of this reason, the analysis of existent applications from the point of view of their beneficiary is considered appropriate. The necessity of this kind of analyses is obvious, if we take into account the fact that the attractiveness of a certain financial solution for the consumers determines its success and development.

Generally, the mobile financial services are appreciated by their users because of the independence from the place and time of their occurring and implicitly, as a synergetic effect of these two characteristics, because of the comfort they offer.

Beyond these general advantages, the characteristics of a mobile system that we consider relevant from the point of view of its potential user are:

- The necessity of adapting the mobile phone to the payment system- the importance of changing the SIM card or even the phone in order to be able to use the mobile solution can be considered a serious obstacle in the way of adopting the application.<sup>11</sup>;
- The necessity of registration- signing a contract may not be necessary (for example in order to pay some goods at the street automates) , it can be made through Internet or through the mobile phone or may obligatorily require the physical presence of the person; the users will accept more easily the systems for which the registration is easy, but only with the guarantee of the data confidentiality.
- The dependency of payment solution on a certain telephony operator can be a serious impediment in its implementation- the users will not easily accept to change the company they are subscribed at;

- The diversity of services that the payment instrument offers – some applications try to offer the user the possibility to pay through the mobile phone in a great number of circumstances, while others focus on a single type of payment;
- The complexity of the payment transaction itself, which depends on a series of aspects: the necessity of phoning a number at the beginning of the transaction, the necessity of communicating the transaction details to the user (by SMS, vocal call or the direct screen display of the transaction details), the manner of authenticating the user;
- The user's perception of the security of the transaction – mainly influenced by the manner of accepting the transaction by the user (\*by a PIN code established together with the solution provider during the registration period or through a PIN+ randomly generated unique code combination for each transaction) and by the transaction confirmation in the moment following immediately after the payment, by cash voucher in the case of traditional POS or by SMS or display on the mobile device screen;
- The occurrence of payments- the paid sum is subtracted from the client's bank account, from a sum prepaid to the payment solution provider or is added to the monthly invoice issued by the mobile telephony operator;
- The brand name attached to the payment system- can belong to the financial institution , to the mobile telephony operator, to the application provider- the more credible the brand is for the user, the bigger his trust in the system;
- The cost associated to the mobile transaction – can include the registration fee, a temporary subscription for the solution use, the payment of a solution for each transaction made, the cost of the phone call, of the SMS sent within the transaction etc.
- The transaction time- can be appreciated in comparison with cash transactions (in average less than 10 seconds) or with the card ones (about 30 seconds); the fact that the mobile transaction has the advantage of not depending on the time and place of payment, even if it doesn't last more, must not be neglected.

Starting from this theoretical background, we will continue by analyzing the *mobile banking* type of services from Romania<sup>26</sup>, which represent, in our opinion, the most developed segment of national mobile financial services.

As a result of the public information analyses from the web sites of the 38 commercial banks in Romania, we can express the following observations:

- The number of banks offering services of Internet banking type is of 68% from the total number of banks, optimistic percentage that shows a tendency of bank institutions towards the electronic sphere of their interaction with the consumer;
- In contrast, only 18 % of the total number of Romanian banks offer mobile banking services;
- All the banks that have certificates, according to the Communication and Information Technology Ministry's Order No. 218/2004 concerning the procedure of certifying the payment instruments with distance access (Internet Banking, Home Banking or Mobile Banking) have effectively implemented these instruments.
- According to the information on the Romanian banks' sites, accessed in April 2005, there is a number of 7 banks offering mobile banking services, alone or in partnership with national mobile telephony operators (see table 2); the distribution of individual and partnership solutions is evenly (4 individual solutions, 4 instruments offered together with a mobile telephony company);
- These services' characteristics differ considerably (see table 3).

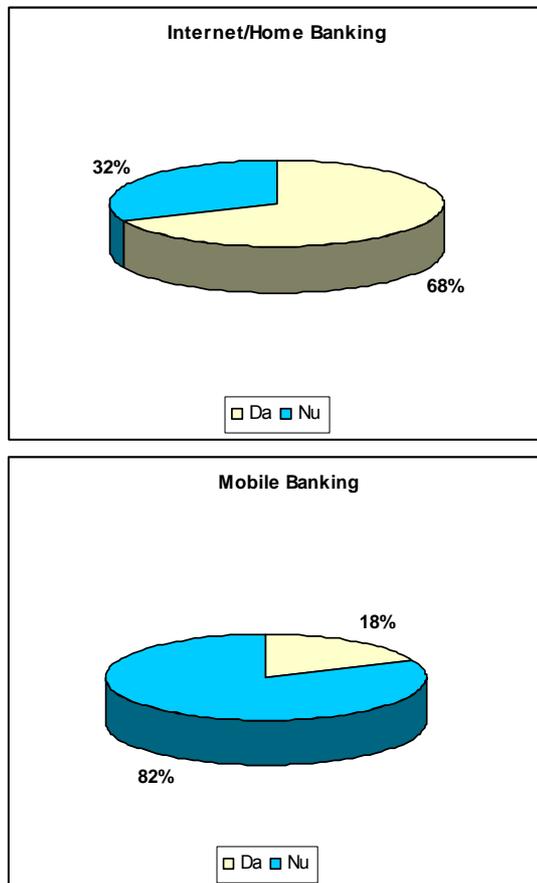
As far as the necessity to adapt the mobile phone in view of using the mobile banking application is concerned, two of the solutions analyzed propose the replacement of SIM card with a special card, which has the advantage of being free. The card is available only in a few towns, district residence, for at least one of these solutions. There are also two solutions which require an eventual adaptation of the phone- one for which a WAP phone is necessary (not very restrictive, taking into account that the greatest

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<sup>26</sup> Their list was taken from the National bank's sites(<http://www.bnro.ro/>), and the Communication and Information Technology Ministry's site (<http://www.mcti.ro/1398.html>)

majority of phones have incorporated WAP facilities) and another for which a phone provided with a micro browser is necessary. The applications that don't require any phone or card adaptation generally offer basic services.

**Figure 1 The percentage of banks offering Internet Banking and Mobile banking in Romania**



**Table 2 Romanian mobile banking instruments**

<i>Bidder</i>	<i>Instrument</i>
Raiffeisen – Connex	myBanking
BRD - Orange	Mobilis
BCR – Connex, Orange, Zapp, Cosmorom	Smart Tel SMS and Smart Tel 3G SMS+ Browsing
Banca Italo Romena	Bank@You
Piraeus Bank Romania	MOBILBank
UniCredit	UniCredit Mobile Banking
BancPost	SmartTel, in three variants: SMS, 3G and WAP

A mobile solution which is not interoperable, in other words, functions in only one mobile network, will only have the success allowed by the limits of that network. After the SMS model, the success belongs to the applications independent of the network. Before accepting this assertion, we must look at the mobile telephony market context from Romania, where dominants are the Orange and Vodafone (the owner of Connex brand) operators, each one having an equal (and impressive) number of users. The two operators have each achieved, in partnership with a financial institution, an *m-banking* solution, comparable with the one of the competitor's.

Thus, a consumer of each of the two companies will always have at his disposal an m-banking application which may satisfy his needs. Problems appear only for users who have a bank account at a different financial institution than the one that the mobile telephony operator has made the m-banking solution with. Annulling the possibility of occurrence of this type of problems, five of the analyzed services offer applications independent of the network.

For the amazing majority of applications, it is necessary to sign a contract with the bank. In Romania, a bureaucratic country by excellence, this fact isn't necessarily negative, being considered a foregone conclusion. On the contrary, it even has positive connotations, increasing the consumer's trust in that service.

The m-banking Romanian applications have generally focused on offering basic services. Almost all instruments offer their user the possibility to visualize information about their own accounts (most of them in the easiest way- by SMS), to receive alerts/notifications regarding the transactions made in accounts and the possibility to make transfers between accounts. Only two solutions offer the payment service of bills to the providers (by providers meaning only mobile telephony operators who have made the application). However, this is not the fault of financial institutions offering the solution, but moreover the fault of utilities of other goods providers, who have to adapt their own informative systems in order to sustain the payment by mobile.<sup>27</sup>

Together with the basic services presented above, some banks also offer there services, destined to attract the consumer (see table 3).

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<sup>27</sup> According to „Jurnalului Național”, in March 2005 Electrica carried out tests related to the possibility of bill payment through mobile telephony-Radescu , A, *Buying train tickets by SMS*, in „Jurnalul Național”, online version , 18<sup>th</sup> of March 2005, at <http://www.jurnalul.ro/modules.php?op=modload&name=News&file=article&sid=244105&mode=thread&order=0&thold=0>

**Table 3 The characteristics of national mobile banking type instruments**

<i>Instrument/ Characteristics</i>	<i>my Banking</i>	<i>Mobilis</i>	<i>Smart Tel SMS (BCR)</i>	<i>Smart Tel 3G (BCR)</i>	<i>Bank @ You</i>	<i>MOBIL Bank</i>	<i>UniCredit Mobile Banking</i>	<i>Smart Tel (Banc Post)</i>
<b>The necessity of adapting the phone</b>	Yes, special card	Yes, special card	No	Yes, phone with browser	No	No	Yes, WAP phone	No
<b>The dependency of a certain telephonic company</b>	Yes, Connex	Yes, Orange	No	No	No	No	Yes, Connex, Orange, Cosmoro m	No
<b>The necessity to register to the bank</b>	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
<b>The diversity of services offered</b>								
<i>Transfer between accounts</i>	Yes	Yes	Yes	Yes	No	No	Yes	No
<i>Information about your own accounts</i>	Yes, SMS	Yes, SMS	Yes, SMS	Yes, browsin g	Yes	No	Yes	Yes
<i>Alerts (Notifications) regarding the transactions made between the accounts</i>	Yes	Yes	Yes	Yes	Yes	No	No	No
<i>The payment of the bill to some providers</i>	Yes ( Connex)	Yes	No	No	No	No	No	No
<i>The request to block the card account</i>	No	No	Yes	Yes	No	No	No	No
<i>Information about the currency, interests, types of bank products</i>	No	No	No	Yes	Yes, currency	Yes, currency , interests	Yes, currency	No
<i>Currency exchange completion</i>	No	No	No	No	No	No	Yes	No
<i>ATM in the area</i>	Yes	No	No	Yes	No	No	No	No
<i>Bank in the area</i>	Yes	No	No	Yes	No	No	No	No
<i>Telephonic cards recharge</i>	Yes, Connex	Yes Orange	No	No	No	No	No	No
<b>Security</b>								
<i>Coding</i>	Yes	No	No	No	No	No	No	No
<i>Authentication by codes/passwords</i>	Yes	Yes	Yes	No	No	No	No	No
<b>Costs</b>								
<i>Monthly subscriptions</i>	0,5 €	No	No	1 \$	No	No	No	No
<i>Unitary cost(/message)</i>	0,15 € or 0,30 €	No	0,19 \$	0,19 \$	Normal message	No	No	No

From the point of view of transactions' security, the preferred method of authentication is the codes one. It is adopted only by three of the 8 analyzed solutions. One of the applications has implemented a method of coding information that circulates between the bank and the client. We consider the level of security ensured by the greatest majority of solutions as being unsatisfactory, especially taking into account that the information spread are part of the confidential category.

Regarding the m-banking services, the situation is heterogeneous: a part of the solutions offer services for a cost formed of subscription and unitary cost, per transmitted message, while others are free. The costs do not have a restrictive level, especially taking into account that the m-banking instruments do not address the large public, but, for Romania, to a population segment with incomes over the average.

## 6. Conclusion

In conclusion, mobile banking is an additional channel to the bank's traditional activity in Romania. The implementation of such a solution brings a plus of image to banks and mobile telephony operators involved, but do not represent, at least until now, an important source of income. Regarding the mobile data services, it is assumed that the national wireless market will have an explosive evolution, with increases between 30% and 60% from one year to another<sup>28</sup>. The beginning is promising: Information and Communication technology Ministry and the General Inspectorate for Information Technology are about to elaborate a strategy of clearing the 3,6 – 3,8 Mhz frequency band and to provide it, by auction to the operators who want to implement WiMax in Romania<sup>29</sup>, while Orange Romania has developed localization services<sup>30</sup>.

By using the mobile phones, the area or road where the mobile phone or the vehicle belonging to one of the company's employees is found can be discovered at any moment, from the computer's screen.

In this context, we can estimate that IMMs will be more and more interested in mobility, security, registration and stocking applications in Romania, while more and more Notebooks will be bought and the portable devices will be more and more appreciated. In this background, a

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<sup>28</sup> Simion, D., *Everything wireless*, in „Biz”, no. 98, 1 – 15 February 2005

<sup>29</sup> Ibidem

<sup>30</sup> Birzoi, V., *The public eye and tympanum*” in „BusinessMagazin”, no. 46 (33/2005), 24-30 August 2005

development of mobile financial services is possible, but in a rather remote future.

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*Public Finance and Anti  
Money Laundering*

# A FRAMEWORK ON DEVELOPING AN INTELLIGENT DISCRIMINATING SYSTEM OF ANTI-MONEY LAUNDERING

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## **Abstract**

*Anti-money laundering (AML) has attracted highly focus from the mainland China government recently since it has been deeply involved with the faiths of the nation, economic stability, combating the serious flooding of nationwide corruption offences, especial the field of organized crimes. Due to the backward situation of AML mechanism in China, it is of great significance to develop a set of AML intelligence collecting and analyses system to reinforce the countermeasures fighting the ever-raging money laundering activities among local financial networks. Based on the business characteristics of Chinese financial systems, the paper proposed a framework of self-adaptive AML system which is composed of a 4-layer structure including 3 modules. Related procedures of feature selecting and strategies of analyzing and discriminating are discussed.*

**Keywords:** *data mining, anti-money laundering, self-adaptive, decision support system*

## 1. Introduction

Anti-money laundering (AML) has attracted a high focus inside mainland China financial and judicial fields nowadays. It has become a symbol of the capability of the central government and the faith of the nation, as well as an important measure fighting organized crimes and forestalling the flooding of nation-crossed corruptions. However, the construction of an effective AML mechanism is just at its startup which is far from perfect. Most of relevant technical tools, the developing and applications of monitoring and analyzing system are nearly blank, while legislation work is relative coarse and primitive, given the opportunities for the launders to evade the detections. For example, the threshold for the reporting of large-value foreign exchange transaction payment stipulated by the regulator is: as to cash payment, single transaction or accumulated to above US\$10,000 per day; as to credit payment, single transaction or summed up to US\$100,000 for individuals or US\$500,000 for enterprises. Such data reported by local financial institutions compose the main sources for AML intelligence database while other data below the threshold will escape from data collection. It is easy to infer that the launders will split large value funds into smaller pieces and disperse them into different bank accounts as an effective strategy, while a lot of clean and honest transactions above the amount given by the rule will be reported as enormous noises to the analytical procedures day by day and constitute the main body of the database. Though the board will keep perfecting the legislations to adapt the situation, both sides of regulators and offenders will obviously repeatedly play the game. Thus the main requirements of AML information system developing are: to pre-cleanse the immense data reported nation-wide everyday to refine the most valuable clues, to embed a mechanism of self-learning and self-adaptive into the information system to meet the continuously changing strategies of the launders. In this paper we propose a framework to construct an intelligent suspicious financial transaction discriminating system considering the complex situation in mainland China. The paper is organized as follows: Section 2 sets forth three urgent problems the self-adaptive system should solve. Section 3 proposes a whole framework based on the experiences of world-wide AML practices. Section 4 gives a group of preliminary algorithms and data structures to realize the self-adaptive requirements mainly based on statistical theory. The last section is a conclusion and further research jobs are listed.

## **2. Three Urgent Requirements an Effective AML System Should Meet**

Three urgent requirements are listed below that an effective AML system should solve. Such requirements are all derived from the status quo of AML practices among financial networks across mainland China.

### ***2.1 Providing automatic data filtering and checking functions for data reporting jobs of bank branches***

The monitoring and analytical data sources are reported by every commercial bank branch to the regulator—the People’s Bank of China. The data are generated from hand written cash payment dealing reports or electronic reports of SWIFT remittance system shared by all commercial banks. Far different from the credit payment style dominated in the western countries, Chinese people prefer cash payments which take a proportion of more than 80% over all transactions. Credit payments level in small or medium cities and rural areas is even lower than those in big cities. As a result it’s very difficult to pursue the trace of fund flow procedure for the investigators. Considering other factors existing in the commercial bank braches, including the shortage of professional AML talents, the procedures of suspicious data discriminating, collecting, analyzing is surely under an uncertain supervisory. A sound solution is to equip all such bank branches with data collecting computer software providing automatic data filtering and checking functions to ensure the quality of data reporting.

### ***2.2 Self-adaptive or self-evolving technologies***

Self-adaptive technologies in AML system are mainly adopted in two procedures:

First, the system will apply such technologies to regularly extract the data that can feature the customer’s financial transaction behaviors in different local areas, industries, organizations in order to reflect a real and continuously changing image of local economic development. The uniform reporting threshold of large-value payment stipulated by the Central Bank has obviously ignored the serious economic unbalances across mainland China. There exists a remarkable gap between the eastern coastal area and the middle and western areas, where the eastern coastal areas enjoy much higher economic development level. Enormous legal and normal large-valued transactions data are reported unconditionally in the southeast coastal developed areas while lots of abnormal data may be omitted in those backward areas just by the reason they do not reach the reporting standards though they have been apparently beyond the local economic normal level and show notable unusualness. Thus the reporting data filtering standard

should be stipulated by an overall statistical analysis based on local area or industries historical databases instead of a uniform nationwide standard. Furthermore this filtering standard should be self-adjusted along with the local developing level.

Second, achieve a data-mining ability to find out suspicious clues through series normal-likely transactions data. A critical characteristic of money laundering is that the launders will try all efforts through series complex and normal-likely transactions to explain the legitimacy of dirty funds. Their laundering strategies will be also continuously revised by the new AML policies. It is an essential requirement for a successful AML system to provide a learning mechanism which could automatic adjust the analytical and discriminating strategies to reflect the AML offenders' changing activities.

### ***2.3 Link analytical tools to promote the concentration of suspicious intelligences***

Most money-laundering cases are related with the investigations of law enforcement departments such as the Public Security Bureau, the Custom, the Tax Office and the Business Administrative Office, etc. It is proved to be a short cut to notably reduce the processing job size applying a link analytical tool embedded into the system which could tracing the transactions related with those accounts, suspects, corporations being investigated by law enforcement departments. Most literatures of international AML practices all recommend that an effective link analytical tool plays a key role in AML intelligence system.

## **3. A Macro Framework of AML Intelligence System Designing**

A macro framework of AML intelligence system is given as below based on experiences of leading AML countries joined with the status quo in mainland China.

### ***3.1 A 4-Layer Analytical Model***

The analysis procedures shall be divided into four layers from micro to macro, from local pieces to a wholly aggregation so as to acquire a particular and comprehensive results.

From inner to outside the four layers include: transaction layer, account layer, organization layer and link layer (link layer is also designated as ring layer in some literatures).

**3.1.1 Transaction layer:** separated or isolated single transaction records, such as cash deposits and withdrawals, cheques, electronic remittance, etc. Such records provide few analytical context because they don't constitute a data chain.

**3.1.2 Account layer:** A serial transaction activities should have all happened through a specialized account in a bank set up by a specialized person.

**3.1.3 Organization layer:** a main body of money laundering activities is more likely a corporation or an organization, covering multiple accounts and persons.

**3.1.4 Link layer:** investigation to a money-laundering mostly involves multiple levels of corporations, organizations and persons.

Different layers play different roles during the analyzing procedure. Data of Transaction layer and Account Layer are submitted from the root bank branches and have composed the fundamental sources. Only isolated intelligence may be derived from the perspectives of both inner layers. Organization layer and Link layer provide perspectives to take a comprehensive and aggregate discriminating and analyzing procedure to all data involved by multiple banks, areas and departments, to check, contrast, mine, judge and derive in all those data collected from varied channels. The later layers have much more advantages during macro situation judgment and relevant cases investigation.

## ***3.2 Three Main Bodies of the System***

### **3.2.1 Data collecting and filtering system**

The system will be applied in the root bank branches to aid the suspicious data collecting, filtering and transmitting job. It belongs to Transaction layer and Account layer.

### **3.2.2 Data integrating and analyzing system**

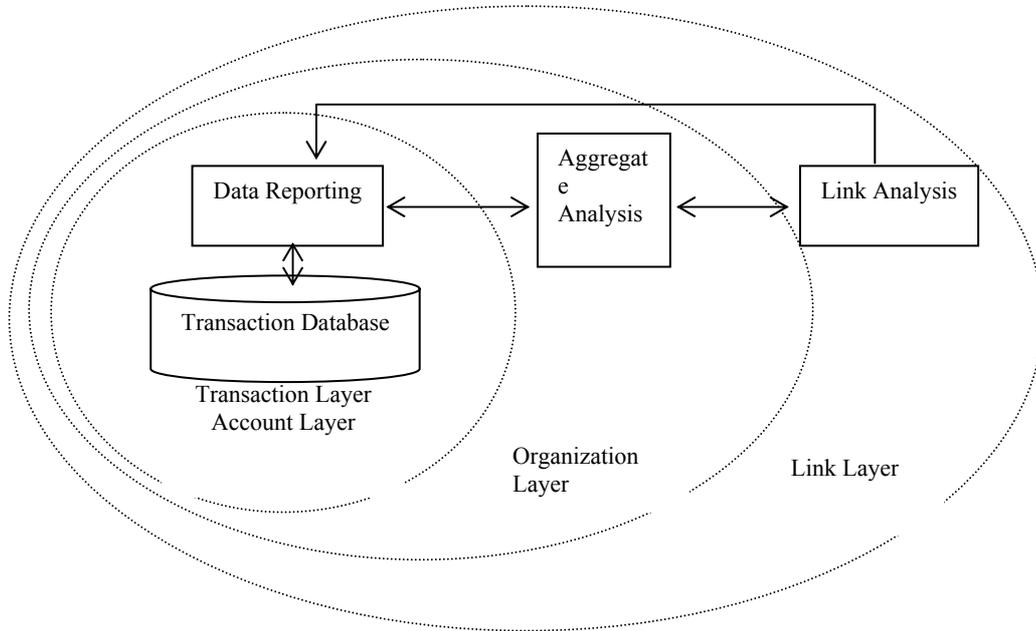
It will give a comprehensive analyzing process to the data collected from different channels at a integrative perspective to pick out most suspicious-like intelligence, as well as provide a wholly study from a macro and strategical perspective to derive the trends, migrations, and countermeasures of AML.

### **3.2.3 Link Analytical System**

The system can take advantages of the intelligence provided by law enforcement departments to tracing relevant persons, organizations and their accounts and transactions. The link tracing function may be integrated into

other systems to acquire an ability of automatic monitoring and analyzing given accounts and persons. The framework is shown as Figure 1.

**Figure1 Framework of AML Intelligence System**



## 4. Main Algorithms

### 4.1 Data Filtering

Data filtering is the essential function of data reporting system for local bank branches. The key technology is feature selection based on expert knowledge database. Feature selection job should give a relative accurate behavior profile reflecting the normal level standards of local financial transaction activities. A simple but practical algorithm is the famous Bayes decision method based on statistical theory. The central bank has set forth series unusual financial norms featuring money laundering in its suspicion reporting rules. But the standards are all ambiguous to operate. The judgment features include capital flow sum in a given period, frequencies of in and out the account, etc. But they are not recorded in the reporting database. Such features could be derived out by statistical method. Relationship may be described through a linear regression model.

Tag the register capital sum with  $f$  the sum of in and out the account during given period is  $s$   $f_i$  and  $s_i$  are corresponding attributes of account  $i$ . Assume that  $f$  and  $s$  have an approximate linear relationship:  $f = \alpha + \beta s + \varepsilon$   $\alpha$   $\beta$  are constants,  $\varepsilon$  obeys normal distribution  $N(0, \sigma^2)$   $\alpha$   $\beta$  may be estimated using least square method so we will get

$$\hat{\alpha} = \frac{n \sum_{i=1}^n f_i s_i - (\sum_{i=1}^n s_i)(\sum_{i=1}^n f_i)}{n \sum_{i=1}^n s_i^2 - (\sum_{i=1}^n s_i)^2} \quad \alpha = \bar{f} - \hat{\alpha} \bar{s}$$

The relationship between register capital of a given industry and the periodical flow sum in and out from its bank account could be estimated by above equation so as to filter out the abnormal data.

For those time series data from given bank account, the behavior profile could be also be inferred through statistical method as below:

Assume the periodical flow sum nearly obeys a normal distribution  $X \sim N(\mu, \sigma^2)$  the parameters  $\mu, \sigma$  may be estimated by median and range. The theorem tells that:

If  $Me$  is the median of samples series  $X_1 \square X_2 \square \dots \square X_n$ , then for any

$$\lim_{n \rightarrow \infty} P \left\{ \sqrt{\frac{2n}{\pi}} (Me - \mu) \leq x \right\} = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{t^2}{2}} dt$$

$x$ , , we could assume  $\mu = Me$  if  $n$  is big enough.

Besides, the expectation and variance of range  $R$  are:

$$E(R) = dn\sigma \quad D(R) = vn2\sigma^2,$$

$$\text{So we could infer } \sigma = \frac{R}{dn}.$$

As the parameters have been concluded, give the single side degree of confidence  $\alpha$ , the confidence interval is  $(0, \mu + \mu\alpha \frac{\sigma}{n})$ . If the given transaction sum is big enough which has been located outside the interval, the transaction may be considered as unusual.

#### 4.2 Algorithms of aggregate analysis

Money laundering is a three-stage process that requires: placement--launderers place the dirty money into financial system. Layering, that is, disguising the trail to foil pursuit, with such techniques as shares, bonds, loans and other conduits. It usually consists of a series of transactions

designed to conceal the origin of the funds. This is the most complex stage of the process, and the most international in nature. The money launderers might wire transfer funds from one country to another, and then break them up into investments in advanced financial options or in overseas markets. The final stage of money laundering is termed integration, making the money available to the criminal once again with its occupational and geographic origins hidden from view. The aggregate analysis focuses on the layering stage by collecting all related data from different accounts, persons and transactions. Almost every mature data mining and pattern recognition algorithm such as neural network, genetical algorithms, etc. has been adopted in the financial analyzing systems in AML leading countries. Two solutions are put forward in this paper to meet the requirements during designing the analysis system: how to describe the relationships between different accounts, and how to reduce the immense data search range.

#### 4.2.1 Directed map data structure

A directed map structure can easily describe the relationship and the transaction details between two accounts as shown in Figure 2. Each node represents an account; each line links two accounts, what's more, it also records their transaction features such as frequency, sum, etc. The structure is described as below:

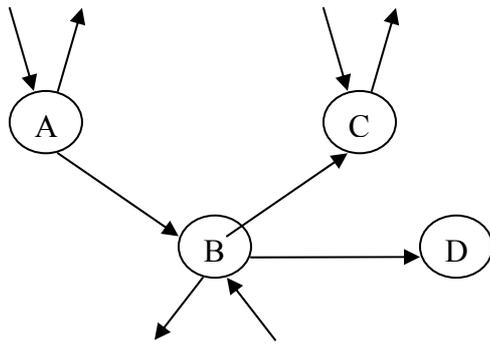
Node structure:

```
node{
    Accountid:long; //account no
    accountAttr:string;//description of attribution
    N:int;// count of out
    Out[1...N]:line;//line of out
}
```

Line structure:

```
line{
    Node:node;//direction node
    monSum:int;//monthly average sum of account
    monFreq:int;//monthly average frequency of
dealing
    monFreqs:float;// variance of the monthly
frequency }
```

**Figure 2 An illustration to directed map data structure**



#### **4.2.2 Suspicious score ranking method**

In order to effectively reduce the immense processing size on reporting records, we adopt a suspicious score ranking method. Construct a table of account score, give each account an initial score 0. Then construct a scoring rule table which provides the scoring value or norms given by professional experts or derived by statistical experiences. Suspicion scores can be computed for each record in the database (for each customer with a bank account), and these can be updated as time progresses. The table can then be rank ordered, and investigative attention can be focused on those with the highest scores or on those which exhibit a sudden increase.

### **5. Conclusion**

AML system designing and constructing is at its infancy now in China. The AML intelligent prototype proposed here is mainly based on the practical algorithms based on statistical theory. A further research work will introduce more effective self-learning capability, integrated with the training data set acquired from AML applications, and perfect the data storing structure for analyzing procedures.

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# EU FIGHT AGAINST MONEY LAUNDERING

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## **Abstract**

*International integration produces many positive effects. Nevertheless, every coin has two sides. Liberalizing of international capital flows and making money transfers easier has also enabled new ways of legalizing dirty money. Fight against money laundering became a discussed topic mainly after terrorist attacks in September 2001. EU has followed the world struggle to stop money laundering and terrorist financing by creating a new anti-money laundering directive. The directive is in conformity with international conventions and standards related to that topic. It reflects the revision of FATF 40 recommendations. New directive proposes three forms of due diligence. It also deals with the role of national financial intelligence units. Aim of the paper is therefore to present the fight of EU against money laundering and terrorist financing and the influence of the fight on the financial sector. Institutional provisions regarding anti-money laundering rules will be also mentioned, i.e. role of financial intelligence units and international institutions that focus on money laundering.*

**Keywords:** *EC anti-money laundering directive; FATF; due diligence; financial intelligence unit*

## 1. Introduction

Integration processes have their positive and negative aspects. Single European market is based on the principles of non-discrimination, market access and competitive federalism. Thus the aim is to create market similar to domestic market. As to the free movement of capital and payments, EU has liberalized capital flows between EU member states and between EU and third countries. EU shall therefore take necessary measures to hinder money laundering as a negative aspect of integration process. European Union naturally follows international processes and standards of fight against money laundering. This shouldn't however mean that all the standards and measures should be adopted automatically without critical consideration of cost and effects of the measures.

## 2. Definition of money laundering

Most proper definitions give international agreements. Because of the topic of the paper, I have chosen EC directive whose definition follows international standards.

*'Money laundering' means the following conduct when committed intentionally:*

- *the conversion or transfer of property, knowing that such property is derived from criminal activity or from an act of participation in such activity, for the purpose of concealing or disguising the illicit origin of the property or of assisting any person who is involved in the commission of such activity to evade the legal consequences of his action;*
- *the concealment or disguise of the true nature, source, location, disposition, movement, rights with respect to, or ownership of property, knowing that such property is derived from criminal activity or from an act of participation in such activity;*
- *the acquisition, possession or use of property, knowing, at the time of receipt, that such property was derived from criminal activity or from an act of participation in such activity;*
- *participation in, association to commit, attempts to commit and aiding, abetting, facilitating and counselling the commission of any of the actions mentioned in the foregoing indents.*

*Knowledge, intent or purpose required as an element of the abovementioned activities may be inferred from objective factual circumstances. Money laundering shall be regarded as such even where the activities which*

*generated the property to be laundered were carried out in the territory of another Member State or in that of a third country.*<sup>1</sup>

As can be seen from the definition, money laundering is not only conversion or transfer of property but even possession or use of property that was derived from criminal activity, if the person knew that such property stems from criminal activity.

Money laundering has three stages: placement, layering and integration. In the placement stage, the aim of the launderer is to introduce the money into financial system, typically by breaking large sum to be laundered into smaller sums. The aim of this phase is to hide illicit origin of the money. In the second stage, the money is transferred from the accounts, used to set up shell companies so that the origin of the money appears clean. Last stage of the process is integration of laundered money into legitimate economy.

Total laundered volume can be only estimated. International Monetary Fund for instance estimated the volume as 2-5% of world GDP<sup>2</sup>. Money launderers don't use only bank sector to conceal the true origin of the financial sources, they use also currency exchange houses, wire transfer companies etc.<sup>3</sup>

### ***2.1 Why should we fight against money laundering?***

When talking about anti- money laundering (further in text "AML") rules, natural question arises. Is the fight against this phenomenon effective and shall we matter about this activity? When considering this topic, we should name negative effects of money laundering. From macroeconomic point of view, money laundering changes the demand for cash and thus influences monetary policy. Money laundering is a process of financing consequent criminal activity. Money laundering has also negative effect on financial institutions. Money laundering increases the probability that financial institution becomes corrupt or controlled by criminal interests and increases the probability of financial failure as a result of the institution being defrauded<sup>4</sup>. Money laundering also goes hand in hand with corruption<sup>5</sup>.

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<sup>1</sup> Directive 2001/97/EC of the European Parliament and of the Council of 4 December 2001 amending Council Directive 91/308/EEC on prevention of the use of the financial system for the purpose of money laundering

<sup>2</sup> see European Parliament. Money laundering. Access from  
<[www.europarl.eu.int/comparl/libe/elsj/zoom\\_in/26\\_en.htm](http://www.europarl.eu.int/comparl/libe/elsj/zoom_in/26_en.htm)>

<sup>3</sup> see Money Laundering. Access from:  
<[www.pctc.gov.ph/edocs/papers/MoneyLaundering.htm](http://www.pctc.gov.ph/edocs/papers/MoneyLaundering.htm)>

<sup>4</sup> see Bartlett, B. L. The negative effects of money laundering on economic development. Economic research report for the asian development bank. May 2002 Access from:

Money that stems from corruption must be laundered and to launder money, one sometimes has to corrupt employees of financial institutions. These are the most important arguments for pursuing illegally gained money.

There are also several arguments contra tracing dirty money. Some anti money laundering rules are in conflict with fundamental human rights (e.g. right to privacy, right to fair trial). To detect illegal money, financial institutions have to gather relevant information on financial transaction and on the customers. Data protection and breach of bank secrecy becomes a relevant problem in this context. Other problem is effectiveness of the activity of tracing illegal money. The effectiveness cannot be precisely measured and anti money laundering measures appear to be very costly.

There are however strong arguments for AML fight. When tracing criminal money, we can trace criminal activity as such and reveal criminal acts. AML fight also hinders development of criminal activity (illegal money serves as source of consequent financing of criminal activity). It gives a strong signal for potential criminals that “crime doesn’t pay<sup>6</sup>”. Another question is if money laundering shall be considered as a criminal act (in other words, if it is not punishing twice for one crime). It is to emphasize that many famous criminals have been convicted because of other crimes – tax evasion, money laundering<sup>7</sup>. Fight against money laundering is therefore not meaningless; the important question is scope and method of the fight.

## ***2.2 International standards of fight against money laundering***

Money laundering is an international problem. To cope with it in an effective way, it is necessary to cooperate on international level. Hence, international organizations try to set out world-wide standards for fight against money laundering. These standards shall include definition of money laundering as a criminal activity, measures taken by institutions in which money laundering occurs, state measures against money laundering and international cooperation in this field. Quality institutional and legal framework is essential.

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<[http://www.adb.org/Documents/Others/OGC-Toolkits/Anti-Money-Laundering/documents/money\\_laundering\\_neg\\_effects.pdf](http://www.adb.org/Documents/Others/OGC-Toolkits/Anti-Money-Laundering/documents/money_laundering_neg_effects.pdf)> p. 23

<sup>5</sup> For detailed analysis of effects of money laundering, see Bartlett, B. L. The negative effects of money laundering on economic development. Economic research report for the Asian development bank. May 2002

<sup>6</sup> Many criminals count with the imprisonment as a price they have to pay for the money they have illegally gained. This changes if the possibility of confiscation of the money is very probable.

<sup>7</sup> One example speaking for all is imprisonment of Al Capone.

International organizations feel the need to combat this phenomenon. Thus, several anti money laundering conventions have been adopted. **Council of Europe** adopted the Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime (Strasbourg Convention). **United Nations Organization** adopted two conventions: UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substance 1988 (Vienna Convention) and UN Convention against Transnational Organized Crime 2000 (Palermo Convention). Aim of the conventions is to unify national rules on criminalization of money laundering and thus make the fight against this phenomenon more effective.

Banking sector also became active in fight against money laundering. **Basel Committee on Banking Supervision** focused on money laundering in several recent texts. The committee elaborated rules for customer due diligence (October 2001) and consolidated know your customer (KYC) management (October 2004)<sup>8</sup>.

**Wolfsberg Group**<sup>9</sup> drafted Wolfsberg AML Principles. The principles were agreed by major international private banks. The Principles set general guidelines for client acceptance. Categories of information that are essential to collect in order to comply with due diligence rules are named. The Principles also define situations that require additional diligence, give definition of unusual or suspicious activities, their identification and reporting. Banks are required to monitor account activities, establish regular management reporting on money laundering issues, establish a training programme on the identification and prevention of money laundering for employees who have client contact and keep records of anti-money laundering related documents. They shall establish department responsible for the prevention of money laundering.

There are also international organizations that focus expressively on AML rules. **Financial Action Task Force**<sup>10</sup> (further in text FATF) is a body created by states of G7 to combat money laundering. Main aim of the body is to *generate the necessary political will to bring about legislative and regulatory reforms in these areas*<sup>11</sup>. FATF examines the international

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<sup>8</sup> See [http://www.bis.org/bcbs/publ\\_13.htm](http://www.bis.org/bcbs/publ_13.htm)

<sup>9</sup>Wolfsberg Group is an association of twelve global banks, which aims to develop financial services industry standards, and related products, for Know Your Customer, Anti-Money Laundering and Counter Terrorist Financing policies.

<sup>10</sup> For more information see official web sites on [www.fatf-gafi.org](http://www.fatf-gafi.org)

<sup>11</sup> Access from: <[http://www.fatf-gafi.org/pages/0,2987,en\\_32250379\\_32235720\\_1\\_1\\_1\\_1\\_1,00.html](http://www.fatf-gafi.org/pages/0,2987,en_32250379_32235720_1_1_1_1_1,00.html)> Accessed: <14. 10. 2005>

methods and trends of money laundering. The body also publishes a list of non-cooperative countries and territories<sup>12</sup>.

FATF created 40 recommendations to combat money laundering. Recommendations are divided into four parts: legal systems, measures to be taken by financial institutions and non-financial businesses and professions to prevent money laundering and terrorist financing, institutional and other measures necessary in systems for combating money laundering and terrorist financing, international cooperation. Recently, the recommendations have been amended by 9 special recommendations against terrorist financing.

First part of the recommendations defines minimal legal scope of money laundering offence. Then the recommendations focus on due diligence, record keeping and reporting suspicious transactions. Recommendations also define competent authorities that shall prevent money laundering. Countries shall establish financial intelligence units (centers for receiving, analysis and dissemination of suspicious transactions).

**Egmont Group** is an informal body that stimulates cooperation among financial intelligence units (FIU). FIUs, at a minimum, receive, analyze, and disclose information by financial institutions to competent authorities of suspicious or unusual financial transactions<sup>13</sup>. Nowadays, 94 countries are members, including the Czech Republic.

International organizations pay sufficient attention to AML phenomenon. Regional integrations must follow basic principles set by the most important AML conventions (UN conventions, Council of Europe convention, FATF rules) in order to combat money laundering effectively. Mainly FATF list of non-cooperative countries and territories creates an international environment in which it is not politically possible for a country to avoid international standards.

### **3. EU fight against money laundering**

To take action in some field of activity, European Union must have competence conferred by primary legislation. Fight against money laundering has two dimensions – economic measures and criminal prosecution. Economic dimension of money laundering falls in the scope of the first (supranational) pillar whilst criminal law belongs to the third pillar – cooperation in the field of justice and home affairs.

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<sup>12</sup> The list of the non-cooperative countries and territories as well as report on observance of FATF recommendations is published also by IMF

<sup>13</sup> According to: [http://www.egmontgroup.org/about\\_egmont.pdf](http://www.egmontgroup.org/about_egmont.pdf) <7. 10. 2005>

At the beginning, the aim of the Communities was to combat drug abuse. Several resolutions of European Parliament dealt with that topic. European Union participated in the United Nations conference on Drug Abuse and Illicit Trafficking and became party to the Vienna Convention. Lately, EC has adopted the first anti – money laundering directive<sup>14</sup>.

Important political step in cooperation of European countries in AML fight was Tampere summit (1999). Aim of the summit was to create an area of freedom, security and justice. In Tampere, EU member states (MS) agreed on action against money laundering. MS shall implement Strasbourg Convention and FATF 40 recommendations. AML directive shall be revised. Further, summit conclusions focus on cooperation of FIU. MS agreed upon approximation of criminal law on money laundering (mainly on the scope of criminal activities, which constitute predicate offences for money laundering)<sup>15</sup>.

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<sup>14</sup> **List of relevant legal texts on money laundering:**

1. Council Directive 91/308/EEC, of 10 June 1991, on prevention of the use of the financial system for the purpose of money laundering. (OJEU L 166 of 28.6.1991 p. 77)
2. Joint Action 98/699/JHA, of 3 December 1998, adopted by the Council on the basis of Article K.3 of the Treaty on European Union, on money laundering, the identification, tracing, freezing, seizing and confiscation of instrumentalities and the proceeds from crime. (OJEU L 333 of 9.12.1998 p. 1)
3. Council Decision of 17 October 2000, concerning arrangements for cooperation between financial intelligence units of the Member States in respect of exchanging information. (OJEU L 271 of 24.10.2000 p. 4)
4. Council Framework Decision 2001/500/JHA, of 26 June 2001, on money laundering, the identification, tracing, freezing, seizing and confiscation of instrumentalities and the proceeds of crime. (OJEU L 182 of 5.7.2001 p. 1)
5. Protocol established by the Council of 16 October 2001, in accordance with Article 34 of the Treaty on European Union to the Convention on Mutual Assistance in Criminal Matters between the Member States of the European Union. (OJEU C 326 of 21.11.2001 p. 2)
6. Directive 2001/97/EC, of the European Parliament and of the Council of 4 December 2001, amending Council Directive 91/308/EEC on prevention of the use of the financial system for the purpose of money laundering - Commission Declaration. (OJEU n° L 344 of 28.12.2001 p. 76)

Access from <[http://www.europarl.eu.int/comparl/libe/elsj/zoom\\_in/26\\_en.htm](http://www.europarl.eu.int/comparl/libe/elsj/zoom_in/26_en.htm)>

<sup>15</sup> X. Special action against money laundering

51. Money laundering is at the very heart of organised crime. It should be rooted out wherever it occurs. The European Council is determined to ensure that concrete steps are taken to trace, freeze, seize and confiscate the proceeds of crime.

52. Member States are urged to implement fully the provisions of the Money Laundering Directive, the 1990 Strasbourg Convention and the Financial Action Task Force recommendations also in all their dependent territories.

The fight against money laundering is carried out by the Commission, mainly DG Justice and Home Affairs and DG Internal Market. The cooperation in the field of criminal justice is realized through Financial Crime Group of Europol.

### ***3.1 Why does EU have to harmonize AML rules?***

Fight against money laundering is important for proper functioning of the single market. Council expressed the peril that launderers could try to take advantage of the freedom of capital movement and freedom to supply services and stated that money laundering has evident influence on the rise of organized crime in general and drug trafficking in particular. Money laundering can constitute an existential threat to European integration<sup>16</sup>.

EU cannot combat the phenomenon isolated. Therefore, when drafting any anti money laundering measures, EU must take into account international AML rules listed above. European Union expressed this in the preamble of

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53. The European Council calls for the Council and the European Parliament to adopt as soon as possible the draft revised directive on money laundering recently proposed by the Commission.

54. With due regard to data protection, the transparency of financial transactions and ownership of corporate entities should be improved and the exchange of information between the existing financial intelligence units (FIU) regarding suspicious transactions expedited. Regardless of secrecy provisions applicable to banking and other commercial activity, judicial authorities as well as FIUs must be entitled, subject to judicial control, to receive information when such information is necessary to investigate money laundering. The European Council calls on the Council to adopt the necessary provisions to this end.

55. The European Council calls for the approximation of criminal law and procedures on money laundering (e.g. tracing, freezing and confiscating funds). The scope of criminal activities which constitute predicate offences for money laundering should be uniform and sufficiently broad in all Member States.

56. The European Council invites the Council to extend the competence of Europol to money laundering in general, regardless of the type of offence from which the laundered proceeds originate.

57. Common standards should be developed in order to prevent the use of corporations and entities registered outside the jurisdiction of the Union in the hiding of criminal proceeds and in money laundering. The Union and Member States should make arrangements with third country offshore-centres to ensure efficient and transparent co-operation in mutual legal assistance following the recommendations made in this area by the Financial Action Task Force.

58. The Commission is invited to draw up a report identifying provisions in national banking, financial and corporate legislation which obstruct international co-operation. The Council is invited to draw necessary conclusions on the basis of this report.

<sup>16</sup> Mitsilegas, V. Money Laundering Counter-Measures in the European Union. A New Paradigm of Security Governance versus Fundamental Legal Principles. Kluwer Law International, 2003. ISBN 90-411-2131-5

new AML directive, stating that ... *money laundering is frequently carried out in an international context. Measures at Community level... have very limited effects.* And vice versa, ignoring the problem would lead to pressure of international organizations on EU states to take appropriate steps.

### **3.2 Anti money laundering directive**

First directive against money laundering was adopted in 1991 (directive 91/208 EEC on the prevention of the use of financial system for the purpose of money laundering). The directive defines money laundering in accordance with international conventions. Money laundering shall be prohibited. Then it sets rules for credit and financial institutions. Basic principle of the directive is thus “**know your customer**”. Credit and financial institutions shall require identification of transactions involving a sum amounting 15.000 ECU and more, keep evidence on the transactions and inform competent authorities of suspicious transactions.

The directive was amended by the directive 2001/97. Main change is the extension of the scope of persons covered by the directive on auditors, external accountants, tax advisors, real estate agents, notaries, independent legal professionals, dealers with high value goods and casinos.

New, **third text of the directive** was being prepared mainly as a consequence of terrorist attacks in September 2001<sup>17</sup>. The text of the directive focuses expressly also on terrorist financing. New text of the directive is considerably longer and more detailed than previous directive. Main principles of the directive stay the same<sup>18</sup>, though described in more details. Main aims of the directive declared by EU are as follows:

- including the funding of terrorism in the definition of money laundering
- extending application of the system to trusts and insurance intermediaries
- introducing a simplified due diligence system
- banning anonymous accounts<sup>19</sup>.

Important part of the directive is Chapter II – **Customer due diligence**. Due diligence is adopted according to risk-based approach.

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<sup>17</sup> Commission proposed the directive on 30 June 2004.

<sup>18</sup> The directive extended the list of obliged persons on trust or company service providers

<sup>19</sup> see European Parliament. Money laundering. Access from :  
<[www.europarl.eu.int/comparl/libe/elsj/zoom\\_in/26\\_en.htm](http://www.europarl.eu.int/comparl/libe/elsj/zoom_in/26_en.htm)>

According to the directive, due diligence has three forms: simplified, enhanced and general.

**Due diligence** comprises identifying the customer and verifying his identity, identifying the beneficial owner<sup>20</sup>, obtaining information on the purpose and intended nature of the business relationship, conducting ongoing monitoring of the business relationship. Persons covered by the directive may however determine the extent of the measures on a risk sensitive basis<sup>21</sup>.

**Simplified procedure** appears when customer is a credit or financial institution covered by the directive, listed company whose securities are admitted to trading on a regulated market, beneficial owner of pooled account held by notaries or independent legal professionals and domestic public authorities, e.g. subjects with a very low risk. In case of credit and financial institutions, these are automatically not subject to due diligence. In case of other institutions mentioned, member state may allow by the way of national legislation not to apply customer due diligence.

**Enhanced customer due diligence** appears in case when risk of money laundering activity is very high, mainly in situations when the customer is not physically present for identification purposes, cross frontier correspondent banking relationships with respondent banks from third countries and transactions with politically exposed persons<sup>22</sup> residing in other state. Directive lists additional measures to prove that the transaction is not a case of money laundering. Transactions with shell banks<sup>23</sup> are prohibited.

Directive prohibits credit and financial institutions from keeping anonymous accounts or anonymous passbooks. These may be an important tool for money launderers because their owners are hard to identify.

The directive sets reporting obligations. For this purpose, each state shall establish financial intelligence unit (FIU) at national level. Persons covered by the directive shall inform the FIU on suspicious transaction and furnish FIU with all necessary information.

The duty of record keeping by persons covered by the directive remains the same. The directive deals also with supervision and requires that

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<sup>20</sup> new feature of the directive

<sup>21</sup> A. 7 of the draft directive

<sup>22</sup> natural persons who are or have been entrusted with prominent public functions and immediate family members or persons known to be close associates of such persons

<sup>23</sup> The directive defines shell bank as “a credit institution, or an institution engaged in equivalent activities, incorporated in a jurisdiction in which it has no physical presence, involving meaningful mind and management, and which is unaffiliated with a regulated financial group.”

currency exchange offices, trust and company service providers must be licensed or registered and casinos licensed.

Member states are required to review the effectiveness of adopted measures by means of keeping comprehensive statistics. The statistics shall at minimum cover the number of suspicious transactions made by the FIU, the follow-up given to these reports and initiate on an annual basis the numbers of cases investigated, the number of persons prosecuted, the number of persons convicted for money laundering and amount of property frozen, seized or confiscated (A. 29).

As to enforcement, the directive urges member states to require that persons covered by the directive establish adequate policies of due diligence, record keeping and other measures necessary for prevention of money laundering. The persons shall also train their staff to recognize money laundering and be able to take necessary steps. Persons covered by the directive shall get access to up-to date information on the practices of money launderers and on indications leading to recognition of suspicious transactions.

### ***3.3 Critical approach to the ( third) directive***

The directive however includes also some controversial issues. Majority of problematic parts remains from previous directive<sup>24</sup>. Main concerns are about disclosure requirements, fundamental right to legal advice and concept of due diligence. This part of the paper discusses selected problematic provisions of the directive.

- **Data protection and bank secrecy**

Institutions have to keep records on transactions for at least five years. This is not relevant only for credit and financial institutions but also for other professions who may not have precisely developed data protection system. To combat money laundering, states have to remove bank secrecy provisions in circumstances related to informing on money laundering. This fact could undermine the credibility of credit institutions. Already the first directive was characterized as “death of bank secrecy”<sup>25</sup>. The opinion of the Communities was that money laundering facilitates drug trafficking and therefore undermines human dignity and physical and moral integrity of its victims.

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<sup>24</sup> The Council of the Bars and Law Societies of Europe (CCBE) considers the second directive as threat for the independence of lawyers and thus illegal. See Euractiv. Money Laundering. Access from: <[www.euractive.com](http://www.euractive.com)>

<sup>25</sup> see Mitsilegas, V. Money Laundering Counter-Measures in the European Union. A New Paradigm of Security Governance versus Fundamental Legal Principles. Kluwer Law International, 2003. ISBN 90-411-2131-5 p. 132

Fight against money laundering was put forward as a moral imperative everybody has to follow<sup>26</sup>.

- **Scope of responsible persons**

Second directive has broadened the scope of persons covered by the directive. The third directive further extended the scope on trust or company service providers. The remaining question is whether the notification duty doesn't mainly in case of legal professionals, accountants and tax advisers undermine the customer – client relationship. Further, the second directive threatens the independence of legal professionals and therefore the fundamental right to legal advice<sup>27</sup>.

Notification duty may be in conflict with the right on fair trial. However, member states are not obliged to apply the directive on legal professionals, auditors, external accountants and tax advisor *with regard to information they receive from their clients in the course of ascertaining the legal position of their client or performing their task of defending or representing their client in or concerning judicial proceedings* (A.20 of the directive).

- **Due diligence**

A risk based approach to due diligence seems to be welcome by the banks. However, European Banking Federation had several remarks to the original draft of the directive. The enhanced due diligence is problematic in case of politically exposed persons. The definition of such persons appears to be very broad and may cause difficulties for banks. Banks are also concerned with the obligation of identifying beneficial owners because they often don't have access to relevant information. As a result of remarks of European Banking Federation, threshold was raised up to 25% so that the banks would be able to comply with the provision<sup>28</sup>.

- **Effectiveness**

Measures taken by responsible institutions are quite costly. Every state established FIU, which traces suspicious transactions. However, there is no report on the effectiveness of measures taken by first and second AML directive. Detailed report on the effectiveness of such measures should have been a starting point before drafting the third directive. The directive

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<sup>26</sup> Ibid.

<sup>27</sup> See Euractiv. Money Laundering. Access from: <[www.euractiv.com](http://www.euractiv.com)>

<sup>28</sup> See Brouver de, F. *Toward Third Anti-Money Laundering Directive*. Better Management. Access from: <[www.bettermanagement.com/library.aspx?libraryid=11366](http://www.bettermanagement.com/library.aspx?libraryid=11366)>

however provides for keeping essential statistics on the effectiveness of AML measures by MS.

- **Costs**

Measures taken by financial institutions to prevent money laundering appear to be very costly. The question of costs goes hand in hand with the question of effectiveness. The directive obliges credit and financial institutions as well as other persons covered by the directive not only to inform on suspicious transactions and keep record of relevant data, but also establish AML system of informing and training of employees so that they are aware of AML rules and are able to recognize suspicious transactions and take appropriate steps. All these measures constitute additional costs.

- **Enforcement measures**

The directive suggests better enforcement of AML through providing access to up-to date information on the practices of money launderers. This is very important because knowledge of the recent techniques of criminals helps to better detection and prosecution. But we shall consider this measure from other point of view. The information shall be provided to persons covered by the directive – i.e. also to notaries, independent legal professionals and tax advisers. This is a scope of persons that are logically the first to be capable to give advice to launderers. The directive therefore ensures that advisers to criminals get recent and up-to –date information on money laundering techniques and helps them indirectly develop their activities. From this point of view, the measure seems to be contra - productive.

- **Security**

Practical question that arises when talking about anti money laundering measures is the security of institutions that have duty to inform about suspicious transactions. Not only notaries and legal professionals but also employees of financial institutions can fear of revenge from launderers. Effectiveness of the AML measures can be from this point of view very lowered. Protection of such persons shall be also considered when drafting amendments to AML rules.

- **Corruption<sup>29</sup>**

No matter how effectively the system is thought out, human factor may also play its role. A corrupted employee of a financial institution can allow money laundering. A corrupted employee may therefore ruin the whole system of AML prevention.

- **Adoption by member states**

The question is whether it is appropriate and wise to adopt a new anti-money laundering directive in the situation when about half of member states haven't transposed the directive into their national legislation. The second directive should have been transposed until 15 June 2003. The new text was therefore created in a situation when it was premature to evaluate effects of measures taken by the second directive.

### ***3.4 Future of the Directive***

The directive is not yet finally approved. Regardless of many remarks of bar associations, banking federations and other persons covered by the directive, there are still some points that shall be considered. The text of the directive was regarded as controversial<sup>30</sup>. Quick preparation of the directive in the situation when the second directive wasn't implemented by all member states could make the EU stop and consider the effectiveness of AML measures. Elaborating appropriate AML measures statistics shall be essential for EU before taking any other steps. Though the amount of laundered money can be only estimated, sufficient could be however the statistics demanded by the directive: the number of cases investigated, the number of persons prosecuted, the number of persons convicted for money laundering and amount of property frozen, seized or confiscated.

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<sup>29</sup> “*Money laundering is the handmaiden of international corruption . . . Those who take bribes must find safe international financial channels through which they can bank their ill-gotten gains. Those who provide the bribes may well assist the bribe takers to establish safe financial channels and launder the cash.*”

Frank Vogl, Transparency International. Access from:  
<<http://www.globalpolicy.org/nations/corrupt/corner.htm>>

<sup>30</sup> Euractiv. Money Laundering. Access from: <[www.euractiv.com](http://www.euractiv.com)>

## 4. Conclusion

The European Union, mainly after September 11, 2001, tries to combat money laundering and terrorist financing. The fight is important in international context and EU AML rules are in conformity with international AML standards. When adopting the third directive, we shall however consider the effectiveness of AML rules. The remaining questions are measuring of the effectiveness of such measures, costs, scope of responsible persons and possible conflict with human rights.

The question shouldn't be whether we should fight against money laundering or not. The fight is internationally very important – it shows criminals that crime doesn't pay. The question is whether we have internationally found the right balance between effective AML fight and protection of human rights, bank secrecy and economic and professional interests of persons covered by AML rules.

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# THE PROTECTION OF FINANCIAL INTERESTS OF THE COMMUNITY IN STOPPING AND CONTROLLING OF FRAUD AND THE UNLAWFULNESS

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## **Abstract**

*The control of legality and regularity in the use and administration of nonrefundable funds coming from the EU financial assistance programs, accorded to Romania, has as aim:*

- the identification of irregularities, of the imperfect financial administration and of frauds*
- the establishment of eventual prejudices*
- the establishment of the persons guilty of producing the prejudices.*

*The control begins when are clues or remarks from the part of the internal or external audit's structure, or from other institutions named by the law, or also from the part of citizens or mass-media, concerning the imperfect or illegal financial administration of public funds. The recuperation activity consists in executing the administrative function that leads to the disappearance of the debts resulted from fraud and irregularities.*

**Keywords:** *budget debts, financial administration, co-financial funds, fraud, control procedure*

## **1. Fighting fraud and embezzlement**

Fraud against the community financial interests is any deliberate act that consists in using and handling false documents or statements that result in the fraudulent appropriation or incorrect possession of funds and the illegal diminution of the resources of the general community budget. In the actions directed at abolishing fraud against the community financial interests, the Union pays attention to the public property fraud. The principle at the basis of this orientation consists in the fact that while the losses of the victims are relatively limited in cases of fraud in private wealth, the damage caused to the public wealth affects all the tax-payers by diminishing the public funds. Designed to remove the deficiencies and irregularities between the provisions of the criminal law of the member states, the Convention for the protection of the community financial interests (the PIF Convention adopted by the Committee Act of July 26<sup>th</sup> 1995, 95/C 316/03) requires that the member states should make sure that the action defined as fraud against the community financial interests is a crime. In order to include the different types of fraud, two complementary concepts cover the financial process within the Union: income and expenses.

From the perspective of the expenses, by fraud, one understands any deliberate act or omission connected to the use or presentation of false, incorrect or incomplete documents, the concealment of information by breaching a specific obligation that result in the fraudulent appropriation or incorrect possession of funds from the general community budget, or the fraudulent investment of these funds with purposes other than their original destination. From the expenses viewpoint, the effect of the fraudulent appropriation or retention is not necessarily present in the fraudulent investment of funds.

As for the income, by fraud one understands any deliberate action or omission of using or presenting false documents or statements, incorrect or incomplete the concealment of information by breaching a specific obligation and the fraudulent investment of legally obtained benefits that result in the illegal diminution of the resources of the general community budget or its management by or for the European Union.

The adequate protection of the community financial interests must be ensured not only against fraud but also against embezzlement, not necessarily fraudulent.

By irregularity one understands any breach of a community law provision that results in an action or omission of an economic agent, with the purpose of harming the general community budget, by the diminution as well

as the loss of income gained from the resources collected directly or on behalf of the Union, or by unjustified expenses.

One of the instruments of fighting fraud is the internal audit. This procedure is concerned with the protection of the public funds against the losses that may occur due to errors and/or fraud.

The internal audit is conducted by a special division, organised within every public institution and consists of one or more people hired for this purpose or contracted for audit, people who are never involved in the activities they audit.

The internal audit is applied according to the norms issued by the Ministry of Public Finance and is based on the principles of independence and ethics.

Another prophylactic measure against fraud is that of the financial control carried out by the Ministry of Public Finance, in those situations that show evidence of fraud or any other breach of the financial regulations of public institutions. From the perspective of the income, fraud offends the national financial interests by tax evasion.

The influx of financial funds from the budget is monitored by the tax inspection, concerned with the implementation framework, the legality and the concordance of the financial operations, the correctness and the exactness of the obligations of the citizens, the observation of the provisions of the fiscal and bookkeeping regulations as well as their accessories.

The tax inspection is directly and freely enacted by the National Agency of Fiscal Administration (in Romania), on all the citizens, regardless of their organisation, citizens who are compelled to establish, retain and pay the taxes.

Tax evasion leads to the illegal diminution of the budget resources, thus being classified as fraud. For this reason, the legal provisions (Law no 87/1994, reissued in 2003), concerning the control of tax evasion, can be interpreted as support in controlling fraud.

The legal provisions concerning the control of tax evasion establish a series of events that can be classified as crimes: The refuse to hand in to the control authorities the justifying documents and bookkeeping papers, as well as the material goods undergoing taxation and contributions to the public funds, to determine the budget duties;

The incomplete or inadequate drawing up of the primary documents or accepting such documents with the purpose of obstructing the financial-

bookkeeping control, if the deed had as consequence the diminution of the income or taxable sources;

The illegal issue in any manner, or the possession in view of illegally circulating financial and fiscal documents. The circumvention from paying the legal taxes by not registering certain activities that must be legally registered or by conducting unauthorised activities with the purpose of obtaining profit;

The complete or partial circumvention from the fiscal obligations with the purpose of gaining profit, by not declaring the taxable income, hiding the taxable object or source or by the diminution of the income as a result of fictitious operations;

The omission, total or partial, of the bookkeeping or any other legal documents of the developed commercial activities or of the profits made or the recording of unreal operations or expenses with the purpose of not paying or diminishing the tax or contribution;

The organisation and management of double bookkeeping, the change or destruction of bookkeeping documents, memories of the electronic taxation or identification machines or other data recording means with the purpose of diminishing the profits or the taxable sources; The issue, distribution, purchase, filling in or accepting false fiscal documents.

The measures against fraud are also provided in the Customs Code that stipulates as a crime the use of false documents and/or the transportation or presentation of commercial documents with the purpose of reducing the taxes while the customs declarations are carried out.

Similarly, an additional measure for fighting/controlling fraud at the customs is the existence of the anti-fraud service as part of the Customs Surveillance Division.

Moreover, the Bookkeeping Law stipulates that the deliberate registering of inaccurate data as well as the deliberate omission of the bookkeeping records, having as consequence the alteration of income, expenses, financial results as well as the assets and liabilities provided in the balance are defined as intellectual false.

Eventually, beyond the income-expenses approach of the funds, the Criminal Code defines the different kind of activities that can generate fraud. These include especially:

The fraudulent administration, as a deliberate act of causing prejudice to one person by managing and keeping the goods that belong to that particular person;

Deceit, i.e. the use of a mistaken interpretation of reality, the presentation as correct of false information or papers or vice-versa, the presentation of real facts and truths as untrue, to the deliberate end of gaining for oneself or someone else undeserved material benefits. The presentation of false information at the time of the conclusion or implementation of a contract, information whose presence would have prevented the victim from signing or implementing the contract, is also considered fraud;

The abuse against the public interests, as a deliberate act of a civil clerk, during his mandate, that willingly causes or alters the good functioning or causes prejudice to the state, department or institution goods.

Embezzlement, as change of destination of the money or material resources, by violating the legal provisions in the field, causing the bankruptcy of the economic and financial activity or causes prejudice to the state or the institution respectively.

## **2. The European Anti-Fraud Office (OLAF)**

OLAF was founded in 1999 as a subsidiary of the European Committee, as a consequence of the fact that the units and departments for the prevention of fraud proved to be inefficient control authorities.

The OLAF activities concentrate on the discovery and monitoring of customs fraud, the fraudulent appropriation of subsidies and tax evasion, if the community budget is affected, as well as on the fight against corruption and other illegal activities that damage the community financial interests.

The OLAF activities especially involve:

The development of administrative investigations (internal and external) for the fight against fraud, corruption and other illegal activities;

Commission counselling in cooperation with the member states, in the field of prevention of fraud;

The development of other operational activities of the Committee, related to the fight against fraud.

The investigations, administrative inspections and other measures taken by the OLAF employees according to their duties may be:

External, developed in the member states and, according to the cooperation agreements, in third countries;

Internal, developed in the community institutions, departments, offices and agencies.

OLAF has the right to:

Immediate and unannounced access to any information of the institution, department, offices and agencies and their subsidiaries;

Make, get copies and acquire extracts of any document or contents that include additional data;

Require information from the members of the institutions, departments, offices and agencies, in written or verbally;

The OLAF executive can conduct the internal or external investigations, at his own initiative or as a consequence of a request of a member state or a community institution, a department, office or agency.

*The OLAF independence is ensured by:*

*the rules that establish the executive's appointment, activities and the disciplinary sanctions*

For the appointment of the executive, following a public advertisement for applicants and a favourable opinion of the Surveillance Committee, the Committee draws up a list of the applicants qualified for this position. When the Surveillance Committee has issued an opinion on the candidanship of the executive and after consulting the European Parliament and the Council, the Committee can appoint the executive.

The executive does not seek or follow any instructions from any government or institution, department office or institution on the initiation and development of investigations or editing of reports. If the executive feels that a decision made by the Committee threatens his independence, he has the right to take action against this institution in the Court of Justice.

The executive regularly reports to the European Parliament, to the European Council and Court of Auditors, on the findings resulted from the investigations he has conducted;

*the powers granted to the Surveillance Committee*

The Surveillance Committee is made up of five independent individuals (from outside), with the right expertise, and its main role is to support the OLAF independence by regular surveillance of the implementation of its investigative power. It expresses its own opinions or at the request of the OLAF executive, on the OLAF activities, without disturbing the developing investigations.

The OLAF executive regularly informs the Surveillance Committee on:

the OLAF activities, investigations, their results and the measures that have been taken;

the cases when a community institution, office, department or agency did not act according to the OLAF recommendation;

the cases when the information must be transmitted to the judiciary authorities of a member state.

### **3. The single OLAF contact in Romania**

The single contact with OLAF in Romania is the Romanian institution that ensures the cooperation between OLAF and the corresponding authorities in Romania until Romania becomes a member of the European Union.

The coordination of the anti-fraud fight and effective and balanced protection of the financial interests of the European Union in Romania is ensured by the Government Control Body, as unique contact with OLAF.

In this direction the Government Control Body:

coordinates the anti-fraud fight and protects the financial interests of the European Union in Romania, acting with complete functional and decisional autonomy, independent from other public institutions, according to the obligations assumed by Romania;

receives for control, from OLAF or any other interested institution or individual, notes on embezzlement or possible frauds in gaining, developing or using the funds from the assistance programs of the European Union and makes a control note with the result of the investigations. The note is sent to the Prime Minister and to OLAF.

In order to investigate the notes on embezzlement or possible fraud in gaining, developing or using the money from the assistance programs of the European Union, the Government Control Body requires the necessary data from the public authorities and institutions, as well as the public or private companies involved. These institutions and companies are compelled to answer in a complete and adequate manner within 30 days.

In order to ensure the anti-fraud fight and the effective and equivalent protection of the financial interests of the European Union in Romania, all the central and local, public and private institutions appoint one or more contact persons. Those individuals benefit from specific expertise and technical means to adequately answer to the requirement of the Government Control Body.

At the request of OLAF, its representatives may be directly involved in the control developed by the Government Control Body which reacts to the

notifications of OLAF. The OLAF representatives may have legal access to the data and information that lead to the drawing up of the control note.

If there is evidence of criminal elements in the granting or use of the community funds, the control note is transmitted to the competent criminal prevention authority that must take legal action to release the funds, recover the damages, as well as to bring action against the people responsible.

The Government Control Body can benefit from technical assistance and facilities from the European Union, as well as from specific training programs for its personnel.

The control and recovering of the community funds and the additional co finance funds, used inadequately.

#### **4. The object of control and recovery of the budget debts caused by embezzlement and fraud**

The control of the observance of laws and regulations in using and managing the funds resulted from the irredeemable financial assistance provided by the European Committee to Romania, as well as the afferent co-financing funds, is directed at:

- identifying the embezzlement, the faulty financial management and fraud;

- establishing the possible prejudices;

- identifying the people responsible for the prejudices.

Another object of control and recovery of the budget debentures are the unjustified sums paid from the community funds and/or the afferent co-financing, as a result of the embezzlement and/or of fraud, their accessories, i.e. interest, delay penalties and other penalties, as the case may be, as well as the bank expenses.

Co-financing is the financing of a program, project, sub-project, objective and other such steps, partially by budget credits and partially by external source financing.

The budget debts resulted from embezzlement and/or frauds caused by the inadequate use of the community funds and the afferent co-financing funds, are sums to be recovered for the European Committee budget as well as for the budgets that have released those funds, co-financed as follows:

- the state budget;

- the state social insurance budget;

the special funds budget;

the state treasury budget;

the budget of the public autonomous institutions;

the budget of the public institutions, fully or partially financed from the state budget, the state social insurance budget and the special funds budget, as the case may be;

the budget of the funds that came from contracted external funds or guaranteed by the state and whose reimbursement, interest and other costs come from public funds;

the budget of the irredeemable external funds;

the local budgets of the villages, cities, municipalities, sectors of the capital Bucharest, the counties and Bucharest;

the budget of the public institutions, fully or partially financed from local budgets, as the case may be;

the budget of internal and external loans for which the reimbursement, the pay of interests, commissions, expenses and other costs is ensured by the local budgets consisting of: contracted external loans and further loaned to the authorities of the local public administration and/or the economic agents and public services subordinated to them; external loans contracted by the authorities of the local public administration and guaranteed by the state. External and/or internal loans contracted or guaranteed by the authorities of the local public administration.

Irregularity means any deviation from legality, regularity and conformity, as well as any disrespect of the provisions of the financing memorandums, of the agreement memorandums, of the financing agreements on the financial and irredeemable assistance provided to Romania by the European Community – as well as of the provisions of the contracts signed under the terms of these memorandums or agreements, resulting in an action or omission of the economic operator who, by unelectable expenses, prejudices the general budget of the European Community and/or of the internal budgets that have provided or co-financed the funds about to be recovered.

Fraud is any intended action or omission, deeds that result in the allocation or acquiring, or inadequate or incorrect use of the community budget of the European Communities or the budgets administered by them or on their behalf and/or of the afferent co-financing sums.

Fraud is:

the use or presentation of false, inaccurate or incomplete documents or statements, resulting in the unlawful gaining of funds or the illegal diminution of the community resources;

the omission of willingly communicating the data required according to the law, failing to communicate information by breaching a specific obligation respectively, if the deed results in the unlawful gaining of funds or the illegal diminution of the community resources;

the change, without abiding by the legal provisions, of the destination of the funds, the embezzlement of the funds from their initial purposes, respectively;

the change, without abiding by the legal provisions, of the destination of a legally gained use, if the deed results in the illegal diminution of the community resources.

The procedure of recovery of the budget debts resulted from embezzlement and fraud comprises two stages:

the finding – the control activity that establishes and singularizes the obligation of payment in the form of a debenture;

the so-called recovery of the budget debt through the voluntary payment, the deduction from the subsequent expense statements, by forced execution or by other means provided by the law.

The debenture is the document or paper that establishes and singularizes the obligation of payment of the budget debts resulted from embezzlement or fraud, drawn up by the inspection officials or other lawful authorised control structures, as follows:

the document or paper that establishes the obligations of payment of the budget debts resulted from unlawful payments made from the community funds and/or from afferent co-financing funds, as a result of embezzlement and/or fraud, as well as their accessories and the bank costs, issued by the inspection officials or other specialty structures of the Ministry of Public Finance or other institution qualified by the law ;

the final or unalterable court order that establishes the obligation of payment of the budget debts resulted from embezzlement and/or fraud;

other documents issued by appointed officials, documents which assess and singularize, according to the law, the budget debts resulted from embezzlement and/or fraud.

These documents establish the sums unlawfully paid from community funds and/or from afferent co-financing as a result of embezzlement and/or

fraud, their accessories, i.e. interest, delay penalties and other penalties, as the case may be, as well as the banking costs, the breached law as well as the individuals compelled to pay them.

## **5. The competent officials should carry out the control of the recovery of the budget debts resulted from embezzlement or fraud (in Romania)**

Qualified to carry out the control and to manage the recovery of the budget debts resulted from embezzlement and/or fraud, the officials of the central or local public administration and their subsidiaries, as the case may be, as well as other public institutions qualified by the law.

The competence of carrying out the control is granted to:

the inspection and/or control officials or other specialty structures from the Ministry of Public Finance , according to their specific legal framework;

the specialized structures of the local or central public administration authorities, including their territorial subsidiaries, structures that manage the funds from external financial assistance and have ensured national co-financing by specialty departments. The responsibility of establishing the necessary organisational framework for the above-mentioned specialty structures is granted to the manager of that specific entity;

the institutions qualified by the law, like the Government Control Body and the criminal investigation officials, according to their specific legal framework.

The Ministry of Public Finance and the other budget creditors who manage the budget debts of the co-financing budgets are qualified by the law to carry out control, to enforce and to carry out the insuring measures and to apply the forced execution procedure under the circumstances established by law.

## **6. The control procedure. The control report.**

Control is imposed when there are clues or notices from the internal or external audit structures, from other lawful institutions as well as from the citizens or the mass-media, on the faulty or fraudulent financial management of the public funds, including the external irredeemable financial assistance.

The manager of the control structures establishes:

the nominal constitution of the control team;

the length of the control which cannot overcome 30 days;  
the warrant on the control of the confirmation of the notice.

The control team announces the institution undergoing the examination on the starting date of the action, at least five days in advance. The announcement establishes the purpose and length of the control. The control caused by a notice is not announced

The control is carried out totally or by survey with reference to:  
the complexity of the activities and operations undergoing control;  
the value and nature of the goods;  
the frequency of the previous infringements.

The control by survey covers a large number of the operations that will allow the issue of solid conclusions. In the case of finding prejudices, control by census can extend over the entire period during which, according to the law, recovery and indictment measures can be enforced on the guilty parties, by correctly extending the control period, but not more than 90 days.

In order to accomplish the control objectives, the controllers have access to all the data and documents, as well as to all the storing and production locations of the assets during the control of the structure and of the beneficiaries of the public funds financial assistance. The staff of the controlled structure, including the beneficiaries of the public financial assistance, is compelled to bring forward, at the settled time, all the required data and documents and provide all the necessary support for a proper development of the control activity.

For concordance, the control officials can require data, information, as well as copies of the certified documents from the legal or natural persons related to the structure undergoing control, including from the beneficiaries of the public funds financial assistance, and they are compelled to provide this information at the specified date.

The control officials may require the development of specialty expertise from authorised individuals, for the goods, services and executed works, resulted from financial activities and operations undergoing control and only in a case of utter necessity to ground their findings.

The quantum of the prejudice is established from the specific time it was inflicted, and if this time cannot be established, from the time it was found.

The budget debt includes, aside from prejudice, the interest and delay penalties owed at the time when the prejudice was inflicted or found, calculated according to the legal provisions related to collecting budget debts.

When the control has been carried out,, a control report is drawn up with the following information:

the identification data of the control officials and of the responsible individuals of the bookkeeping structure, its headquarters and the locations where control has been developed;

the description of the context in which embezzlement or fraud have appeared, the breached normative acts, the budget debt, separating it for the affected budgets, including European funds as well as the people responsible;

the bank accounts where the budget debts are to be collected;

the full evidence that lead the findings is registered in annexes.

The control report is sent:

to the controlled structure for announcing, signing and completing further observations. The control paper is a debenture;

to the manager of the institution initiating the control, who, if prejudice is found, will require the bookkeeping recording of the budget debt and will enforce the measures of recovery.

The Obligation of payment of the budget debt resulted from embezzlement or fraud can be disputed in a court of law.

## **7. Methods of extinction of the budget debts resulted from embezzlement and/or fraud.**

### Obligation and responsibility of payment

The payer of the budget obligation, i.e. the funds received unlawfully from community funds and/or from afferent co-financing, as a result of embezzlement and/or fraud, as well as their accessories (interest, penalties, bank costs) will be the economic operator as debtor or the individual who, according to the law, represents the operator or who, on behalf of the debtor operator unlawfully profited by the money that came from community funds and/or afferent co-financing funds as a result of embezzlement and/or fraud.

If the budget obligation resulted from embezzlement and/or fraud is not paid by the economic operator, the person who represents him or who profited by the money from the community funds and/or afferent co-financing, as the case may be, under lawful provisions, compelled to pay is:

The institution or the person who assumes the obligation of payment of the debtor by a payment commitment or by any other authentically signed paper, with the insurance of a real warranty at the level of the payment obligation;

Other institutions or individuals under lawful provisions.

The recovery of the budget debts resulted from embezzlement and/or fraud

The recovery action consists in executing the administrative function that leads to the extinction of the debts resulted from embezzlement and/or fraud.

The extinction of the budget debts resulted from embezzlement or fraud is developed in the following ways:

The voluntary payment by the individuals responsible for it;

The deduction from the future expense statements;

Forced execution;

Other means provided by the law.

The payment of the budget debts resulted from embezzlement or fraud, found and established by the inspection officials or any other qualified structure, is made by the debtors in the accounts indicated by the budget creditors, at the dates established by the present legislation concerning the collection of the budget debts.

The debtor's obligations of payment, as well as their accessories due for untimely payment and the bank costs are calculated and paid in Romanian currency at the exchange rate established by the National Bank of Romania the day the payment is made.

The manager of the entity that has initiated control has the payment notification sent to the debtor who is compelled to record the owed sum in the ledgers and, within 15 days from the notification, he should pay the debts or prove the extinguishment of the debt. Otherwise, when the time has expired, the debenture becomes writ of execution and is sent to the competent execution officials.

If the debtor does not willingly pay his obligations on the budget debts resulted from embezzlement or fraud, the qualified officials decide and carry out the insuring measures and develop the forced execution procedure.

Authorised to carry out the ensuring measures and to develop the forced execution procedure are the officials or specialty departments of the

central public authorities or their territorial subsidiaries, of the local administration authorities or other public institutions qualified to manage the budgets that provided the co-financing.

The qualified control officials authorised to find and to establish the debts may impose by a motivated decision in an administrative procedure, the insuring interdiction on the income and/or the insuring distraint of the debtor's goods, measures carried out by the qualified execution officials.

The insuring measures in the form of insuring interdiction and the insuring distraint imposed on the movable or immovable goods owned by the debtor, as well as on his income, are enforced when there is a possibility that he may steal them, hide or spend his patrimony, thus endangering or considerably slowing down the recovery of the debts resulted from embezzlement or fraud.

These measures can also be enforced when the budget debt has not yet been singularized and fallen due.

The enforced insuring measures remain valid during the period of forced execution, without carrying out other formalities. Once the debt has been singularized and fallen due, in case of delay in payment, the insuring measures become execution measures.

A copy of the report of insuring distraint on immovable goods is announced for recording to the cadastral register and the recording prevents the distraint to all those who subsequently gain any rights on the building. The enforcing papers subsequent to the recording become void.

If the value of the debtor's assets does not fully cover the budget debt, the insuring measures can be called in on the goods owned by the debtor together with third parties, for the share he holds.

The enforced insuring measures are removed by a motivated decision, when the reasons for insurance no longer exist or when a guarantee for the debts had been settled.

The forced execution of the budget debts resulted from embezzlement or fraud is developed only on the grounds of a writ execution, according to the law.

A writ execution is:

the paper or document drawn up by the inspection officials or any other lawful control structures, for the budget debts resulted from embezzlement or fraud;

the court decision, for the budget debts resulted from embezzlement or fraud settled in a court of law;

Any type of expenses caused by the carrying out of the insuring measures and the development of the forced execution procedure are deducted from the budgets of the central public administration authorities, the local public administration authorities and other institutions qualified to manage the co-financing budgets that have started the forced execution procedure.

The recovery procedure for the unlawful sums paid from the community funds and/or from the afferent co-financing budgets, as well as their accessories and of the bank costs does not influence in any way the development of the criminal procedure when the embezzlement or fraud is classified as criminal offence.

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*Rating, Audit and  
Accounting*

# **FINAUDIT – INFORMATION-BASED SOLUTION FOR AUDITING FINANCIAL STATEMENTS OF VARIOUS BUSINESS ESTABLISHMENTS**

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## **Abstract**

*Our paper is a synthesis of the practical achievements of a research programme financed by the Ministry of Education and Research of Romania, focused on auditing by information-based means the financial statements of different business establishments. It is well-known the fact that since the financial auditor is not an employee of the audited company the financial-accounting information is submitted on various media, which means it is highly unlikely that it could be incorporated in the auditing software. At this level of our research, we suggest a prototype of information-based product that would facilitate the work and exchange of financial-accounting information. In other words, our prototype is based on an on-line dialogue interface with the audited company, which will allow the auditor a quick development of the audit files (both the permanent and current ones) based on electronic evidence. At the same time, we shall make a presentation of certain financial-accounting restrictions considered when developing the marketable version of the information product called FINAUDIT.*

**Keywords:** FINAUDIT, financial statements, financial audit, prototype.

## 1. Introduction

Accounting is, in fact, an information system that quantifies, processes and communicates financial information related to an identifiable economic entity. Each accounting information user needs information which reflects reality that is "real" information, although it refers to an "accounting truth" built by reference to a series of accounting conventions. In order for the user to trust this accounting information, there is needed the intervention of the accounting information quality controllers who thus provide a guarantee for the enforcement of and compliance with accounting principles [4].

## 2. Financial audit and the accountant profession

The checking and certification of the financial statements by authorized bodies before they are made public has become a must. Moreover, the Romanian accounting legislation, drawn up in accordance with the provisions of the 4<sup>th</sup> Guideline of the European Economic Community and with the International Accounting Standards, states that the publication of the annual financial statements should occur after their auditing by authorized bodies called financial auditors. In the countries having a tradition in the market economy, the checking of the financial statements of the economic entities is stipulated by the act of companies of each country, many of these laws dating back from the 1900s.

Etymologically speaking, the term *audit* comes from Latin and means listening or checking. Considering the statement according to which *financial audit consists of an examination performed by a qualified and independent professional accountant, in order to be able to express a justified opinion on the drawing up and presentation of the financial statements in accordance with an identified accounting reference system*, the re-establishment of the trust between the accounting information emitting and the receiving parties is influenced, among other things, by the quality and efficiency of the audit. The independent opinion expressed by the auditor on the financial statements in question must defend all the users of accounting information alike [Berheci, M., 2004].

The reputation of the auditors as regards their skills and independence was highly appreciated throughout the time. Hence, banks, investors and creditors request the opinion of a financial auditor whenever they decide to invest in a company or to give a loan to a company that was audited.

The international standards regulating the audit profession originate from America, since the United States of America are one of the countries

that have had the longest experience in the financial audit field. At international level, IFAC has taken on the task of drawing up the financial audit standards aimed at supporting the development of the accountant profession. International audit standards are the reference grounds for the elaboration of national standards and are meant to improve the quality of the financial information on international markets. It is highly unlikely that international audit standards apply to all the situations an auditor may encounter. Therefore, we may consider that these standards set out the *basic principles* that one must comply with, as procedures vary depending on the circumstances of each case and any professional accountant is free to decide upon.

### **3. Financial audit in information-based society**

#### *a. Definition of the information-based society*

Generally speaking, we may say that the information society may be defined as an information-based society. In a modern meaning, we may speak of an information-based society since the use of computers in economy, after the building of the ENIAC in 1947, that is since the second half of the 50'.

#### *b. Transition towards the globally information-based society*

The following years will bring about essential changes in our every day life. Thus, the use of electronic computer will be extended to all activity fields, due to an increase by almost 100 thousand times of the current performance, until it reaches the performance of the human brain, together with a reduction of its sizes to the shape of a chip. The name of this computer will be system-on-a-chip, and its price will be so small that its package will be more expensive than the system itself. At the same time, the information and communication technologies, together with the discoveries of new materials, shall lead to the so-called Cyberspace, whose spine will be the INTERNET and the virtuality through digitization. Moreover, the federal government of the USA has recently launched a 5 year research program, financed with 400 million dollars for the future development of the INTERNET, that should be 100 faster than the current one and will be called NREN [7]. Finally, the Cyberspace will include the BODY AREA NETWORK (BAN) [3].

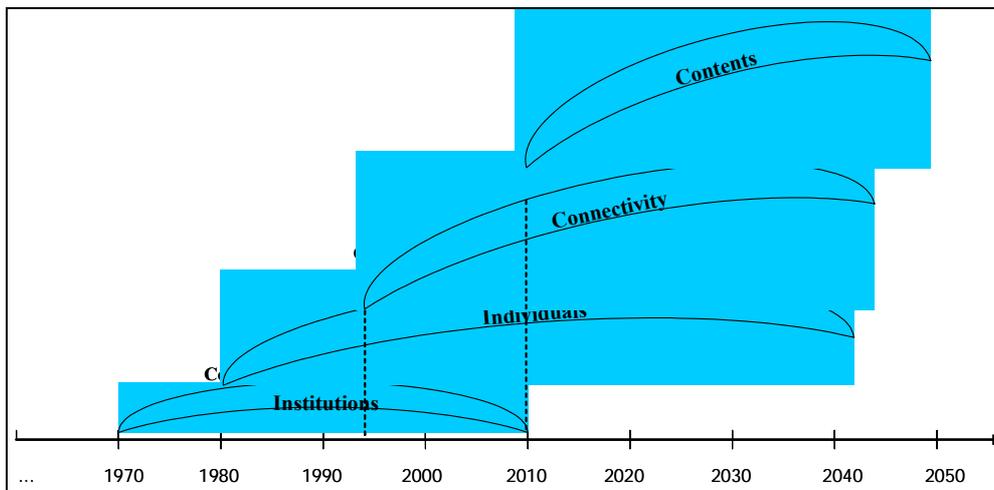
At network level, performance will be amazing. Thus, many types of networks are meant to fulfill people's dreams about a wholly or partially cyber-based world and about an information super-highway.

In other words, the grounds of tomorrow's society will be constituted by information and computer-mediated communications. J.A. O'Brien has

drawn up a globally information-based society transition chart and he reckons that humanity, in order to reach that point, must go through four waves, namely:

- Computerized Enterprises, corresponding to the period 1970-2010;
- Networked KnowledgeWorkers, which started in 1980;
- Global Internetnetworked Society, started around 1992-1993;
- Global Information Society, which will begin after 2010.

**Figure 1. The four waves of information technology**



As it is presented in figure 1, until 2010 we will be crossing a period of time when the first three waves superpose, what means we are in a transition period with its specific risks and advantages. Thus, as we can see, humanity has not even gone through the first stage, but two other have already been started and in 2010 the fourth will start as well. In other words, until 2010, the human society is crossing a continuous transition process towards this information world-wide covering. Therefore, the traces of modernity will become even more obvious as we approach 2010, when the first wave of the simple information technology is completed and the fourth wave is more and more present, namely the “*Globally information society*” wave.

*c. Necessity of total informatization of the financial audit*

Literature in the field of informational technologies shows us the fact that subjects like intelligent company, virtual companies, Internet extension, e-commerce, e-bank, e-\* and the global informatization of the society are trends that mankind cannot avoid. Under these circumstances, companies, with or without their will, must get modernized. At the same time, the professional accountants should understand at least partially their field of competence from the perspective of this evolution, otherwise their opinions will be easily influenced and disregarded. Therefore, professional accountants cannot stay indifferent to these technological trends!

In other words, in the current society based on information, which is more and more based on knowledge, in which the achievements in the field of artificial intelligence are more and more promising, it becomes imperiously necessary that the professional of the financial audit field should be endowed with as many work tools as possible based on the newest information and communication technologies.

By the means of the International Audit Standard no. 400, titled Audit in an environment of computer systems, there are determined a few criteria for the evaluation of the risk in an audited entity that avails of a partial or integrated accounting information system. We consider that it is necessary to resume and materialize the issue of accounting and audit informatization in standards that should take into account the specific technological system of an information-based society.

Recently, INTOSAI<sup>1</sup> Standing Committee on IT Audit centralized in a published report the situation of the use of softwares in the field of financial audit and IT. In table 1 we present this situation (<http://www.intosaiitaudit.org/directory/topic/Audit1.html>).

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<sup>1</sup> INTOSAI is the professional organization of supreme audit institutions (SAIs) in countries that belong to the United Nations or its specialist agencies.

**Table 1. Software used in financial auditing on international level**

Country	Down-loading	Data extraction & analysis	Sampling
Australia		IDEA, Excel NT	IDEA NT
Bahamas	IDEA Windows 98	IDEA Windows 98	IDEA Windows 98
Bahrain		IDEA Windows	IDEA Windows
Barbados		IDEA DOS	
Belgium	ACL Windows 95 / NT	ACL Windows 95 / NT	
Botswana	Connect OS Windows	IDEA Windows	
Brazil	Excel/Tempus Windows 95 / MVS	Access/Excel Windows 95	
Brunei		ACL Windows	ACL Windows
Canada	IDEA/CAATS Windows 95/DOS	IDEA Windows 95/DOS	IDEA Windows 95/DOS
China	Foxpro Windows 95	Excel Windows 95	
Colombia	IDEA, SQL Windows, Unix	Excel, IDEA Windows	
Costa Rica		ACL, Oracle Browser Windows	
Croatia		EKOFINA Win 3.1 Effect Dubrounix CBO	
Cyprus		IDEA DOS	IDEA DOS
Czech Republic		IDEA Windows	
Denmark	Access Windows NT/2000	Access Windows NT/2000	Access Windows NT/2000

Ecuador	IDEA / Excel Windows	IDEA / Excel Windows	
Ethiopia		IDEA Windows 98	
Fiji	ACL Windows	ACL Windows	ACL Windows
Finland		ACL Windows	ACL Windows
Germany		IDEA V1.2 Windows	IDEA V1.2 Windows
Greece			IDEA, EXCEL
Grenada			IDEA DOS
Hungary		IDEA, SAS Windows 98	IDEA, SAS Windows 98
Iceland	Entire Connection Software AG. Windows	ACL Windows	ACL Windows
India	IDEA Windows	IDEA, MS Access Windows	IDEA Windows
Indonesia	ACL Windows		ACL Windows
Iraq		FoxPro2 DOS	123 DOS
Ireland	Entire Connection Software AG Windows	ACL Windows	ACL Windows
Israel	The auditee downloads the data to PC and we transfer it to our equipment	Excel, Access, IDEA, SPSS, Wizrule Windows	SPSS, IDEA Windows
Japan		SQL, Oracle Unix	
Jordan		IDEA Windows	
Korea	Unix, Telnet, FTP Unix, Windows	Excel, IDEA DOS, Windows	IDEA Windows XP
Lesotho	Yes DOS, UNIX	Yes DOS	Yes DOS

Malaysia	ACL DOS/Windows	ACL DOS/Windows	ACL DOS/Windows
Malta		IDEA Windows	IDEA Windows
Mauritius		IDEA DOS	IDEA DOS
Mexico	1 Q SQL AIX	Excel, SQL, IDEA Windows, AIX 3 2.5	
Nepal		Excel, Access Windows 98	
Netherlands	Easytrieve DOS	IDEA Windows	IDEA Windows
Netherlands Antilles	IDEA	IDEA	IDEA
Norway		IDEA/SPSS Windows	IDEA
Oman	ACL ver. 5 Windows 95	ACL ver 5, MS Access 97 Windows 95	
Papua New Guinea	Laplink, ACL, Autoimport DOS, Windows 95	ACL Windows 95, DOS	
Philippines		IDEA, ACL, SQL DOS, Windows	ACL DOS
Poland	ACL Windows	ACL Windows	ACL Windows
Puerto Rico		IDEA Windows	IDEA Windows
Russia		Oracle Discoverer Application Software Win NT 4.0/Solaris	
Saint Lucia	PC Support Windows	IDEA Windows	IDEA Windows
Saudi Arabia		IDEA 3.03 Windows	IDEA, ACL Windows

Slovenia		IDEA Windows	
South Africa			ACC Windows
Spain	Excel Windows		
Sweden		IDEA	
Switzerland	Made by Client Windows 2000	ACL Windows 2000	ACL Windows 2000
Tanzania			
Thailand	ACL Windows	ACL Windows	ACL Windows
Trinidad & Tobago		IDEA Windows	IDEA, Excel, FoxPro Windows
Tunisia		Systems pertaining to the organization DOS	
U.K.	Various	IDEA Windows 2000	IDEA Windows 2000
Ukraine	SQL Win NT 4.0, 2000	SQL Win NT 4.0, 2000	SQL Win NT 4.0, 2000
Uruguay	ACL v. 6.5 Windows	ACL v. 6.5 Windows	ACL v. 6.5 Windows
Zimbabwe	IDEA Windows	IDEA Windows	IDEA Windows

The previous table shows that there are countries which do not have the practice of using such an information product in the financial audit field or countries which use it by means of applications developed within the organizations, which are, most of the times, unstandardized and hard to generalize.

#### **4. Stage of financial audit computerization in Romania. A few accomplishments**

Romania currently makes shy attempts at employing the IDEA information product used by a part of the National Audit Office of Romania, and to a smaller extent by the private audit offices. On the other hand, international audit offices use information products meant for audit activities in companies whose partially integrated business computing and accounting programs are audited. This limitation of the use of financial audit information programs is justified by:

1. a developing financial audit market;
2. rather aged financial auditors;
3. considerable IT investments required;
4. lack of an integrated information system of the company which is the beneficiary of the audit activity;
5. high price of softwares.

As concerns the coverage of the financial audit market, one should note that our research shows that about 95% of the financial auditors active on the market do not use an computerized solution for auditing the financial statements of their clients, while, on the other hand, the latter use MSO Word and Excel on a large scale, when preparing the financial audit files needed for drawing a conclusion. In other words, computers are used as audit file "type writers" and storing and finding devices. The rest of 5% of the financial auditors work with foreign audit companies that provide them with modules ready to use for the partial preparation of the financial audit sections<sup>2</sup>.

All these justify the need for a wider use of information products in this financial audit field.

#### **5. Finaudit – prototype of software for auditing financial information**

##### *a. Research team*

From our research, it results that in Romania there are information models at a conceptual level resulting from doctoral research, that are usually

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<sup>2</sup> These data result from a survey we performed in December 2003 among professionals in 6 counties in Romania.

made at an industrial level and not by a team, which restricts the area of the future prototype or commercial applications further to the fact that the field to be covered involves knowledge coming from accounting, financial administration, specialized practice, programming, design etc.

These reasons determined us in proposing for financing to CNCSIS of the Ministry of Education and Research of Romania, a research theme that should have as finality the automated modeling of all activities specific to the financial audit, theme that was accepted for financing for a period of three years, starting from 2004. To approach this theme we have made up a complex team of highly skilled members: certified accountants, financial auditors, accountants, PhDs and PhD students in accounting and administration computing, PhD students in accounting and accounting and financial-audit companies, as it results from the table below.

**Table 2. Structure of the research team**

No	Members of the research team	Qualities, scientific titles
1.	Prof. univ. PhD Alexandru Țugui	PhD in Accounting, Certified accountants, CECCAR <sup>3</sup> member, IPAO member, member of Academie des Sciences et Technique Comptable et Financiere, member of the Institute of the Professionals associated to the Order of the Certified Accountants of France, Certified evaluator of companies, ANEVAR member Financial auditor - trainee
2	Prof. univ. PhD Georgescu Iuliana	PhD in Accounting, Certified accountant, CECCAR member, Financial auditor – trainee
3	Senior Lecturer PhD Pintilescu Carmen	PhD in Economy Specialist in Data Statistics and Analysis
4	Senior Lecturer PhD Munteanu Adrian	PhD in Administration Computing, CISCO, Auditor of information systems
5	Prof. dr. Iuliana TUGUI	PhD in Accounting, Certified accountant, CECCAR member, Company evaluator
6	Senior Lecturer PhD Georgescu Mircea	PhD in Economy, IT specialist

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<sup>3</sup> Association of Certified Accountants and Licenced Accountants of Romania.

7	Muntenescu Mihai	PhD Student in Accounting and Financial Audit, Trainee financial auditor Specialist in administration computing Manager and administrator of an accounting company
8	Aparaschivei Florin	PhD Student in Accounting and Financial Audit, Specialist in administration computing
9.	Romică Adam	PhD Student in Accounting and Financial Audit, Specialist in cibernetics and applied computing Banking specialist
10	Pătruț Bogdan	PhD Student in Accounting and Financial Audit, Specialist in computing Programmer
11	Greavu Șerban-Valerica	PhD student in Economic Computing, CISCO Programmer
12	Mihalache Sabina	PhD Student in Accounting
13	Bacain Ionela	PhD Student in Accounting
14	Genete Laura	PhD Student in Accounting
15	David Neculai	Master Student
16	Ciocioiu Sorela	Master Student
17	Gherasim Cristian	Master Student Programmer
18	Pisaru Irina	Master Student Programmer
19	SC AUDIT SERVICES SRL	Company of Accounting Expertise, Financial Audit
20	SC CONT AUDIT SRL	Company of Accounting Expertise, Financial Audit
21	SC EXPERT AUDIT SRL	Company of Accounting Expertise, Financial Audit
22	SC Cabinet Exp. Cont. Pavel Badragan SRL	Company of Accounting Expertise, Financial Audit
23	SC Expert Cont-Grup SRL	Company of Accounting Expertise, Financial Audit
24	SC VIO CONTEXPERT SRL	Accounting Company
25	C.E.C.C.A.R. Iasi	Professional Association

As you can see from the previous table, the research team has specialists in theoretical and practical fields necessary for the development of

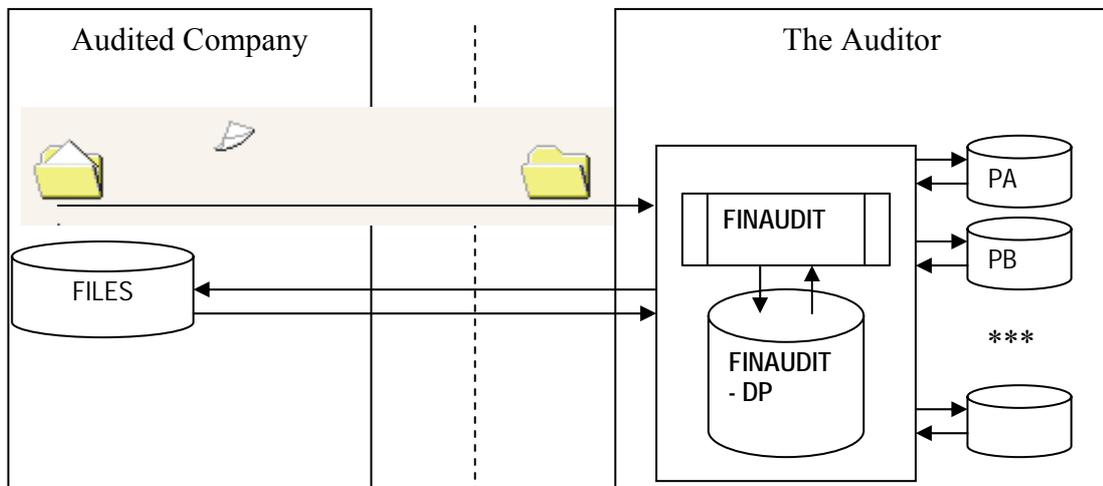
the FINAUDIT application. Moreover, the partners of the trade company provide the link with the market in the financial audit field.

*b. Presentation of the information product FINAUDIT*

An information product for the financial audit must settle two basic components of a financial audit file, that is: the permanent file and the current file of the audited company. At this moment, the FINAUDIT prototype settled from a conceptual viewpoint the permanent file.

From a conceptual viewpoint, FINAUDIT is designed as a *module that meets the demands of the audit company and of the beneficiary company*, it enables various security levels for information updating between both partners. In other words, on the server of the audit company FINAUDIT is installed and the audited company by an authorized agent, shall have the possibility to access the permanent file in order to view and to add information in an electronic format. The auditors of the audit company shall take over the electronic files and shall attach them as enclosures to the specific section of the permanent audit file. Hence, we shall make more efficient the work of collecting the documents necessary for the development of the permanent audit file and we shall contribute to the enhancement of the financial audit quality. In Figure 2 we have the work schemata between the two partners of an audit file.

**Figure 2. Work schemata with the module Permanent file of the information product FINAUDIT**



The stages of using the DP module (permanent file) of FINAUDIT consist in:

1. Installing FINAUDIT with the audit company;
2. Installing the module DP with the audited company (client) and the assignment of a username and of a password;
3. Generation of the database for the client at the audit company;
4. Joint preparation of the work sheets PA, PB ... PF;
5. Viewing data and information on the permanent file at any time by the client;
6. Adding information (enclosure electronic documents) by the client;
7. Auditor's using the new documents as enclosures to the sections PA, PB ...;
8. Printing at request the permanent file.

*The main characteristics of the FINAUDIT product are:*

1. uses WEB technologies for registering and storing information on trade company auditing;
2. the basic technology for the interface of the application is *Windows SharePoint Services* (WSS<sup>4</sup>).
3. users' authentication is made based on the Active Directory that represents the directory service supported originally by Windows 2003 server and Windows SharePoint Services;
4. data persistence is provided by the data support SQL Server 2000;
5. list and list format customizing may be achieved originally from WSS or using a Web page editor, in the case of this application we recommend using FrontPage 2003;
6. the advantage of using Web technologies as application interface is represented by the fact that at the main office of the customer there should not be installed a client-type component, the only requirement being a WSS-compatible browser: Internet Explorer (recommended), Firefox etc;
7. users may be grouped per page-access levels from read-only users to administrators;

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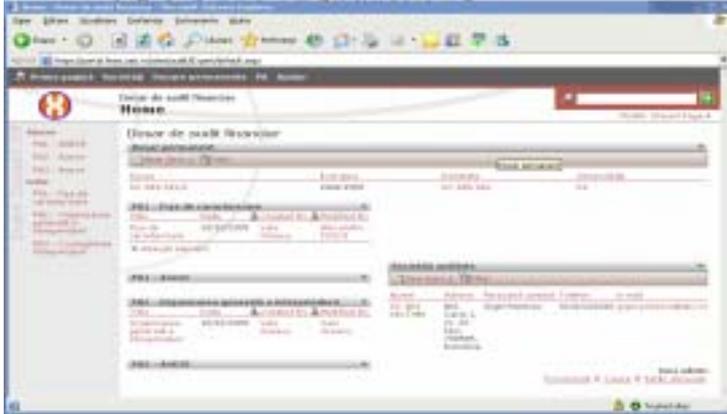
<sup>4</sup> Customizable solution of document management provided by Microsoft Company

8. entry security and data confidentiality may be achieved by determining and grouping the users per work groups and per access levels;
9. to determine a security per correlated levels, the solution is Small Business Server that includes all services necessary for the implementation of the application at the level of the audit company.

In order to use the application FINAUDIT, the following aspects should be known:

- main page: <https://portal.fea.uaic.ro/sites/audit/Expert/default.aspx> (figure 3);

**Figure no. 3. Main page of the application FINAUDIT**



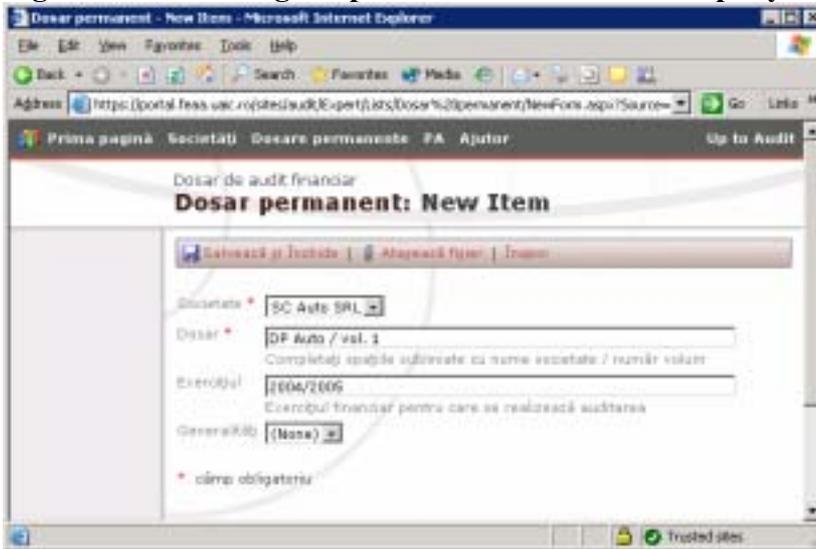
- to add a new company, press the button *New item* of the area audited *Companies*.

**Figure 4. Statement of a new company client**



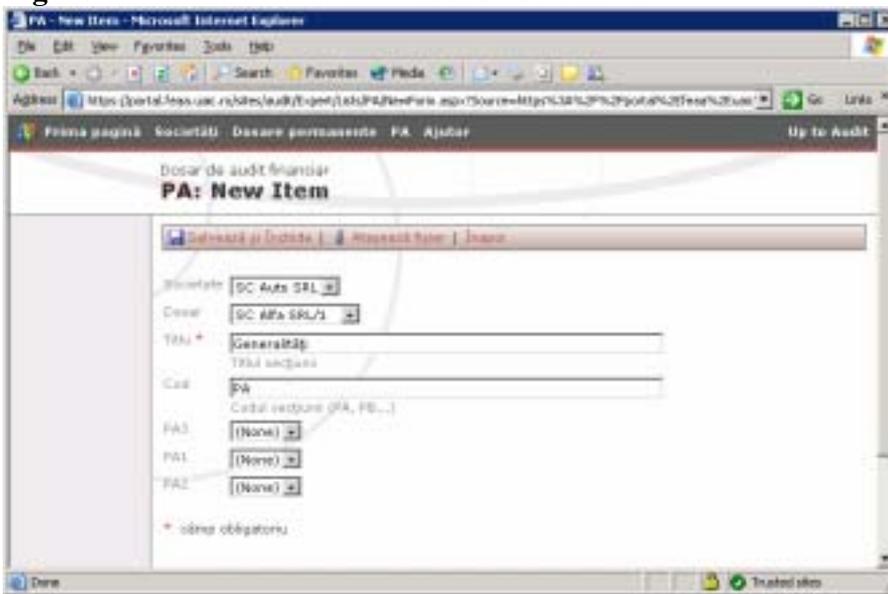
- to add a new permanent File, activate the link *Permanent files* of the top menu and then press the button *New item* of the permanent file page;

**Figure 5. Generating the permanent file for the company**



- to fill in the sheet PA, press the link *PA* and then the button *New item*;

**Figure 6. Definition of the PA section structure**



- to fill in the sheets PA1 and PA2 ... activate the left links of the first page of the application, press the button *New item*. For instance, in figure 7 we present the PA1 form;

**Figure 7. Work modality for the *Sheet of characteristics***

The screenshot shows a web browser window with the address bar displaying a URL. The page title is "PA1 - Fișa de caracterizare: New Item". The form is organized into several sections:

- General Information:** Includes fields for "Fișa de caracterizare", "Subul caracterizării", "Cod", "Cantitate", "Data", "Data de încheiere", "Data de începere", "Data de încheiere la BC", and "Data de începere la BC".
- Technical Specifications:** Includes fields for "Nume produs", "Adresa", "Numele societății producătoare", "TM", "Pai", "Numele recipient", "TM", "Pai", "Numele produs", "Data fabricării", "N. de înregistrare BC", "Data fabricării", "Data înregistrării la BC", and "Local fabricării la BC".
- Product Details:** Includes a dropdown for "Cant. produs", a text field for "Cant. produs", a dropdown for "Unitate de măsură", a text field for "Unitate de măsură", a dropdown for "Cant. produs", a text field for "Cant. produs", a dropdown for "Unitate de măsură", a text field for "Unitate de măsură", and a dropdown for "Cant. produs".
- Calendar:** A calendar widget for November 2009 is displayed, showing the days of the week and the dates. The date 14th is highlighted in yellow.

This is the final shape of PA, after the other sheets have been completed.

**Figure 8. Presentation of the PA sheet**

SC Auto SRL			
Dosar: <u>DP Auto / vol. 1</u>	DOSAR PERMANENT Generalități	Ref. PA	
		Pagina	
CUPRINS		Referință	(1)
* Fișa de caracterizare		* PA 1	
* Organizarea generală a întreprinderii		* PA2	
* Cunoașterea întreprinderii		* PA3	
* Documentația privind întreprinderea		* PA4	
* Fișa de acceptare a mandatului		* PA5	
<small>Created at 10/13/2005 5:05 PM by <u>GEORGESCU C. ILIANA</u> Last modified at 10/13/2005 5:46 PM by <u>Razvanh TUGUI</u></small>			

We mention the fact that the work logic for the PA section is applicable also to the other sections of the permanent file afferent to an audited company (client).

*The main advantages of the FINAUDIT application are:*

- converts into digital format the Audit Files of an audited company;
- involves in the stage of Audit File completion the audited company;
- imposes electronic administration of documents at the level of the audit company;
- the cost of the application is relatively low;
- provides the possibility of audit automated modeling and of obtaining under the requested format for the work sheets the enclosures of the two audit files;
- very low costs of the implementation of the application with the users;
- enhancement of the auditing quality by observing certain information procedures;
- an advantageous role of the ones that implement the product FINAUDIT;

- a work interface close to the logic of financial auditors.

These are some *disadvantages*:

- difficulty in automated modeling of the professional reasoning, hence the necessity of auditor's intervention in the work sheets;
- the continuous harmonization of the auditing activity imposes the permanent updating of the application, if this one was designed as modular;
- great reticence of financial auditors with regards to the new information and communication etc.

## **6. Conclusions**

This study shows the high degree of informatization of the tomorrow's society in which business operators will work, which justifies the necessity to resort to ICT in the activity of financial audit, too. By our research theme, we undertook to make available for Romanian financial auditors a work tool in the logic of the end users, which should enable the construction of the audit files of their customers.

Our research team is on an advanced stage of design of the current file of an audit mission and we succeeded even in obtaining a prototype for the F section - Audit approach.

What do we undertake? We undertake this year to complete the demo version of the FINAUDIT product and to present it to the accounting and financial accounting professionals. During 2006, we want to achieve the commercial version of FINAUDIT. Moreover, we want to continue our studies in the field, with financing from the forecast sales on the Romanian market, on two directions: a. product completion with modules specific to artificial intelligence (expert systems, intelligent agents etc) and b. the conversion of this product on the market of the Republic of Moldova and other countries that undergo the same process of financial-audit harmonization.

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# STATISTICAL METHODS OF PREDICTING FINANCIAL STATEMENTS

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## **Abstract**

*This paper try to emphasize the importance of predicting financial situation for any firm's management, necessity of this process and certainly are present some practice modalities of preview a balance sheet, a profit and loss account and a cash-flow statement. Especially we will refer at the statistical method of preview the financial statements based on the data of the last 5 to 10 years of activity.*

**Keywords:** *prediction, financial statements, additional funds needs, managerial finance*

## 1. Introduction

In any activity, the existence of a program that can provide the future coordinates of the activity is very important. In the economic activity, such an objective must be achieved. The enterprises must plan the value of their assets, expenditure, income, results in order to efficiently allocate their funds.

The firms need more assets if they wish to increase their sales, meaning that they have to make new investments. For this, they need funds that in most of the cases are represented by new loans. These loans generate interest. Although a part of funding can be obtained by self-finance, a high growth rate implies external financing even for a very profitable firm. In these circumstances, every firm, in its process of financial prediction, needs to have appropriate solvability, liquidity, profitability rates.

As a conclusion, any accounting management that wants to increase the efficiency of his activity must accept the aid of predicted financial statements. The degree of detail of these financial statements depends upon the period considered.

The prediction of financial statements refers to the following documents:

- the predicted financial position synthesized in the actual predicted balance sheet;
- the predicted financial performances synthesized in the predicted Profit and Loss account;
- the modification of the predicted financial position reflected in the predicted Cash-Flow;
- the predicted efficiency of the activity reflected by the main predicted financial indicators.

Prediction of sales, that is the estimation of net turnover for a certain future period, is the starting point in estimating the future funding needs. The prediction of future sales is done by analyzing the net turnover of the last 5 -10 years, its trend providing the future evolution. This can be very useful. Even so, the hypothesis that the sales will grow in the same rate as in the past not always can be valid and can lead to unrealistic predictions. Because of this, the following information need to be analyzed, such as:

*Establishing the strategic fundamental objective of the firm.*

Every firm acts in a specific economic and competitive environment and, because of this, the future strategic objectives are dictated by this

environment. Practically, a firm can establish a certain objective. The degree in which this objective is accomplished is very much influenced by the governmental policy, by the legislative system and so on.

*The elaboration of a market study.*

Every company produces for the market, and consequently it must know the demand. The market study must offer the producer, information on future evolution of demand and factors with impact in the future. In every day activity this information has a certain degree of probability due to the several natural, political, legislative factors that may appear.

Every good prediction implies a lot of effort. If the prediction is wrong, the consequences can be negatives. .

If the demand is higher than the predicted one, the firm won't be able to satisfy the customers. The consequences can be accumulated orders, delayed delivers and finally lower market share because the clients will choose a firms more competitive and prompt with its deliveries.

On the other hand, if the prediction regarding sales is too optimistic, the company will be in the situation of having more product reserves and unused technology. This will generate low rotation speed for fixed assets, increased costs which will result in general depreciation of the firm's stocks and value. But, if the company has financed its development with bank loans, the problems could be much worse.

Because of these, a correct sales prediction is useful for a firm's long run success.

## **2. Methods of predicting the Balance Sheet and the Profit and Loss Account.**

Next, we will refer to the methods of predicting the Balance Sheet and the Profit and Loss Account because the Cash Flows and the financial indicators result of the predictions concerning the financial position.

In consequence, for the elaboration of the two predicted documents can be used the following methods:

**1. Method "percent from sales"** which can be applied successfully in the hypothesis:

a) The majority of the elements of the financial position presented in the Balance Sheet vary in the same rate with the sales.

b) The current values of the entities assets are optimal for the current values of the sales.

## 2. "Statistical methods"

When the hypothesis used by the "percent from sales" method are not confirmed, another prediction can be used, among which regression methods has the largest applicability. There are numerous situations when the two conditions cannot be fulfilled

### *a) The existence of the "scale savings"*

Various times the entities must have a basic stock even though the turnover at the moment is very low. According as, this turnover increases also increases the value of the stocks but with a lower growing rate so the initial ratio among the value of the stocks and turnover decreases.

### *b) Lumpy assets*

In many industries, the development of an enterprise can be made only buying valuable assets. This is the case of the paper industry where even the smallest cellulose operation unit can be efficient.

In Canada, for example, the firm must have at least 75 millions fixed assets, this meaning at least a complete unit in order to be competitive. This situation influences significantly the ratio fixed assets/turnover for different sales amounts is influenced also the financial needs. The relation between an asset and turnover is in several occasion laniary. In this case, simple laniary regression method is applied for assessing the increase in value of that asset determined by a certain increase of the sales. A mathematical equation can be established based on information from the last five to ten years. In inflation this methods determines consequent transformations in a constant currency in order to obtained pertinent data.

Practically, the application of the regression method for the provisions of the financial statements is the following:

a) The assets from the last 5 to 10 years are analyzed in accordance with the turnover which they generated each year. The relationship between each asset element and turnover over the analyzed period is reflected by the "statistical cloud". The parameters of the regression equation are estimated and subsequently the value of every asset element considered.

b) Based on the prediction of sales, the incomes and the expenditures are assessed and the predicted profit and loss account is elaborated. for the following year.

These stages can lead to a predicted balance sheet without equilibrium between assets and liabilities. In the liabilities will appear a so called "*additional funds needed*" – AFN. This need will generate new loans, from the shareholders or banks and this choice is based on the compared analysis

of the the costs generated by these two and by the existing restrictions. The restrictions regarding supplementary loans are determined according to:

- the maximum level of loans established by the indicator “degree of debt”;
- the loan estimated for the following period;
- the difference represents the loan that the firm can contract.

If the need for funds is not satisfied by contracting new loans then new shares are issued and the assets grow. The equilibration of predicted balance sheet by contracting loans will take into consideration the cost of these new loans (the interest or the dividends).

The need for funds can be determined from the balance sheet equilibrium or with the help of a formula that has some advantages:

- it reveals the relation between the sales growth and the need for finance;
- by the equation  $AFN=0$  we can see the growth rate that can be financed from the firms resources; this growth rate is know as the sustainable growth rate.

The formula for the need for financing is:

$$AFN = \Delta CRA + \Delta FA - \Delta NFL - M * Rap * S1$$

Where:

- AFN represent additional funds needed
- $\Delta CRA = CRA1 - CRA0$  where CRA1 represent estimated current assets presuming that this increase at the same rate with a sales according to the equation:  $CRA1 = a + b * S1$ , where “a” and “b” are the parameters of the regression equation, which where resulted from the statistical analysis of the relationship between CRA and S over the analyzed period; CRA0 represent current assets on the N year (the last year analyzed).
- S1 represent the predicted net turnover;
- $\Delta FA = FA1 - FA0$  where FA1 represent the estimated fixed assets presuming that this grow at the same rate with sales after the equation:  $FA1 = c + d * S1$ , where “c” and “d” are the parameters of the regression equation, which where resulted from the statistical analysis of the relationship between FA and S over the analyzed period. FA0 represent the fixed assets on the N year;

-  $\Delta NFL = NFL1 - NFL0$  where NFL1 represent the estimated nonfinancial liabilities (like note payable, trade account payable, taxes and wages to pay and so on) presuming that this grow at the same rate with the sales after the equation:  $NFL1 = e + f * S1$ , where “e” and “f” are the parameters of the regression equation, which where resulted from the statistical analysis of the relationship between NFL and S over the analyzed period. NFL0 represent the nonfinancial liabilities on the year N;

- M represent the profit rate (Net profit/Net turnover \*100);

- Rap represent acumulated profit ratio;  $Rap = (1 - \text{dividend payout ratio})$ ;

For exemplification we will consider a company  $\alpha$  that has the following predictions:

- the estimated net turnover is 1.500 monetary unit (m.u.) for the year N+1;
- the profit rate (Net profit/Net turnover)\*100 is estimated at 4%;
- from the net profit, 50% is given as dividends;
- general liquidity rate is not to exceed 250%;
- debt degree (total debt/total liabilities)\*100 is not to exceed 50%;
- the production technology isn't used at the maximum capacity;
- the expenses will decrease to 60% of sales;
- assets sales is estimated that will generate 300 m.u.. loss;
- other exploitation expenses are estimated at 98 m.u.;
- profit tax is 16%.

The balance sheet and the profit and loss account at 31.12.year N is:

**Table 1. Simplified Balance sheet at 31.dec.year N (m.u.)**

Fixed assets	300
Current assets	390
Stocks	200
Trade account receivable	170
Liquidities	20
<b>Total assets</b>	<b>690</b>
Trade account payable	100
Taxes and wages to pay	50
Current liabilities	150
Bonds	140
Total liabilities	290
Share capital	200
Reported result	200
Net result	10
Repartition of result	(10)
Total shareholders equity	400
<b>Total liabilities and equity</b>	<b>690</b>

**Table 2. The simplified Profit and Loss Account at 31.dec.year (m.u.)**

Net turnover	1000
Material costs	700
Amortization costs	20
Loss from asset selling	168
Exploitation result	112
Interest costs	100
Current result	12
Gross result	12
Profit tax	2
Net result	10

The assessment of the current assets and nonfinancial liabilities for the year N+1 is made based on the statistical analysis of the connexity between these and turnover in the last five year. From the statistical analysis of the variables mentioned above, can be determined the following conditions:

$$FA = 40 + 0,26 * S$$

$$St = 20 + 0,18 * S$$

$$TAR = 10 + 0,16 * S$$

$$C = 5 + 0,015 * S.$$

$$NFL = 18 + 0,132 * S, \text{ where}$$

- FA represent the fixed assets in the last five years;
- St represent the stocks in the last five years;
- TAR represent the trade accounts receivables in the last five years;
- L represent cash in the last five years;
- NFL represent the nonfinancial liabilities in the last five years.
- S represent the sales in the last five years.

For an estimated turnover for the year N+1 of 1500 m.u., can be obtained the following values of the assets:

- Estimated fixed assets for the year N+1 : FA1= 430 m.u.
- Estimated stocks for the year N1: St1= 290 m.u.
- Estimated trade accounts receivables for the year N+1: TAR1= 260 m.u.
- Estimated cash ( liquidity) for the year N+1: C1 = 27,5 m.u.
- Estimated nonfinancial liabilities for the year N+1: NFL1 = 216 m.u.

Based on the mentioned formula, the *additional funds needed* is:

$$AFN=(430-300)+(290-200)+(260-170)+(27,5-20)+(216-150)- 4\%*50\%*1500 =221,5 \text{ m.u.}$$

The need for financing will be satisfied by new loans but in case of emergency by issue of shares or by increase in equity. For this, must be respected certain restrictions such as:

*a) The restrictions regarding the degree of debt imposed:*

$$\begin{aligned} \text{Maximum of debt allowed} &= 0,5 * \text{Total assets} = \\ &= 0,5 * 1.007,5 = 503,75 \text{ m.u.} \end{aligned}$$

Minus: Loaned capital estimated for year N+1:

$$\text{Current debt} = 216 \text{ m.u}$$

$$\text{Bonds} = 140 \text{ m.u}$$

$$\text{Total} = 356 \text{ m.u}$$

$$\text{Maximum of supplementary loan} = 503,75-356= 147,75 \text{ m.u}$$

*b) The restrictions regarding the general liquidity degree impose:*

$$\text{Maximum of current debt allowed} = \text{Current assets allowed}/2,5 = 577,5/2,5= 231 \text{ m.u.}$$

Minus: Current debt estimated for N+1 = 216 m.u

Maximum of supplementary current debt = Maximum of current debt allowed - Current liabilities already estimated = 231-216 =15 m.u

*c) Need for shareholders equity:*

Total supplementary need for funds = 221,5 m.u

Maximum of allowed supplementary loan = 147,75 m.u

Need for shareholders equity = 221,5-147,75 = 73,75 m.u

*d) The predictions for external financing are:*

Current debt = 15 m.u

Long run debt = 132,75 m.u

Supplementary shareholders equity =73,75 m.u

After satisfying the need for financing and after take into consideration the restrictions mentioned above, the predicted simplified balance sheet for 31 December year N+1 will be the following:

**Table 3. The Simplified provisioned balance sheet for 31.dec.N+1 (m.u.)**

Fixed assets	430
Stocks	290
Trade account receivables	260
Liquidities	27,5
Current assets	577,5
<b>Total assets</b>	<b>1 077,5</b>
Nonfinancial liabilities	216
Current debt	15
Current liabilities	31
Bonds	272,75
Total liabilities	503,75
Share equity	273,75
Reported result	230
Net result	60
Result repartition	(60)
Shareholders equity	503,75
<b>Total liabilities and equity</b>	<b>1 077,5</b>

**Table 4. B. Estimated profit and loss account at 31.dec.N+1 (u.m.)**

Net turnover	1,500
Material costs	900
Amortization costs	30 <sup>1</sup>
Loss from asset give away	300
Other exploitation costs	98
Exploitation result	172
Interest costs	100
Current result	72
Gross result	72
Profit tax	12
Net result	60

<sup>1</sup> Amortization expenses are increased with 10 m.u. by taking into consideration the supplementary purchase of assets.

<sup>2</sup> We didn't took into consideration the implications of the indebtment over the profit and loss account.

Using the estimated balance sheet and the profit and loss account we can determine the predicted cash-flow. Using the indirect method this will be:

**Table 5 The predicted cash-flow for 31.dec.N+1 (m.u.)**

<i>Exploitation activity</i>	
<b>Net result</b>	<b>60</b>
Adjustments:	
<b>* Regarding current assets</b>	<b>-104</b>
- Δ Account receivables	-90
-Δ Stocks	-90
+Δ Nonfinancial liabilities	66
<b>* Regarding nonmonetary exploitation elements</b>	<b>53</b>
+ Amortization costs	53
<b>* Regarding investments</b>	<b>300</b>
+ Loss from fixed assets sale	300
<b>A. Net cash flow from exploitation activity</b>	<b>299</b>
<i>Investing activity</i>	
- Fixed assets bought	-550
+ Fixed assets sold	67
<b>B. Net cash flow from investing activity</b>	<b>-483</b>
<i>Financing activity</i>	
- Contracting loans on short and long term	147,75 (15+132,75)
+ Bonds issued	73,75
- Dividends paid	-30

<b>C. Net cash flow from financing activity</b>	<b>191,5</b>
<b>Net cash-flow (A+B+C)</b>	<b>7,5</b>
Estimated reserve for end of N+1	<b>27,5</b>
Reserve at the beginning of N+1	<b>20</b>

For the estimated cash flow we will take into consideration the following information extracted from the investment budget: new investments in the amount of 550 m.u. will be made a part of the old machinery will be sold at a value of 67 m.u ;the estimated net accounting value (entry value minus costs with cumulated amortization) is 367 m.u.

### **3. Conclusions**

Statistical methods are very good used in the prediction of financial statements especially based on the regression method. In this way the manager benefits of the most elevated methods for the best decisions that he wants to do refering the future of their activity.

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# THE RISKS OF THE FINANCIAL-ACCOUNTING AUDIT AND THE RELATIVE IMPORTANCE

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## **Abstract**

*The financial-accounting audit was legalized in Romania in 1999 and since then there were made important steps of development through CECCAR, as well as through the Ministry of Finances. The financial-accounting audit interposes between the manufactures and the users of accounting information, by high-class professionals, which assume the responsibility of certification that the financial situations are concluded in all the significant aspects and in comply with the national and international standards of accountancy. In a financial audit, the control of objectives is planned in terms of the risk factors and of their relative significance, which changes from a company to another. Through his activity, the auditor must achieve a comprehensive understanding of the accounting systems and of internal control in order to program the audit activity.*

**Keywords:** *financial audit, internal control, financial-accounting*

## 1. Introduction

In an increasingly active business world, the performance of the enterprise is expected by its partners – shareholders, banks, financial analysts, suppliers, creditors, etc. In a first phase, the ensemble of its activities, translated in accounting language, makes the object of thorough examinations, conducted by management controllers or internal auditors who intervene in the area of the enterprise business management; they contribute to the improvement of the enterprise organization and thus to the ability to reach the objectives set by the management of the enterprise.

The effectiveness of the financial and accounting information, synthesized in the financial statements, is subsequently validated by a professional accountant holding the title of auditor. He will not reiterate the examinations already conducted within the enterprise, examinations whose extent varies according to the size of the enterprise.

In the course of an audit of the accounting data, the most important step is to determine whether the recorded information correctly mirrors the economic events that occurred during the accounting activity. As the accounting rules represent the evaluation criteria of the adequate recording of the accounting information, any auditor involved in the activities related to these data, must also have perfect knowledge of these rules. In the context of an audit of the financial statements, the rules applied are often the generally accepted accounting principles.

Aside from a good knowledge of accounting, the auditor must also have experience in collecting and interpreting the audit samples. It is this experience that separates the auditors from bookkeepers. The identification of the adequate audit procedures, the assessment of the number and types of elements to be tested, as well as result evaluation, these are all unique problems that define the activity of an auditor.

The auditors that certify and identify the financial statements and the information provided by the accounting department are called in to fulfill their mission according to “The Code of professional ethics and conduct in the field of financial audit”, without getting influenced by the often contradicting interests of the users of the information. Due to the need external users have of relying on the financial statements, there is a set of strictly defined standards for the audit of these financial statements.

## 2. Manager decision process

In order to underline the need of the auditing, let us take as an example the decision of a bank manager concerning a loan granted to an enterprise. This decision will be based on factors like: the previous financial relations of the bank with the respective enterprise and the financial position of this enterprise, as reflected in its financial statements. If the bank grants the loan, it will request an interest rate widely determined by three factors [1, p. 81]:

1. The interest rate for no risk investments. It is approximately equal to the interest rate the bank could get if it were to invest in state bonds with equation of payments as the loan requested by the enterprise.
2. The economic risk represented by the client. This type of risk reflects the probability that the enterprise may not be able to return the loan due to general or specific economic circumstances linked to the activity of the enterprise like: economic recession, wrong managerial decisions or unpredicted competition in the branch.
3. The informational risk reflects the probability that the information on which the evaluation of the economic risk was based might not be exact. A possible cause for the occurrence of an informational risk is the probability of drawing up inaccurate financial statements.

The audit has no influence on the interest rate for no risk investments or on the economic risk but it may have a significant impact on the informational risk. If the bank manager is content with the minimum informational risk of a client because the latter has hired an auditor for his financial statements, the risk is significantly diminished and the total interest rate applied to the debtor can be alleviated.

As our society becomes more complex, the decision factors are facing an increasing probability of receiving incorrect information. This is explained by several reasons: the wider distance between the information and the users, bias and the personal reasons of the information provider, the large volume of data as well as the existence of certain complex commercial transactions.

The enterprise managers and the users of the financial statements could conclude that the best way to manage the informational risk consists in simply maintaining it on a reasonably high level. A small company could find that it is cheaper to pay higher interest than increase the expenses brought about by the attempts to reduce the informational risk.

For larger enterprises, it is a more practical habit to assume the expenses on the reduction of the informational risk. This measure can be enforced in three ways: the information is checked by the user, the

informational risk is shared between the management and the user, and audited financial statements are provided.

*The user verifies the information.* The user could come to the headquarters of the enterprise that provides the information in order to examine its accounting records and to get information on the effectiveness of the presented situation. Normally, this measure is not a practical one because of its cost. Moreover, it is economically inefficient for each user to verify the information. Nevertheless, certain users conduct their own checks. For example, the IRS conducts important examinations of the enterprises and the natural persons in order to determine whether the tax return mirrors the real taxes or not. Similarly, if an enterprise intends to take over another enterprise, the buyer often makes use of a special audit team to examine and independently assess the key information of the potential purchase.

*The user shares the informational risk with the management.* There are significant juridical precedents that suggest that the management is responsible for providing effective information to the users. If the users rely on incorrect financial statements and, as a consequence, they record financial loss, they have the possibility to sue the management of that enterprise. One of the difficulties of sharing the informational risk with the management consists in the possibility that the users may not recover their losses. If a company is unable to reimburse a loan on grounds of bankruptcy, there is a small chance that the management should dispose of sufficient funds to compensate the information users.

*Providing audited financial statements.* The most frequent way for the users to receive accurate information is conducting an independent audit. Subsequently, the audited information is used in the decision-making process, starting from the premise that the information is reasonably complete, exact and unbiased.

The management usually hires an auditor who will reassure the users that the financial statements are accurate. If the financial statements are eventually proved to be wrong, the auditor can be sued by the users of the information as well as by the management of the enterprise that hired him in the first place. Without a doubt, the auditors have a significant juridical responsibility concerning their line of work.

### **3. Risks of audit**

The control of the objectives, in the case of a financial audit, is planned varying with the *risk factors* and *their relative importance*, which differs for every enterprise. During his activity, the auditor must gain sufficient knowledge of the accounting and internal control systems in order to program the audit activity.

A competent auditor acknowledges the existence of the risks and approaches them in the correct manner. Most of the risks the auditors encounter are very difficult to quantize and require thorough analysis in order to be properly assessed. For example, let's assume that the auditor decides that the branch of the client is going through major technological changes that will affect the audit client as well as the purchaser of his products. This change could have an impact on the moral usage of the client's stocks, on the probability of cashing in the commercial claims and perhaps also on the client's ability to sustain business. An adequate reaction to these risks is of critical importance for conducting high quality auditing.

The risks do not have the same probability of occurring. From this viewpoint one can distinguish potential risks and possible risks.

- Potential risks are those likely to occur if no control is imposed in order to detect and correct the errors that might happen. These risks are common to all the enterprises.
- Possible risks are potential risks the enterprise has no means of reducing.

In an enterprise, the auditor usually encounters the following categories of risk [5, p.61]:

- general risks specific to the enterprise;
- risks related to the nature of the developed operations;
- risks related to the conceiving and functioning of the system.

In an enterprise the auditor encounters general risks specific to the enterprise, risks which are likely to influence all the activities of the enterprise. In order to control the enterprise, the auditor must identify those features that distinguish it from the others. Therefore, the following information must be researched and analyzed:

- the activity of the enterprise and its sector of business, including the existence of special regulations for that sector (supply, sales, finance, price formation, etc.);
- the enterprise structure and organization;
- the general policies of the enterprise: financial, commercial and social;
- the enterprise development prospects;
- the administrative and accounting organization, the existence of a data processing system;
- the accounting policies of the enterprise.

As the auditor is not able to control everything, he must be fully aware of the potential risks that may happen in any patrimonial unit; to

identify them and to focus most of his procedure on them in order to determine whether the errors or the inaccuracies have materialized or not.

**The general risks** can be illustrated as follows: [3, p. 178]

a) *The risks related to the economic situation of the enterprise*, caused by:

- Economic factors like: lack of solvency of certain states, thus reducing the markets of the enterprise;
- Internal factors: the existence of certain economic, juridical and revenue regulation specific to one sector.

The economic situation of the enterprise can generate risks caused by the different reactions of the managers. The reaction of a manager from a profit enterprise differs from that of the manager of an enterprise experiencing difficulties, as they may have scattered and dangerous reactions (ruinous loans, dangerous fiscal operations).

The auditor must be fully aware of the perception managers may have on their situation, in order to anticipate their reactions and to help them assess their real situation. This can be accomplished by direct contact with those managers.

b) *The risks related to the general organization of the enterprise* are caused by:

- The policies chosen by the managers: the financial investment policy can influence the classification of the movable values (sharing or investment securities) that must be correctly recorded in the bookkeeping or development policy of the new products can accelerate the ageing of other products;
- The structure of the enterprise: if it is an enterprise founded with the participation of another enterprise at the setting up of the share capital, it will have certain advantages as opposed to another independent one (easier loans, certain advantages) as well as servitudes (supply and sales under certain required conditions etc.).

c) *The risks related to the management's attitude* concern the position adopted by the management with regard to the quality of information.

A management concerned with the quality of information will permanently aim at the implementation and use of accurate and effective systems. On the other hand, if the management puts too much trust in the qualities of the employees and of the current systems, the problem of the

information system tends to get neglected, a situation which can lead to important errors and irregularities.

***The risks related to the nature of the operations approached*** can be identified by classifying the data being recorded in the ledgers as follows:

- repetitive data – are those that result from the normal activity of the enterprise: sales, purchases, wages, etc; these data are dealt with in a uniform manner, depending on the chosen system;
- punctual data – are complementary to the repetitive data but are more or less regularly emphasized, e.g.: physical stock control, final evaluation, etc. These data carry significant risks if they are not discovered in due time and, therefore, the auditor must get acquainted to the situation in time to organize the necessary examinations;
- exceptional data – resulted from operations or decisions that derive from current activities: reevaluations, merges, restructuring. The enterprise does not have the prerequisite criteria of comparative elements and of experienced staff for such operations, therefore the risk of errors and their recording are of high importance;

The more important is the value (individual or cumulative) of a certain category of operations (repetitive, punctual or exceptional), the more likely are the errors to influence the financial statements.

***The risks related to the conceiving and functioning of the systems***

The auditor must understand the bookkeeping and the internal control system of the entity. This will be of use to the auditor in the planning and programming phase of the commitment (mission) as well as in the phase of collecting and evaluation of the audit samples.

Knowing the organization and functioning manner of the bookkeeping and internal control systems, the auditor applies professional reasoning in order to evaluate the audit risks and to establish the audit procedures necessary to reduce the audit risk to an acceptable level.

In the Audit Standard no. 400 “Risk evaluation and internal control”, it is mentioned that the audit risk stands for the risk the auditor determines for an inadequate audit opinion when the financial statements have significant erroneous information.

The audit risk has three elements: inherent risk, control risk and omission risk. [6]

***Inherent risk*** is “the likelihood that a current balance or a transaction category might contain erroneous information that could be individually significant or when accompanied by erroneous information from another balance or transaction”.

The inherent risk mirrors the vulnerability of the financial statements to the occurrence of errors in the case of lack of internal control. If the

auditor reaches the conclusion that there is a great probability of error, without considering the internal control, then he will conclude that the inherent risk is very likely to occur. Internal control is ignored in determining the inherent risk as it is separately analyzed in the risk model of the audit by control related risk.

The auditor should analyze certain important factors when he estimates the inherent risk as follows: [1, p. 305]:

- the nature of the client's activity;
- factors related to erroneous statements that result from fraudulent financial reports;
- the results of the previous audits;
- whether it is an initial or a repeated engagement;
- the affiliated parts;
- exceptional (unconventional) operations;
- the necessary reasoning for the correct recording of the current balances and operations;
- the vulnerability of the assets to the abduction (circumvention) risk;
- the component of the analyzed population.

The inherent risk for certain accounts is influenced by the nature of the client management activity. For example, the possible existence of morally used (unmarketable) stocks is higher in the case of a producer of electronic goods than in the case of a steel producer. The inherent risk has a high probability of varying from one activity sector to another, especially when it is applied to certain accounts like stocks, client debts, loans and fixed assets. The nature of the clients' activity should have a very low or no impact on accounts like cash means, commercial effects and mortgage loans.

**The control risk** is the risk that an erroneous statement that may appear in the balance of an account or in a category of operations or transactions might not be prevented or detected and corrected in due time by the bookkeeping systems and internal control.

After acquiring the knowledge on the internal control, the auditor conducts an initial evaluation of the control risk. This evaluation states the extent to which the auditor expects the internal control mechanisms to miss the possibility of significant erroneous statements as well as to fail to detect and correct the already existing significant erroneous statements.

The initial evaluation is generally conducted for each audit objective related to the operations and for each type of operations.

The initial evaluation usually starts with the analysis of the control environment. If, in the opinion of the managers, the internal control is of no importance, there is a low possibility that the specific control activities may be accurate. The best solution in this case is to assume that the control risk

specific to all the audit objectives related to operations is of a maximum degree. On the other hand, if the manager has a positive attitude, then the auditor analyses the specific policies and procedures of the secondary elements of the control environment and those belonging to the other four elements of internal control. The control mechanisms of all the five elements are used as grounds for evaluating the risk under its maximum level.

There are two important assessments as to the initial evaluation. First, the auditor is not compelled to conduct the initial evaluation in a formal, detailed manner. In the case of many audits, especially those for small companies, the auditor assumes that the control risk is high, regardless of the real situation. The auditors act as such because they decide that it is more economical to make a thorough audit of the balances in the financial statements than to test the mechanisms of internal control of these balances.

Secondly, even if the auditor thinks the control risk is low, the estimated value of the control risk is limited to the level justified by the gathered evidence.

After conducting the initial evaluation and analyzing if a lower risk is possible, the auditor has the possibility of deciding which of the estimated control risks should be used: either on the already justified level of the initial evaluation or on a lower level. The decision on the level to be used is essentially an economical one, based on a comparison between the costs of testing the relevant control mechanisms and the costs of conducting the substantial tests that will be avoided if the estimated control risk will be diminished.

Different techniques can be used for documentation on the information related to the bookkeeping systems and internal control. The selection of a certain technique is an issue that depends on the professional reasoning of the auditor. The common techniques, used singularly or combined, are represented by narrative descriptions, opinion polls, check lists and diagrams of the information flow. The form and extend of this documentation is influenced by the size and complexity of the entity, as well as by the nature of the bookkeeping and internal control systems of the entity. Generally, the more complex the bookkeeping and internal control systems of the entity and the control procedures of the auditor, the more extended his documentation should be.

Some of the procedures conducted for acquiring the knowledge on the bookkeeping and internal control systems, may not have been specifically planned as control tests but they can provide audit evidence on the efficiency of the development and operation mode of the internal controls relevant for certain assessments and, consequently, function as control tests. For example, in understanding the bookkeeping and internal control systems of the cash

flow, the auditor may have gathered audit evidence about the effectiveness of the bank reconciliation process by investigations and observation.

When the auditor concludes that the procedures conducted in order to understand and bookkeeping and internal control systems also provide audit evidence related to the adequate character of the effective development and operation of the relevant policies and procedures in the case of a private examination of the financial statements, he can use that audit evidence, mentioning that it is sufficient to maintain the control risk evaluation on a higher level.

**The omission risk** is the risk that an essential audit procedure may not detect erroneous information in a current balance or in a category of operations or transactions. The omission risk includes: the risk not associated with the sampling, determined by the quality of the staff conducting the audit and the sampling risk which consists in the possibility of reaching different conclusions based on the samples and not using opinion polls.

The auditor's evaluation of the inherent risks, in addition to the control risks influence the nature, length and extent of the essential procedures that must be conducted. In their turn, these essential procedures influence the level of omitting the risk and consequently, the audit risk level.

An important factor that allows the auditors to assess the importance of the above mentioned risks is the **relative importance** defined as opposed to the value or the nature of an inaccuracy or irregularity encountered in the financial statement which will lead to a biased reasoning of decision of a reasonable person that relies on this information.

By irregularity, one may understand all the actions or omissions that either bend the law or enforced regulations applied to companies; either the accounting principles or procedures; either the statutory provisions; either the decisions of the Annual General Meeting; or the decisions of the Board of Directors.

By inaccuracy one understands the accounting or juridical changes and interpretations of a certain fact, disagreeing with the reality like: calculus errors; recording errors; inaccuracies in the presentation of the annual balance (inaccurate numbers).

When the irregularities or the inaccuracies have been detected by the auditor, he conducts the necessary examinations to assess their nature and importance and to report them to the manager only when these errors relate to the direct object of his mission, when they have a relative, sufficient importance.

The assessment of the relative importance by the auditor is carried out taking into account the significant areas of the audited company:

- ◆ significant systems;
- ◆ significant accounts;

- ◆ significance threshold.

By significant system one understands any system existing in the patrimonial unit that secures the recording and posting of the repetitive information, when their accumulated value is itself significant in relation to the value of the financial statements. [4, p.518]

The significant systems related to the purchases from suppliers, sales to customers, payments to personnel, treasury, production of stocks, are common to all patrimonial units. The identification of the significant systems specific to the patrimonial unit is a very delicate activity of the auditor, as only these systems require his study of the procedures.

The significant accounts [4, p.518] are those accounts whose value or nature makes for an important part of the financial statements, accounts that can hide errors or significant inaccuracies whose relative importance is directly related to the regularity of the bookkeeping, bearing a significant influence on the financial statements.

In practice, the auditor takes into account the following bench-marks in order to determine the significant accounts:

- even if the current production is at a very low level at the end of his mandate, it can represent a significant account to the extent where the values it mediates are high and the operations are complex;
- the provisions, even at a low level, are significant accounts;
- accounts which, by their nature, are risk accounts (regulation accounts or accounts affected by a legislative change);
- accounts which have apparent anomalies as compared to the previous balance or against the functioning of the accounts, are also considered significant accounts.

The significance threshold allows the auditor to assess whether the detected errors or inaccuracies must be straightened or not, being able to decide the right direction.

The elements specific to the significance threshold are the following: [5, p.91]

1. The necessities of the users of annual financial statements

The annual financial statements provide information for different users: shareholders, associates, personnel, creditors, revenue authorities, unions, clients, etc. Varying with the requirements and needs of the users, the auditor will set the significance threshold.

2. The characteristics of the enterprise which can be significant for the significance threshold:

- the business sector – in certain business sectors, the actual result of the exercise is replaced by other indices (for example, in the trade field, the net result is replaced by the gross margin);
  - the size of the enterprise determines the maximum and minimum parameters of the significance threshold;
  - the evolution of the enterprise in time;
  - the social-economic environment in which the enterprise conducts business, including legislation, economic circumstances, political situation, competition, social climate, etc;
3. The features of the significant elements are:
- sensitivity – an element is sensitive if a small change in its nature generates major changes in the assessment of the annual accounts;
  - the approximation degree – an error is more significant if it refers to a job that requires precision and accuracy;
  - the evolution of the element – it can reflect a tendency of increase or decrease of the element for dishonest reasons;
  - the sum of several elements – the sum of several insignificant elements may lead to a significant result.

The auditor must consider the possibility of the erroneous information of low values which may have a significant effect on the financial statements if accumulated. “An error detected in the monthly closing procedure may be a clue for a potential significant erroneous statement, if the error is repeated every month”. [6, p. 92]. Erroneous information must be considered from quantitative and qualitative viewpoint.

In order to emphasize the consequences of the significance threshold, at the end of his mandate, the auditor makes up a list of his findings. If the management of the enterprise accepts the corrections of the auditor, then, he grants the certificate without reservations. If the auditor must specify the nature of his reservations (the annual postings he is referring to), how these postings must be corrected and what the influence of correcting these balance postings is, then he will have reserves in granting the certificate.

The common definition of the significance threshold, as applied in accounting and in the area of expertise of the audit, is:

“An erroneous presentation in the financial statements can be considered as significant if the information on the existence of this erroneous presentation could influence the decision of a reasonable user of the situations concerned.” [1, p.63]

In the practical use of this definition, three significance levels are used to determine the type of opinion expressed.

When there is an erroneous presentation in the financial statements, but this presentation is not likely to influence the decision of a reasonable user, it is considered as insignificant. In this case, an opinion without reservations must be expressed.

The second significance level or threshold exists when an erroneous piece of information in the financial statements could influence the decision of a certain user but the situations as a whole provide a correct image and are, therefore useful. For example, being aware of the existence of erroneous information in the presentation of the fixed assets could affect the decision of a user when he lends money to the company, only if those assets are used as collateral for this loan. An error in the presentation of stocks does not imply that the cash means, the debts – clients and other elements of the financial statements, or even the financial statements as a whole, are inaccurate in a significant percent.

In order to make decisions on the relative importance in the occurrence of one of the conditions that require a deviation from the report without reservations, the auditor must evaluate all the effects on the financial statements. Let us assume that, while making the decision on the adequate type of opinion, an auditor is not in the position of reaching a satisfying conclusion on the accurate presentation of the stocks. Because of the effects an error in the presentation of stocks may have on other accounts and on the total presented in the financial statements, the auditor must evaluate the relative importance of the accumulated effect of the error on the stocks, on the total circulating assets, on the total working capital, the total assets, on the profit tax, debts related to profit tax, the total of the short-term debts, the cost of the sold items, the profit before taxes and the net profit after taxes.

When the auditor reaches the conclusion that an inaccurate presentation is significant but it does not influence the financial statements as a whole, a reserved opinion must be expressed (including the expression “except for”).

The highest significance level is applied when there is a high probability that the users might make erroneous decisions if based on financial statements as a whole. Returning to the previous example, if the stocks stand for the highest balance in the balance sheet, a considerable error will be so significant that the auditor’s report will have to mention that the financial statements as a whole cannot present an accurate image. When this maximum level of relative importance occurs, the auditor must issue either refusal to express an opinion or an unfavorable opinion, varying with the applicable conditions.

In order to determine whether an omission is very significant, the percentage in which that omission may affect the different elements of the financial statements must be analyzed. This index is called “depth of

repercussions”. An error in the classification of a sum between a monetary means account and a client debt account only affects the two accounts involved and consequently, does not have a deep impact, it does not influence other accounts. On the other hand, not recording a considerable sale is an error of wide repercussions as it affects the sales, the client debts, expenses on the profit tax, the payment profit tax and shared profit which, in their turn will influence the circulating assets, the asset total, short-term debts, total of debts, equity capital, the gross margin and the result of the exploitation.

As the effect of an error spreads, the possibility of expressing an unfavorable and not a reserved opinion also grows. For example, let us assume that the auditor decides that a classification error between the monetary means accounts and client debts accounts should lead to a reserved opinion as the relative importance of this error is high; not recording a sale of similar value could lead to an unfavorable opinion because of the deep and multiple repercussions of such an error.

Regardless of the sums involved, a refusal to express an opinion must be issued if the auditor is convinced that he does not have the independence required by the rules of the Professional Conduct Code. This very severe condition reflects the importance independence has for auditors.

In theory, the influence of the significance threshold on the type of opinion expressed is direct. In practice, making a decision on the real significance threshold in a certain situation is related to a difficult reasoning. There are no simple, clearly defined recommendations that allow the auditors to decide whether an element is significant, insignificant or very significant. . The evaluation of the significance threshold also depends whether a situation involves a breach of the generally accepted accounting principles or a restriction of the audit perimeter.

The decision of a user can be influenced by the type of erroneous presentation of the financial statements. The elements mentioned below could have a different impact than that of the majority of errors on the decision of the user and, therefore, on the opinion of the auditor:

- The transactions are illegal or fraudulent;
- An element could have repercussions in a future exercise, though not significant if only the present exercise is analyzed;
- An element has “psychological” repercussions (for example, if we compare the impact of a reduced profit with that of a small loss or the impact of a monetary means account with that of an overdraft).
- An element could be important in the light of the possible consequences resulted from contract duties (for example, the impact of disregarding a restriction on the indebtedness degree could consist in revoking a significant loan).

## 4. Conclusion

The audit report can be refused when the regularity and accuracy of the annual accounts does not present an accurate, clear and complete image of the patrimony, of the financial situation and of the results but it can also be impossible if the auditor thinks that there are not enough elements provided by the enterprise to establish an opinion.

The setting of the significant elements and of the significance threshold is important but it is done at the request of the auditor, because of the numerous factors that must be considered (the experience of the auditor, his professional experience and judgment) and of their relative importance.

As stated in the Audit Standard no 320, the relationship between the significance threshold and the audit risk is reversely balanced. The higher the significance threshold, the lower the audit risk is and the other way around. This relation is reversely balanced when the auditor determines the nature, length and duration of the audit procedures. If the auditor determines that the acceptable significance threshold is low, then the audit risk is high.

The auditor can draw significant conclusions along his financial activity as well as during the different stages of financial statement preparation: evaluation, presentation or examination. In practice, the most significant findings can make direct or indirect reference to a posting in the balance and/or in an exploitation account or a profit and loss account, or even to a piece of information written in the notes of the annual financial statements.

In certain cases, the consequence is yet undetermined as the auditor does not have the necessary information or perhaps the conclusions he had drawn have an influence on the general situation of the enterprise. These conclusions may be of a juridical nature or may refer to the future of the enterprise. It is the auditor who will decide whether his report should mention the facts that do not hold a direct influence on the financial statements undergoing his examination but facts that will have consequences on future examinations.

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# ASSESSMENT OF THE SIGNIFICANCE THRESHOLD IN AUDITING FINANCIAL STATEMENTS

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## **Abstract**

*This paper is aimed at providing specialists with a practical method of assessing the significance threshold when auditing financial statements, as well as of determining the analyzed sample. The novelty of this study resides in the information-based modeling of the section "Audit approach" of the Current audit file together with the determination of the sample size depending on the risk margin corresponding to each category of patrimonial assets. Thus, we reckon that the subjectivity of financial auditors is significantly reduced. Hence, we shall present to you a brief description of the section F – Audit Approach, and a presentation of the possibility to automatize this section by means of the software FARisk.*

**Keywords:** *audit, significance threshold, information-based modeling, FARisk.*

## **1. Introduction**

The company images provided by the accounting division as information should not be credible except for the case when they are validated socially in two ways: by launching normalizing regulations and downstream, by account ratification achieved by accredited and certified professionals.

The phenomenon of harmonising accounting regulations at an international level makes the credibility of accounting questionable both from the perspective of accounting information production and from the perspective of its quality certification. Things became more serious after the financial scandals of 2001 (Enron, Parmalat etc.) that showed that accounting systems and implicitly accountants' organization systems are far from perfect.

## **2. The concept of financial audit and the role of the accounting profession**

The correct operation of economy relied mostly on the confidence in audited financial statements. From the perspective of the accounting doctrine, the financial audit is the examination performed by a competent and independent professional in order to express a motivated opinion on the way in which the financial reports of a company are drafted and presented according to an identified accounting regulation book [6].

The requirements that some companies should have their financial statements audited by a skilled professional, introduced by European directives on accounting, protects the public interest. The safety provided by information comprised in audited financial statements should make all parties interested in the company business confide in such information and use it. For many users, the financial statements are the only information source. The transparency that results from harmonizing the way in which financial-accounting information is drafted and presented, as it is published by entities of various countries, and the enhancement of the credibility of such information, further to the financial audit made by skilled professionals, is a premise for achieving the Unique Market.

The role of the financial audit consists in that it should apply checking methods that should lead to the formulation of an opinion on the drafting of financial statements under all significant aspects, in conformity with a general framework of financial reporting that may comprise: The Informational Accounting/Financial Reporting Standards (IAS/IFRS),

national accounting regulations, another framework of identified financial reporting.

The objective of the mission of auditing the financial statements is to allow the auditor to express an opinion that should determine if they were presented in accordance with the accounting principles and standards. This opinion should be communicated in a written report.

An important moment in the normalization and the harmonization of auditing practices is marked by the emergence in 1983 of the International Standard of Audit ISA 13 "Audit Report on Annual Accounts" [7]. This standard establishes regulations and provides recommendations regarding the form and the contents of the audit report drafted by an independent auditor on the financial statements of an entity [11].

In the process of planning and performing the audit procedures, and in the process of result evaluation and reporting, the auditor should admit that the uncompliance of an entity with the legislation and the regulations in force may significantly affect financial statements. Nevertheless, it is expected that an audit should detect such uncompliances. Uncompliance detection, irrespective of the significance level, requires the consideration of the implications of any misconduct of management or staff and of the potential effect on some other aspects of the audit process [3].

### **3. Significance Threshold in Audit**

The audit of financial statements should enable the auditor to express an opinion according to which the financial statements were drafted under all *significant aspects* in compliance with an identified framework of financial reporting. The evaluation of what is significant is an aspect pertaining to the use of professional reasoning.

Information is significant if its omission or its erroneous declaration may influence the users' economic decisions, made based on financial statements. The significance threshold depends on the size of the issue or of the error, judged under the specific circumstances of the omission of erroneous declaration.

Hence, the significance threshold is rather a limit than a primary qualitative characteristic that information should have in order to be useful [4].

When drawing up the audit plan, the auditor uses an acceptable level of the significance threshold able to detect, from the quantitative viewpoint, significant deviations on time. However, one must consider both the amount (quantity) of these deviations and their nature (quality). The auditor must

consider the significance threshold both at the global level of financial statements and at the level of the balances of individual accounts, depending on the transaction categories and submitting of accurate information. As regards the assessment by the auditor of the significance threshold, as compared to the specific account balances and transaction categories, these help him decide on certain aspects like those relating to the items that need to be assessed or whether or not to use analytical and evidence-collection procedures. These enable the auditor to choose those audit procedures which, combined, are deemed to reduce the audit risk to an acceptably low level.

There is a reversed relation between the significance threshold and the audit risk level, namely: the higher the significance threshold level, the lower the audit risk and vice versa. In order to be able to draw reasonable conclusions to support the audit opinions, the auditor must collect sufficiently adequate audit evidence. *Audit evidence* is represented by all the information used by the auditor to draw a conclusion that supports the audit opinion and includes all the information in the books that the financial statements were based upon. The books generally include: initial records and their supporting documents, as well as checks and records of electronic fund transfers; invoices; contracts; ledger and inventory register, accounting-related records and other alterations to the financial statements that do not appear in the official books; other records like work documents and spread sheets supporting funds allotment, calculations, reconciliations and information presentations. [5].

The degree of sufficiency is the measure of the amount of audit evidence, while the degree of stability is the measure of the quality of the audit evidence; in other words, their relevance and trustworthiness in providing support for the categories of transactions, account balances, information presentations and corresponding assertions, or for the detection of the deviations from their level.

#### **4. Audit approach - "F" section of the current audit file**

With regards to the audit approach section, according to the Minimal Standards of Audit of Romania harmonized with the International Standards of Audit, we shall have 4 work sub-sections:

1. F0 – Significance threshold;
2. F1 – Checklist of the general inherent risk;
3. F2 – Checklist of the specific inherent risk;
4. F3 – Specific inherent risks and size of samples.

**The significance threshold** represents the level of value from which financial-accounting operations are audited operation by operation, while under this value the statistical sampling is used. Please notice that the level of the significance is determined by the auditor by professional reasoning depending on the degree of knowledge of the latter on the audited company and on the evaluated risk level. Under these circumstances, the determination of the significance threshold gets a subjective and sometimes even risky character.

Practically, the determination of the significance threshold is made starting from the completion and the interpretation of the form F0 – *Significance threshold* of figure 1.

**Figure 1. Determination of the significance threshold – Section F0**

<b>SIGNIFICANCE THRESHOLD</b>								<b>Sect. F0</b>
<b>Client</b>	<b>ABC SA</b>			Drawn up by <b>AT</b>		<i>Initials</i>	<i>Date</i>	<b>15-Jan-05</b>
<b>Period</b>	<b>1/1/2004</b>	<b>12/31/2004</b>	Checked up by <b>CR</b>				<b>17-Apr-05</b>	
			<b>2004</b>		<b>2003</b>	<b>2002</b>		
			<b>Accompl.</b>	<b>Budget</b>				
<b>Total assets (before debts subtraction)</b>								
Start	<b>1.00%</b>	1.00%	1	27	26	25	24	
Ratio	<b>1.00%</b>	2.00%	2	54	52	50	48	
<b>Turnover</b>								
Start	<b>1.00%</b>	1.00%	3	1250	1100	950	870	
Ratio	<b>1.00%</b>	2.00%	4	2500	2200	1900	1740	
<b>Profit before taxation</b>								
Start	<b>1.00%</b>	1.00%	5	150	110	85	74	
Ratio	<b>0.50%</b>	1.50%	6	225	165	127.5	111	
<b>The chosen significance threshold is:</b>			<b>2500</b>					
Explanations:								

Section F0 of figure 1 highlights the following aspects:

- it focuses on the financial year 2004 for the company ABC SA;

- three basic ratios are used, total assets, turnover and profit before tax, but depending on the audited company their number may be increased;
- percentage quotas have been used on each category of ratios, to highlight their degree of sensitivity and the indicators of maximal stability.

After the determination of the significance threshold, two types of audit emerge for each category of patrimonial issue, namely:

1. Over the level of the significance threshold, case in which auditors will audit each and every operation;
2. Under the level of the significance threshold, case in which the audit activity is based on **statistical methods/models of risk evaluation and determination of the samples to be audited** per each category of patrimonial issues.

There are two approaches for the risk evaluation and the determination of the sample size per each category of patrimonial issues in order to audit operations under the value of the significance threshold:

1. *The no-risk statistical method of sampling*, case in which the sub-sections F1 are used (Checklist of the general inherent risk) and F2 (Checklist of the specific inherent risk);
2. *The risk-based statistical method of sampling*, case in which are used F1, F2 and F3 (Specific inherent risks and sample size).

We present in tables 1 and 2 sections F1 and F2 necessary for risk evaluation and the determination of the sample size per categories of patrimonial issues in the case of the no-risk statistical method of sampling.

**Table 1. Checklist of the general inherent risk  
Sect. F1**

Client:		<i>Initials Date</i>	
ABC SA		Drawn up by	GI 15-Jan-05
Period	1/1/2004 12/31/2004	Checked up by	CR 17-Apr-05
1. Management			YES/NO
(a.) Do managers lack the necessary knowledge and experience to lead the company?			YES

		<i>Initials Date</i>	
<b>Client:</b>			
<b>ABC SA</b>		<b>Drawn up by</b>	<b>GI 15-Jan-05</b>
<b>Period</b>	<b>1/1/2004 12/31/2004</b>	<b>Checked up by</b>	<b>CR 17-Apr-05</b>
(b.) Do managers tend to engage the company in highly risky businesses?		<b>YES</b>	
(c.) Were there any managers in key positions replaced during the financial year?		<b>NO</b>	
(d.) Are there some requirements concerning the preservation of a certain level of profitability or the accomplishment of certain goals (for instance, meeting some requirements imposed by the creditors)?		<b>YES</b>	
(e.) Has the reported result a personal significance for the managers (for instance, profit-related benefits) ?		<b>NO</b>	
(f.) Is the administrative and managerial control weak?		<b>NO</b>	
(g.) Are there any competitive managerial information systems?		<b>NO</b>	
(h.) Are the managers concretely involved in the daily tasks? (This question is relevant only if there is a risk under item (d) or (e) identified)		<b>NO</b>	
<b>OVERALL ASSESSMENT OF MANAGEMENT RISKS</b>			
		Very low                      Low                      Moderateh                      Hig	
		<b>The risk is LOW</b>	
<b>Explanations</b>			
		<b>YES/NO</b>	
<b>2. Accounting</b>			
(a.) Is the accounting function decentralized?		<b>NO</b>	
(b.) Do the accounting personnel lack the necessary training and skills to perform their assignments?		<b>NO</b>	
(c.) Are there any attitude- or ethics-related issues in the accounting department?		<b>NO</b>	
(d.) Is there a risk of an error resulting from the employees working under pressure?		<b>NO</b>	
<b>OVERALL ASSESSMENT OF ACCOUNTING RISKS</b>			
		Very low                      Low                      Moderateh                      Hig	
		<b>The risk is VERY LOW</b>	
<b>Explanations</b>			
		<b>YES/NO</b>	

<b>3. Operation of the audited company</b>		
(a.) Does the company operate in a highly risky industry?		YES
(b.) Is there any creditor-third party with a significant individual importance?		YES
(c.) Do certain of the members of the Board of Directors who do not held an executive position have a right of action or vote exceeding 25%?		NO
(d.) Is there any prediction of the future sale of the business (or part of it)?		NO
(e.) Has the management of the company been taken over by somebody else in the last 12 months?		YES
(f.) Is the company insolvent?		YES
<b>OVERALL ASSESSMENT OF THE BUSINESS RISKS</b>		
Very low	Low	Hig Moderateh
		<b>The risk is HIGH</b>
<b>Explanations</b>		
		YES/NO
<b>4. Company Audit</b>		
(a.) Is this the first time the company audits this client?		NO
(b.) Did any of the last two years audit reports contain opinions stating significant reserves?		YES
(c.) Would you describe the relations with the client company as being "conflicting" or "deteriorating"?		YES
(d.) Are there any fees- or time-related pressures?		NO
(e.) Is there a significant number of operations which are "difficult to audit"?		YES
<b>OVERALL ASSESSMENT OF AUDIT RISKS</b>		
Very low	Low	Hig Moderateh
		<b>The risk is HIGH</b>
<b>Explanations</b>		

OVERALL ASSESSMENT OF INHERENT RISKS – Synthesis		
Range	Risk	Value
1. Management	LOW	3.5
2. Accounting	VERY LOW	0
3. Business	HIGH	7
4. Audit	HIGH	6.5
<b>Valuation Inherent Risk</b>	<b>LOW</b>	<b>5.8</b> <b>75</b>

**Explanations:** As work modality, the auditor should answer with YES or NO to the questions asked by means of the section F1 - Checklist of the general inherent risk and to appreciate the risk level per each of the 4 levels (management, accounting, business and audit) with one of the qualifying grades *Very low, Low, Medium and High*. Eventually, we take into account a general appreciation that is also the entry into the section F2 – *Checklist of the specific inherent risk* to determine the size of the sample in the case of the application of the no-risk method of sampling.

**Table 2. Checklist of the specific inherent risk  
Sect. F2**

								Initials	Date
Client		ABC SA			Drawn up by		AT	15-Jan-05	
Period		1/1/2004 31/12/2004			Checked up by		CR	17-Apr-05	
Significance threshold = 2500 mii RON								Ref.	
<b>General inherent risk= LOW</b>									
	I1	I2	I3	I4	I5	I6	Valuation	Sample Size	
Tangible and intangible permanent assets	YES		YES		YES	YES	70%	52	
Group accounts and investments	YES	YES					50%	48	
Stocks and prod in progress - quantities	YES	YES	YES		YES		70%	52	
Stocks and prod in progress - assessment	YES	YES	YES	YES			70%	48	
Debtors	YES	YES	YES	YES	YES		100%	53	
Short-term investments	YES	YES	YES	YES	YES	YES	100%	11	
Bank accounts and cash office - payments							50%	48	
Bank accounts and cash office - receipts							50%	48	
Bank accounts – compared with bank statements	YES	YES		YES		YES	70%	48	

							Initials	Date
Client	ABC SA			Drawn up by		AT	15-Jan-05	
Period	1/1/2004	31/12/2004	Checked up by		CR	17-Apr-05		
Creditors					YES	50%	48	
Long-term creditors						50%	43	
Sales						50%	48	
Purchases						50%	48	
Expenses						50%	48	
Wages and benefits						50%	13	
Other audit sections						50%	23	
Trial balance and book entries						50%	12	
Preliminary financial statements and book entries after the end of the financial year	YES					50%	23	

**Explanations:** Questions I1, I2, I3, I4, I5 and I6 should be answered per each category of audited issues. If there is no answer, it means NO and only affirmative answers matter. This is what every questions means:

I1 – System exposed to errors/inadequate system/non-automated manual system;

I2 – Incompetent accountant responsible for this field;

I3 – Complex operations;

I4 – Risk of loss/fund embezzlement/fraud;

I5 – Many professional judgements;

I6 – Unusual operations.

Affirmative answers per each audited issue is taken into account. Depending on the number we get and on the *General inherent risk*, in our case LOW, the *Specific inherent risk* will be evaluated based on table no.3.

**Example:** In the case of *Corporeal fixed assets* we have an affirmative answer (1) and the general inherent risk LOW, which corresponds to a specific inherent risk of 50%.

**Table 3. Table of evaluation of the level of specific inherent risk**

Bumber of specific risks identified	General level or inherent risc (from F1)			
	Very low	Low	Moderate	High
0, 1 or 2 risks	23%	50%	70%	100%
3 or 4 risks	50%	70%	100%	100%
5 or 6 risks	70%	100%	100%	100%

To determine the size of the audited sample, it is necessary to know how many operations are in the Journal for the audited item, which is related to a volume of population of more than 400 or under 400 operations. The value of the specific inherent risk is part of a risk band for a volume of the sample to audit. In our case, the inherent specific risk of 50% leads for a volume of population under 400 operations at a number of 400 operations. As in accounting there are only 23 operations, these will be checked all in all. Similarly, we proceed for the other items.

In the case of the application of the risk-based model of sampling, it is necessary to use the Section F3 – *Specific inherent risks and size of sample*. This form shows how necessary it is to evaluate the *Risk of non-detection non-associated with sampling* (RDNE), based on table 4 and Control Risk (RC), based on table 5.

**Table 4 – RDNE Evaluation**

Analytical examination safety	Values
Non-Existent	100%
Moderate	56%
High	31%

**Table 5 – RC Evaluation**

Control Safety	Values
Significant	13.5%
Moderate	23%
Limited	56%
Non-Existent	100%

Based on the information of tables 2, 4 and 5, the risk band is determined after having performed the product RI\*RDNE\*RC, that in relation to the number of operations per each audited item will lead to the determination of the sample size. In table 5, we present an example of risk band determination and sample size determination by completing the section F3.

**Table 6. Specific inherent risks and sample size Sect. F3**

		<i>Initials</i>			<i>Date</i>
<b>Client</b>	<b>ABC SA</b>	Drawn up by <b>AT</b>			<b>15-Jan-05</b>
<b>Period</b>	<b>1/1/2004</b>	<b>12/31/2004</b>	Checked up by <b>CR</b>		<b>17-Apr-05</b>
Significance threshold = 2500 mii RON	Risc inherent	Non-detection risk	Control Risk	Risk band	Sample Size
	RI (F2)	RDNE	RC	RI*RDNE*RC	
Tangible and intangible permanent assets	70%	31%	14%	2.93%	5
Group accounts and investments	50%	31%	14%	2.09%	5
Stocks and prod in progress - quantities	70%	31%	14%	2.93%	5
Stocks and prod in progress - assessment	70%	31%	14%	2.93%	3
Debtors	100%	31%	14%	4.19%	3
Short-term investments	100%	31%	14%	4.19%	3
Bank accounts and cash office - payments	50%	31%	14%	2.09%	5
Bank accounts and cash office - receipts	50%	31%	14%	2.09%	5
Bank accounts – compared with bank statements	70%	31%	14%	2.93%	3
Creditors	50%	31%	14%	2.09%	5
Long-term creditors	50%	31%	14%	2.09%	3
Sales	50%	31%	14%	2.09%	5
Purchases	50%	31%	14%	2.09%	5
Expenses	50%	31%	14%	2.09%	5
Wages and benefits	50%	31%	14%	2.09%	3
Other audit sections	50%	31%	14%	2.09%	3
Trial balance and book entries	50%	31%	14%	2.09%	3
Preliminary financial statements and book entries after the end of the financial year	50%	31%	14%	2.09%	3

## 5. Informatization of the activities run in audit approach

At this time, there are various information solutions for auditing financial statements of economic entities. For instance, the best known products are IDEA and ACL for Windows or even for DOS, to which a series of national products are added. Countries like Bulgaria, Italy, Moldova, Romania are not presented as users of such information solutions.

Please find in table 6 a list of users of information solutions in audit at an European level.

**Table 6. Users of audit software**

<b>Country</b>	<b>Soft &amp; OS</b>
Belgium	ACL - Windows 95 / NT
Croatia	EKOFINA - Win 3.1 Effect Dubrounix CBO
Cyprus	IDEA - DOS
Czech Republic	IDEA - Windows
Denmark	Access - Windows NT/2000
Finland	ACL Windows – Windows
Germany	IDEA V1.2 - Windows
Greece	IDEA - Windows
Grenada	IDEA – DOS
Hungary	IDEA, SAS - Windows 98
Iceland	ACL - Windows
Ireland	ACL - Windows
Israel	Excel, Access, IDEA, SPSS, Wizrule - Windows
Malta	IDEA - Windows
Netherlands	IDEA - Windows
Netherlands Antilles	IDEA – Windows
Norway	IDEA/SPSS - Windows
Poland	ACL - Windows
Puerto Rico	IDEA - Windows
Russia	Oracle Discoverer Application Software - Win NT 4.0/Solaris
Slovenia	IDEA - Windows
Spain	Excel – Windows
Sweden	IDEA – Windows
Switzerland	ACL - Windows 2000

U.K.	IDEA - Windows 2000
Ukraine	SQL - Win NT 4.0, 2000

As you can see from the previous table IDEA for Windows and ACL for Windows prevail on the market of such softwares for the audit of financial statements. The prices of such products surpass in the commercial version USD 5 000, which is a problem for the offices of countries in transition. An addition problem is the fact that the interface is in English.

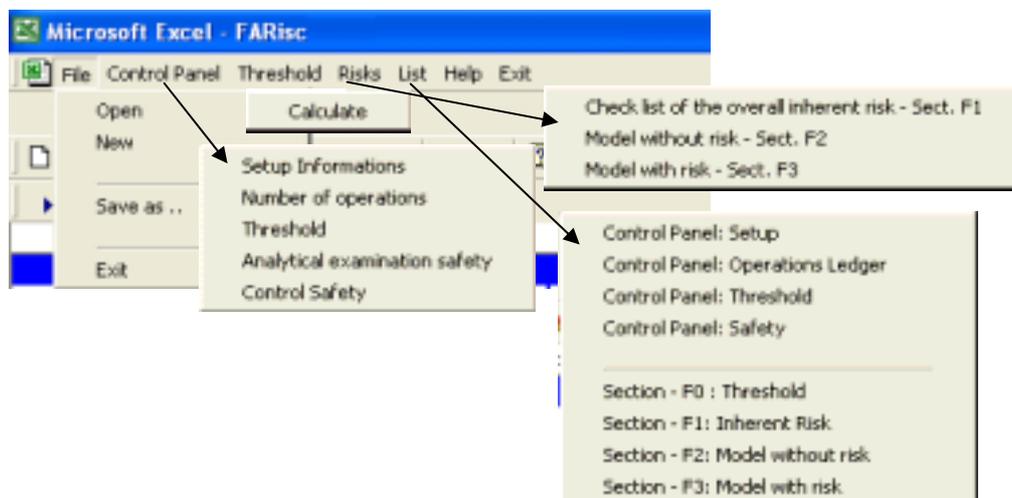
These few reasons made us propose the automated modeling of the activity of financial audit. In this article, we present the module **FARisc** specialised in the section F – Audit approach.

This module is developed under MS Office Excel with VBA support and has a main menu that enables:

1. Files (**Files**);
2. Determination of the work parameters (**Control Panel**);
3. Calculation of the significance threshold (**Threshold**);
4. Determination of risks per various section to audit (**Risks**);
5. Possibility to print audit sheets (F0, F1, F2 and F3) and the data introduced in the control panel (**Lists**).

In figure 2 we are presenting the menu of the application FARisc and the associated options.

**Figure 2. The main menu of the FARisc application**



The advantages of the FARisc are as follows:

1. It is easy to use;
2. It is conceived according to the minimal standards of audit;
3. It may be easily adapted in any language;
4. It is easy to integrate in a general audit application;
5. It is conceived according to the logic of the end user, in our case the financial statement auditor;
6. It makes available for the user the audit sheets under the format demanded by standards;
7. It helps the auditor in risk evaluation by simply using the models;
8. It may be used as work tool by students, accountants and even in the activity of training financial auditors;
9. It is easy to update if the process of international harmonization continues;
10. In the commercial version, its price will be very low.

## **6. Conclusions**

As it is used in specialized offices on a large scale of MS Office Word and Excel for preparing the audit files, the apparition of a module developed in MS Office Excel is an important ace in the activity of covering this market segment.

We consider that the main direction for the close future is the integration of the FARisc module in an integrated product of financial audit and its coupling with administrative and accounting software order to ensure the access to accounting databases and to other databases of the company, for their intelligent exploiting.

We should not disregard the fact that is possible to couple FARisc to intelligernt modules of risk evaluation, in order to eliminate bad practice risks.

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# UNCERTAINTY MODELS IN FINANCIAL STATEMENT AUDITING

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## **Abstract**

*The auditor job is to give his opinion about which of all possible states is the true one. His opinion on the fairness of the financial statements it isn't an absolute guarantee. It is his professional judgment based on the collection and evaluation of sufficient evidence. In this context, to a certain extent, there is a degree of uncertainty in the financial statements auditing. Because of uncertainty it appears the risk that the auditor to give an opinion that does not correspond to the truth. He has to analyze all possibilities and to give the right solution based on his judgment, knowledge and experience. In present in literature there are some models that treat the uncertainty which was adopted for financial statement auditing. One of these models was developed especially for audit, standard model, and it is the most widely used by auditors in their practical work. The rest of them were developed based on mathematical theory and adopted to audit activities. This paper present the most known uncertainty models in financial statement auditing.*

**Keywords:** *audit, uncertainty, financial statement*

## 1. Introduction

Financial audit represents examination activity, for expressing by financial auditors, of an opinion about financial statements according to audit standards, harmonized with international audit standards and adopted by Financial Auditors Organization from Romania. The objective of a financial audit statement is, according to International Audit Standards, the express of an opinion that financial statements were prepared, on all meaningful aspects, in concordance with general identified framework of financial reporting. Therefore the auditor is uncertain about information fairness and truthfulness presented in financial statements and is his task to express his opinion about that. This uncertain determines the existence of a certain risk as auditor's stated opinion not to be the fair one. Within volume and complexity growing of the accountant work, grows the error risk in data processing and implications of these misinform on users are more and more serious. A relevant example in this case represents the negative impact determined in the last years by disorders in producing and supplying of financial information in some banks which lead to a violation of caution principle and influenced the decisions of many legal and individual entities regarding savings assurance deposited in those companies.

Financial audit have to express an independent opinion over financial statements or over other situations and information intended to protect equally all accounting information users, all participants to economic and social life (shareholders, state, employees, banks, clients, suppliers etc). The auditor has to assure information users, by its position, regarding following aspects:

- observance of general accepted accounting principles and of internal procedures settled by company management
- reflection by accounting and by financial statements of trusty, clear and responsible image of patrimony, financial reports and results acquired by company.

Regarding audit objective is obvious that any other mission implies certain risks and their identification is one of the essential's auditor objectives. We have to see that risk evaluation of an entity is denoted by negative impact which may be avoided through protection policy development and by probability which may be avoided through preventive policy development. For precision information check presented in accounting reports is necessary to collect and check data afferent to a small amount of their components which may possible make some situations more credible

then others. In this context audit confront with certain risk mainly connected to impossibility of checking the entire information generated by activity deployment of an organization and the result of audit has a level of uncertainty.

## 2. Uncertainty approaches in financial audit

Considering accountancy of an organization can't be entirely analyzed on the occasion of audit performing we must take into consideration the uncertainty degree which the result implies in terms of a partly control. To frame an image of this we present in the following the models which approach uncertainty: probability theory, upper and lower probability models, belief-function theory and possibility theory and their applicability in financial audit.

### 2.1 Probability Models

From mathematical point of view, probability theory has at its basis probability function. In present are two approaches of it<sup>1</sup>:

- theoretical probability which is computed without experiment effectuation, respectively using only information which is known by physical situation;
- empiric probability determined using an experiment results made by a certain number of times. It is also known as empiric attendance.

Lets be  $\Omega$  a finite number of possible results of an event,  $A$  a finite set of elementary results of event  $A \subseteq \Omega$  and  $\omega$  an elementary event included in  $A$ . Probability  $P$  of  $A$  is given by relation:

$$p: \Omega \rightarrow [0, 1], P(A) = \sum_{\omega \in A} p(\omega) \quad (1)$$

A function  $P$  is a probability function if and only if it has the following properties<sup>2</sup>:

$$a) 0 \leq P(A) \leq 1; \quad (2)$$

$$b) P(\emptyset) = 0; \quad (3)$$

$$c) P(\Omega) = 1; \quad (4)$$

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<sup>1</sup> Francis, A., Statistica si matematica pentru managementul afacerilor, Editura Tehnica, Bucuresti, 2004, pp. 456

<sup>2</sup> Frank, B., Schulz, W., Tietz, W., Warmuth, E., *Compendiu de matematica*, Editura All Educational, Timisoara, 2001, pp. 235

d)  $P(A \cup A_1) = P(A) + P(A_1)$ , if A and  $A_1$  are incompatible.(5)

In case that events field isn't finite is necessary that:

e)  $P(A_1 \cup A_2 \cup \dots \cup A_n \cup \dots) = P(A_1) + P(A_2) + \dots + P(A_n) + \dots$  if

events  $A_1, A_2, \dots$  are two by two incompatible, respectively if  $A_j \cap A_i = \emptyset$  for  $i \neq j$ . (6)

If  $P(A)=0$  then A is an impossible event and if  $P(A)=1$  then A is a certain event. One of this theory consequence is that  $P(A)+P(\bar{A})=1$ , where  $\bar{A}$  is complement of A referring to  $\Omega$  multitude.

Usage of this probability theory was expanded in audit too, especially in literature. From this perspective there are two approaches: audit risk approach (risk models) and audit modeling approach (decision models). The main difference between these two approaches is their purpose. While risk models are oriented to risk modeling in audit and understanding their components for maintaining it at an acceptable level, decision model is used as one of numerous factors regarding decision adopting more orienting itself to audit activity usage maximization.

### 2.1.1 Risk models

In present there are two models for audit risk approach: Audit Risk Model and Bayesian Risk Model.

#### A. Audit Risk Model

This model was proposed by Audit International Standards and starts from the following formula for audit risk evaluation:

$$AR = IR \times CR \times DR \quad (7)$$

defined according to Audit International Standards by<sup>3</sup>:

- AR – audit risk, respective the risk that auditor to express a wrong audit opinion when there are significant errors in financial reports;
- IR – inherent risk is defined as „the susceptibility of an account balance or class of transactions to misstatement that could be material...assuming that there are no related internal control”;
- CR – control risk is „the risk that misstatements that could occur in an account balance or class of transactions and that could be material...will not prevented or detected on a timely basis by the system of internal control”;

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<sup>3</sup> *International Standard on Auditing*, <http://www.cafr.ro> [Accessed 12.06.2005]

- DR – detection risk is defined as „the risk that auditors’ substantive procedures will not detect a misstatement that exists in an account balance or class of transactions that could be material...”

This audit risk evaluation model is very simple and intuitive and because is translated as probability is essential to specify that cumulative probability to exist and to get away of control tests and audit is equal with product of marginal probabilities of equation components.<sup>4</sup>

From this equality we get that inherent risk, control risk and undetecting risk are independent which doesn’t correspond with practical reality. This risk evaluation model is mainly used in audit work planning for undetecting risk determination as proportion between the others three components of the equation. Generally, audit risk is considered a constant, respectively 5% and control and inherent risk are often evaluated by auditor on the basis of non-statistical evidences through organization activity analysis, of their relationship with the outside, of accountancy etc. Independent audit risk components treatment is also the most important criticism brought to this model because it don’t exist a rigorous determination between control risk de control and inherent one, those two categories influencing one each other. Some researches have commented other deficiencies of the audit risk model as: it provides an oversimplification of the tasks (Cushing and Loebbecke), it focuses in the likelihood that audit tests will fail to detect material error when it is preset, but does not consider the risk of incorrect rejection (Kinney). With all that, this proposed model by international standards is the most practically used.

### **B. Bayesian risk model**

Bayesian risk model was introduces in literature starting with 1980 by Canadian Institute of Chartered Accountants’ and can be interpreted as a Bayesian version of audit risk model. After that all known models as „Bayesian” in audit dedicated specialty literature are based on Bayes theorem. It handles probability „inverted” provisory probabilities. Is known that provisory probabilities are defined as:  $P(A|B)$  = probability of production of event A if event B is already produced. Bayes theorem treats „inverted” problem: finding probability of production of event A (early) if it will produce (ulterior) event B. Generally formulation is<sup>5</sup>:

H = hypothesis („proposition”, assertion);

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<sup>4</sup> CARINE VAN DEN ACKER, *Belief-function Theory and its Application to the Modeling of Uncertainty in Financial Statement Auditing*, Katholike Universiteit Leuven, 1996, pp. 71

<sup>5</sup> DINU, O., MIRODOTESCU, B., *Teoria Bayes, Probabilități subiective*, <http://www.upg-ploiesti.ro/sescom/pdf/s07/s07-117-od2.pdf>, [Accessed 15.06.2005]

E = event/evidence;

$$P(H_i | E) = \frac{P(E \cap H_i)}{\sum_j E \cap E_j} = \frac{P(E | H_i) \times P(H_i)}{\sum_j P(E | H_i) \times P(H_i)} = \frac{P(E | H_i) \times P(H_i)}{P(E)} \quad (8)$$

where:

a)  $P(H|E)$  is a subjective probability interpreted as trust degree in H hypothesis, if event E was produced, applicable to systems which contain non-recurring processes.

b)  $P(H|E)=1$  if H hypothesis is true;

c)  $P(H|E)=0$  if H hypothesis is false.

Carine van den Acker proposes the following formulas for Bayes theorem application to define the audit risk and the posterior probability of „error free” by<sup>6</sup>:

$$P(E | A) = \frac{P(A | E) \times P(E)}{P(A)} \quad (9)$$

with:

$P(E)$  - the prior probability of errors;

$P(A|E)$  - the likelihood of accepting financial statements on the basis of evidence, given that they contain errors (this is the risk of incorrect acceptance);

$P(A)$  – the marginal probability of the evidence that implies acceptance;

$P(E|A)$  – the posterior probability of errors, given that financial statements are accepted on the basis of the evidence (the user’s risk of unjustified reliance on accepted financial statements).

$$P(\bar{E} | R) = \frac{P(R | \bar{E}) \times P(\bar{E})}{P(R)} \quad (10)$$

with:

$P(\bar{E})$  - the prior probability of „errors free” financial statements;

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<sup>6</sup> CARINE VAN DEN ACKER, Read Works, pp. 73

$P(R|\bar{E})$  - the likelihood the rejecting the financial statements on the basis of evidence, given that they are error-free (this is the risk of incorrect rejection);

$P(R)$  – the marginal probability of the evidence that implies rejection;

$P(\bar{E}|R)$  - the posterior probability of errors, given that financial statements are rejected on the basis of the evidence (the user's risk of unjustified neglecting of rejected financial statements).

### 2.1.2 Decision models

Unlike audit risk models which show only how to obtain acceptable level of risk without specifying which is that, decision models get in consideration decisions theory insisting on utility maximizing regarding benefits and loses generated by taking economic decisions in uncertainty conditions. Because of these reason are taking in consideration, in audit risk evaluation, audit procedures cost and efficiency and possible loses happen because wrong decisions. In this models category for audit risk evaluation are included: Bayesian decision models and game theoretic models. In the following is presented only the first model.

Bayesian Decision Models use Bayes theorem for audit risk determining using as parameters economic factors. This was surveyed by many researchers as Kinney (1975), Gwilliam (1987), Steele (1984, 1992). According to this approach trust degree in audit opinion regarding financial statements is determined through trust degree analysis in every elementary component of them and is represented through subjective probabilities.

Those model characteristics may be synthesized hereby:

- financial statements are decomposed in elementary components and is analyzed the credibility of every element. The credibility of financial statements in the whole is determined on the basis of results obtained from the analysis of each elementary component;
- financial statements credibility is continuous updated through new evidences collecting and analyzing for reducing audit risk at an acceptable degree.

For obtaining a specified degree of trust are permanently comparing the relationship between collecting imposed costs of more samples for risk and loses reduction generated in case of wrong opinion. The most important disadvantage of this model usage first comes from difficulty of costs and loses representation through mathematical formulas.

## 2.2 Belief-function Models

Belief-function formalism isn't new. It was tackled along the time by Shafer (1976), Gabbay & Smets (1998), Shafer & Srivastava (1990), Smets (1998, 1990) etc. and it bases on probability theory as Bayesian formalism.

Lets be  $\Theta$  a finite number of results  $\theta$ . Trust degree Bel in a cognitive state A is determined by:

$$Bel(A) = \sum_{b \subseteq A} m(B) \quad (11)$$

A function Bel:  $2^\theta \rightarrow [0, 1]$  is a belief-function, if and only if are accomplished the following conditions<sup>7</sup>:

a)  $Bel(\emptyset) = 0$ ;

b)  $Bel(\Theta) = 1$ ;

(12)

$$\forall A_1, A_2, \dots, A_n \subseteq \Theta$$

c)  $Bel(A_1 \cup A_2 \cup \dots \cup A_n) \geq \sum_i Bel(A_i) - \sum_{i < j} Bel(A_i \cap A_j) + \dots + (-1)^{n-1} Bel(A_{n-1} \cap A_n)$

One of the consequences of these axiom is  $Bel(A) + Bel(\bar{A}) \leq 1$ .

As we see in probability theory formula and in Belief-function theory formula the last one is a generalization form of the first one.

The idea of belief functions was introduced by Dempster in 1967 and implies three connected representations for certainty representation: the basic probability assignment function (bpa or m), the belief function (Bel) and the plausibility function (Pl).

The basic probability assignment is a primitive form of evidence theory. It is also known as m-function, its values m-values and takes values between 0 and 1. Bpa's value for a set of (m(A)) expresses the proportion of all relevant and available evidence that supports the claim that a particular element of X (the universal set) belong to the set A but to no particular subset of A and may be represented as<sup>8</sup>:

<sup>7</sup> CARINE VAN DEN ACKER, Read Works, pp. 2

<sup>8</sup> Sentz, K., *Combination of Evidence in Dempster-Shafer Theory*,

www.sandia.gov/epistemic/Reports/SAND2002-0835.pdf, [Accessed 20.06.2005]

$$\begin{aligned}
& \text{a) } m : P(X) \rightarrow [0,1]; \\
& \text{b) } m(\emptyset) = 0; \\
& \text{c) } \sum_{A \subseteq P(X)} m(A) = 1;
\end{aligned}
\tag{13}$$

where  $P(X)$  is the power set of  $X$ ,  $\emptyset$  is the null set and  $A$  is a set in the power set.

Belief on a set of elements represents the sum of all basic masses ( $B$ ) included in  $A$ :

$$Bel(A) = \sum_{B|B \subseteq A} m(B),
\tag{14}$$

and the plausibility is the sum of all the basic probability assignments of the sets that intersect the set of interest:

$$Pl(A) = \sum_{B|B \cap A \neq \emptyset} m(B).
\tag{15}$$

From these two formulas we obtain the following relation:  $Pl(A) = 1 - Bel(\sim A)$ .

Belief-function models may be used for uncertainty representation resulted from partial ignorance and randomness analysis. The most important studies in this area were realized by Srivastava and Shafer who, on the basis of realized studies made each other a function for risk evaluation at financial statements level, every account level and every audit objective level.

It's argued hereby the usage of belief function in audit achievement<sup>9</sup>:

1. belief function represent ignorance as a separate explicit component of the evaluation, rather than describing it indirectly by assigning some ignorance to each of the possible outcomes;
2. belief function can represent support for an audit objective or account without showing any support against the audit objective or account.

The usage advantages of this model for risk evaluation and representation in audit can be synthesized hereby:

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<sup>9</sup> Harrison, K., Srivastava, R.P., Plumlee, R.D., *Auditors' Evaluations of Uncertain Audit Evidence: Belief Functions versus Probabilities*, in *Belief Functions in Business Decisions*, Physica-Verlag Heidelberg, New York, 2002, pp. 181

- audit risk evaluation is based on plausibility model and an interpretation of its components with belief function makes it more intuitive;
- components representation with assertive, negative and composite values is more favorable;
- representation on different levels of certainty for information which derive from the same source, respectively data from financial statements and are dedicated to different audit objectives is more suitable. For example, it can make distinction between an objective existence and its evaluation.

### **2.3 Possibility theory**

Possibility theory was first introduced by Professor Lotfi Zadeh in 1978 as an extension of his theory regarding fuzzy sets and fuzzy logic. It's a mathematical theory which works with uncertainty types and represents an alternative to probability theory.

A function  $\Pi$  is a possibility function if and only if is achieved the following condition:

$$\forall A, B \subseteq \Theta : \Pi(A \cup B) = \max(\Pi A, \Pi B) \quad (16)$$

where:

- a)  $\Theta$  is a finite set of possibilities;
- b) A, B are set of elements included in  $\Theta$ .

In case of considering  $\theta$  a set of events and  $p(\theta)$  possibility that  $\theta$  to belong to  $\Theta$  then  $p(\theta) = 0$  means that  $\theta$  is impossible and  $p(\theta)$  means that  $\theta$  is certain. If  $p(\theta') > p(\theta)$  then event  $\theta'$  have bigger chances to be achieved then event  $\theta$ .

Dubois and Prade drew a consequence of possibility axiom according whom:  $\Pi(A) + \Pi(\bar{A}) > 1$ . Starting from those data certainty degree of an event ( $C(A)$ ) is  $1 - \Pi(\bar{A})$  and is given by the relation:

$$\forall A, B \subseteq \Theta : C(A \cup B) = \min(C(A), C(B)) \quad (17)$$

The most important difference between possibility theory, probability theory and belief-function is that first one is ordinal and the other two are numerical.

The most important usage of possibility theory is connected to fuzzy sets, the advantage coming from possibility of using insufficient knowledge, these one being the main motivation for using it in audit risk evaluation. The

disadvantage in this case is that this theory can't be used for randomness representation.

### 2.4 Upper and Lower Probability Models

Upper and Lower Probability is similar with probability theory by difference that some probabilities may be unknown. Let  $\Pi$  be the set of all probability distributions compatible with the available information. Upper and Lower Probability can be interpreted as being the bigger and the smaller frequency which a result A can be obtained with if there are more identical experiments:

$$P: 2^\Omega \rightarrow [0,1], P_{\min}(A) \leq P(A) \leq P_{\max}(A), \forall P \in \Pi, \forall A \subseteq \Omega \quad (18)$$

where  $P_{\min}(A)$  is the minimum number of experiments with result A and  $P_{\max}(A)$  is the maximum number of experiments with result A. In case that A obtaining is conditioned by a certain event B Smets<sup>10</sup> proposed in 1994 the following function based on Bayes theory: let  $\Pi_B$  be the resulting set of conditional probability function:

$$\Pi_B = \{P_B : \forall A \subseteq \Omega P_B(A) = (A|B) = \frac{P(A \cap B)}{P(B)}, P \in \Pi\} \quad (19)$$

And the upper and lower conditional probabilities functions proposed by Smets are the upper and lower limits of these conditional probabilities:

$$P_{\min}(A|B) = \frac{P_{\min}(A \cap B)}{P_{\min}(A \cap B) + P_{\max}(\overline{A \cap B})} \quad (20)$$

$$P_{\max}(A|B) = \frac{P_{\max}(A \cap B)}{P_{\max}(A \cap B) + P_{\min}(\overline{A \cap B})} \quad (21)$$

The main reason which may befriend usage of Upper and Lower Probability Models in audit risk evaluation is the possibility of working with unknown probabilities.

### 3. Conclusion

Evaluation models of uncertainty in financial audit former presented have their peculiarities, have advantages and disadvantages.

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<sup>10</sup> SMETS, P., *The transferable Belief Model and other Interpretations of Dempster-Shafer's Model*, Université Libre de Bruxelles, [http://www.mat.univie.ac.at/~andrzej/papers/TBM\\_and\\_DST.pdf](http://www.mat.univie.ac.at/~andrzej/papers/TBM_and_DST.pdf), [Accessed 16.05.2005]

Audit risk model presents audit risk as product of inherent risk, control risk and detection risk. It doesn't take into consideration the connection and dependence between these three specified components. Its usage is mainly recommended in audit planning stage for determining sample size of financial information to whose audit activities will be applied to. This model is simple and intuitive but doesn't offer a real value of audit risk, even is preferred by these domain practitioners.

Decision model, proposed by Steele, evaluates audit risk on the basis of elementary components of financial statements. This is a "real" Bayesian model. The main disadvantage of this model is that it doesn't offer the possibility of verifying the completeness of audit risk activity. An important characteristic of this model is the inclusion of audit costs as a component of audit risk evaluation process.

Belief-function model presented by Srivastava proposes evidence representation and risk aggregation. It decomposes the question of fairness of the financial statements in subquestions related to the fairness of each account and further and achievement of objectives and the fairness of transaction. Variables used in this model have two possible values "fair" and "not fair". It's based on "and" relationship. In this context financial statements are fairness if and only if all their components are fair and an account is fair if and only if all its objectives are accomplished. "And" relationship usage between audit risk components makes them less flexible and financial statements decomposition grows very much the process complexity.

All approach models of uncertainty in audit have advantages and disadvantages like I said and I presented before. In practice, the most used is audit risk model because its simplicity, being also the model proposed by Audit International Standards.

The other models based on probability theory, belief-function etc. are more complex and may reflect better the risks situation the auditor may confront with, being preferred by researchers. Another advantage of the last ones is facilitation of process informatization of audit risk evaluation.

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# A FABRICATED CEILING? THE INFORMATION CONTRIBUTION OF BOND RATINGS<sup>1</sup>

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## **Abstract**

*We test whether security prices react to an independent, unanticipated and simultaneous change in Moody's bond rating procedure. Moody's eliminated its sovereign ceiling rule on June 7, 2001 allowing a company rating to exceed that of its home country. It placed the long-term foreign currency bonds of 38 companies from 13 different emerging markets, mostly Latin American, on review for an upgrade. We find that the yield spreads of the affected companies fell in a cross-section comparison with control companies on June 8, 2001. However this effect is no longer significant when allowing for a time dimension and not just a limited cross-section comparison on the event date. There is no evidence that companies that a priori would be expected to be more constrained by the sovereign ceiling, react more strongly to the announcement. Finally, there is no stock price reaction, even in a cross-section comparison on the event date.*

**Keywords:** *bond ratings; sovereign ceiling; emerging markets*

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## 1. Introduction

The purpose of this paper is to investigate whether security prices react to an independent change in the bond rating procedure. This can be on account of one of two factors. First, ratings may contain pricing-relevant information that investors cannot or find too costly to obtain on their own. Second, some investors (such as institutional investors) may be constrained by statutory requirements. So the removal of the sovereign ceiling may serve to increase the potential pool of investors and in the process affect the market price. The literature on credit ratings (and in particular, that on sovereign credit ratings) has been plagued by the difficulty in accurately testing for rating value and causality. The main problem is the presence of joint endogeneity, whereby ratings are rarely changed independent of market or firm news and events. Therefore it is difficult to ascertain whether a company's (or a sovereign's) bond price reacts because of a rating change or whether a rating change coincides with a fundamental (or at least a market-perceived) change in borrowers' risks. In that case, it would be wrong to attribute the bond price reaction to the rating change when in fact it may be on account of the triggering economic event.

Moody's unanticipated announcement on June 7, 2001 provides an ideal natural experiment to test for the independent information effect of rating changes. On that date, Moody's issued a press release in which it stated that it would no longer apply the sovereign ceiling and it would therefore allow a company rating to exceed that of its home country. Thereby it effectively did away with the premise that companies are always riskier than their governments. It concurrently placed the long-term foreign currency bonds of 38 companies from 13 different emerging markets on review for an upgrade. Prior to that date, Moody's did not issue a rating for a company above that of its home country rating<sup>2</sup>. The companies were mostly in the petroleum, telecommunications, and banking sectors. Of the 38 companies, 28 (or 74%) were Latin American and 29 were in banking & finance. Descriptive statistics on the affected companies are presented in Table 1.

This change in Moody's rating policy was not accompanied by any fundamental change in borrowers' risk nor in general emerging market risk,

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<sup>2</sup> With the possible exception of a corporate in Panama. In the future, we intend to include in our study the April 1997 decision by Standard & Poor's to upgrade the debt of fourteen Argentinian firms to a rating higher than Argentina's sovereign debt. However it was not interpreted as a wide-spread and permanent change in procedure, especially as it was limited to Argentina.

was not preceded by any announcement<sup>3</sup>, and was carried out simultaneously for all 38 bonds. Therefore to the extent that the sovereign ceiling matters in constraining companies' external financing, we would expect there to be a significant economic effect on the security prices of the affected companies in reaction to the rating policy change.

Rating agencies do not reveal their rating methodology and ratings remain non-transparent. It is extremely rare to find a publicly announced change in procedure or to even instrument for it with a change in a rating committee's members. First, this data is confidential. Second (and directly concerning sovereigns), there has been no material change in sovereign rating procedures in the last 15 years and even since the early 1970s, according to a knowledgeable ratings industry insider. Third, there is a lot of persistence in sovereign rating committee composition and small changes occur continuously but this is also not available.

There is only one paper that we are aware of that has investigated a change in rating procedures. Kliger and Sarig (2000) assessed the information value provided by Moody's refinement of issued ratings on April 26, 1982. They emphasize that the rating changes on that date exclusively reflected rating information. Furthermore, they cite Moody's statements confirming that the change to fine ratings was based on the same information that was behind its previous ratings. Prior to that date, Moody's assigned one of ten "coarse" rating classes to issuers' bonds (such as Baa, Ba and so on). On April 26, 1982, Moody's added rating modifiers ranging from 1 to 3, where a "1" was for the best subrating and "3" for the worst subrating. Using cross-section data on 812 bonds and 386 stocks, they find that debt value increases and equity value falls when Moody's announces better than expected ratings, although firm value is not affected. Therefore they favor an asset-substitution explanation, whereby wealth is transferred from shareholders (the residual claimants) to bondholders when there is "good" bond rating news. More importantly, they therefore conclude that the bond rating information has value to investors.

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<sup>3</sup> Moody's press release was widely cited and news of it appeared in both The Financial Times and The Wall Street Journal (among others) on June 8, 2001. We carried out a search for Moody's announcement using Lexis-Nexis and all articles mentioned that it was a surprising event and there are no reports prior to June 8, 2001.

**Table 1. Descriptive Statistics on the 38 companies affected by the June 7, 2001 Announcement**

	N	Bond data <sup>a</sup>	Stock data <sup>a</sup>	Rating <sup>b</sup>	Leverage <sup>c</sup>
<b>LATIN AMERICA</b>	<b>28</b>	<b>17</b>	<b>10</b>		<b>0.768</b>
ARGENTINA	2				
Telefonica de Argentina S.A.		✓	✓	B2	0.519
YPF S.A. (Repsol YPF)		✓	✓	B2	0.342
BRAZIL	16				
Banco ABN Amro Real S.A.		✓		B1	0.829
Banco AGF Braseg S.A.			✓	B1	1.054
Banco Barclays e Galicia S.A.				B1	
Banco Bilbao Vizcaya Brasil S.A.		✓		B1	0.933
Banco Bradesco S.A.		✓		B1	0.881
Banco Citibank S.A.				B1	
Banco de Investimentos CSFB Garantia				B1	
Banco do Brasil S.A.		✓	✓	B1	0.944
Banco Sudameris Brasil, S.A.				B1	
BankBoston Banco Multiplo S.A.				B1	
Lloyds Bank Plc (Brasil)				B1	
Unibanco-Uniao de Banc. Bras		✓	✓	B1	0.896
Banco Safra S.A.		✓		B1	0.984
Banco Votorantim S.A.				B1	
Petroleo Brasileiro S.A.		✓	✓	B1	0.607
Safra Leasing SA Arrendamento Mercantil				B1	
CHILE	3				
Banco Santiago		✓	✓	Baa1	0.932
Banco del Estado de Chile				Baa1	
Banco Sud Americano		✓	✓	Baa1	0.856
MEXICO	6				
Banco Nacional de Mexico		✓		Baa3	0.930
Banco Santander Mexicano, S.A.				Baa3	
BBVA - Bancomer, S.A.		✓		Baa3	0.911
Coca-Cola FEMSA, S.A. de C.V.		✓	✓	Baa3	0.500
Petroleos Mexicanos		✓		Baa3	0.725
Telefonos de Mexico, S.A.		✓	✓	Baa3	0.655
VENEZUELA	1				
Bariven S.A. (guaranteed by PDVSA)		✓		B2	0.332
<b>Rest of the World</b>	<b>10</b>	<b>6</b>	<b>6</b>		<b>0.860</b>
ESTONIA	1				
AS Hansapank			✓	Baa1	0.916
HONG KONG	1				
Hongkong and Shanghai Bank Corp.		✓	✓	A3	0.932
INDIA	1				
ICICI Ltd.		✓	✓	Ba2	0.933
LATVIA	1				
Latvijas Unibanka			✓	Baa2	0.913
LEBANON	3				
Banque Audi		✓	✓	B1	0.934
Byblos Bank			✓	B1	0.933
BLOM Bank		✓		B1	0.940
MALAYSIA	1				
Petroliam Nasional Berhad		✓		Baa2	0.533
SOUTH AFRICA	1				
Telkom SA Ltd.		✓		Baa3	0.703
TURKEY	1				
Turkiye Vakiflar Bankasi TAO				B1	
<b>Total Available</b>		<b>23</b>	<b>16</b>		<b>0.799</b>
<b>By Industry</b>					
Banking & Finance	29	14	11		0.917
Beverages	1	1	1		0.500
Petroleum	5	5	2		0.508
Telecommunications	3	3	2		0.626

*a Source of bond and stock data was Datastream and supplemented with Bloomberg and Reuters*

*b Historical rating data was obtained from Moody's website (<http://www.moody.com>)*

*Note: a rating of Ba1 or below indicates a sub-investment (speculative) grade rating.*

*c Leverage is defined as the ratio of total debt (liabilities) to total assets. The main data source for accounting data was ISI Emerging Markets Database and it was supplemented with Factiva*

We study the reaction of both bond and stock prices to Moody's independent, unanticipated and widespread elimination of the sovereign ceiling rule. We take advantage of the time series and cross-sectional variation in security prices. We find that the yield spreads of the affected companies fell in a cross-section comparison with control companies on June 8, 2001 (as to be expected if ratings have value). However this effect is no longer significant when allowing for a time dimension and not just a cross-section comparison with a limited number of control bonds on the event date. Furthermore, it does not appear that companies that we would a priori expect to be more constrained by the sovereign ceiling, react more strongly to the announcement. Finally, there is no stock price reaction, even in a cross-section comparison on the event date.

That we find little or no security price reaction to Moody's elimination of the sovereign ceiling is a significant result in its own right. The sovereign ceiling rule is important to the extent that rating agencies provide information value in pricing emerging market debt. If the independent elimination of the ceiling rule did not contribute new information, then the rule itself may not have been important. The previous literature has conjectured that rating announcements may have a considerable market effect because many institutional investors are constrained to holding investment-grade instruments (see for example, Kaminsky and Schmukler (2002)). This effect would imply that there should be a significant bond price reaction to Moody's announcement on account of the increase in the potential pool of investors. Previous literature assessing the impact of rating changes on security prices in emerging markets includes Richards and Deddouche (1999). However their study looks at bank rating changes that may have been triggered by bank or market events. Nonetheless, it is interesting that they find that stock prices do not react (for the most part) to the rating change.

A relevant study by Durbin and Ng (1999) find that market participants do not strictly apply the sovereign ceiling. To illustrate their point, they show evidence for several companies with a significantly lower spread than their home country. One of the companies is Telefonica de Argentina, which later was among the 38 companies affected by Moody's announcement. In a comparison of yield spreads on 116 emerging market corporate bonds with those on their home country bonds, they find that a 100 basis-point increase in the spread of the sovereign bond is associated with only a 40 basis-point increase in the spread of the corporate bond and conclude that transfer risk is not 100%. It is interesting that they do not find an increase in the country risk effect on corporate risk during and after the Asian crisis.

## 2. Change in Rating Practice and the Sovereign Ceiling

On Thursday June 7, 2001, Moody's placed the long-term foreign currency bonds of 38 issuers on review for upgrade; effectively eliminating the sovereign ceiling. Moody's issued a press release explaining the factors behind this explicit change in their long-standing policy to reflect "a new reality". Moody's noted that the recent evidence from country defaults ranging from Russia to Ecuador indicated that the foreign currency transfer risk from sovereign to resident companies had declined (for example when the home government can tax firms by imposing foreign exchange controls or by appropriating assets). This contrasts with the across-the-board moratoria placed by countries (such as Mexico and Argentina) during their defaults during the 1970s and 1980s. Further, Moody's cited that the role of the private sector has increased considerably in emerging economies and a private sector default would have significantly more negative consequences on the domestic economy<sup>4</sup>.

These reasons led Moody's to reconsider their sovereign ceiling rule. They listed three main factors that would allow a company rating to exceed that of its sovereign. First is the creditworthiness of the individual borrower. Second is the probability that there would not be a generalized moratorium in the event of a government default. Third are case-by-case circumstances of the borrower in terms of ease of access to foreign exchange. Moody's noted that it would continue to examine other borrowers in the context of its policy change<sup>5</sup>.

The Moody's announcement took the press and market participants by surprise<sup>6</sup>, which is an important precondition for our study. Moody's had also traditionally been viewed as being more conservative than other rating agencies. The Financial Times noted in its June 8, 2001 article that the

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<sup>4</sup> Nonetheless, the macroeconomic environment in which the firm operates will be affected by the situation of its home country. To the extent that a firm is more responsive to the domestic business cycle, then it should be more affected by sovereign risk, regardless of its size.

<sup>5</sup> However placement on review for upgrade or upgrades after June 7, 2001 are confounded with the standard problem of joint determination with company and/or market news. Therefore only the affected companies on June 7, 2001 can be suitably used to test for the information contribution of the rating procedure change.

<sup>6</sup> In fact, on June 5, 2001, Moody's had confirmed the ratings of 7 Argentinean telecommunications companies (among them Telefonica de Argentina) at B2 with a negative outlook. Furthermore, Vincent Truglia (co-head of Moody's Sovereign Risk Unit) was quoted as saying that "we were not able to talk directly with the individual issuers in light of the sensitivity of the information on the market" (obtained from High Yield Report, June 18 2001).

Moody's announcement may be "controversial because it is so wide-ranging" as it includes purely domestic companies and banks. S&P and Fitch disagreed with Moody's policy relating to banks. On the other hand, Moody's disagreed with S&P's policy of relaxing the sovereign ceiling for dollarized economies. Moody's did not include any Argentinean bank on their review for a possible upgrade<sup>7</sup>.

### 3. Methodology

The central question that we address is whether security prices react to an independent, unanticipated and uncontaminated change in Moody's bond rating procedure. In theory, the paper is in the spirit of an event study. However in practice, we cannot apply standard event study methodology in the presence of perfect clustering on one event date because the covariances between abnormal returns will not necessarily be equal to zero (see Campbell, Lo and MacKinlay (1997) for a good discussion). One way to deal with this problem is to analyze the abnormal returns without aggregating the securities. This is done using a multivariate regression model with dummy variables for the event date among other controls.

We take advantage of the time series and cross-sectional variation in bond and stock prices. The sample of affected companies on June 7, 2001 is arguably small, but from a time series perspective there are many data points available. Therefore the effective sample is quite large. In addition to each bond (or stock) serving as its own control, it is important to control cross-sectionally by including non-affected companies.

We follow the methodology adopted by Kliger and Sarig (2000). They first need to determine a benchmark for the ex ante default risk expectations to assess whether the rating refinement was good, bad or no news for a company. Our study is more simple because the event should have been good news for all the affected companies (for their bonds, more accurately). Therefore while Kliger and Sarig compare the good news relative to the bad news coefficients, it is sufficient for us to compare the affected companies with the controls. They limit their estimation to a cross-section regression of the change in the yield spread using month-end prices of April 1982 compared to March 1982. We begin by estimating the following cross-section on June 8, 2001 using week-end yield spreads. To compute the yield spread for a given bond, we subtract the equal-maturity US Treasury bond yield from the US dollar-denominated company bond<sup>8</sup>. Because it is

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<sup>7</sup> The Argentinean crisis may have vindicated Moody's opinion.

<sup>8</sup> There are a few cases when the company has issued only bonds in euros, and so we subtract an equal-maturity European government bond. We also intend to adjust for relative duration

uncertain whether the press release was issued during trading hours on June 7, 2001 and to allow for the likely possibility that investors received the news on June 8, we estimate weekly yield spreads as of each Friday (therefore comparing June 8, 2001 to June 1, 2001, etc.)

$$\Delta YS_i = \alpha + \beta I_{Affected} + \gamma X_i + \varepsilon_i, \quad (1)$$

where  $I_{Affected}$  is a dummy for those bonds affected by the announcement when they were placed on review for possible upgrade. We therefore expect  $\beta$  to be negative if Moody's announcement contributed new price-relevant information.  $X$  refers to all other controls. Because of the limited number of affected companies equation 1 can be extended to a panel regression shown below:

$$\Delta YS_{it} = \alpha + \beta(I_{Event,t} \times I_{Affected,i}) + \gamma I_{Event,t} + \delta I_{Affected,i} + \gamma X_{it} + \alpha_i + \varepsilon_{it}, \quad (2)$$

where  $I_{Event}$  takes on the value of 1 on June 7 and June 8, 2001 and 0 otherwise and we again expect  $\beta$  to be negative.

We also study the effect on stock prices using two methods for calculating abnormal returns. The first uses the "mean-adjusted returns" as a benchmark for the expected return. Specifically we calculate the abnormal return of a stock  $i$  as

$$AR1_{it} = R_{it} - R_{i,-[80,10]}, \quad (3)$$

where  $t$  refers to a daily date,  $R_{it} = 100 \times (P_{it} / P_{it-1} - 1)$ , and  $R_{i,-[80,10]}$  is the average return of the stock in the 80 through 10 trading days prior to June 7, 2001<sup>9</sup>. We also calculate the abnormal return using "market-model-adjusted returns":

$$AR2_{it} = R_{it} - (\alpha_i + \beta_i R_{Mj}), \quad (4)$$

where the market model uses the overall domestic stock market index of a company's home country,  $j$ , for the market return. As for the "mean-

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of the bonds, to account for the coupon structure on the effective maturity of the bond. However, it is worth noting that Durbin and Ng (1999) found no substantially different results when they adjusted for duration.

<sup>9</sup> We follow Kliger and Sarig and use the previous 80 to 10 trading period for the benchmark period. However the results are robust to different estimation periods.

adjusted returns" model, the period of estimation of the market model is over the 80 to 10 trading days prior to the announcement day. We repeat the estimation of equations 1 and 2 but using the abnormal stock return in place of yield spread differences. The coefficient,  $\beta$ , in this case may be of ambiguous sign. If the dominant effect derives from a transfer of wealth from shareholders to bondholders, then abnormal returns for the affected companies should be negative and  $\beta$  should therefore be negative. However, Richards and Deddouche (1999) suggest that the expected reaction of stock prices to positive rating changes should be positive if rating changes reflect improved company operating conditions. Therefore we leave the question to the data to reveal.

### ***3.1 Data***

We first collected daily data on all available long-term foreign currency bond yields and stock prices of the 38 affected companies from Datastream and supplemented with the use of Reuters, Bloomberg, and ISI Emerging Markets. After an exhaustive search, we were only able to obtain data on 23 bonds and 16 stocks. In cases of missing data, we contacted the companies directly through email. Several replied that they are not listed (or were not listed in 2001), which helps to explain the scarcity of stocks. However we should have the full 38 bonds, since the Moody announcement pertained to companies with issued bonds at the time. One explanation is that Datastream and Bloomberg often do not keep data for expired bonds (a point also noted by Durbin and Ng (1999)). A few companies replied<sup>10</sup> that their eurobond was traded very infrequently. Therefore if there is any bias in our sample, it would be towards the more liquid sample. Also to avoid including cases of multiple bonds for one company, we use the most recently issued bond or the most liquid one. All these reasons could imply that we are more likely to find a security price reaction to Moody's announcement. Therefore if we do not find a reaction with our sample, it is also likely to be the case with the full sample. Refer to Table 1 for descriptive statistics on the affected companies.

We also collected historical rating data on each of the bonds from Moody's website and supplemented missing data on expired bonds with the help of a contact at Moody's<sup>11</sup>. Accounting data on the companies in question were collected from the ISI Emerging Markets Database and supplemented with data from Factiva. This data was used to calculate company leverage.

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<sup>10</sup> For example, Estonia's Hansapank and Lebanon's Byblos Bank.

<sup>11</sup> We acknowledge the help of Mr. Adel Satel at Moody's Cyprus Office.

We collected US Treasury bond yield data and European government bond yield data from Global Financial Database. We also collected country stock price market indices from Global Financial Database. Data on the stripped yield spread of country bonds (JP Morgan's EMBI Global series) was collected from Datastream.

Finally we collected data on control companies that were not placed on review for a possible upgrade on June 7, 2001. Ideally these would be companies chosen from the 13 countries and from the same industries as the affected companies and also rated by Moody's<sup>12</sup>. Although it would be ideal to get data only on similar companies with a Moody's rating, unfortunately there are a number of sectors in various countries where only the affected companies were rated on June 7, 2001 (e.g. the banking sector in Lebanon.)

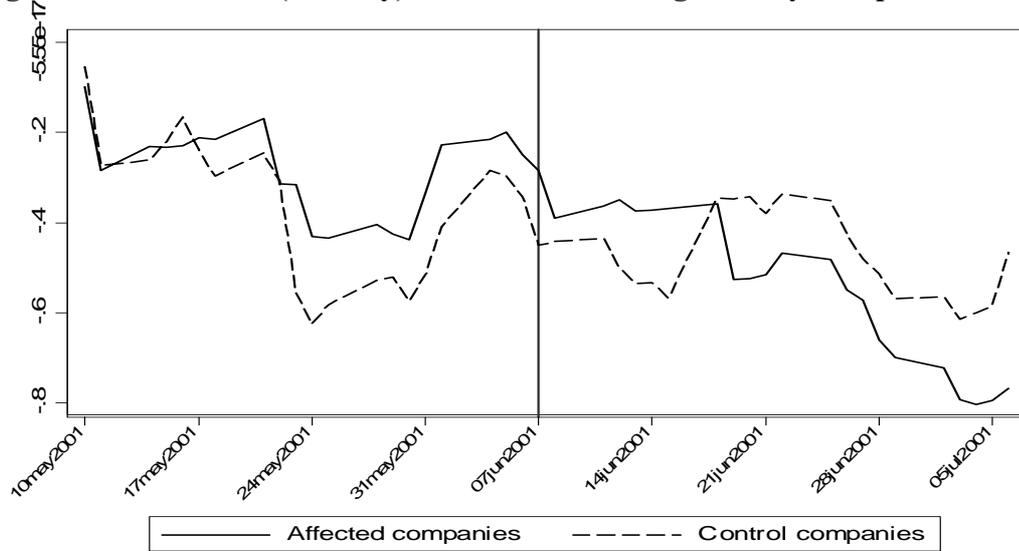
#### **4. Empirical Results**

Before proceeding to the results of the estimations, we present some evidence inspired from the event-study literature. Figure 1 plots the cumulative average difference in yield spread over the -20 to +20 trading day period around the event for the affected and control companies, respectively. This should be interpreted as only illustrative because of perfect clustering. Nonetheless it appears that there was a decline in yield spreads for the affected companies on June 8, 2001. The average yield spread difference on that date was approximately 11 basis points, supporting the anecdotal evidence cited in the press at the time. Formal estimation is necessary to determine if this was an economically significant effect.

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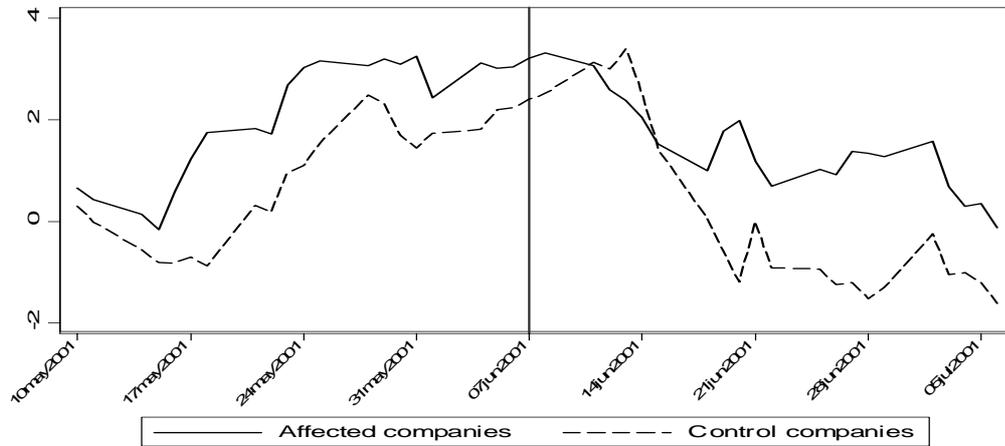
<sup>12</sup> We are currently in the process of improving our control sample, and particularly for bonds. We have so far obtained a maximum sample of 17 control bonds and 31 control stocks.

**Figure 1. Cumulative (one-day) difference in average bond yield spread**

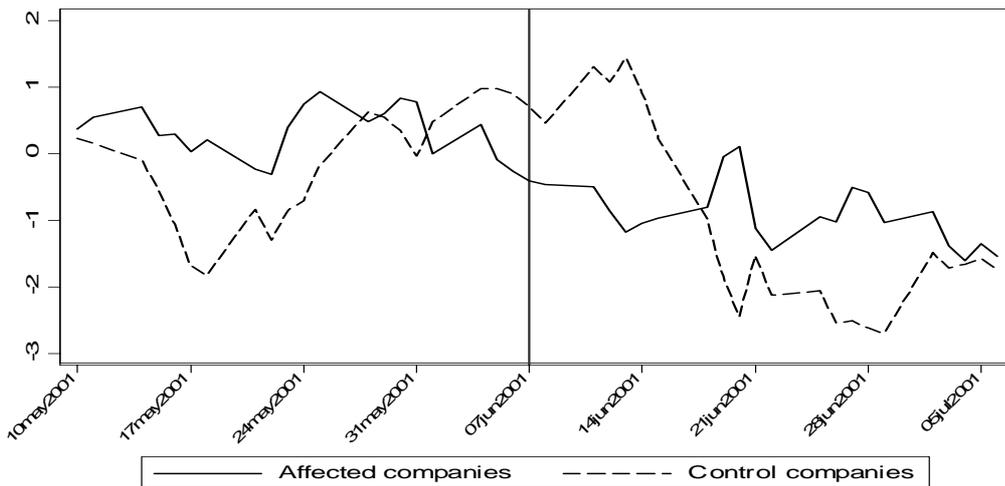


Figures 2 and 3 present the cumulative average abnormal events for stocks using the mean-adjusted and market-model-adjusted abnormal returns. Here the casual evidence is even less clear-cut than for bond spreads. The cumulative average abnormal return appears to be moving with that of the control companies in the immediate window around the event date. That said, Moody's announcement may have been a significant price-relevant event but is simply confounded by other factors that need to be controlled for in the estimations.

**Figure 2. Cumulative abnormal stock market return (using mean-adjusted)**



**Figure 3. Cumulative abnormal stock market return (using market-model adjusted)**



#### 4.1 Bonds

Table 2 presents estimation results for equations 1 and 2, using weekly differences in bond yield spreads as the dependent variable. Column (1) estimates equation 1 on the 31 bonds available on June 8, 2001 and the standard errors are corrected for heteroscedasticity. The estimated  $\beta$ , the

coefficient on the affected dummy is negative and equal to -0.12 (a 12 basis point decline in yield spreads) but is not very statistically significant (only at the 15% level).

When controlling for the company's home country stripped yield spread (using JP Morgan's EMBI Global country index), the estimated  $\beta$  turns more economically significant and is statistically significant at the 10% level (column (2)). Therefore it can be said that Moody's announcement contributed some price-relevant information to the affected companies' bonds<sup>13</sup>.

Columns (5) through (8) present estimation output for equation 2 allowing for the time-series of the 20 trading days prior to the event<sup>14</sup>. The main justification for this is the limited number of affected bonds. Therefore by including each bond's time-series as an additional control, the effective sample becomes quite large. This allows us to test whether Moody's announcement had a significant effect in a time-series dimension and not just in a comparison with a limited number of control bonds on the event date. This is arguably a more relevant comparison because it provides information on the relative importance of the announcement as placed within the context of the previous trading days for a given bond. We include bond fixed effects in all the regressions to account for bond-specific factors. We also cluster the standard errors by bond. Column (5) reports the results of equation 2. The coefficient of interest is the interaction between the event dummy of June 7 and June 8, 2001 with the dummy for those bonds placed on review for an upgrade. The sign continues to be negative, but interestingly, it is no longer significant.

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<sup>13</sup> The results are slightly more significant when including data for 2 bonds missing on June 8 but using the closest available data and therefore increasing the observations to 33.

<sup>14</sup> The results are robust to allowing for time-series variation around the time of the event from May 10 to July 5, 2001 (+20/-20 trading days).

**Table 2. The Effect of Moody's Announcement on Bond Yield Spreads, Weekly**

**Table 2. The Effect of Moody's Announcement on Bond Yield Spreads, Weekly**

*Dependent: One-week difference (5 trading days) in yield spread (dys)*

	Cross-section on June 8, 2001			FE Panel from May 10 to June 8, 2001			FE June 1998 to June 2004		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Affected (dummy)</i>	-0.1233 (0.0823)	-0.1578* (0.0852)			0.1175*** (0.0030)	0.2600*** (0.0000)	0.1178*** (0.0048)	0.1568*** (0.0001)	0.1392*** (0.0000)
<i>Event of June 7, 2001</i>				0.0278 (0.0256)	0.0666 (0.0469)	0.0693 (0.0424)	0.0666 (0.0469)	0.0488 (0.0623)	0.0488 (0.0623)
<i>Event * Affected</i>					-0.0559 (0.0555)		-0.0589 (0.0669)	0.0101 (0.0936)	0.0577 (0.1303)
<i>dembig_country</i>		0.0014 (0.0010)							
<i>Country of investment grade (dummy)</i>							0.3023*** (0.0048)		-0.0176*** (0.0002)
<i>Event * Affected * Ctry of inv. grade</i>							0.0068 (0.0558)		-0.1110 (0.1249)
<i>Leverage</i>			0.3092 (0.2372)						
<i>Bank dummy</i>						0.0055 (0.0042)			
<i>Petrol dummy</i>						-0.1355*** (0.0059)			
<i>Telecomm dummy</i>						-0.3577*** (0.0088)			
<i>Event * Affected is bank</i>						-0.0514 (0.0598)			
<i>Event * Affected is petrol</i>						-0.0738 (0.0593)			
<i>Event * Affected is telecomm</i>						-0.0971 (0.0879)			
<i>Constant</i>	-0.0330 (0.0706)	0.0557 (0.0873)	-0.4024* (0.1983)	-0.1788*** (0.0026)	-0.2946*** (0.0000)	-0.3001*** (0.0042)	-0.2946*** (0.0000)	-0.1567*** (0.0000)	-0.1392*** (0.0002)
<i>Observations</i>	31	29	23	585	585	585	585	33317	33317
<i>No. of bonds</i>	31	29	23	35	35	35	35	40	40
<i>Affected</i>	21	19	23	23	23	23	23	23	23

Robust standard errors in parentheses (clustered by bond)

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Column (6) includes sector controls. As shown in Table 1, of the 38 companies affected by the announcement, 29 were in banking & finance, followed by 5 in petroleum, 3 in telecommunications and 1 in beverages. As noted earlier, the immediate press coverage highlighted the controversy over Moody's inclusion of banks in its press release. Suppose that banks were more constrained by the sovereign ceiling than, for example companies in petroleum. This may be because the latter can avoid the sovereign ceiling by

securitizing their future-flow receivables, as discussed by Ketkar and Ratha (2001). Then if Moody's announcement was price-relevant, we would expect banks to have the strongest reaction to the sovereign ceiling elimination. This does not appear to be the case. Included in the regression is the interaction of the event with affected companies and with the sector of the affected company. While all these interactions are negative, none are significant and if anything the strongest effect appears to have been for telecommunications. This may be on account of the fact that banks are more responsive to the business cycle of their home country and also may hold a lot of government bonds. If investors believed that to be important and discounted Moody's opinion on banks, then this would go against finding a strong effect for banks.

Column (7) estimates equation 2 and is similar to column (5) but allows us to test if it matters whether the sovereign ceiling is investment-grade or speculative grade. We therefore include a dummy that indicates that the country ceiling is investment grade as well as the interaction of the event dummy with those companies affected and with whether they are located in an investment grade country. If the sovereign ceiling constrains external financing, then we would expect the bond price reaction of those companies placed on review for an upgrade from speculative-grade countries to be stronger in response to the announcement. In fact, there is no effect. Columns (8) and (9) repeat columns (5) and (7) but allow for an even larger time-series dimension of 3 years around the event date: from June 1998 to June 2004. The coefficient on the interaction between the event and the affected companies continues to be insignificant.

Finally column (3) controls for company leverage. Klinger and Sarig (2000) find that the more leveraged<sup>15</sup> a firm is, the stronger is its bond-price reaction to the new rating information (although they find no significant effect on stock-price reaction). The prior is that bondholders of a high-leveraged company bear more of the firm's risk than bondholders of a low-leveraged company. As a result, the price reaction should be stronger for the bonds of the high-leveraged company if the rating information has value. We find no evidence of this *within* our set of affected companies as we only have collected accounting data on them so far. The coefficient on the constant is

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<sup>15</sup> where they define leverage as  $[(D^{Book}) / (D^{Book} + E^{Market})]$ , and use the March 31, 1982 total market value of equity for  $E^{Market}$ , and the book value of the debt at the end of the fiscal quarter preceding April 26, 1982. Our sample is more limited and we use book value for both debt and equity for March 31, 2001 if available. If not, we use 12/31/2000. Accounting data are obtained from ISI Emerging Markets and supplemented with information from the Factiva database. We are in the process of extending the sample to the control companies as well. See Table 1 for descriptive statistics.

negative and significant on June 8, 2001 at the 10% level, supporting the results presented in columns (1) and (2). However, within this group of affected companies, those that are more leveraged appear to have had a *weaker* (though only significant at the 20% level) bond price reaction.

**Table 3. The Effect of Moody's Announcement on Bond Yield Spreads, Monthly**

	Dependent: End-of-month difference in yield spread (dys)						
	Cross-section June						
	2001		FE Panel from April to June 2001			FE June 1998 to June 2004	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Affected (dummy)</i>	-0.2546 (0.2781)	-0.3204 (0.2561)	0.2699*** (0.0776)	2.2956*** (0.4317)	-0.0480 (0.0550)	-0.6991*** (0.0135)	-0.7051*** (0.0140)
<i>Event of June 2001</i>			-0.1163 (0.6132)	-0.0874 (0.5793)	-0.1163 (0.6179)	-0.1448 (0.2549)	-0.1448 (0.2550)
<i>Event * Affected</i>			-0.0664 (0.6559)		0.0700 (0.6395)	0.2716 (0.4030)	0.6994 (0.4824)
<i>dembig_country</i>		-0.0086* (0.0048)					
<i>Country of investment grade (dummy)</i>					0.0052 (0.2426)		-1.0253*** (0.0127)
<i>Event * Affected * Ctry of inv. grade</i>					-0.3042 (0.5006)		-0.9827 (0.5866)
<i>Bank dummy</i>				1.8500*** (0.4317)			
<i>Petrol dummy</i>				-0.1901 (0.2005)			
<i>Telecomm dummy</i>				1.8134*** (0.5461)			
<i>Event * Affected is bank</i>				-0.0638 (0.6961)			
<i>Event * Affected is petrol</i>				-0.1617 (0.6014)			
<i>Event * Affected is telecomm</i>				-0.2744 (0.6630)			
<i>Constant</i>	-0.1134 (0.2019)	-0.1415 (0.1730)	-0.6477*** (0.0000)	-2.4611*** (0.5461)	-0.3753*** (0.0000)	0.6897*** (0.0127)	0.6897*** (0.0127)
<i>Observations</i>	36	33	107	107	107	1998	1998
<i>No. of bonds</i>	36	33	38	38	38	40	40
<i>Affected</i>	23	21	23	23	23	23	23
<i>Controls</i>	13	12	15	15	15	17	17
<i>R-squared</i>	0.02	0.08	0.12	0.13	0.13	0.04	0.04

*Robust standard errors in parentheses (clustered by bond)*

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 3 also reports estimation output for bonds, but using a slightly longer run horizon. The dependent used in Table 2 is the one-week difference in yield spreads. The dependent used in Table 3 is the end-of-

month difference instead. This is the horizon used by Kliger and Sarig (2000) probably because of data constraints. However it is interesting to look at these results as well because they provide insight into whether the Moody announcement had an effect over a slightly longer horizon from end-June 2001 to end-May 2001. It does not appear to have had an effect, even at the cross-sectional level, which was significant when using weekly differences.

#### 4.2 Stocks

Table 4 tests for a stock price reaction of the affected companies to Moody's announcement. As discussed in the methodology section, we use both the (weekly) mean-adjusted abnormal stock return and the (weekly) market-model-adjusted abnormal stock return as dependent variables. There are less stocks available for the affected companies for reasons discussed in the data section. Nonetheless it is worth testing for an effect. In contrast to the case for bonds, there is no stock price reaction. There is a potentially negative but insignificant stock price reaction to the announcement when allowing for the stocks' time-series in columns (4) through (7).

**Table 4. The Effect of Moody's Announcement on Stock Prices**

Dependent: One-week Abnormal Stock Return (5 trading days)							
<i>AR1</i>	<i>Mean-adjusted Abnormal Stock Return (previous 80 to 10 trading days)</i>						
<i>AR2</i>	<i>Market-model-adjusted Abnormal Stock Return</i>						
	FE Panel from May 10 to						
	Cross-section on June 8, 2001			June 8, 2001		FE June 1998 to June 2004	
	<i>AR1</i>	<i>AR1</i>	<i>AR2</i>	<i>AR1</i>	<i>AR2</i>	<i>AR1</i>	<i>AR2</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Affected (dummy)</i>	0.1618 (1.3970)	0.0009 (1.3723)	0.0191 (1.2800)	4.6680*** (0.1746)	2.9923*** (0.1638)	-1.6285*** (0.0038)	-0.4253*** (0.0018)
<i>Event of June 7, 2001</i>				-0.0240 (1.1463)	-0.4036 (1.0615)	-0.4797 (0.7183)	-0.3184 (0.7124)
<i>Event * Affected</i>				-0.8849 (1.6669)	-0.9330 (1.6000)	-0.8469 (1.1999)	-1.0759 (1.1033)
<i>Market Return</i>		0.3474 (0.3038)		0.3204* (0.1711)		0.6167*** (0.0664)	
<i>Constant</i>	0.6146 (0.8438)	0.0372 (1.0051)	-0.7071 (0.7532)	-3.0189*** (0.1063)	-1.6056*** (0.1117)	1.9710*** (0.0081)	0.5198*** (0.0014)
<i>Observations</i>	44	44	44	935	935	57483	57362
<i>No. of stocks</i>	44	44	44	45	45	46	46
<i>Affected</i>	13	13	13	14	14	15	15
<i>Controls</i>	31	31	31	31	31	31	31
<i>R-squared</i>	0.00	0.03	0.00	0.22	0.14	0.20	0.05

Robust standard errors in parentheses (clustered by stock)

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

To summarize, bond prices reacted to the independent, unanticipated and uncontaminated change in Moody's bond rating procedure on June 8, 2001 in a comparison with other companies on that date. However this effect is no longer significant when allowing for a time dimension and not just a cross-section comparison against a limited number of control bonds on the event date. Furthermore, it does not appear that companies that we would a priori expect to be more constrained by the sovereign ceiling, react more strongly to the announcement. For example, bond prices for companies from speculative-grade countries do not react more strongly than those from investment-grade countries. In addition, bond prices of affected banks do not react more strongly than those of petroleum and telecommunications companies (which have more easily engaged in structured finance deals and escaped the sovereign ceiling prior to 2001). Leveraged companies do not appear to have a stronger bond price reaction. Finally there is no stock price reaction.

## **5. Conclusions**

Our paper has tested for whether purely independent rating changes contribute price-relevant information to the market. If that prior were true, then we would expect significant security price reaction. The rating change in question is Moody's elimination of the sovereign ceiling rule on June 7, 2001, which was not accompanied by any fundamental change in borrowers' risk nor in general emerging market risk, was fully unanticipated, and was widespread affecting 38 companies in 13 countries. The sovereign ceiling rule is important to the extent that rating agencies contribute value to the pricing of emerging market securities. If the independent elimination of the ceiling rule is found not to contribute new information, then the rule itself may not have been important.

Emerging market bonds have become the main source of emerging market financing. For example, figures from Euromoney's Bondware (and as cited in Durbin and Ng (1999)) show that from 1991 to 1996, the dollar amount of long-term bonds issued in emerging markets jumped from \$12.4 billion to \$93.9 billion. By comparison new equity issues increased from \$5.6 to \$16.4 billion and syndicated loan commitments (the traditional method of financing during the 1980s) increased from \$50.7 to \$79.7 billion.

It is therefore important to distinguish between whether investors perceive company credit risk as "de jure" credit risk and therefore rely on rating agencies or whether they perceive it as a "de facto" company-specific risk and are therefore not sensitive to rating assessments. Ratings may

contribute value on account of possibly two factors. First, ratings may contain pricing-relevant information that investors cannot or find too costly to obtain on their own. Second, some investors (such as institutional investors) may be constrained by statutory requirements. So the removal of the sovereign ceiling may serve to increase the potential pool of investors and in the process affect the market price.

We study the reaction of both bond and stock prices to Moody's elimination of the sovereign ceiling rule. We take advantage of the time series and cross-sectional variation in security prices. We find that the yield spreads of the affected companies fell when compared to control companies in a cross-section on June 8, 2001 (as to be expected if ratings have value). However this effect is no longer significant when allowing for a time dimension and not just a cross-section comparison against a limited number of control bonds on the event date. Furthermore, it does not appear that companies that we would a priori expect to be more constrained by the sovereign ceiling, react more strongly to the announcement. For example, bond prices for companies from speculative-grade countries do not react more strongly than those from investment-grade countries. In addition, bond prices of affected banks do not react more strongly than those of petroleum and telecommunications companies (which have more easily engaged in structured finance deals and escaped the sovereign ceiling prior to 2001). Affected companies that are more leveraged do not appear to have a stronger bond price reaction. Finally, there is no stock price reaction, even in a cross-section comparison on the event date. Although the cross-sectional sample is not large, the effective sample is quite large on account of daily time series for each security. Therefore given that we find no effect most likely means that there is no effect. Our findings are therefore closer to that of a fund manager who is quoted as saying that "I don't care about [the sovereign ceiling]. We don't pay any attention to it. The agencies should rate the companies for their own creditworthiness, not based on the sovereign's creditworthiness."<sup>16</sup> A contrasting view asks "but are you going to open up the floodgates and allow a lot of other companies that should be constrained by their sovereigns into that group?"<sup>17</sup>

How can we reconcile our results with those of Kliger and Sarig (2000) who find that bond rating changes contain pricing-relevant information? Aside from timing and sampling issues, one explanation is that their study examines a new system that provides information in a strictly

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<sup>16</sup> Rodrigo Briones of Deutsche Morgan Grenfell in New York, quoted in *LatinFinance* May 1997.

<sup>17</sup> Walter Molano, senior managing director at BCP Securities, who focuses on Latin American markets, as quoted in *The Financial Times* June 8, 2001.

finer partition than the coarse system, but both systems are based on the *same* rating procedure (and information). In contrast, Moody's rating procedure itself changed on June 7, 2001. One possibility is therefore that the market was ahead of the rating agencies in discounting transfer risk and generally more sophisticated in assessing individual company risk than that implied by the (former) Moody policy. Therefore the event was no news and just a confirmation. Alternatively, the market may have disagreed with Moody's *change* in rating procedure and investors continued to rely on their own assessments of risk.

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# THE IT IMPACT ON THE AUDIT PROCESS

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## **Abstract**

*With this subject we intend to discuss about the IT impact on the audit process. Even when the client's use of IT leads to a better control of the internal mechanisms, the creation of the economical systems based on such technology supposes the existence of new risks that are not usually found in the traditional systems. The well administrated companies admit the existence of these new risks and react to them by instituting (in the IT system) some new general and applied controls with the aim of reducing the impact of these risks upon the financial market. The auditor must be informed about the risks and he must gain an understanding of the general and applied controls of the client in order to plan (in a better way) the audit. One part of the tests of the control mechanisms that the auditor makes can be executed with the help of computers, this solution allowing the creation of some more efficient audits. The reference to the general and applied controls with the aim of reducing the risk can be modified when the clients use microcomputers, administrative database systems and centers for external IT service instead of using the centralized informational technology system.*

**Keywords:** *audit process, IT, control, technology systems.*

## **1. Introduction**

The use of informational technologies could improve the internal control by adding new control procedures, executed by computer, and by replacing the manual control devices, liable to the risk of human error. Despite the fact that it improves the internal control, the addition to informational technologies could also generate new risks that the client could administrate through setting up new control devices that are specific to environments based on such technologies.

The paper highlights the risks specific to the environments based on informational technologies, identifies the control devices that can be set up in order to administrate those risks and emphasizes the way in which the control devices connected to informational technologies affect the audit process.

Before accepting as being reliable any result generated by computer, the auditors must firmly evaluate the internal control in the cases in which clients have a book-keeping system based on modern technologies. However, too often we trust computer generated data, without testing their accuracy, because auditors forget the fact that a computer does what it is programmed to do. Auditors must understand and test the computerized control devices before concluding that information produced by informational system is reliable.

## **2. How do Informational Technologies Improve the Internal Control?**

Most entities, including small, familial enterprises, are based on informational technologies to register and process the economic operations. As a result of the impressive progresses in this field, even those societies with a relatively simple activity use personal computers with informational programs for their accounting systems that are inefficient and less effective. As they grow and evaluated, enterprises are often improving the informational technologies systems in order to respond to the growing need of information. Nowadays using some complex network environments and some centralized informational technologies functions is wide spread in enterprises.

Among the improvements of internal controls a result of the integration of informational technologies in accounting systems we enumerate:

- **Informational control devices that replace the manual ones.**

The obvious benefits of informational technologies, like the possibility of profitable administration of impressive volumes of complex economic operations, determine organizations to resort to such technologies in the process of financial reference. One of the advantages of informational technologies consists of the possibility of improving the internal control through the incorporation of computer executed control devices in daily activities of operation processing. Replacing manual procedures with programmed control devices, that applies tests and calculates balances for each processed operation, could reduce human errors that could appear in traditional manual environments. A well-checked IT system offers a bigger potential in reducing errors, because computers process information in a consistent and uniform manner. Among the examples of internal control procedures that are executed nowadays by computers and that were in the past the employees business we enumerate: the comparison of the client's and product's code to the systematic files or the comparison of selling operations' sums to the established credit limits.

- **Higher quality information is available.** After the management is convinced of the reliability of the informational technologies data, the use of such information offers an additional potential to the improvement of managerial decisions. First of all, the complex IT environments are, usually, administrated effectively, because complexity requires organization, procedures and efficient documentation. Secondly, IT systems usually offer to management a bigger quantity of quality information that is available faster than in most manual systems.

### **3. The evaluation of risks related to informational technologies**

Though informational technologies could improve the internal control of a company, they could also affect the general control risk of the company. Numerous manual systems related risks are diminished and, in many cases, even eliminated. Still, there appear new risks that are specific to IT environments, and these could lead to substantial loss if ignored. For example, the impossibility to recover important information due to an informational system blockage or to the use of incorrect information based on such technologies could paralyze an organization. These risks increase the

probability of the appearance of significantly erroneous presentations in financial situations, fact which should be taken into consideration by managers and auditors. These are the key-risks, specific to environments based on informational technologies:

- **The addiction to functional abilities of informational equipments and programs;** without an adequate physical protection, informational equipments and programs might not work. Eventually, it is vital to ensure a physical protection of equipments, programs or data against physical degradation that might be the result of inappropriate use, sabotage or certain natural conditions (like fires, high temperatures, humidity or floods);

- **The visibility of the audit track.** As the greatest amount of information is directly introduced in the computer, the use of informational technologies reduces or even often eliminates the explanatory documents and the source book-keeping that allow any organization to remark the itinerary of the accounting information. These documents and accounting evidences are called „audit track”. Due to the loss of audit track, there must be introduced other control devices in order to replace the traditional possibility to compare the resulting information to data written on physical support.

- **The reduction of human factor implication.** Inside numerous environments based on IT, employees who deal with the initial process of operations never see final results. Therefore, they have a smaller possibility to identify the processing errors. Even though these employees see the final result, errors are often difficult to detect, because data is, mostly very synthetic. Also, the employees tend to consider information generated by use of modern technologies as being „correct” as it was produced by computer.

- **Systematic errors versus incidental errors.** As organizations replace manual procedures with procedures based on modern technologies, the risk of some incidental errors decreases. Still, the risk of systematic errors increases as a result of the uniform character of computer executed operations. After a procedure set is programmed in informational applications, the computer processes information in a consistent manner and also in a uniform procedure for all operations, until the moment of modifying the programmed procedures. Unfortunately, the gaps in the applications programming and the modifications brought to those applications affect the reliability of the computer executed operations, having as a result numerous risks. The risk is even bigger if the system is not programmed so as to recognize the unusual operations or the situations in which the audit tracks of the operations are inadequate.

- **Unauthorized permission.** Accounting systems based on informational technologies often allow permission in real time to data in

systematic files and other evidences kept on electronic support. As the access in real time can be made from numerous access points, situate at distance, there appears a risk of making unpermitted, illegal access. If there are no adequate restrictions regarding the access in real time, such as passwords or identification codes of users, through computer there can be made unauthorized activities, having as a result inadequate modifications of informational applications and of systematic files. More over, in this way there can be obtained in illegal manner confidential information.

- **Loss of data.** The majority of fundamental data in an environment base don IT is stocked on centralized electronic files. When data is centralized, the risk of loss or degradation of entire data files with important ramifications grows. It appears an elaboration potential of some erroneous financial situations and, in certain cases; the organization can undertake serious interruptions of activity.

- **The reduction of separating tasks.** As the organizations pass from manual processes to the informatics ones, the computers execute more and ore tasks that were traditionally separated, such as authorizing operations and keeping accounting situations. Eventually, mixing the activities of different parts of organization into one function of international technologies centralizes the responsibilities that were separated in the past. The staff of the informational technologies department, which has access to applications and to systematic files, could embezzle assets if the key tasks are not properly distributed among employees of the informational technologies function.

- **The absence of traditional authorization.** In very modern IT system it is used for certain types of operations to be initiated automatically by computer. Among examples, we enumerate the calculation of interests in the deposit accounts and the initiation of provisioning commands when it is reached a predefined level of stocks. Eventually the adequate authorization depends upon the procedures included in the informational application and upon the accuracy of the systematic files used in taking the authorization decision.

- **Need of experience in IT domain.** Even when companies purchase relatively simple informational systems, which include configured programs, it is essential to exist staff with experience and knowledge necessary for installation, keeping and use of the system. As the use of IT systems spreads inside organizations, most of the times it also grows the need of qualified specialists in informational technologies domain. Numerous companies set up a function or a whole department of specialized staff in IT domain, in which we include programmers, operators, network administrators, data library administrators, employees who introduce data

inside the system, specialists in ensuring the quality and data basis administrators. The reliability of an IT system and of information generated by it often depends upon the ability of the organization to hire staff or consultants with experience and suitable Knowledge in IT domain.

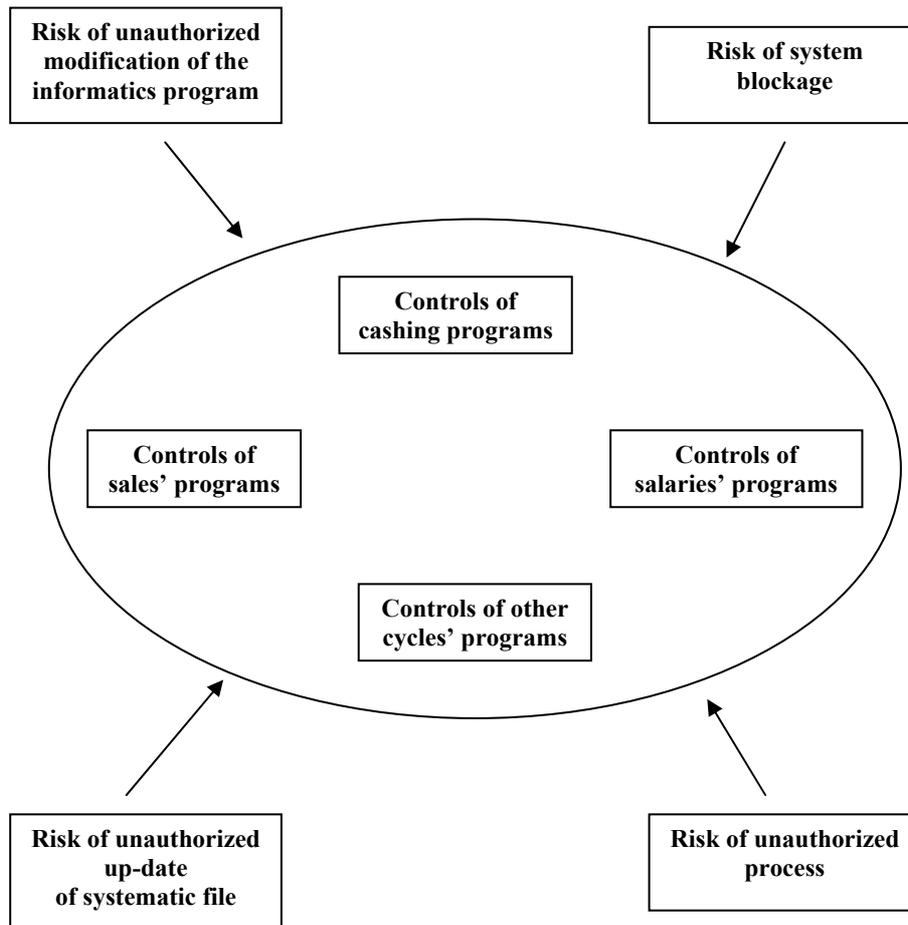
#### **4. Internal Control Devices that are Specific to Informational Technologies**

Frequently, in order to face the numerous risks connected to the growing addiction of informational technologies, organizations set up control devices that are specific for the IT function. Audit standards describe two main categories of control devices concerning systems base don informational technologies, namely: general controls and application controls.

**General control** refer to all the aspects about the IT function, including systems' administration, acquisition and maintenance of informational programs, physical security and electronic (logic) access security to equipments, programs and data associated to them, planification of making back-up copies in case of unpredicted events and conception of control devices integrated in informational equipments.

**Application controls** are practiced over processing individual operation such as the control sales or cashing process. Eventually, application controls are specific to certain informational programs and, usually, do not affect all functions that use informational technologies. Out of this reason, process controls must be evaluated for each segment of the audit (account or category of operations) affected by a informational application, in which the auditor plans to reduce the estimated control risk.. As shown in the next graph, general controls are projected in order to protect all application controls, to ensure their efficiency. Solid general controls reduce those types of risks identified in the box outside the oval containing general controls in this figure (**figure 1.**).

**Figure 1 Connections between general controls and application controls**



Source: *Arens Loebbecke, Auditing.*

More the addiction of informational technologies in the economic environment grows; the administration of the IT function becomes more important. The management must distribute sufficient resources in order to support the technologies.

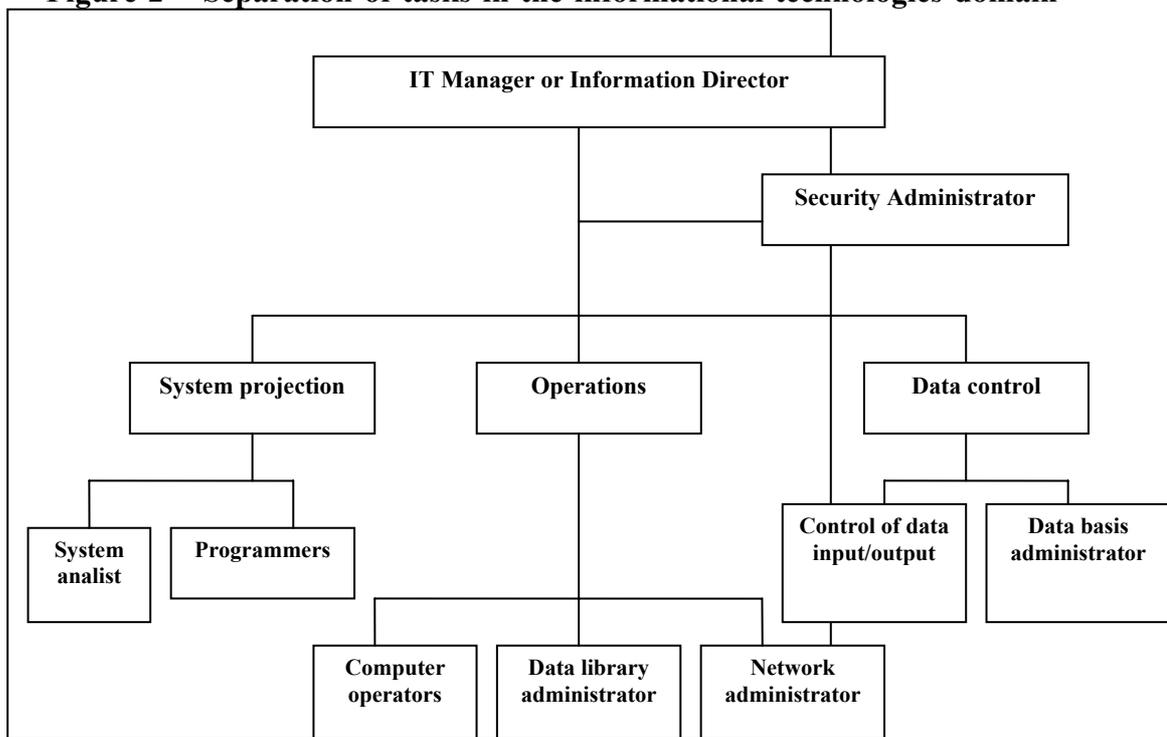
The attitude towards the importance of informational technologies inside an organization is often determined by the position adopted by the board of directors and by the top management. The supervision, the distribution of resources and the implication of this factor in the key-decision regarding informational technologies consists in a powerful clue about the

importance of this function inside the company. In the complex environments, the management often creates internal committees to contribute to the supervision of the technological needs of the entity. Inside less complex organizations, the board of directors could rely on periodical reports concerning informational technologies, elaborated by an Information Director (ID) or by another top manager, in order to maintain the management up to date.

In comparison to such situations, in the case in which functions connected to technologies are exclusively commissioned to employees from lower hierarchical levels or external consultants, it is being transmitted the implicit message that the informational technologies might not be a priority of the company. Often, it results an IT function with insufficient staff, insufficient resources and inadequate control.

To respond to these concerns, the programming, the computerized operations (including security of physical and logical access to equipments, programs of data and over production of result should be separated such as the model in the figure 2.

**Figure 2 – Separation of tasks in the informational technologies domain**



Source: *Arens Loebbecke, Auditing.*

In an ideal situation, responsibilities connected to IT management, system projection, operation execution and data control should separate as it follows:

- **IT Management.** Supervision of informational technologies function generally regards the responsibility of Information Director (ID), or IT Manager. This person is responsible for the supervision of all functions connected to the informational technologies, in order to ensure that activities go in accordance with the strategy plan regarding informational technologies. Besides an ID, a security administrator supervises also the physical access and the logic one to equipments, programs and data files and executes the necessary investigation procedures after detecting some breaches or gaps inside the security system.

- **System projection.** The projection and the modification of IT system are, usually, coordinated by a system analyst who is responsible for the general projection of each system application and who represents the connection person between IT department employees, application programming managers and employees outside IT function, who would be the main users of the system (such as the staff responsible for the evidence of credit-clients). Programmers elaborate sequential diagrams that are special for each application, also elaborate informational instruction, test programs and gather evidence of results on the basis of recommendations given by the system analyst. Programmers should not have access to the introduction of data or to the computerized operations as the well knowledge of a program might be used in personal interests. The access to programs' back-up, that is effectively used for information production and the access to data basis should be limited, so that programmers could not make modifications in the informational applications without a suitable authorization. In exchange, programmers should work only with test back-up of programs and data.

- **Operations.** Daily effectuation of computerized operations concerns PC operators who should fulfill their tasks according to the work schedule elaborated by ID and follow the appearance on their electronic consoles of any messages regarding program working or computer trouble. The librarian is responsible for keeping informational programs, operation files or other evidences or important electronic documents. The librarian controls these programs and evidences by offering them to operators, only in the indicated conditions of the work schedule. He puts to programmers' disposal a test back-up only with the approval of the top management. Inside environments consisted of networks, the network administrator is the one responsible for planning, functioning and keeping of a server network, that makes the connection between users, different applications and data files.

- **Data control.** Employees responsible for the control of data inputs and outputs independently check the quality of the introduced data and the reasonable character of the produced information or extracted from system information. In the case of organizations that use data basis to stock information which is used, in common, by book-keeping and other functions, the administrators of data basis are responsible for the security operation and common data basis access.

Of course, the proportion of task separation depends upon the volume and the complexity of an organization. Inside numerous small companies it is not practical to separate tasks in the manner described above.

The existence of some solid physical controls of computers and the limitation of real-time access to applications and to associated data files reduce the risk of operating some unauthorized modifications inside informational programs and data files. Security plans should be elaborated in a written form and their application should be permanently supervised. It follows a short presentation of a typical physical control and of a real-time access control.

- **Physical controls.** Physical controls of informational equipments starts with the limitation of the access to equipments, programs and safe back-up of data files kept on magnetic bands or disks, CD and disks. Among the examples of limitation modalities of unauthorized use of equipments are: use of electronic locks, installation of systems based on magnetic cards access, use of security video cameras and hiring security staff. For a higher level of security, the physical and logical access is allowed only after reading employee's fingerprints or scanning employee's retinas, which are later compared to an approved data basis. Among other physical controls we enumerate the supervision of conditioned air system and of humidity of equipments. The immediate access to the prevention and fighting against fires system reduces the potential loss caused by fires.

- **Real-time access control.** The adequate use and existence of some identification codes of users and some access passwords to programs and associated data files reduce the probability of operating some unauthorized modifications in the informational applications and data files. Operating systems of most computers offer the possibility to define some identification codes of users and some access passwords. In modern IT systems there can be installed a package of additional programs in order to improve security.

Accidents like interruption of electricity, fires, heat or excessive humidity, floods or even sabotages can cause serious consequences for the companies that use informational technologies. To face this kind of risks,

organizations elaborate plans concerning the creation of some safe back-up and concerning the reaction to unpredicted events. One of the success back-up of informational programs and of data files are made and stocked outside the headquarters of the company. Often, in order to stock this safe back-up there are being used underground strong boxes that are being used underground strong boxes that are resistant to fire and explosions. Moreover, this kind of plans should identify the alternative physical equipments that might be used for processing the company data.

For smaller IT systems, there can be purchased computers and server for replacement, which can be used along with the safe back-up of the informational programs and data files. In the case of more complex systems, organizations install inside the company's premises safe batteries and diesel oil generators to face the temporary interruptions of electricity and they can even sign alternative agreements for providing basic services in case of emergency.

Control devices that are integrated in informational equipments by their producer and that concern detection and raportation of flaws are called personal controls of equipment. Independent auditors are rather interested in the methods used by clients in order to administrate the computer identified errors than in the adequate character of personal control of equipments in the system. No matter what the quality of personal controls of equipments is, the information produced by the system will not be corrected only if the client's organization has foreseen administration measures for the equipment generated errors.

Application controls are projected for each informational application and their target is to help the company respond to the six audit objectives concerning operations that were discussed in the previous chapters. Although, one part of application controls do not affect more than one or very few audit objectives connected to operations, most controls forestall or detect several types of errors. Despite the fact that the control objectives in the introduction, processing and extraction of data domain are identical, the procedures used to realize these objectives are totally different. These three types of application controls will be presented in the following paragraphs.

The control devices created by organizations in order to ensure that all computer processed information is authorized, accurate and complete are called controls of data input. Controls of data input are critical as a large amount of IT system errors result from errors produced when introducing data. Errors in data input process lead to errors in given results, no matter what the quality of information processing is. Typical control devices in manual operated system keep their importance. Among the examples there

can be mentioned: written authorization of operation given by the management, elaboration of explanatory documents for data input and for hiring qualified staff. Other controls are specific to IT systems. Examples are: suitable projection of information input displays, menus with lists of available program options and validation tests for the precision of the introduced data, executed by computer, such as the validation by comparing the client's number to the client's systematic files. Moreover, the immediate error correction procedure and error collection procedure in a separate file that would later be analyzed by the responsible staff permit an early detection and correction of errors produced during the process of data input,

The control devices that forestall and detect errors produced during data processing operations are called controls of data processing. Although solid general controls, especially those connected to the projection and security of systems, offer some of the best control devices to minimize the risk of error appearance, controls of application processing are often integrated in the informational programs in order to prevent, detect and correct the processing errors.

An auditor must know these control devices because he takes all the responsibility of obtaining an internal control agreement, including general and application controls, no matter if the informational technologies use by client is simple or complex. Also, knowledge connected to general controls consolidate the ability of the auditor to rely on efficient application controls in order to reduce the control risk of audit objectives connected to operations.

Most auditors evaluate the efficiency of general controls before evaluating the application controls. In the case in which general controls are inefficient, it appears the probability of producing some significant errors in each informational application in book-keeping, no matter what the application controls' quality is. For example, if the tasks are not properly separated, PC operators being also programmers and having access to programs and informational files, the auditor must be interested in false operation registering or unauthorized data registering and also in emission in accounts such as sales purchases and salaries. In dike manner, if he notices that data files are not adequately protected, the auditor could conclude that there is a significant risk of data loss, because general controls affect each informational application. In this kind of situations, audit tests concerning the confirmation of exhaustivity objective should be spread in certain fields, such as cashing, payments and sales.

On the contrary, if there are solid general controls, the possibility to attribute a higher level of reliability to application controls increases.

Thus, the auditors can test the operational efficiency of some application controls and they can rely the results of these tests in order to reduce the quantity of substantial tests. This use of efficiency of the audit.

Still, there is a challenge in IT environments which refers to the effect of modifications operated in informational programs about the trust that the audit can have concerning control devices. When the client modifies the applications, the auditor must determine whether it is necessary to use additional tests. In the case in which general controls are efficient, the auditor could easily identify the program operated modifications. In environments where general controls are inefficient however, the probability of the appearance of some unidentified modifications increases. As a result, the auditors must foresee the effectuation of periodical tests concerning the operational efficiency of application controls during a whole year when general controls are weak.

Usually, the auditors receive information about general and application controls using the following techniques: questioning the staff and the key-users of informational technologies, examination of system documents, such as sequential diagrams, user books, requests of program modifications, test results, and the analysis of detailed questionnaires completed by the informational technologies department staff. In most cases, it's best to use more methods to understand the internal control, as each of them offers different information. The interview with the informational department manager and with the system analysts offers useful information concerning the operation of the whole informational technologies function, the proportion of the projection process of informational applications and the modifications operated in the key-accounting applications, and also a panoramic view over the planned changes. The analysis of the program modification requests and of system tests results is useful for the identification of programming modifications in informational application. The questionnaires are useful to identify the specific internal control devices.

Of course, the auditors do not correlate the qualities and the flaws of general controls with the specific audit objectives connected to operations. Like the control environment, general controls affect the audit objectives connected to operations in more cycles. In the case in which general controls are inefficient, the possibility of the auditor to rely on application controls in order to diminish the control risk is reduced. On the contrary, when general controls are efficient, the ability of the auditors to rely on application controls in order to reduce the control risk increases.

Auditors identify both manual application controls and computer executed ones, and also the system flaws for each audit objective connected

to operations, using a matrix of the control risk. For example, the computer comparison of staff identification number that were introduced manually to the systematic file data could reduce the control risk regarding the objective of expenses existence for salaries, through the fact it stops making payments to fictitious employees.

Most organizations use informational technologies in order to process operations and they project their systems so that their explanatory documents could be restored in legible form and easily followed in the accounting system until the final resulting data. In such situations, organizations keep most traditional explanatory documents like the clients' purchasing commands, the delivery and the reception dockets, sales invoices and supply invoices. The accounting informational program also generates printed versions of journals and books which allow the auditor to remark the itinerary of the individual operations through all accounting evidences. Moreover, the internal control devices often include a comparison by the client of the computer generated evidences to the explanatory documents.

In this kind of situations, using informational technologies has no significant impact on the audit track. Usually the auditor obtains an agreement of the internal control and makes control devices tests, substantial tests of operations and verifying procedures of account balances. The auditor has also obligation to understand the general and application controls executed by computers, because this kind of knowledge will be useful in identifying the risks that might affect the financial situations. However, usually the auditor doesn't make tests of controls effectuated by computer. This audit method is often called audit around computer as the auditor doesn't use computerized controls in order to reduce the estimated control risk. In exchange, the auditor uses control devices outside the informational technologies to justify the adequate assessment of the control risk.

As the use of informational technologies by organizations spreads, internal control devices are often integrated into applications and became visible only in electronic form. When traditional explanatory documents, such as invoices, provisioning commands, invoice registers and accounting books, such as sales journals, stock evaluation lists and analytic registers of credit-clients, are available only in electronic form and not on paper support, the auditor must change the audit method. This audit method is often called audit by computer.

There are three categories of testing strategies that can be used in the audit by computer: test-data method, parallel simulation method and modulus of integrated audit method.

**Test-Data Method.** Test data method is about processing a set of test-data of the auditor using the computerized system and informational applications of client in order to determine whether the control procedures executed by computer ensure the correct process of test-data. As the auditor is the one who defines the test-data, he can identify the testing elements that should be can accepted or rejected by the client's system.

When using the test-data method, the auditor must take into consideration three fundamental aspects, namely:

1. Test-data should include all relevant conditions that the auditor wants to test. The auditor should project the test-data so that he could test the main computerized control devices that he intends to rely on in order to reduce the control risk. The auditor's test-data should contain realistic elements that might be part of the normal processes made by client, including valid operations and inadequate operations.

2. Informational programs verified by the auditor's test-data should be identical to the ones used by client along the accounting exercise. One of the methods would consist in processing the test-data by surprise, possibly at aleatory moments of the year, though this solution is expensive and takes a lot of time.

3. Another method consist in relying on general controls of the client that were carried out by the responsible employees for the administration of the informational library and system projection, in order to ensure that the tested program is the same used in the current data process.

Test-Data should be eliminated from the client's evidences. If testing informational programs of a client supposes processing test-data in parallel with processing client's real operation, the auditor must eliminate all test-data from the client's systematic files after he finishes testing. It is not allowed to permanently keep some fictions operations in the client's systematic files. To remove the fictitious operations, the auditor must introduce additional data to invert the effect of those operations.

**Paralle Simulation Method.** There are numerous informational applications that help the auditors to evaluate the efficiency of the informational control devices and to obtain proofs concerning available balances of accounts in electronic form. The auditor uses programs that are controlled by him in order to execute operations parallel to the client's application, using the same data files. Who matter if the tests control devices or final balances of accounts, the auditor compares his own output data to data generated by applications used by clients, whit a view to test the efficiency the client's informational programs. The absence of difference in

the resulting data indicates a correct working of the client's programs, while the existence of some deviations indicates potential flaws of the client's system. Since the auditor's applications are projected to effectuate in parallel (to imitate) an operation processed by the client's applications, this testing strategy is called parallel simulation.

Frequently used instruments by auditors to effectuate the tests of parallel simulation are generic applications of audit (GAA), namely informational applications projected to be utilized by auditors. These informational programs can be already-made purchased and are, usually, compatible with Windows system, being easily installed in the office computer or laptop of an auditor.

Generic applications of audit present two advantages. First of all, it is relatively easy to train the audit staff how to use them, even if there are involved persons with no preliminary preparation in the field of informational technologies that are applied in audit. Secondly, generic applications of audit can be applied to a large variety of clients, with a minimum effort of adaptation and personalization.

**Modulus of Integrated Audit Method.** When being used the modulus of integrated audit method, the auditor inserts a modulus of audit in the system applications of the clients in order to extract those operations having characters that the auditor is interested in. For example, the auditor could extract all the purchases that exceed a determined economic value, so that he could examine all the sizable operations that have crossed the cycle of purchase and payment.

Auditors can use either only one method (test-data, parallel simulation or modulus of integrated audit) or a combination of them. Usually, auditors use test-data in order to test the control devices and to make the substantial tests of the operations. Parallel simulation is often used for the substantial tests, such as the fresh calculation of operation sums and the overall of the analytic evidences of account balances included in the systematic files. Auditors use the modulus of integrated auditing method to identify unusual operations in order to effectuate substantial tests.

Microcomputers are widely utilized in most companies, no matter what their sizes are. Usually, they have even in small societies an important role in processing or analyzing accounting data by using accounting programs or tabular calculations that were ready-mode purchased or especially created for the company.

Usually, in small companies general controls are less efficient than in more complex IT environments. Often, there is no qualified staff in

informational technologies or the client relies on the periodical implication of consultants for support in installing and keeping equipments or informational programs. Also, the responsibility connected to IT functions is often attributed to the utilizing departments inside which physical equipments are placed. Still, even in these IT environments, purchase controls of informational programs, physical security, real-time access security and planning of safe back-up are important.

Often, client's auditors who use microcomputers in environments with less sophisticated general controls make the biggest part of their audit "around the computer". These systems often produce sufficient audit tracks which allow the auditor to correlate the explanatory documents of data input with data output.

Still, even in less sophisticated IT environments, there are situations in which the auditor can rely on controlled procedures executed by computer. For example informational program from microcomputers can be installed on the hard disk of the computer so that the client's staff could not modify them. The risk of unauthorized modifications in informational applications is, consequently, diminished. Before making reference to integrated control devices in those applications, the auditor must be convinced of the informational program, namely in what concerns the quality.

A problem that appears in environments based on microcomputer is the access of some unauthorized persons to the systematic files. For example, the utility of comparing the client's sales commands and of credit-clients balances to the systematic files of credit limitation depends upon the accuracy of the established credit limits. Unlike the sophisticated IT environments, often, microcomputers do not contain protection of data files by means of access password. Without such protection, any user could introduce a modification which cancels the utility of a control device. An example is the increase of a client's credit limit which is sufficient to avoid the rejection of the operation by the system. In alike situation, it is critical an adequate separation of the staff's tasks, staff who has access to the systematic files, by the data processing responsibility. Moreover, a periodical check by the owner-administrator of output data connected to operations consolidates the internal control.

Another risk related to the use of microcomputers is the data and program loss due to informational viruses, which can infect other programs or even the whole system. Certain viruses can deteriorate disk files or block a whole network of computers. The existence of some protection programs against viruses, which should permanently scan the system to detect possible viruses improves the internal control.

The spectacular intensification of use of networks connecting equipments as microcomputers, average size computers, extremely powerful computers, data input terminals, servers and printers has changed the IT function in numerous companies. Local Area Networks (LAN) connect equipments from one building or a small group of buildings and are used only for operation inside companies. A typical use of LANs consists in data and program transfers from one computer or terminal to another, using programs for the network system which allow all the equipments to work together. Wide Area Networks(WAN) connect equipments from larger geographical regions, permitting even operation at an international scale.

In environments based on networks, the informational applications and data files used for processing operations are stocked on servers, which are equipments used for data administration. The access to the respective operations from microcomputers or terminals is administrated by the programs for network systems. Often, companies have several servers. In the case of many ample network environments, there are applied most general controls because the support given by informational technologies and the implication of users are centralized. In other companies, the use of a network medium often leads to modifications of control devices, which the auditor must analyze during audit planning. Numerous organizations decentralize the network servers, fact that often increases the control risk as it lacks security and whole supervision of network operations by the management. Also, numerous network environments have no equipments and standardized procedures. Organizations which need fast communications and easy access to data often create network outside the control sphere of the informational technologies function. The responsibility concerning the purchase, maintenance, administration and physical security of equipments and informational programs is frequently incumbent upon the key-groups of users and not upon a centralized IT function, fact which often leads to an absence of adequate control devices. Also, sometimes, network informational programs do not include the necessary options to ensure security, including for task separation (devices which are usually available in centralized environments), because there are numerous users having easy access to data and programs.

When clients have book-keeping applications that work in a network environment, the understanding of the internal control by the auditor should contain accumulation of data regarding the network configuration, including the servers' location, the terminals' and the computers' connection, as well as accumulation of some data concerning the network program used for the system administration. Also, the auditors should be informed about the

control devices for the access and modification of international applications and data files stocked on servers.

Controls are better when data is centralized into an administration system of data basis, by the fact that it eliminates the redundant data files. However, administration systems of data files can also create risks connected to the internal control. For example, there are risks related to the fact that numerous users, among whom we enumerate persons outside the book-keeping department, can access and update data files. Without a suitable administration of data basis and without an access control, the risks of appearing some unauthorized, inaccurate and incomplete data files increase. Also, centralizing data into one single file increases the importance of the insurance of a safe data back-up, which should be proper and regularly created.

Clients' auditors who use administration systems of a data basis should understand planning, organizing, politics and procedures of the clients in order to determine how well these systems are administrated.

To cover a part or all their needs of informational technologies, many clients prefer to resort to independent informational service centre sooner than to set up an internal department of informational technologies. Numerous smaller companies subcontract the administration function of salaries, because this is not enough similar between companies and because there are reliable suppliers of salary administration services. Like in any other subcontract decision, companies determine whether it is worth to subcontract the IT function on the basis of a cost-advantages analysis.

When activities are subcontracted to an informational service centre, the client delivers the input data, and the service centre processes them for a certain price and then delivers the client the convenient output data and the original input data. In the case of salaries, the company presents the service centre the check sheets and the daily rates.

It would be more difficult for the auditor to understand the internal control of the client in such situations, as a large amount of control devices works at the service centre level and the auditor can not start from the hypothesis that these devices are suitable only because it concerns an independent services supplier. Audit standards require the auditor to analyze the need to understand and test the control devices of the service centre in the cases in which applications used by the respective centre involves the process of some significant financial data.

The decision concerning the proportion of understanding and testing the control devices of the service centre used by the client should rely on the

same criteria the auditor takes into consideration when evaluating the internal control devices of a client. The depth of understanding would depend upon the complexity of the system and upon the level in which the auditor intends to reduce the estimated control risk in order to diminish the quantity of substantial audit tests, if the auditor concludes that the active implication at the level of the service centre is the only manner to effectuate the audit, it could be necessary an agreement of the internal control inside the service centre and a testing of the control devices, using test-data and other testing methods.

## 5. Conclusion

In the last few years, it has become more and more frequent the practice through which an independent auditor understands and tests the internal control devices of the service centre, in the interest of all the centre's clients and of their independent auditors. The aim of this independent evaluation consists in offering the service centre's clients a reasonable level of insurance concerning the adequate character of the general and application controls used in the service centre and in eliminating the need of redundant audits made by the auditors of the centre's clients. If the service centre has numerous clients and each one demands an understanding of the centre's internal control by his own independent auditor, the perturbation of activities and the costs supported by the service centre could be substantial. The moment after the independent auditor of the service centre concludes devices, it is being elaborated a special report, indicating the perimeter of the audit proceedings and the auditor's responsibility to decide over the measure in which he is willing to rely on the audit report of the service centre.

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# THE EFFECTS OF INTERNATIONAL OFF-SITE SURVEILLANCE ON THE BANK RATING CHANGES<sup>1</sup>

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## **Abstract**

*This article explores the determinants for off-site surveillance of the short-term and long-term bank rating changes for rated banks in Asia and the differences between them. Application of an ordered logit model reveals that the CAMEL criteria of asset quality and capital adequacy as well as non-financial variables such as asset size and mergers and acquisitions play an important role to influence both the short-term and long-term bank ratings. Notably, it is found that higher capital to loan ratio, greater liquid asset ratio, and lower capital to asset ratio are likely to improve the probability of long-term creditworthiness, while higher impaired loans ratio are less likely to improve the short-term bank ratings. Results of the marginal effect suggest that the dividable scale helps to improve long-term creditworthiness through cross-selling tactics, synergy gains and a better capability for fund raising.*

**Keywords:** *bank rating; CAMEL; off-site surveillance*

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## 1. Introduction

Numerous studies have documented that the banking system in developed countries had become a highly regulated procedure by the early 1980s. (Johnson and Lindley, 1993; Benink and Llewellyn, 1994; Warf and Cox, 1995) By this point the regulatory environment consisting of controls on interest rates, credit and capital acted as a protection in the banking industry. The existence of restrictive practices and high entry barriers into the banking sector not only provided excess capacity, but also formed monopolistic profits in response to low degrees of competition. Subsequently, the banking system experienced a period of profound crisis due to the rapid process of financial liberalization associated with mismanagement, deregulation, and depressed economies that intensified competition among banks. Consequently, many banks collapsed and faced financial insolvency because the substantial rise in bank lending and eroded credit rationing raised markedly the proportion of nonperforming loans in the early 1990s. A number of studies have examined the effect of bank-specific variables on predicting bank failures. Abrams and Huang (1987), Pantalone and Platt (1987), Randall (1993), Estrella, Park, and Peristiani (2000), and Brewer, et al. (2003) suggested that bank failures are influenced by both financial performance and supervisory assessments associated with CAMEL criteria and other ratings aimed at maintaining bank safety and soundness.

Much previous research has used the probit and logit models to investigate the relationship between the financial performance and the risk of domestic bank failures, rather than a linear cardinal approach. The empirical evidence so far suggests that bank-specific variables such as asset size, nonperforming loans, and capital to asset ratio, together with loans and monetary policies such as regulation Q and Federal Deposit Insurance play important roles in influencing the probability of bank failure.<sup>2</sup> However, little information has been available to policymakers to discuss how to apply the off-site surveillance on a comparison of nations for banks because the differences in the surveillance procedures of nations can affect how the probability of bank risks reflecting their ratings are determined. This study adds to the existing academic evidence but differs by exploring whether and how CAMEL criteria and non-financial factors are related to how bank's off-site surveillance reflects the bank's rating changes.

In this paper we test whether the financial variables followed CAMEL criteria, with non-financial variable including bank size and dummy variables

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<sup>2</sup> Under the approval of Regulation Q, the Federal Reserve permitted commercial banks to provide the maximum explicit interest rates to be paid on savings and time deposit liabilities (Cebula and Saltz, 1994).

such as financial holding company, mergers and acquisitions, and geographic differences responding to the off-site surveillance of bank rating refinements. This paper uses an ordered logit model with maximum likelihood estimation and the sample is comprised of bank rating changes for 151 banks in Asia during 1996 to 2002. We probe deeper using a comprehensive investigation to determine if there are inherent differences between the long-term and short-term bank rating changes in order better understand off-site surveillance of banks worldwide.

Our results indicate that CAMEL criteria and non-financial variables do exist and influence the rating agencies' behavior for evaluating bank ratings. Generally, we found that a small net loan to total asset ratio, lower expenses to asset ratio, higher return on assets, and larger bank size enhanced the creditworthiness of short-term and long-term bank ratings, which may increase asset quality, management efficiency, extra funds and earnings. It was also be found that mergers and acquisitions lead to lower probability of upgrading bank ratings due to improper managerial performance and financial difficulties of acquired banks. Geographic differences seem to be caused by the vulnerability of the banking sector and sovereign risks that rated banks faced. The results suggest that a higher capital to loan ratio, greater liquid asset ratio, and lower capital to asset ratio are likely to increase the probability of the long-term bank ratings. In addition, the positive coefficient for financial holding company supports the notion that rated banks belonging to a financial holding company may benefit from a better financial environment to improve their portfolio performance and obtain extra funds, leading to improved long-term creditworthiness. In particular, we found evidence to support the view that a higher impaired loans ratio was associated with lowered asset quality and profitability, making rating agencies less likely to upgrade the short-term bank ratings. Overall, the marginal effect results revealed that rated banks may incorporate the dividable scale of the investment-grade and speculative-grade of long-term bank ratings to rebuild creditworthiness by utilizing cross-selling tactics, enhancing synergy gains and assessing extra funds properly.

The remainder of this paper is organized as follows. Section 2 presents a literature review of bank failures. Section 3 presents the empirical model used in this study. Section 3 reports the data and some testable hypotheses. Section 4 presents the empirical results and Section 5 summarizes the findings.

## 2. Literature Review

A considerable volume of empirical studies on bank failures have explained the role of financial performance and supplement supervisory assessments (e.g., Abrams and Huang, 1987; Pantalone and Platt, 1987; Randall, 1993; Estrella, Park, and Peristiani, 2000; and Brewer et al., 2003). In two influential papers Abrams and Huang (1987) and Khorassani (2000) found that a lower probability of failure occurred when banks were larger or were affiliated with holding companies. Abrams and Huang found empirical evidence that U.S. banks which depend heavily on large certificate deposits and loan portfolio have a higher probability of failing. Randall (1993) and Warf and Cox (1995) analyzed U.S. banks that had profound crisis and failed during a period of 1980s -1990s. Their results generally supported Abrams and Huang's findings that an overbuilt commercial real estate market, which had markedly increased the proportion of nonperforming loans at higher risk exposures, was the dominant factor in bank failures. Consistent with these findings, Brenda, Ceyla, and Robert (1997) confirmed that a higher share of nonperforming loans to total loans decreased the survival time for Mexican banks that experienced the Mexican financial crisis during the early 90s. They indicated that banks with smaller size and capital asset ratios seem to be more likely to obtain liquidity support. Likewise, Wheelock and Wilson (1994) also indicated that an increase in ratios of capital to assets reduced the likelihood to failing. In other study, Henebry (1997) used the CAMEL rating system areas of capital, asset quality, earnings and liquidity to test the stability of bank failure prediction. He found that the ratios of primary capital to total assets and of nonperforming loans to total loans both have strong power in predicting bank failure.

Previous studies have identified possible links between capital ratio requirements and the risk of subsequent bank failures.<sup>3</sup> These ratios are especially for the development of early warning systems for predicting the likelihood of bank closings and they play a crucial role in prompt supervisory action for bank regulators. As pointed out by Khorassani (2000), the capital adequacy requirements to assess safety and soundness for the banking industry can be significant predictors of bank failure. Estrella, Park, and Peristiani (2000) evaluated three types of capital ratios, risk-weighted, leverage, and gross revenue ratios. They found that the risk-weighted ratio

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<sup>3</sup> A comprehensive international approach to capital adequacy was recently developed by the Basel Accord to Banking Supervision in 1988 (Estrella, Park, and Peristiani, 2000). To emphasize capital regulation and promote safety and soundness, the new framework has been expanded to the three pillars-minimum capital requirements, supervisory review, and market discipline (Gunther and Levonian, 2001).

tend to perform relatively in predicting bank failure over long time horizons, while the leverage and gross revenue ratios can play an important role of prediction over the shorter time periods.

To build an effective early warning model of bank failure to identify banks taking excessive risks, Pantalone and Platt (1987) used Logit regression analysis to discriminate between healthy and failure-prone commercial banks in U.S. They reported that adopting a risky management strategy that inadequately diversified away from loans or having insufficient controls to prevent fraud would jeopardize a bank's survival if a major stress in the economy occurred. They also showed that an increase in bank lending has affected bank failures because the rapid process of deregulation has increased the competitive environment among financial institutions. In support of this position, Benink and Llewellyn (1994) provided empirical evidence based on Tobit estimates for pooled banking data of Norway, Sweden and Finland, suggesting that rising credit losses may speed up banking crises due to intensified competition from substantial deregulation.

A number of studies argued that changes in the risk of bank debt may not be the sole cause of bank failures. Johnson and Lindley (1993) and Cebula and Saltz (1994) examined the pattern of the bank failure rate in the U.S. in response to the monetary policy changes over last two decades. They found that regulation Q for the U.S. Federal Reserve policy appeared to play a crucial role in contributing to bank failures.

In addition, Cebula (1993), Wheelock and Wilson (1994), and Laeven (2002) have provided convincing evidence indicating the connection between deposit insurance and bank failure. In this regard, they pointed out that the Federal Deposit Insurance (FDIC) has probably been the most criticized monetary policy related to the proximate cause of the rapid growth of banks and the Savings and Loan (S&L) failures during the 1980s. Cebula (1993) and Wheelock and Wilson (1994) found that banks and S&L institutions that carried FDIC were more risky, and hence had an increased failure rate. They suggested that the regulators may consider an increase in the cost of deposit insurance proportionately with risk in order to discourage the risk taking behavior of banks for lending. However, Laeven (2002) showed that private banks or other financial institutions with the highest cost of deposit insurance tend to take greatest risks.

The comprehensive studied of on-site inspections and examinations by Flannery and Houston (1999) and by Gilber, Meyer, and Vaughan (2002) attempted to assess and control the regulatory risk exposures associated with deposit insurance and lending activities which affected bank's market value. Flannery and Houston (1999) provided a notable result in that surprise

examinations were more likely to have a significantly negative effect on well-capitalized banks.

To evaluate the off-site surveillance at the bank level for scheduling on-site exams, Cole and Gunther (1998), Gunther (2002), and Gilber, Meyer, and Vaughan (2002) used both CAMEL and CAMELS ratings to predict bank failure.<sup>4</sup> Gunther and Levonian (2001) summarized the usefulness of the BOPEC rating as a benchmark for banking organizations' financial safety and soundness.<sup>5</sup> These results indicate that stock price information was useful in predicting financial conditions that affected BOPEC ratings to supplement supervisory assessments. Moreover, Elmer and Fissel (2001) and Brewer et al. (2003) indicated that equity market information can help forecast downgrades in the supervisory ratings and responded unfavorably to bank failures. Among previous studies that used stock returns or prices to examine the supervisory ratings, Gilber, Meyer, and Vaughan (2002) found that the CAMELS downgrade ratings performed slightly better than the SEER (the System for Estimating Examination) Ratings. This indicates that the CAMELS ratings models have a little contribution to off-site surveillance. Gunther (2002) evaluated the potential trade-off between credit enhancement objective of the Community Reinvestment Act (CRA) and the risk-constraining objectives of safety and soundness used in assigning CAMEL ratings.<sup>6</sup> However, the limited evidence revealed that aggressive banking strategies to expand credits and low managing capital were both associated with favorable CRA ratings, but they conflict with safety and soundness ratings so that losses may occur at a high level of risk.

To the best of our knowledge, the current paper extending previous empirical work on bank rating changes is the first attempt to test off-site surveillance among banks across different nations in Asia. While a limited number of studies have examined the impacts of off-site surveillance on the probability of domestic bank failure, these papers have not attempted make

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<sup>4</sup> To assess supervisory information, both composite CAMEL and CAMELS ratings were obtained from examinations of five/six components aimed at maintaining bank safety and soundness including capital protection (C), asset quality (A), management competence (M), earnings strength (E), liquidity risk exposure (L) and market risk sensitivity (S) (Gilber, Meyer, and Vaughan, 2002).

<sup>5</sup> BOPEC rating was obtained from financial performance of five factors: Bank subsidiaries (B), other (non-bank) subsidiaries (O), the parent company (P), consolidated earnings (E), and consolidated capital (C) (Gunther and Levonian, 2001).

<sup>6</sup> Since July 1990, the Community Reinvestment Act (CRA) has legislated that Federal regulators were to encourage financial institutions to meet local credit needs in a bank's service area (Gunther, 2002). The CRA ratings can be classified to four levels: outstanding, satisfactory, needs to improve, and substantial noncompliance.

an international comparison linking bank ratings in reflecting bank's insolvency associated with leverage risk, credit risk, and liquidity risk.

### 3. Ordered Logit Analysis of Bank Ratings in the Banking Sector

An ordered logit models with the random effects fitted by maximum likelihood are now well established in the economic and financial research literature of bond ratings and credit ratings (e.g., Kamstra, Keenedy and Suan, 2001; Badu and Daniels, 1997; Blume, Lim and McKinlay, 1998; Chen, 2003). It is to be noted that Walker and Duncan (1967) originally developed an ordered logit models for pooled data. Greene (1993) revealed that the standardized logistic probability distribution functions are available to constrain the estimated probabilities for an ordered logit models. In principle, the random effect estimates of both models use maximum likelihood functions and asymptotic standard errors to assess the parameters that were formed to similar statistical characteristics.

To capture the relations between discrete-valued dependent variables and continuous-valued independent variables, we consider the following specification for an ordered logit models with the random effects:

$$\begin{aligned}
 Y_{it}^* &= \beta' x_{it} + \varepsilon_{it} + \varpi_i, & (1) \\
 Y_{it} &= 0, & \text{if } Y_{it}^* \leq z_1, \\
 Y_{it} &= 1, & \text{if } z_2 < Y_{it}^* \leq z_3, \\
 Y_{it} &= 2, & \text{if } z_3 < Y_{it}^* \leq z_4, \\
 & \dots & \\
 Y_{it} &= M, & \text{if } Y_{it}^* > z_M, \\
 \text{Var} [\varepsilon_{it} + \varpi_i] &= \text{Var} [v_{it}] = \sigma_\varepsilon^2 + \sigma_\varpi^2, \\
 \text{Cov} [v_{it}, v_{is}] &= \sigma_\varpi^2, \\
 \text{Corr} [v_{it}, v_{is}] &= \rho = \frac{\sigma_\varpi^2}{\sigma_\varepsilon^2 + \sigma_\varpi^2},
 \end{aligned}$$

where  $Y_{it}^*$  represents an approximation of the unobserved measure of bank ratings and  $Y_{it}$  refers to the observed variable. The values of a matrix of the independent variables  $x_{it}$  can be observed for the bank  $i$  at time  $t$ . Note that  $z$  is the unknown "threshold" parameter which can be defined as the range of the set of observed value,  $Y_{it}$ , to be estimated in combination with a vector of

the estimated coefficient  $\beta'$ . Let  $\varepsilon$  have a standard logistic distribution and its underlying cumulated distribution function can be expressed as  $\frac{\exp(z)}{1 + \exp(z)} = \Lambda(z)$  and  $\varpi_i$  represents the group specific term which is distributed as  $N(0, \sigma^2)$ . We consider  $M$  categories ordered from lowest to highest as  $0 < z_1 < z_2 < \dots < z_M$ . A maximization of the log likelihood function associated with the threshold values  $z$  can be formed as follows:

$$L(\beta, z) = \sum_{i=1}^N \sum_{j=0}^M \log(\text{Prob}(Y_{it} = j | x_{it}, \beta, z)) \cdot \ell(Y_{it} = j) \quad (2)$$

where  $\ell(\cdot)$  is an indicator function which takes on the value 1 if the argument is true, and 0 otherwise. In this study we use an ordered logit to combining the marginal effects in order to obtain the impact of change in the covariates of each independent variable on the cell  $M$  probabilities:

$$\frac{\partial \text{Prob}(\text{cell } M)}{\partial x_i} = [f(z_{M-1} - \beta' x_i) - f(z_M - \beta' x_i)] \cdot \beta, \quad (3)$$

where  $f(\cdot)$  is the appropriate logistic density function,  $\Lambda(z)[1 - \Lambda(z)]$  (Greene, 2002).

We measured the  $\beta$  coefficients to reflect the importance of each of the independent variables on the probability of bank rating changes. The marginal effect was implemented by holding  $\beta$  and the unknown “threshold” parameter  $z$  constant. The effect of an additional unit increase in the independent variable  $x$  shifts the probability of the logistic distribution of bank ratings to the right. Therefore, the unchanged signs of the marginal effects for the probability of bank rating changes at the highest ordered level will be the same compared to the  $\beta$  signs. However, the opposite signs related to  $\beta$  signs for the probability of bank rating changes at the lowest ordered level will occur. To capture a better interpretation of the marginal effect, we need to further examine the signs of the changes in other probability of bank rating changes levels because these signs are indeterminate in either direction (Greene, 1993).

## 4. Data

This study considers the impact of ratings changes from 1996 to 2002 for both short-term and long-term bank ratings to measure a bank's intrinsic safety and soundness. The sample was well dispersed regionally over the cross section of 151 banks in Asia. The regional dispersion is quite important to our analysis due to the differences in the regulations of on-site inspections and examinations to provide supervisors that affected bank's valuation by certain nations (Gunther and Levonian, 2001).

To identify the effects of off-site surveillance, we used the cross-section and time series of bank ratings based on an ordered logit with the random effect model as follows:

$$\begin{aligned}
 RATING_{i,t}^* = & \alpha_1 + \alpha_2 \cdot ADE_{i,t} + \alpha_3 \cdot CAP_{i,t} + \alpha_4 \cdot LOAN_{i,t} + \\
 & \alpha_5 \cdot IMP_{i,t} + \alpha_6 \cdot EXP_{i,t} + \alpha_7 \cdot ROA_{i,t} + \alpha_8 \cdot LIQ_{i,t} + \alpha_9 \cdot SIZE_{i,t} + \\
 & \alpha_{10} \cdot FHC_{i,t} + \alpha_{11} \cdot M \& A_{i,t} + \alpha_{12} \cdot GRE_{i,t} + \alpha_{13} \cdot SOUTH_{i,t} + \varepsilon_{i,t} + \psi_i,
 \end{aligned} \tag{4}$$

where  $RATING_{i,t}^*$  represents some unobserved measure of bank ratings. It was assumed that  $\varepsilon_{i,t}$  and  $\psi_i$  are the white-noise residual and group specific term, respectively. The two dependent variables of the short-term and long-term ratings are a linear cardinal measure of bank ratings, which consist of the following five or six values of the dependent variable of  $RATING_{i,t}^*$ , respectively:

$$ST_{i,t} = \begin{cases} 0 & \text{if } RATING_{i,t}^* \leq C \\ 1 & \text{if } C < RATING_{i,t}^* \leq B \\ 2 & \text{if } B < RATING_{i,t}^* \leq A3 \\ 3 & \text{if } A3 < RATING_{i,t}^* \leq A2 \\ 4 & \text{if } RATING_{i,t}^* > A2 \end{cases} \quad \text{for the short-term}$$

bank ratings; or

$$LT_{i,t} = \begin{cases} 0 & \text{if } RATING_{i,t}^* \leq CCC \\ 1 & \text{if } CCC < RATING_{i,t}^* \leq B \\ 2 & \text{if } B < RATING_{i,t}^* \leq BB \\ 3 & \text{if } BB < RATING_{i,t}^* \leq BBB \\ 4 & \text{if } BBB < RATING_{i,t}^* \leq A \\ 5 & \text{if } RATING_{i,t}^* > A \end{cases} \quad \text{for the long-term}$$

bank ratings.

The independent variables for the short-term and long-term bank ratings model include a set of financial and non-financial ratios to capture the impact of leverage, credit, and liquidity risks that have consistently caused financial insolvency in the banking sector. The short-term bank ratings were defined as having a threshold value ranging from 0 to 4 in order to represent ascending ratings of no rating or C below, B, A3, A2, and A1. Likewise, the threshold values ranging from 0 to 5 symbolize an ascending rating of CCC or below, B, BB, BBB, A, and AA for long-term bank ratings, respectively. This article uses the CAMEL criteria (e.g. capital adequacy, asset quality, management quality, earnings ability, and liquidity) to identify potential financial performance variables for the models. The non-financial ratios include bank size, mergers and acquisitions, financial holding company and geographic difference factors based on previously published articles. Table 1 shows the definition and notation of bank ratings as the dependant variable, and the impacts of other independent variables are described below.

This article uses the ratio of equity capital to total loans (ADE) and capital-asset ratio as a measure of capital adequacy. Persons (1999) examined the behavior of banks in response to the potential of unanticipated losses, pointing out that adequate capital must be maintained at a higher level to reflect unanticipated losses in order to reduce the likelihood of bank risk. Banks with higher ratio are assumed to be in stronger financial condition, which tends to increase probability of higher bank ratings. Moreover, the bank ratings model captures the impact of the ratio of capital to total asset (CAP) which is the most commonly used measure of leverage risk. Khorassani (2000) and Gilbert, Meyer and Vaughan (2002) found that a negative relationship between capital-asset ratio and bank risks. These findings are consistent with our view that lower levels of capital-asset ratio increased leverage risk to render a bank insolvent will enlarge the likelihood of bank ratings downgrades.

**Table 1: List of variables**

<i>Variable</i>	<i>Notation</i>	<i>Definition</i>
<i>Bank Ratings</i>	RATING	The dependent variable: [1] 1. Short-term bank ratings (ST): 0=no effect or below C; 1=B; 2=A3; 3=A2; 4=A1. 2. Long-term bank ratings (LT): 0= no effect or below CCC; 1=B; 2=BB; 3=BBB; 4=A; 5=AA.
<i>Capital to Loan Ratio</i>	ADE	The ratio of equity capital to total loans. Unit=% [1]
<i>Capital to Asset Ratio</i>	CAP	The ratio of capital to total asset. Unit=% [1]
<i>Net Loan to Asset Ratio</i>	LOAN	The net loans to total assets ratio. Unit=% [1]
<i>Impaired Loans Ratio</i>	IMP	The ratio of impaired loans to total loans. Unit=% [1]
<i>Expenses to Asset Ratio</i>	EXP	The ratio of overhead to total assets. Unit=% [1]
<i>Return on Asset</i>	ROA	The ratio of net income to total assets. Unit=% [1]
<i>Liquid Asset Ratio</i>	LIQ	The ratio of liquid assets to total assets. Unit=% [1]
<i>Bank Size</i>	SIZE	Natural log of total assets. Unit= billion \$ [1]
<i>Financial Holding Co.</i>	FHC	A dummy variable for financial holding company. If FHC=1, the bank was a subsidiary company affiliated with a holding company. Otherwise, FHC=0. [2]
<i>Merger and Acquisition</i>	M&A	A dummy variable for mergers and acquisitions. If M&A=1, a rated bank made a major mergers and acquisitions of targeting banks. Otherwise, M&A=0. [2]
<i>Greater China Region</i>	GRE	A dummy variable for Greater China Region. If GRE=1, a country locates in Greater China Region. Otherwise, GRE=0.
<i>Southeast Asia</i>	SOUTH	A dummy variable for Southeast Asia Countries. If SOUTH=1, a country locates in Southeast Asia. Otherwise, SOUTH=0.
<i>Northeast Asia</i>	NORTH	A dummy variable for Northeast Asia Countries. If SOUTH=1, a country locates in Northeast Asia. Otherwise, SOUTH=0.

*Source: Bankscope, Bureau Van Dijk Electronic Publishing Inc., 1995-2002. The Banker, Financial Times, 1995-2002.*

To capture the strength of lending activity for asset quality, this article used the net loans to total assets ratio (LOAN) as a proxy variable to measure asset efficiency. Persons (1999) contended that LOAN has a positive impact on the probability of failure. His findings reflected that the deterioration of asset quality augmented bank risks. A high ratio means poorer asset quality and it should decrease the likelihood of bank ratings. We used the ratio of impaired loans to total loans ratio (IMP) which served as credit risk to control for the lending quality of a bank's assets. We expect that the credit risk measures of IMP have a negative relationship with the bank ratings. If borrowers failed to make promised interest or to repay principal, credit losses increase the likelihood of bank failures and insolvencies caused by reducing net earning, anticipating a larger write-off of bad loans and lost capital. Benink and Llewellyn (1994), Brenda, Ceyla, and Robert (1997), and Khorassani (2000) revealed that the coefficients of the Nonperforming Loan Ratio turn out to be positive and statistically significant related to bank fragility.

This current article uses the ratio of overhead to total assets (EXP) as a proxy variable to measure the quality of management. Persons (1999) also used a similar measure for the quality of management. This ratio helps to determining a managerial efficiency of bank's overall performance that involved qualitative issues related to the risk-taking preferences, regulatory compliance, and internal control to maintain safety and soundness. It is reasonable to expect that a higher ratio reflects lower management quality and higher probability of bank risk that downgraded bank ratings to insolvency.

The next variable is a measure of earnings ability, that is defined as the ratio of net income to total assets (or, return on assets, ROA). Abrams and Huang (1987) and Khorassani (2000) found that a negative relationship may exist between profitability and the bank failure. Brenda, Ceyla and Robert (1997), and Gilbert, Andrew and Vaughan (2002) provided evidence that high levels of profitability enable a bank to increase its additional capital through accumulated retained earnings, thus improving its viability to overcome economic shocks. We expect that higher ROA increases the probability of bank risk for the bank ratings upgrade.

With regard to measuring sufficient liquidity for banks to meet the demand for unexpected deposit withdrawals, we include the ratio of liquid assets to total assets (LIQ) which plays an important role in depository financial institution risk. Brenda, Ceyla and Robert (1997) reported that an increase in liquid assets would allow a bank to deal with unexpected deposit withdrawals and hence reduce the likelihood of failure. Thus, a positive coefficient of LIQ is hypothesized for the bank ratings.

To capture the impact of asset size, Abrams and Huang (1987), Persons (1999), Khorassani (2000), and Gilbert, Meyer and Vaughan (2002) linked a non-financial variable -size variable (SIZE) (natural log of total assets) influenced the probability of bank failure. They suggested that SIZE reduces the probability of failure because larger asset size may influence bank performance by diversifying away risks by means of providing more financial products, accessing extra funds, and expanding geographic regions. Thus, banks with larger asset size should have lower probability of bank rating downgrades.

We included the financial holding company (FHC) as another non-financial variable to examine the bank's capability of fund raisings. FHC was a dummy variable that equals 1 if the bank was a subsidiary company affiliated with a holding company, zero otherwise. Abrams and Huang (1987) and Khorassani (2000) found that a dummy variable for financial holding company was negatively associated with the probability of bank failure. We used FHC as a measure of cross-selling gains to achieve better portfolio performance and to raise addition capital more easily than unaffiliated banks, thus lowering the probability of decreased bank ratings due to reduced credit risk.

We also examine to see if there is any empirical evidence that activities of Mergers and Acquisitions (M&A) in the banking sector affect bank ratings. Healy, Palepu and Ruback (1992), Cebenoyan, Papaioannou and Travlos (1992), and Lyroudi, Lazaridis and Subeniotis (1999) have examined the post-merge performance of acquirers. They found a strong positive relation between increases in shareholder wealth of the targeting firms after merger and abnormal returns around the acquisition announcement date. The results showed that financial markets were likely to expect an improvement of equity revaluations of acquirers. Thus, a dummy variable of M&A would be expected to have a significant positive influence on the probability of upgrading bank ratings due to a financial enhancement caused by gains of synergy.

Geographic differences among regional economies may also partially account for regional variations in bank ratings attributing to geographically diversified cash flow, guaranteed external support, and sound financial regulations. To account for these differences, the analysis included three regional dummy variables to capture the effect of any systematic differences by regions due to the difference in economics, finance and the regulatory environment on bank risks. We specified Northeast Asia (NORTH) as the reference dummy. We employ dummy variables for Southeast Asia (SOUTH) and Greater China Region (GRE) to determine whether geographic

differences in short-term and long-term bank ratings exist relative to NORTH.

Table 2 contains the recent history of Capital Intelligence ratings and Standard & Poor's ratings for the short-term and long-term bank rating changes, respectively.<sup>7</sup> In general, most rated banks in Japan, Hong Kong, Korea, Taiwan and Singapore had a rating of BBB or higher, whereas rated banks in Indonesia, China, Malaysia, Philippine and Thailand were mostly in the range of BBB or lower for the long-term bank rating changes. In addition, many rated banks in China, Hong Kong, Korea, Malaysia, Singapore and Taiwan obtained a rating of A3 or higher, while rated banks in Indonesia, Philippine and Thailand were generally in the range of A3 or lower for short-term bank rating changes. Rated banks in China, Taiwan and Thailand have been upgraded for long-term bank ratings since 1996, and most of them remained in the same category for short-term bank ratings. Some rated banks in Korea and Japan were downgraded to lower levels. Shizuoka Bank in 1996 and Bank of Taiwan in 1999 have received the higher ratings (i.e., A1+ or AA-), while Panin Bank in 1998 and Philippine National Bank in 1996 received lower ratings (i.e., CCC or C) for the short-term and long-term bank ratings.

We compared the definitions for the entire set of credit ratings assigned by Standard and Poor's Rating Service (S&P) and Capital Intelligence Rating Service (CI), as shown in Table 3. Note that the addition of rating modifiers (+ or -) which indicated slightly greater or lesser standing within each category were ignored to simplify rating categories. Generally, S&P and CI rating agencies issued Credit Ratings and Financial Strength Ratings for banks that were expressed in terms of default risk, and periodically assessed and correct ratings to renew the issuer's credit positions.

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<sup>7</sup> We neglected S&P short-term bank ratings and Capital Intelligence long-term bank ratings due to a variety of missing observations. Thus, 78 rated banks remained in our analysis.

**Table 2: Recent history of bank rating changes**

<i>Bank</i>	<i>Long-Term Ratings</i>	<i>Short-Term Ratings</i>	<i>Bank</i>	<i>Long-Term Ratings</i>	<i>Short-Term Ratings</i>
<b>Indonesia</b>			<b>Philippines</b>		
<i>Panin Bank</i>	CCC (1998)	C (1999)	<i>Bank of the Philippine Islands</i>	BB (1998)	B (1999)
<i>China</i>			<i>China Banking Corp</i>	Nil	B (1999)
<i>Bank of China</i>	BB+ (1996); BBB- (1999)	A2 (1996)	<i>Equibable Banking Corp</i>	B (1998)	B (1998)
<i>Agricultural Bank of China</i>	Nil	A2 (1999)	<i>Philippine National Bank</i>	CCC (1996); BB (2001)	C (1996)
<i>Bank of Communications</i>	BB (1996); BB+ (2000)	A2 (1996)	<i>Rizal Commercial Banking Co.</i>	B (1996)	B (1999)
<i>China Construction Bank</i>	BB+ (1996); BBB- (2000)	A2 (1996)	<i>Security Bank Corp</i>	B (1998)	Nil
<i>Ind. &amp; Comm. Bank of China</i>	BB+ (1996); BBB- (2000)	A2 (1999)	<i>United Coconut Planters Bank</i>	Nil	B (1999)
<b>Hong Kong</b>			<b>Singapore</b>		
<i>Bank of East Asia</i>	BBB+ (2001)	A1 (1999)	<i>Oversea-Chinese Banking Co.</i>	A (1996)	A1 (1999)
<i>Dah Sing Financial Holdings</i>	BBB (1997)	A2 (1999)	<i>United Oversea Bank</i>	A+ (1996); A (2001)	A1 (1999)
<i>ShangHai Commercial Bank</i>	BBB (1997)	A2 (1999)	<b>Taiwan</b>		
<i>Wing Lung Bank</i>	BBB (1997)	A2 (1999)	<i>Bank of Taiwan</i>	A+ (1996); AA- (1999)	A1 (1996); A1+(1999)
<b>Korea</b>			<i>Bank SinoPac</i>	BBB+ (1999)	A2 (1999)
<i>Industrial Bank of Korea</i>	BBB (1996); BBB+(2002)	A2 (1999); A3 (2002)	<i>Chang Hwa Bank</i>	BB 1996; BBB (2002)	A2 (1999)
<i>Kookmin Bank</i>	BBB+ (1996); BBB- (2002)	A3 (1996); B (2001)	<i>Chiao Tung Bank</i>	Nil	A2 (1999)
<i>Korea Exchange Bank</i>	BB (1996); BB- (2002)	A3 (1996); B (2002)	<i>Chinatrust Commercial Bank</i>	BBB (1999)	A2 (1999)
<i>Shinhan Bank</i>	BBB+ (1996); BBB (2002)	A3 (1996); B (2002)	<i>Farmer Bank of China</i>	BB+ (1996); BBB- (2002)	B (1996)
<b>Malaysia</b>			<i>First Commercial Bank</i>	BBB (1997)	A2 (1999)
<i>Hong Leong Bank</i>	BB (1999)	Nil	<i>Fubon Commercial Bank</i>	Nil	A3 (1999)
<i>Public Bank</i>	BBB (1998)	A2 (1996)	<i>Grand Commercial Bank</i>	BB (1996); BB+ (2002)	A3 (1996); B (2002)
<i>Southern Bank Berhad</i>	BB (1997)	A3 (2000)	<i>Int. Comm. Bank of China</i>	A (1996); A+ (2002)	A1 (1999)
<i>Allied Banking Corporation</i>	Nil	B (1999)	<i>Land Bank of Taiwan</i>	Nil	A1 (1996); A2 (1999)

**Table 2: (continue)**

<i>Bank</i>	<i>Long-Term Ratings</i>	<i>Short-Term Ratings</i>	<i>Bank</i>	<i>Long-Term Ratings</i>	<i>Short-Term Ratings</i>
<i>Shanghai Comm. &amp; Saving</i>	Nil	A2 (1999)	<i>Fukuoka City Bank</i>	B (1996); BB (2002)	Nil
<i>Taipeibank</i>	BBB+ (2000)	A2 (1999)	<i>Gunma Bank</i>	A- (1996); BBB+ (2001)	Nil
<i>Taiwan Business Bank</i>	Nil	A3 (1996); A2 (2002)	<i>Hiroshima Bank</i>	BBB (1998)	Nil
<i>Taiwan Cooperative Bank</i>	BBB (1999)	A2 (1996)	<i>Hokkoku Bank</i>	BBB (1998)	Nil
<i>Union Bank of Taiwan</i>	Nil	A3 (1999)	<i>Hyakugo Bank</i>	A (1996); A- (2002)	Nil
<i>Utd. World Chinese Bank</i>	BBB (1996)	A1 (1996); A2 (2002)	<i>Hyakujushi Bank</i>	BBB (1996)	Nil
<b>Thailand</b>			<i>Iyo Bank</i>	BBB (1996)	Nil
<i>Bangkok Bank</i>	BB (1996); BB+ (1998)	A3 (1999)	<i>Joyo Bank</i>	A- (1996); BBB+ (2001)	Nil
<i>Bank of Ayudhya</i>	BB (1998)	B (1999)	<i>Juroku Bank</i>	BBB (1997)	Nil
<i>Krung Thai Bank</i>	Nil	B (1996); A3 (2001)	<i>Keiyo Bank</i>	BBB (1998)	Nil
<i>Siam Commercial Bank</i>	BB- (1996); B+ (1998)	A3 (1999)	<i>Kiyo Bank</i>	BB (1996)	Nil
<b>Japan</b>			<i>Nanto Bank</i>	BBB (1996)	Nil
<i>77 Bank</i>	A (1996); BBB (2002)	Nil	<i>Ogaki Kyoritsu Bank</i>	BBB (1998)	Nil
<i>Akita Bank</i>	A (1996); BBB (2002)	Nil	<i>Oita Bank</i>	BBB (1998)	Nil
<i>Bank of Fukuoka</i>	BBB (1998)	Nil	<i>San-In Godo Bank</i>	BBB (1998)	Nil
<i>Bank of Kyoto</i>	BBB (1997)	Nil	<i>Shizuoka Bank</i>	AA- (1996); A+ (2001)	Nil
<i>Bank of Nagoya</i>	BBB (1998)	Nil	<i>Sumitomo Trust &amp; Banking</i>	A- (1996); BBB (1998)	Nil
<i>Bank of Yokohama</i>	BBB (1996)	Nil	<i>Toho Bank</i>	A- (1996); BBB+ (1999)	Nil
<i>Chiba Bank</i>	BBB+ (1996); A- (1998)	Nil	<i>Tokyo Tomin Bank</i>	BB (1998)	Nil
<i>Chugoku Bank</i>	A (1997)	Nil	<i>Yamaguchi Bank</i>	BBB (1998)	Nil
<i>Daishi Bank</i>	BBB (1998)	Nil	<i>Yamanashi Chuo Bank</i>	A (1998)	Nil

*Note: There were missing values of Capital Intelligence short-term bank rating for banks in Japan.*

**Table 3: The definitions of standard & Poor’s (S&P) and Capital Intelligence (CI) ratings**

<i>S&amp;P Long-Term</i>	<i>Definitions</i>	<i>CI Short-Term</i>	<i>Definitions</i>
<b>Investment Grade</b>			
<i>AAA</i>	Extremely Strong Capacity to meet its financial commitments.	<i>A1+</i>	Superior credit quality. Highest capacity for timely repayment of short-term financial obligations that is extremely unlikely to be affected by unexpected adversities.
<i>AA</i>	Very strong capacity to meet its financial commitments.	<i>A1</i>	Institutions with a particularly strong credit profile have a "+" affixed to the rating.
<i>A</i>	Strong (satisfactory) capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than debt in higher-rated categories.	<i>A2</i>	Very strong capacity for timely repayment but may be affected slightly by unexpected adversities.
<b>Speculative Grade</b>			
<i>BBB</i>	Adequate capacity to meet its financial commitment, but adverse economic and financial conditions more likely to weaken capacity. Lowest investment-grade rating.	<i>A3</i>	Strong capacity for timely repayment that may be affected by unexpected adversities.
<i>BB</i>	Debt has less near-term vulnerability to default than other speculative issues. However, it faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions that could lead to inadequate capacity.	<i>B</i>	Adequate capacity for timely repayment that could be seriously affected by unexpected adversities.
<i>B</i>	Greater vulnerability to default but still has the capacity to meet its financial commitments.		
<i>CCC</i>	An obligor is currently vulnerable, and is dependent upon favourable business, financial, and economic conditions to meet its financial commitments.	<i>C</i>	Inadequate capacity for timely repayment if unexpected adversities are encountered in the short term.

*Note: S&P and Capital Intelligence used the addition of a plus or minus sign from “AA” to “CCC” and from “A1” to “C” to indicate relative slightly greater or less standing within similarly rating categories.*

*Source: Bank Rating Guide, Standard & Poor’s Service, 2004, [www2.standardandpoors.com](http://www2.standardandpoors.com) and Capital Intelligence, 2004 [www.ciratings.com](http://www.ciratings.com).*

Rating agencies provide not only an opinion of a bank's inherent financial soundness and risk profile, but also consider the quality of banking regulation and supervision within stability of the financial and legal systems. Rated banks with extremely strong capacity to meet their financial commitments on interest payment and principal in accordance with the terms of the obligation will be rated as AAA for long-term rating. Likewise, agencies assigned a rating of A+ to indicate that rated banks have the highest quality in a timely manner for repayment of short-term financial obligations. Banks with superior credit quality tend to be less impacted by unexpected difficulties. For a comparable assessment purpose, rating agencies classify bank ratings into two major categories, investment-grade rating and speculative-grade rating. The investment-grade rating is restricted to a bank's creditworthiness graded at least BBB for long-term and B for short-term and above by the rating agencies. Banks ranked investment-graded rating are suitable for investment by financial institutions. The speculative-grade rating is designated as BB or below for long-term and graded B or below for short-term ratings, indicating a bank reduced ability to meet financial obligation. Ogden (1987) and Cheung (1996) pointed out that investing in a speculative grade in any form of securities with higher yields or returns was prohibited by many financial institutions to avoid default risks.

## 5. Empirical Results

We began our empirical analysis using LIMDEP software to estimate an ordered logit model of bank rating changes by the maximum likelihood. The empirical results of four alternative models are shown in Table 4. We also compared short-term and long-term bank ratings to evaluate off-site surveillance. The results of short-term bank ratings are in columns (1) and (2), while long-term bank ratings are in columns (3) and (4) with different specifications, respectively. The analysis utilized a Likelihood Ratio (LR) test to examine the group specific heterogeneity, and the test results are presented in Table 4. We find that the values of the LR test statistics are greater than the critical value of  $\chi^2(0.01, 1) = 6.64$ . This suggests that we are able to accept the random effect for better estimation rather than a fixed constant in the logistic function under the null hypothesis. Note that in-sample predictions of correct rating classifications was correctly predicted at 81.52 percent for short-term bank ratings in column (1), comparing other predictions which were below 60 percent in columns (2)~(4). The results of the threshold values, such as B, A3, A2, and A1 for short-term and B revealed that  $B^- \sim B^+$ ,  $BB^- \sim BB^+$ ,  $BBB^- \sim BBB^+$ , and  $A^- \sim A^+$  for long-term bank ratings, are all statistically significant. This finding reveals that categorizing

bank ratings were clearly definable and appropriate for uneven spacing intervals.

**Table 4: An ordered logit model for bank ratings**

<i>Regressor</i>	<i>Short-Term Bank Rating</i>				<i>Long-Term Bank Rating</i>			
	(1)	(2)	(3)	(4)	(3)	(4)	(3)	(4)
<i>Constant</i>	32.11	(6.20)**	10.06	(5.02)**	6.38	(2.87)**	4.60	(2.29)**
<i>Capital to Loan Ratio</i>	0.03	(0.43)	-0.06	(-1.54)	-0.03	(-0.65)	0.11	(2.28)**
<i>Capital to Asset Ratio</i>	0.03	(0.46)	-0.01	(-0.01)	-0.08	(-3.02)**	0.08	(1.13)
<i>Net Loan to Asset Ratio</i>	-0.16	(-2.44)**	-0.06	(-2.31)**	-0.07	(-2.91)**	-0.04	(-1.88)*
<i>Impaired Loans Ratio</i>	-0.76	(-6.77)**			-0.01	(-1.01)		
<i>Expenses to Asset Ratio</i>	-0.08	(-4.09)**	-0.01	(-1.19)	-0.01	(-3.35)**	-0.01	(-1.76)*
<i>Return on Asset</i>	0.10	(1.86)*	0.07	(1.46)	0.08	(1.52)	0.09	(1.69)*
<i>Liquid Asset Ratio</i>	-0.01	(-0.55)	0.01	(0.47)	0.01	(2.10)**	0.01	(0.28)
<i>Bank Size</i>	7.55	(6.32)**	0.06	(0.98)	2.38	(8.85)**	1.62	(7.83)**
<i>Financial Holding Co.</i>	-2.10	(-1.64)*	1.24	(1.37)*	-0.05	(-0.07)	1.13	(1.79)*
<i>Merger and Acquisition</i>	2.50	(0.75)	-1.01	(-1.85)*	-2.57	(-4.23)**	-1.58	(-2.91)**
<i>Great China region</i>			-0.05	(-0.01)			-3.83	(-5.67)**
<i>Southeast Asia</i>			-2.16	(-4.47)**			-3.27	(-6.70)**
<b>Thresholds</b>								
<i>B</i>	27.27	(9.28)**	2.94	(11.52)**				
<i>A3</i>	32.54	(11.44)	3.96	(17.64)				
<i>A2</i>	41.43	(11.98)**	6.97	(22.43)**				
<i>B<sup>-</sup> ~ B<sup>+</sup></i>					3.70	(9.72)**	3.39	(10.04)**
<i>BB<sup>-</sup> ~ BB<sup>+</sup></i>					5.84	(19.90)**	5.85	(24.17)**
<i>BBB<sup>-</sup> ~ BBB<sup>+</sup></i>					9.97	(2.43)**	9.60	(36.58)**
<i>A<sup>-</sup> ~ A<sup>+</sup></i>					13.79	(18.77)**	12.24	(28.08)**
<b>Measure of Fit</b>								
<i>Likelihood Ratio Test</i>	203.13**		89.04**		150.53**		207.09**	
<i>Per cent Correctly Predicted</i>	81.52%		50.64%		59.47%		52.45%	

*Note: t-statistics in parentheses, \* and \*\* indicate significance at the 10 per cent and 5 per cent levels of the two-tail test, respectively.*

*Source: Author's calculation*

The estimated coefficient on the ratio of equity capital to total loans is positive and significant in column (4), similar to the finding of Persons (1999). Higher adequate capital level has great impact on financial performance improvements to lessen unanticipated losses and bank risks that upgraded long-term bank ratings, whereas other types of specifications do not. The coefficient for the ratio of capital to total assets is positive and statistically significant for long-term bank ratings in column (3), indicating that higher levels of capital that lowered leverage risks tended to upgrade bank ratings.

It should be noted that all four of the estimated coefficients of net loans to total asset exhibit the expected signs and are significant. These results are consistent with the earlier findings of Abrams and Huang (1987) and Persons (1999), that rating agencies take a higher net loans to total asset ratio as more accurately reflecting lower asset quality and larger loans default, which significantly contribute to downgrade short-term and long-term bank ratings.

The results strongly suggest that the ratio of impaired loans to total loans ratio (IMP) has a negative and statistically significant impact on the probability of short-term bank ratings in column (1). This implies an inverse relationship between downgrade probability and credit risk due to the deterioration in asset quality and profitability.

The estimated coefficients on the ratio of expenses to assets are negative and statistically significant although they are insignificant in column (2). This indicates that higher operating expenses to total assets makes the rated bank's management inefficient due to overpayment of its personnel and highly leverage that incurred greater risks would indicate poorer financial position and hence downgrade the bank's ratings.

The significant positive coefficients on return on assets (ROA) in columns (1) and (4) provide further evidence that an increase in ROA, which indicates higher earnings ability and relatively lower exposure to default risk, may raise the probability of bank ratings upgrade on off-site surveillance.

As for the effects of liquidity risk of rated banks, the results reveal a positive and statistically significant impact of the ratio of liquid assets to total assets (LIQ) on long-term bank ratings in column (3). We find that higher LIQ improves the long-term bank ratings since there is sufficient liquidity to meet the demand of large withdrawals for long-term certificates deposit but

not in short-term bank ratings. One reason for this may be that rated banks are required to maintain reserve requirements regulated by the central bank to meet their demand deposits.

Generally, bank size carries a positive and significant sign. This is consistent with a priori theory because larger-sized banks may be more successful in raising extra funds and diversifying away risks, thus increasing the probability of better short-term and long-term bank ratings.

The effects of association with a financial holding company (FHC) are somewhat mixed for short-term bank ratings, and this variable did have statistically significant effects on bank ratings. These results echo the finding of Khorassani (2000) that financial holding companies may decide to hasten the bank closure rather than provide subsidies under the pressure of ensuring the survival of other associated banks. On the other hand, ratings agencies may upgrade short-term bank ratings for associated banks of financial holding companies because they may easily hire capable personnel who can raise more capital and improve management quality to reduce bank risks. In addition, this finding also supports our expectation that rated banks that belong to financial holding companies do receive a greater probability of better long-term bank ratings by rating agencies. Financial holding companies provide a better environment for commercial banks to achieve portfolio performance, obtain addition capital and diminish their inherent risks by increasing their cross-selling gains.

Inconsistent with a priori hypothesis, the findings show that mergers and acquisitions (M&A) have a negative and statistically significant effect on short-term and long-term bank ratings. This suggests that rated banks whose growth strategy involves takeovers have a lower probability of upgrading ratings. Wansley, Elayan and Maris (1990) and Goh and Ederington (1993) reported a significant negative reaction in stock returns for downgrading credit quality when a rating agency notes a firm's financial difficulty and lower earnings. Additionally, Ghosh and Lee (2000) and Kohers and Kohers (2001) concluded that acquirers may not obtain an increase in long-term post-merger performance due to a high premium deal, a low book-to-market ratio, a severe agency problem, and disciplinary actions<sup>1</sup> when there was managerial performance of the targeting firms performed improperly.

To control for geographic differences in the responses of short-term and long-term bank ratings across ten countries, Southeast Asia and the Greater China Region are included in the model. Generally, the results seem

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<sup>1</sup> Palepu (1986) and Cudd and Duggal (2000) pointed out that the acquirers may use disciplinary actions to whip on the inefficient managers of the targeting firms prior to the acquisition in order to benefit the shareholders' wealth.

to indicate that rated banks located on Southeast Asia and the Greater China Region are less likely to obtain creditworthiness on short-term and long-term bank ratings than rated banks in Northeast Asia.

To better evaluate the probability of observing a particular rating, the estimation of the marginal effect for an ordered logit model is also shown in Table 5. The estimated marginal effects for the set of CAMEL variables, including capital to loan Ratio, capital to asset ratio, net loan to asset ratio, expenses to asset ratio, returns on asset, liquid asset ratio and impaired loans ratio are all close to zero. Thus, small changes of these variables may have a negligible impact on the probability of short-term and long-term bank rating changes. The results of other factors such as bank size, financial holding company, and mergers and acquisitions in explaining short-term and long-term bank ratings are unique. This study clearly reveals that a larger bank size reflecting less default risks and easier fund raising may improve the likelihood of better short-term and long-term bank ratings, especially for the investment-grade rating at BBB or above, and it reduces the probability of the speculative-grade rating at BB or below.

Overall, we found that association with a financial holding company increases the likelihood of receiving long-term investment-grade bank ratings of a BBB or above. This result suggests that rated banks belonging to a financial holding company with many subsidiaries seem to have better financial performance, lower inherent risks, more professional workers and greater cross-selling gains. However, association with a financial holding company not only decreases the likelihood of receiving a BB or below for the long-term speculative-grade, but also downgraded the short-term bank ratings. This would imply that certain policies that regulate the financial holding companies may accelerate the bank closure process rather than rebuild the creditworthiness of rated banks. Most importantly, M&A activities will decrease the likelihood of observing a BB or below for the long-term speculative-grade and short-term bank ratings but increase the likelihood of observing a BBB or above for the long-term investment-grade bank ratings. This implies that the dividable scale of the investment-grade and speculative-grade ratings provided useful information for banks to improve their creditworthiness efficiently and strengthened some principles of mergers and acquisitions behavior.

## **6. Conclusion**

This study used an ordered logit model with random effect to examine the proposition that bank rating changes related off-site surveillance for 151 banks' safety and soundness were determined by financial and non-financial

factors during 1996 to 2002. We attempt to emphasize the marginal effect of the mean value change for the financial variables such as capital to loan ratio, capital to asset ratio, loan to asset ratio, impaired loan ratio, expenses to asset ratio, return on assets, and liquid asset ratio. We also examine the marginal effect for non-financial variables such as bank size and dummy variables of financial holding company, mergers and acquisitions, and regional factors on the different probabilities of bank ratings.

Our findings indicate that a rated bank with smaller net loans to total assets ratio, lower expenses to assets ratio, higher return on assets, and larger bank size was more likely to experience improvements in creditworthiness than other banks. This suggests that rated banks associated with short-term and long-term bank ratings act to certify increased asset quality, improved management efficiency, strengthened fund raising and enhanced earnings ability to investors in order to diversify risks. It was found that a mergers and acquisitions strategy has a lower probability of upgrading bank ratings, because a rated bank faced improper managerial performance, financial difficulty and lower earnings of the targeting firms. Geographic differences are also evident among rated banks in Asia. A rated banks located in Southeast Asia and the Greater China Region were weaker than those in Northeast Asia, possibly due to the vulnerability of the banking sector caused by the financial crisis of 1997 and sovereign risks.

The short-term and long-term bank ratings from an international analysis highlight differences in off-site surveillance of rating agencies. One result from this paper is that the benefits from association with a financial holding company are more likely to accrue to rated banks for the long-term bank rating upgrade. As expected, the results indicated that capital to loan ratio, capital to asset ratio and liquid asset ratio all contributed to the changes in long-term bank ratings. This shows that higher adequate capital level, lower leverage risks, and greater liquidity are associated with upgraded creditworthiness of rated banks, possibly due to better financial performance, fewer unanticipated losses, and larger bank reserve to meet demand for unexpected deposit withdrawals. In particular, the impaired loans ratio is negatively related to the probability of short-term bank ratings due to lower asset quality and profitability. A brief analysis of the marginal effect seems to indicate that rated banks were able to incorporate the dividable scale of the investment-grade and speculative-grade of long-term bank ratings. This provided useful off-site surveillance to improve creditworthiness, enhance synergy and strengthened the mergers and acquisitions activities on the basis of a rated bank's inherent risks. In addition, the advantage of financial holding company structures and mergers and acquisitions activities did not take place, whereas a larger bank size can assess fund raising, apparently

upgrading short-term bank ratings. To the best of our knowledge, the impact of bank ratings changes on off-site surveillance in the pre- and post-M&A period for banks has not been thoroughly examined in related literature. This would be significant topic for further study, providing a useful means by which regulators can assess changes of creditworthiness in the banking sector.

**Table 5: Marginal effects of variables on the short-term and long-term bank ratings**

<i>Regressor</i>	<i>Short-Term Bank Rating</i>					<i>Long-Term Bank Rating</i>			
	<i>ST=B</i>	<i>ST=A3</i>	<i>ST=A2</i>	<i>ST=A1</i>	<i>LT=B</i>	<i>LT=BB</i>	<i>LT=BBB</i>	<i>LT=A</i>	<i>LT=AA</i>
<i>Capital to Loan Ratio</i>	0.0060	0.0001	0.0002	0.0000	-0.0036	-0.0066	0.0041	0.0066	0.0006
<i>Capital to Asset Ratio</i>	0.0017	0.0000	0.0000	0.0000	0.0009	0.0015	-0.0010	-0.0017	-0.0001
<i>Net Loan to Asset Ratio</i>	-0.0076	-0.0002	-0.0002	0.0000	-0.0013	-0.0022	0.0015	0.0024	0.0002
<i>Impaired Loans Ratio</i>	-0.0119	-0.0003	-0.0003	0.0000	0.0016	0.0026	-0.0017	-0.0029	-0.0003
<i>Expenses to Asset Ratio</i>	-0.0018	0.0000	0.0000	0.0000	0.0002	0.0003	-0.0002	-0.0003	0.0000
<i>Return on Asset</i>	0.0100	0.0002	0.0003	0.0000	0.0007	0.0012	-0.0008	-0.0013	-0.0001
<i>Liquid Asset Ratio</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Bank Size</i>	0.3581	0.0077	0.0095	0.0003	-0.0960	-0.1604	0.1080	0.1766	0.0159
<i>Financial Holding Co.</i>	-0.0822	-0.0016	-0.0020	-0.0001	-0.0122	-0.0217	0.0123	0.0249	0.0023
<i>Mergers and Acquisitions</i>	-0.1630	-0.0031	-0.0037	-0.0001	-0.0166	-0.0298	0.0159	0.0347	0.0033

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# RECENT ACCOUNTING DEVELOPMENT IN ROMANIA ON THE WAY TO THE EUROPEAN AND GLOBAL HARMONIZATION

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## **Abstract**

*Integration of each state into the world economic flows requires certain adjustments in different fields of economic life. One of the fields where coordination and harmony are necessary is the field of financial reporting. The worldwide financial community recognizes the need for one set of accounting standards, with added transparency and comparability. A desire of all who prepare, audit or use financial statements is one set of high quality accounting standards used globally by all private or public entities. Having a single set of standards helps to ensure consistency of accounting and reporting among all countries, which results in better and more efficient financial analyses of entities. This will result in more efficient flows of capital because investors will not have to assign risk premiums to entities operating in countries with inconsistent or low quality accounting standards. Finally, it will reduce costs because accountants, auditors, financial analysts, investors, and regulators will no longer be converting or reconciling financial statements from one set of standards to another. International Financial Reporting Standards makes significant progress toward global recognition. For private sector, IASB issued IAS/IFRS and for public sector IFAC issued IPSAS/IPSFRS.*

**Keywords:** *accounting; international regulations, private sector, public sector*

## **1. Introduction**

It is now over 15 years since the beginning for many countries in the CEE region of the transition from a command economy to a market economy. As transitional economies seek to adapt to, or join, the international community there have been moves to adopt or adapt international accounting standards (IAS) either for a part or all of the country's enterprises. Local accountancy profession have developed either drawing upon institutions pre 1989 or created de novo as in Romania.

In the same time, the importance of private sector in economy increase, a lot of domestic new companies appeared in Romanian business environment, result of privatization process, or, of private sector investment. Now there is a significant number of large private companies which operate in Romania, beside the public entities.

For all type of entities (private or public) the transition to free market economy brings new challenges to accounting field, especially regarding the information quality and financial reporting.

The aim of this research is to analyze the steps made by Romanian accountancy on the way to the European and Global Harmonization both for private and public sector.

The research was carried out on the basis of the available sources and research methods (historical analyses, benchmarking with international references, s.e.)

## **2. A single set of accounting standards: an Esperanto business language**

### ***2.1. The need of a common language***

Accounting, perceived as business language, becomes a socio-economic necessity of the international business community.

The worldwide financial community recognizes the need for one set of accounting standards, with added transparency and comparability. A desire of all who prepare, audit or use financial statements is one set of high quality accounting standards used globally by all private or public entities.[1]

Having a single set of standards helps to ensure consistency of accounting and reporting among all countries, which results in better and more efficient financial analyses of entities. This will result in more efficient flows of capital because investors will not have to assign risk premiums to entities operating in countries with inconsistent or low quality accounting

standards. Finally, it will reduce costs because accountants, auditors, financial analysts, investors, and regulators will no longer be converting or reconciling financial statements from one set of standards to another. International Financial Reporting Standards makes significant progress toward global recognition.

Till now, for private sector International Accounting Standards Board issued IASs/IFRSs and for public sector International Federation of Accountants Committee issued IPSASs/IPSFRSs.

IPSAS are based on the International Accounting Standards (IASs) issued by the International Accounting Standards Board (formerly known as IASC). Some accounting issues in the public sector are not fully addressed in the IASs. Similarly, accounting for a number of complex issues will be addressed in IASs currently under development.

We must recognize the significant benefits of achieving consistent and comparable financial information across jurisdictions and we believe that the use of a single set of standards will play a key role in enabling these benefits to be realized.

The adoption of standards by public and private entities will improve both the quality and comparability of financial information reported by entities around the world.

## ***2.2. About the single set of standards: concepts and aims***

If the international economic community will agree the use of a single set of accounting standards, these will represent a *single set* of high quality, understandable and enforceable standards, *transparent* and *comparable* information, *convergence* of national and international standards, *principles-based* standards.

**Transparency** Financial statements should represent faithfully events and transactions that imply to represent and report volatility when it happens, not when management chooses to report it.

**Comparability** Financial statements should account for like transactions and events in a like way and account for different transactions and events differently.

The aim of the unique set of standards is to contain clear statement of underlying principles, deal with almost all events, transactions and structures that arise in practice, allow entities and their auditors to use professional judgment in applying the principles to other events, transactions and structures.

### ***2.3. The benefits brought by the single set of standards***

The single set of standards offer important and positive implications for organizations and individuals that adopt them, such should be:

- reduces cost of capital and the ease of using one consistent reporting standard from subsidiaries in many different countries - for entities
- offer better information for decision making, leading to broader investment opportunities - for investors, creditors
- offer better information for market participants in a disclosure-based system.

Undeniable, the standards provide higher quality information, more transparency and consistency, so the entities financial statement will be comparable both in time and space. Financial statement will look alike everywhere, in any country. The entities will report their financial statements according the standards by presenting the same thing, without any selection or options to reconsider. We have to underline that the benefits of improved financial information does not only serve to entities' externals. Management itself, working within an entity, should be able to see more clearly the economic reality of the entity's activity, and take better management decisions.

### **3. Romanian accounting system before 1998 – an overview**

Under the communist regime, socialist accounting system was characterized by 'operating' in the absence of the real and effective price mechanisms. The objective of the system was to record immediate effects of the activities of the state enterprises in monetary terms but deriving from the pre-determined prices. As prices were controlled and contrived records generated by the system lacked an economic substance. Driven by the communist ideology, it was intended to render accounting information unusable for guiding economic performance. In effect, accounting was neutralised. Accounting records were much more important than financial statements.

The Romanian accounting system with its German and French roots was overlaid by a version of the Soviet based system. The Chart of Accounts were issued for different economic sectors (industry, agriculture, services) by the Ministry of Finance, together with very well defined sets of rules regarding the registration and processing of data, and financial reporting.

Annual statements included explanatory notes with information regarding completion of the financial plan, difficulties leading to failures in

the fulfillment, and predictions on the completion of the plan. Operating results were less important. Profit or loss statement was included as an appendix to the balance sheet. These statements were not publicly available but directed to the Ministry of Finance and regional statistical offices.

#### **4. Steps made by the Romanian accountancy regulation on the way of harmonization with European and international standards**

##### ***4.1. 1990- 1994 – the beginning of transition to the market economy***

A necessity to transform the socialist accounting system was, in large, determined by structural changes in a functioning of the economy [2]. As the means of production became incorporated in private ownership, the state created new legal frameworks in which economic activity was supposed to be responsive to stimulated market forces.

The transition processes, from the centralized economy to the market based economy represent a set of complex reforms of which the key issue involve privatisation, labour market reform, the development of capital markets, currency convertibility, price liberalisation, macro-economic stabilisation and welfare reform.

A transformation of the socialist accounting system into a market-based system comprises a number of intermediary stages, in which the transition system gradually becomes more compatible with the principles and practices of the market accounting system. Transformation processes need to be supported with specific measures, including the development of an appropriate institutional framework, education of the accounting professionals, legal enforcement, as well as the development of professional best practices.

In 1991 was issued Accounting Law no. 82 and the Regulations for the implementation of Accounting Law GO 704 by which was introduced of market driven accounting principles.

The above mentioned regulations cover the following subjects: entities subject to accountancy regulations, accounting operations, language and currency used for accounting purposes, corporate accounting, accounting ledgers, financial statements.[3]

1. *Entities subject to accountancy regulations* are: regies autonomes; national companies; commercial companies; national research and

development institutions; public institutions; cooperative enterprises; associations and other legal persons;

2. *Accounting operations* consist in chronological and systematic recording, processing, publication of information regarding the financial status and economic filed of the above-mentioned entities, as well as their business relations with shareholders, clients, suppliers, banks, fiscal authorities, other legal and natural persons.

3. *Language and currency used for accounting purposes* The accounts must be kept in Romanian language and expressed in the national currency (ROL). Accounting operations evidencing foreign currency transactions must be kept both in ROL and in foreign currency.

4. *Corporate accounting* Corporate entities must keep and manage accounting records by distinct departments, led by the business director, by the chief accountant or by any other person empowered to do so. These persons must have graduated a certified business school. Accounting records can also be kept by authorized legal persons or individuals who are expert accountants or chartered accountants. For companies where accounting records are not organized in distinct departments, which do not employ qualified staff under with the law or have not accountancy services, the Ministry of Finance establishes externalized turnover thresholds, beyond which authorized or certified accountancy services become applicable. The responsibility for the accounting lies with the director or any other person in charge with the entity's management.

5. *Accounting ledgers* are: *Journal - Ledger* (recording all company operations, payments received or made, as well as amounts used for shareholders/associates' personal expenses when allowed by the Articles of Incorporation, kept in chronological order), *Inventory - Ledger* (recording all real estate and movable assets, commercial and civil debenture and receivables, pursuant to an inventory), *General Ledger* (serving as a summary of the journal - ledger, –offering a synthetic view of the corporate status).

6. *Annual financial statement*. comprise the balance sheet, the profit and loss account accompanied by accounting policies and explanatory notes, and for the large companies are added: capital movements statement, cash flow statement. Data in the financial statement must be consistent with data recorded in accounting books and to the assets and liabilities inventory and any set-off between accounts, as well as between income and expenses in the profit and loss account are prohibited. The annual financial statements must be kept for 50 years.

In 1991 was issued an another important law, the Company Law no. 31/1990, where there are presented some aspects regarding the accounting:

- The financial statements must be discussed, approved and amended by the General Meeting of the Shareholders, whereby the dividends are based on the earned profit;

- The company directors cannot approve the balance sheet and the profit and loss account except if they own at least half of share capital and legal majority cannot be attained without their vote;

- Corporate auditors check: balance sheet; profit and loss account; accounting books and draw up a detailed report regarding the balance sheet and the profits, relied on by the Shareholders' General Meeting when approving the balance sheet.

- The balance sheet, profit and loss account and directors' and auditors' reports must be submitted at least 15 days prior to the Shareholders' General Meeting. Within at most 15 days after the General Meeting, directors must file a copy of the balance sheet with the fiscal authorities and following its endorsement file it with the Register of Commerce.

In this period, an importance was given to the construction of the accounting record. Hence, provisions for proper and authorized documentation, the compilation of the accounting entries, and the maintenance of proper accounting records were introduced. An emphasis was placed upon the evidential nature of the accounting record. The implicit assumption was made that provided the accounting record was properly compiled, the financial statements would be necessarily correct [4], as was the case in the socialist economy context.

Accounting reform also encompassed a re-adoption of the regulation of the pre-communist era, these provisions have been revived by ministerial decrees and other legal documents, as well as existing accounting norms (authorised practices) were amended to form accounting standards.

In Romania, like in other CEE countries, The Ministry of Finance acts as a regulator of accounting. Hence, state, not the profession, has acquired a dominant position in reforming the systems. Now accounting, previously seen as an instrument of direct administrative control over state enterprises, becomes an instrument of indirect control and surveillance over privatised, and in a process of privatisation enterprises.

The Accounting Law promote the use of accrual basis accounting, but only the private sector entities applied fully accrual basis accounting. The public sector entities continued to apply the cash basis accounting so there are important differences between private and public sector accounting. One

of main difference regards the financial statements. When the accrual basis of accounting underlies the preparation of the financial statements, the financial statements will include the statement of financial position, the statement of financial performance, the cash flow statement and the statement of changes in net assets/equity. When the cash basis of accounting underlies the preparation of the financial statements, the primary financial statement is the cash flow statement. For these reason we will present the follow stage of accounting harmonization separately for private sector and for public sector.

## ***4.2. The private sector accounting harmonization process***

### **4.2.1. 1994-1997 pre-harmonization period**

External pressures (primarily from the Western Europe) have caused accounting reforms to be placed upon political agendas. Romania have retained compulsory national charts of accounts, but reformed them by abandoning the old-Soviet style charts for the charts based on the French model [5].

In 1994 a system of accounting, based on the French system and incorporating a revised "chart of accounts" was introduced. The Romanian accounting system is codified and rule driven, being based to a large extent on the French model, with a chart of accounts consisting of some 100 obligatory accounts, each with its account name and number defined by law. For each new activity (see the case of leasing, merger, provisions) the Ministry of Public Finances issued a methodological guideline, with accounts, accounts correspondence and registration flows, obligatory to follow.

This was in part influence by the mutual interest; Romanian accountants were interested in strengthening their influence with French help and French accountants were interested in strengthening economic interests in Romania [6].

The main characteristics of Romanian Accounting System before the harmonisation with IAS and EU regulations are: [7]

- *main user groups* Historically, accounting in Romania was directed towards providing information to two user groups, the Tax Authorities and the Government. This led to the financial statements that were being prepared according to regulations that allowed very little scope for judgmental accounting entries, provided limited disclosure, and as a result were of very limited use to other users (shareholders and management).

-*profit and loss structure* It should be noted that Romanian expense accounts are categorized by nature rather than destination, thus these include

accounts such as "Wages and Salaries", "Depreciation of Fixed Assets", etc., rather than cost of sales, marketing costs, etc. however, with a reasonably good, preferably data-based driven accounting system, it is not too difficult to meet both Romanian statutory reporting needs and management and group reporting requirements. Although the standard chart of accounts includes a couple of dozen of provision accounts, it is very unusual to see any of these used.

- *strong connection between taxation and accounting* While the new system allowed for a degree of judgment in recording accounting entries, in practice those which did not have any tax consequences were rarely made, reflecting the unwillingness of most accountants to record entries other than those that were required to calculate taxable profit.

- *financial year* starts on January 1 and concludes on December 31, with the exception of the first year of activity when it begins on the date of formation. All Romanian companies have to have a December 31 year-end. If a Romanian company is a subsidiary of an international companies group, and the group has a different year-end, the Romanian company must prepare two separate closures, two financial statements, one under Romanian regulations at December 31 and the other one at the group year –end.

- *period basis* Profit and losses are registered in the accounting records on a monthly basis.

- *allocation of profit* The allocation of profit is recorded in different parts of the book accounts, depending on its destination according to the law.

#### **4.2.2. 1997- 2000 first harmonisation period**

As candidate to the European Union membership, Romania undergoes intensive accession programs. One of key conditions for the accession is harmonization of the financial reporting systems (incorporating practice of accounting, audit and taxation) with the European Directives and with the International Accounting Standards (hereafter IAS) framework (the 2002 EU regulation), under condition that the latter are not in opposition with the European Directives (The British Know How Fund, 1999). The application of the IAS is believed to provide the platform for increased foreign investment and foreign trade [8].

So, from 1996, an UK based project was rolled, designed to help Romanian accounting to evolve in a direction closer to the capital-market style of accounting in the Anglo-American context [9].

As a result of this process, IAS has effectively started to be rolled out in Romania, with 197 Companies being required to apply IAS for the first

time in respect of the year ended 31 December 2000. The number of Companies required implementing IAS increased constantly. It should be noted that departures from IAS are still permitted in the new standards, but such departures would normally result in the accompanying audit opinion being qualified.

For these aim was issued the Order no. 94/2001 of the Ministry of Public Finances on accounting regulations harmonized with the 4<sup>th</sup> Directive of the European Communities and with the International Accounting Standards.

Under the terms of Order Nr 94 of January 29, 2001, Romanian Accounting Law is being harmonized with the IV<sup>th</sup> Directive of the European Union and with International Accounting Standards. All quoted companies, state corporations and all companies working in the capital markets must apply the new Romanian Accounting Standards starting with the year 2000. These new standards will progressively become compulsory for other largish companies based on total assets, turnover and number of employees for the previous year, as follows:

<b>Year ending</b>	<b>Turnover (Million Euro)</b>	<b>Total assets (Million Euro)</b>	<b>Employees</b>
December 31, 2002	8	4.0	200
December 31, 2003	7	3.5	150
December 31, 2004	6	3.0	100
December 31, 2005	5	2.5	50

Companies meeting these criteria must be audited, under the provisions of the Government Emergency Ordinance Nr 75 of 1999.

Smaller companies may opt to apply the new rules if they have obtained an approval from the Romanian Ministry of Finance.

Starting with the 2006 year-end, small and medium enterprises (as defined by the existing legislation at that time) only will be left outside the scope of the regs. These enterprises apply the provisions of the republished accounting law 82/1991 and the Regulations 306/2002, wich are the simplified version of Order Nr 94 of January 29, 2001. Where the financial statements are fully complying with Order 94/2001, but do not comply in total with the provisions concerning inflation and/or consolidation, the audit report has to make specific references to that.

Legal persons that do not have to comply yet with the harmonized European accounting rules, the annual financial statements comprise the balance sheet, the profit and loss account accompanied by, if case, accounting

policies and explanatory notes. Legal persons subject to the harmonized European accountancy rules, annual financial statements must comprise the balance sheet, the profit and loss account, capital movements statement, cash flow statement, accounting policies and explanatory notes.

The introduction of MoF Order 94/2001 has seen an increase in the level of disclosure of information in notes and adding additional reporting requirements (including introduction of cash-flow statements and statements of changes in shareholders equity) and an increasing emphasis on provisioning and accruals considerations, although there is still, in some cases, an inclination to limit the differences between accounting and taxation profit.

#### **4.2.2. 2001- 2006 harmonisation period**

MoF Order 94/2001 and subsequent regulations have imposed some non-compliance with International Financial Reporting Standards (IFRS) and is based on the application of International Accounting Standards in effect as of 1 January 2000, being the date when a Romanian authorised translation of International Accounting Standards (as they were then named) were issued. No subsequent Romanian translation of IFRSs has occurred. A number of changes have occurred and are intended in IFRS, as the moves are taken to apply the Standards throughout the European Union and to give them an increasingly prominent position internationally.

Legislation issued in 2004 (MoF 1775/2004) has indicated that the European Union 4th Directive (on financial reporting) and the 7th Directive (on consolidated accounts) is to be applied for financial reporting from 1 January 2006. To follow relevant Directives, implies compliance in full for certain entities with International Financial Reporting Standards. Such compliance would also imply that 31 December 2005 financial statements would be prepared in accordance with International Financial Reporting Standards to provide for 2006 comparatives. This is an area where further clarification is likely to occur for some entities.

MoF Order 94/2001 reporting up to 31 December 2004 has excluded for reporting to the Ministry of Finance and as the basis for the financials to be used for profit distribution purposes hyperinflation accounting (IAS 29) and preparation of consolidated financial statements (IAS 27). The same situation is expected to apply for 31 December 2005 reporting, with reporting for 31 December 2006 to be fully compliant with IFRS for entities in accordance with the EU 4th Directive.

Consolidated financial statements for a company and its subsidiaries, are currently not required by the legislation relating to completion of

statutory financial statements for MoF Order 94/2001 compliant companies. Law 82/1991 (republished in January 2005) requires that the standards in the International Financial Reporting Standards relating to consolidation should be applied commencing with the year ending 31 December 2006.

It has been indicated that the EU 4th Directive will be fully applied for the year ending 31 December 2006 for Romanian entities. This is likely to mean full IFRS application for certain entities. For 2005, MoF 94/2001 reporting is considered to apply international standards that were in force for years commencing on 1 January 2000, with subsequent changes to IFRS not being specifically acquired, although early adoption of IFRSs can occur. For years commencing on or after 1 January 2005, IFRS has had substantial changes that are not considered to be compulsory for MoF 94/2001 reporting, although early adoption of IFRSs are allowed. For banking entities reporting under MoF 1982, IFRS reporting requirements are considered to be followed.

#### ***4.3. The public sector accounting harmonization process***

Until 2000 the accounting system for the public sector applied in Romania was characterized as being an accounting system based on cash .

For Romania, in the context of European integration, the achievement of the public sector accounting reform has become an urgent necessity. The key-element that confirm the need of reform in public sector accounting is the informational gaps of the actual system based on cash accounting.

An example is the extreme case of local governments from villages which are strictly in the limits of pure cash accounting, by the overlapping of the expenses notion with the payment notion, of the income notion with cashing-in, low-training level of the staff, over standardization of activity, low technical endowment or even the lack of it.

The harmonization process of Romanian Budgetary accounting suppose some main adjustments of current system, regarding:

**1. Accrual systems, for inventories, receivables (taxes, social contributions and interests) and payables:** these are necessary for the recognition of expenditures (and receipts) made in financial periods other than those in which the costs were actually incurred.

**2. Recognition of full depreciation of fixed assets:** to ensure full incorporation into the costs of activities of the consumption, use and deterioration of fixed assets. This is often a significant cost component of capital-intensive public sector activities.

3. **Assessment of normal profits as "costs of capital"**: will recognize the return on investment implicit in the use of the funding of fixed and working capital by owners or by other funding sources in addition to loans.

4. **Revaluation of fixed assets to allow for inflation**: will result in recognition of *current* fixed asset values and the related *current costs* of depreciation. It also affects the proper recognition of the return on investment, when expressed as a percentage of the real (opportunity) costs of capital.

In action plan for Governmental Program for the year 2000 and 2001-2004 period for implementing Romania's medium term economic strategy, regarding the fiscal policy area and more exactly enhancing fiscal transparency and improving operational and a locative efficiency of budgetary expenditures, the planned actions were restructuring the budgetary accounting by: improving the budgetary classifications, re-setting economic classification in a privileged position against functional and institutional classifications, supplementing accounting on a cash basis with accounting on an accrual basis.

For comply with ESA 95 methodology, the Ministry of Public Finance promised to introduce the accrual accounting system for public institutions, starting with 2003. In August 2001, the Government Ordinance no. 61/2001 for completing and amending the Accounting Law no. 82/1991 was adopted in order to establish the general implementation framework. One important requirement regard the compulsory use of double entry accounting for all entities.

By the fourth quarter of 2002, the following methodological norms were promised to be prepared: norms regarding the accounting of budget provisions, norms regarding the organization and management of the assets accounting for public institutions, the Accounts' List for public institutions as well as the norms regarding the accounting of the main operations.

In order to take over the communitary aquis chapter 11 Economic and monetary union and chapter 29 Financial and budgetary expenses Romania has started rather shyly than transition process towards accrual accounting, which will require additional capacity and resources. The accounting rules, which will be adopted, will be based on the European Directives no.4 and no.7 and the European accounts system (ESA 95). There are also considered the accounting and information presentation requirements according to International accounting standards for the public sector (IPSAS). Through the position document regarding the negotiation of chapter 11 Romania engaged to report to EC according to ESA 95 requirements European standard

Accounts regarding public accounting and debt. By introducing the new budgetary classification (July 2005) applicable starting with 2006 an important step was achieved in harmonizing the accounting system for the public sector with the European and international regulations.

In order to make the Romanian accounting specialists know the best international accounting practices for the public sector The Chartered accountants Body from Romania translated into Romanian in april 2005 the International accounting Standards for the public sector, issued by the International federation of accountants, January 2005 issue .

With the intention of harmonizing the public sector accounting system with the European and international regulations, in the last 5 year a few reform elements have been introduced which aim at:

-The induction, liquidation, ordering and payment of public institutions expenses (OMFP 1792/2002), the four stages of the budget execution of expenses are carried out by all public institutions no matter their subordination and the way of financing expenses with compulsory pre-observance of procedures. Public institutions are also compelled to organize, lead the record and report the budgetary and legal arrangements starting with 2003.

- The re-evaluation and depreciation of fixed assets that are in the patrimony of public institutions (OG no.81/2003 and OMFP no.1487/2003) are introduced for the first time in the history of public administration in Romania. By introducing re-evaluation it was wished to bring at the current cost or the entrance value actualised in correlation with the utility of goods and their market value and by introducing the depreciation it was wished to reflect the real value of goods and the presentation through financial statements of a real image of the patrimony.

-The organization and leading of budgetary incomes accounting (OMFP no.520/2003), according to the Accounting law, that stipulates the compulsoriness of registering in accounting the rights and obligations of the public institutions when they are acknowledged, in this sense there had been until that moment a major contradiction between the national regulation in accounting and the regulations applicable to public institutions.

-The introduction of a new budgetary classification (OMFP no.1025/2005) applicable starting with 2006 according to ESA 95 requirements concerning accounting and public debt has contributed to making an important step in the harmonization of the public sector accounting with the European and international regulations.

With all the reform elements, the present accounting system in the Romanian public sector has a lot of faults especially concerning the quality of information provided both to managers and third party institutions.

The passage to accrual accounting in the public sector in order to take over the communitary acquis will be applied in Romania the latest in 2007.

If until now the public sector accounting has had a secondary role in comparison with the budget, a limited role in patrimony reflection, the cashed incomes and the expenses, by passing to accrual accounting, the accounting system, through the information that it will provide, will regain its deserved place.

Ministry of Public Finance issued some versions of a project of new budgetary accounting harmonized with international accounting standards but without publishing or disseminating.

This reform of public accounting has impact on all public institutions but especially the communes which are currently using another type of accounting and have a limited number of personnel with multiple responsibilities and limited access at training.

Some international consultancy teams in finallising the new accounting system for public Romanian sector help the Finance Ministry. By PHARE: Twinning Project contracted by the European Union, the consultants are involved in providing advice and consultancy with a view to providing financial management controls necessary to implement accruals accounting within the Romanian government. Another project regards the introduction of consolidated accruals accounting into the government of Romanian.

## **5. Conclusion**

### ***5.1. Regarding the private sector accounting harmonization process***

The evolution of accounting system is envisaged as driven by the political, economic and social conditions within the country. These include in particular a stringent need of attracting foreign direct investment and requirements to harmonise the accounting practices with the EU Directives and the IAS, in order to fulfil the necessary standards for integration with the European and International Organisations (EU, IFAC, OECD).[10]

New romanian accounting legislation and regulations have been largely based on International Financial Reporting Standards (which include International Accounting Standards) in relation to fundamental concepts to be followed and applied for private and public sector.

The Romanian development process implied a proper application of the new adopted accounting rules and principles as well as the setting of a time scale within which these were gradually be phased-in.

Facilitating the development of business reporting and emphasising the importance of transparency, accountability and comparability in disclosure, the national accounting system may influence the speed of sociopolitical transition and economic reforms. It also may have a significant impact upon processes of attracting foreign investment, desperately required in this part of the world.

However, with the explosion in cross-border transactions and placements of debt and equity, there is a great need for transparency and comparability of financial statements between countries. As a result, the financial community worldwide - national standard setting boards and securities regulators, multinational companies, international audit firms, and investors - is committed to the goal of one set of high quality accounting standards.

## ***5.2. Regarding the public sector accounting harmonization process***

The use of accrual accounting in the public sector is a relatively recent phenomenon and the balance between costs and benefits is still the subject of substantial debates both for academics and practitioners. The countries which decide to pass from cash accounting to accrual accounting are warned (*IFAC, 2000*) to analyze very carefully the validity and the benefits expected from this reform taking into account the conditions, the priorities and the local characteristics.

About the new accounting system for public sector there are opinion that emphasize the benefits (*Horobeanu S., Alecu G. 2003*) but also more reserved opinions (*McKendrick 2003, SIGMA 2001*). Thus in some people's opinion (*McKendrick 2003*) as long as the transition towards accrual accounting is valid for developping countries it's possible that this not necessarily good for less developed countries or with a transition economy. And in Sigma's opinion (organization that provides assistance to central European countries which are preparing for UE adhesion) : both the efficiency of the reform in the countries where it was implemented and the viability for the economies in transition remains a debatable subject both for academics and practitioners.

A change in mind is also needed, which implies a redesign of the personal value system. This means to overcome the past reluctance of prepares of financial information to disclose more than was absolutely

necessary, in particular in relation to contingent liabilities (including liabilities to State organizations), related parties identification, and disclosure of certain segmental information.

### ***5.3. Regarding the Romanian accounting harmonization process***

The Romanian accounting system (RAS), being adapted from a system originally designed for a planned economy, is particularly unsuited to decision making in a market economy. Thus poor economic decisions are made and wealth is wasted. But if users were provided with relevant information, scarce capital would be more efficiently invested and more correctly priced, to the very great benefit not only of the enterprises but to everyone. It is very rare for a technical matter of this kind to be so beneficial to society as a whole.

From 1990, it has taken some time for financial reporting in Romania to develop, as for much of the past period it has been directed to the provision of information to the State authorities and has not had as a major focus the provision of information to investors (current and prospective owners), management, financial institutions and other common users of financial reports in an international context. Financial reporting (and accounting in general) in Romania has tended to be more about "form" than about "substance",

The Romanian financial reporting requirements are continuing to undergo change and progression to move toward application of standards comparable with the European Union.

We understand that the reform of accounting system in both private and public sector is influenced by the accounting tradition (pre-communist and communist history and tradition of accounting systems). On the other hand, globalization of markets will also shape this transformation. Romania must find the equilibrium between internal and external influences, between past and future conditions, negotiating a fine balance between local culture and global pressures.

The importance of this development does not lie only in the standardization of the world's accounting system, important through that is. It lies, even more, in the fact that the standards adopted (IAS/IFRS) are aimed at transparency and at reporting economic reality, thereby allowing users of enterprise reports to make the correct economic decisions

We consider that if effectively implemented and supported, the transition accounting system can influence the speed of transition and economic transformation, the country's regional and international integration and facilitate societal changes.

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*Collective Investment and  
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# COMPARISON OF COLLECTIVE INVESTMENT IN VISEGRAD GROUP COUNTRIES AND THE SELECTED EUROPEAN COUNTRIES<sup>1</sup>

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## **Abstract**

*The aim of the paper is to compare collective investment in the V4 countries – Czech Republic, Hungary, Poland and Slovakia – with the selected European countries. The authors compare and evaluate fund assets, structure of collective investment funds and the whole contemporary situation of the collective investment in the East European countries and those European countries where collective investment is most developed, zooming in on the most comparable countries.*

**Keywords:** *collective investment in Europe, fund assets, types of funds, Visegrad Group*

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## 1. Introduction

In the course of the nineties, collective investment has become a significant investment instrument even in the former socialist countries. The purpose of the article is to compare collective investment practice in the Visegrad Group Four - Czech Republic, Hungary, Poland and Slovakia – and the selected European countries. In the selection of the European countries, account was taken of both the overall volume of the assets invested in the funds - in other words, those countries had been selected where the assets volume is the highest (namely France, Italy and Germany), and similarity of the selected countries with the Visegrad Four countries - the chosen criteria include the country's size and population number (market volume), and the country's economic advancement (Austria, Spain, Portugal, Greece, Belgium and Denmark). The authors make comparison of the assets volume in, and structure of, the funds and making use of such comparisons they endeavour to assess to what extent the collective investment in the V4 countries differs from the figures observed in the selected countries; finally they make preliminary conclusions concerning the prospects of collective investment.

## 2. Overall investment volume in the funds in the Visegrad Treaty countries and selected European countries

The base for comparison consists in investment in domestic so-called UCITS funds - i.e. funds which correspond to mutual funds under FEFSI directive (currently EFAMA<sup>2</sup>). These funds account for the majority of the fund investments in the V4 countries.

**Table 1 Total net assets + total net assets per capita for selected European countries**

<i>Country/Number of Inhabitants (million)</i>	<i>Total Net Assets (EUR million)</i>	<i>Total Net Assets per Capita (EUR million)</i>
<i>Czech Republic/10</i>	3 826	0,383
<i>Hungary/10</i>	4 627	0,463
<i>Poland/38</i>	9 551	0,251
<i>Slovakia/5</i>	1 595	0,319
<i>France/62</i>	1 053 700	16 995,161
<i>Italy/58</i>	374 840	6 462,759

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<sup>2</sup> EFAMA –European Fund and Asset Management Association

<i>Germany/83</i>	230 665	2 779,096
<i>Belgium/10</i>	97 769	9 776,900
<i>Denmark/5</i>	50 432	10 086,400
<i>Portugal/10</i>	24 122	2 412,200
<i>Austria/8</i>	92 887	11 610,875
<i>Greece/11</i>	31 155	2 832,273
<i>Spain/43</i>	240 553	5 594,256

Source: EFAMA, own calculations

Should we compare overall investments into funds in the V4 countries, the majority of financial facilities is invested in Poland - amounting to EUR 9,551 million. The second place is occupied by Hungary (EUR 4,627 million), third is Czech Republic (EUR 3,826 million) and the last position is taken by Slovak Republic (EUR 1,595 million). If the population number is to be taken into consideration, Poland is on the contrary the country to fall on the tail of the chart since the number of inhabitants is markedly higher than in the other three countries. Comparisons however show that all the V4 countries fall considerably behind the selected European countries (see Table no.1) and the assets volume placed in the funds in the V4 countries account for less than a half a per cent point (0.46) in the overall investment volume of all EFAMA countries, which is rather a poor figure.

**Table 2 Breakdown of chosen nationally domiciled funds (the UCITS market, % of total of EFAMA members)**

<i>Country</i>	<i>%</i>
<i>Czech Republic</i>	0,09
<i>Hungary</i>	0,11
<i>Poland</i>	0,22
<i>Slovakia</i>	0,04
<i>France</i>	23,90
<i>Italy</i>	8,50
<i>Germany</i>	5,20
<i>Belgium</i>	2,20
<i>Denmark</i>	1,15
<i>Portugal</i>	0,55
<i>Austria</i>	2,10
<i>Spain</i>	5,50

Source: EFAMA

Considering the further mentioned countries, the absolute majority of assets is located in the funds in France (EUR 1,053,700), whereas France is

also a country in which per capita assets in funds is the highest. Still regarding the overall assets volume in funds, France is followed by Italy (EUR 374,840 million) and Germany (EUR 230,665 million); considering the high number of inhabitants, the said countries nevertheless outrun countries with markedly lower population, such as Austria, Denmark and Belgium, when it comes to assets volume in the funds per number of inhabitants. It is exactly the similar market size why these countries had been selected for comparison purposes; Belgium has equal number of inhabitants to the Czech Republic or Hungary (10 million), Denmark's population equals to Slovakia's (5 million), Austria has comparable number of inhabitants and concurrently it is one of the most proximate neighbours of the V4 countries. A comparable country for Poland is Spain (43 million inhabitants), this country had been selected also due to its relatively limited economic advancement within the European Union; similarly, Portugal (10 million inhabitants) and Greece (11 million inhabitants) had been selected for comparison with the smaller countries since the Visegrad Treaty countries intend to economically approach the former two countries as soon as possible.

The table clearly demonstrates to what extent the Czech Republic, Hungary, Poland as well as Slovakia fall behind these countries in fund investing; hence, it may be implied that a massive development in collective investment in the V4 countries is to be observed exactly because of this considerable lag. Unless a substantial economic change on the financial markets and potential negative changes (both economic and political) are to be observed in the V4 countries, the future development of collective investment in these countries is supposed to be one of the dominant indicators which shall have impact on their financial markets.

### **3. Economic advancement of selected countries and volume of assets in the funds**

Regarding the fact that development in the Visegrad Four had been substantially affected by their socialist history and hence they are still catching up with the West European countries, a part of this article is devoted to the relation of economic advancement of the country and their inhabitants and the overall volume of assets in the funds. Economic advancement is expressed by two indicators - gross domestic product per capita and average monthly salary, which is recalculated as per the purchasing power parity. The second indicator has been applied due to the fact that it better characterises possibilities of households to deposit free financial means to the funds.

As Table no.3 demonstrates, the indicators under review show a certain degree of correlation. If we first take the V4 countries into account, we can observe that the countries with the least assets in funds per capita Poland and Slovakia have the lowest GDP per capita as well as the lowest average monthly salary. The Czech Republic and Hungary show higher volume of assets in funds per capita and higher GDP as well as the average salary per capita than Poland and Slovakia, while it is apparent that Hungary's inhabitants tend to invest to collective investment funds slightly more than inhabitants of the Czech Republic in spite of the fact that GDP as well as the average salary per capita is a little lower in Hungary than in the Czech Republic.

**Table 3 Total net assets per capita and economic advancement of the country expressed by average monthly salary per PPP and GDP per capita**

<i>Country</i>	<i>Total Net Assets per capita (EUR million)</i>	<i>Average monthly salary per PPP (EUR)</i>	<i>GDP per capita (USD)</i>
<i>Czech Republic</i>	0,383	689	10 316
<i>Hungary</i>	0,463	650	9 900
<i>Poland</i>	0,251	579	6 337
<i>Slovakia</i>	0,319	522	7 624
<i>France</i>	16 995,161	1392	32 433
<i>Italy</i>	6 462,759	1347	29 047
<i>Germany</i>	2 779,096	1351	32 850
<i>Belgium</i>	9 776,900	1355	33 621
<i>Denmark</i>	10 086,400	1136	45 033
<i>Portugal</i>	2 412,200	926	16 125
<i>Austria</i>	11 610,875	1461	35 489
<i>Greece</i>	2 832,273	1037	18 366
<i>Spain</i>	5 594,256	1083	24 070

*Source: EFAMA, World Bank, own calculations*

Once we begin to compare the selected European countries, we find out that there exist three distinct groups of countries. France on its own forms the first group, whereas its volume of assets per capita markedly exceeds other countries, it has come on the second position in the average salary and regarding GDP it has fallen within the group of five countries whose GDP per capita exceeds USD 30 thousand. The second group includes Austria, Denmark, Belgium and Italy, where the high volume of assets in the funds per capita directly relates to the high GDP per capita in all the three

countries (absolutely the highest figure from the countries under review achieved in Denmark) and high average salary in Austria, Belgium as well as Italy, while it is rather lower than the average salary in Denmark<sup>3</sup>. The third group of countries consists of Spain, Greece and Portugal, while the economically most advanced Spain has also the highest volume of assets in the funds per capita. Germany may be deemed an exception which regarding the GDP per capita and the average monthly salary has relatively limited amount of assets located in the funds. This is however caused by the fact that a lot of financial means in Germany is invested into other than mutual funds, too.

Taking a look into the future, the amount of investments into funds is supposed to grow in the Visegrad Group countries also hand in hand with the growing economic advancement.

#### 4. Investments in the individual fund types

**Table 4 UCITS assets by fund type in V4 and selected European countries (% of total, as of 31 March 2005)**

<i>Country/Fund Type</i>	<i>Equity</i>	<i>Money Market</i>	<i>Bond</i>	<i>Balanced</i>
<i>Czech Republic</i>	4,68	57,34	19,76	17,00
<i>Hungary</i>	7,56	41,61	46,75	0,95
<i>Poland</i>	11,62	14,25	38,62	35,44
<i>Slovakia</i>	3,13	55,17	34,23	7,46
<i>France</i>	25,31	34,78	18,72	21,18
<i>Italy</i>	19,67	21,21	39,71	19,40
<i>Germany</i>	42,77	14,60	31,82	6,69
<i>Belgium</i>	56,20	2,31	9,20	22,60
<i>Denmark</i>	32,42	0	66,65	0,93
<i>Portugal</i>	7,55	36,54	42,33	7,73
<i>Austria</i>	14,99	11,02	52,79	6,64
<i>Greece</i>	16,26	46,19	32,06	5,49
<i>Spain</i>	33,80	22,14	28,77	15,29

*Source: EFAMA, own calculations*

It is evident that the structure of funds in all the countries under review is dissimilar and it seems to depend largely on the economic situation and historical development of the collective investment in the particular

<sup>3</sup> This fact is determined by the generally high price level in Denmark.

country. Investments in the individual funds reflect the investors' contemporary preferences which may further develop in time under changed conditions – we are however able to find interesting connections in this table. Concurrently, it is possible to compare this structure of funds with the structure of funds within the whole Europe (all EFAMA members) and the entire world<sup>4</sup> (see the Table no. 5 below).

**Table 5 UCITS assets by fund type (world, Europe, % of total)**

<i>Fund Type</i>	<i>Equity</i>	<i>Money Market</i>	<i>Bond</i>	<i>Balanced</i>
<i>World</i>	45 %	21 %	20 %	9 %
<i>Europe</i>	33 %	19 %	25 %	12 %

*Source: EFAMA*

Concerning the equity funds, the majority of financial means are in the Visegrad Treaty countries invested in Poland, followed by Hungary, Czech Republic and the last position is occupied by Slovakia. In total, all the V4 countries have rather limited amount of financial means located in the equity funds, especially making comparison of investments into these funds on the global scale as well as in Europe, where they are noticeably higher. Considering the countries under review, except for Portugal, investments into equity funds exceed 10% in all countries and over 30% in the four countries. The fact that investors in the V4 countries are so conservative is determined both by their limited experience with long-term investments (less experienced investors tend to prefer shorter-term and hence lower-risk investments) and concurrently by the situation on the world equity markets, which have not recovered yet from the three-year dramatic decline in years 2000-2002. Such a recession obviously affected the equity funds' proceeds and investors in the countries with short history in collective investment are yet to gradually regain the trust in them.

The relative "conservativeness" of investors in the V4 countries is clearly demonstrated with investments into funds on the money market, which take up majority in these three countries. Polish investors appear to be an exception, the share of funds on the money market in the total marked has shown a steady decline since year 2000, when these funds achieved 46% market share, presently only 14% share is observed. Out of the countries under review, the funds on the money market have a majority in Greece (46%) and relatively surprisingly in France (almost 35%).

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<sup>4</sup> Source of information: EFAMA ([www.efama.org](http://www.efama.org)) and Investment Company Institute ([www.ici.org](http://www.ici.org)).

We may forecast that it is likely that if investments are to shift in the future between the individual funds, it is exactly the funds on the money market whose share in the market in the Czech Republic, Slovakia as well as in Hungary is to shrink.

In Poland, such transfers of investments may affect investors' preferences in their investments into balanced funds – Polish investors have in these funds the most financial means of all the investigated countries, the Poles are the only investors which have over 30% fund investments in these funds<sup>5</sup>. In total terms, the share of the balanced funds in the V4 countries is decreasing (e.g. such investments accounted for 63% of the whole market in the Czech Republic in year 2000, currently this figure amounts to 17%) and the individual funds shall profile as equity or bond funds. Limited interest is observed in balanced funds in Hungary, recently further fall in assets in these funds has been recorded, currently accounting for 1% of the market, while since year 2001 their share has been undulating between 1 and 2% of the market. These funds account for merely 1% also in Denmark. On the contrary, investment in balanced funds higher than the European average (12%) have, besides the mentioned Polish and Czech investors, also investors from the other four countries (Belgium, France, Italy and Spain).

The share of bond funds is considerably higher in Hungary, where it accounts for almost a half of the market, while the same investments accounted for even 74% in year 2001; a gradual fall of this share has been observed since that year. In Poland, the share of bond funds shows a dramatic fall as well, these funds showed the highest share in the market in year 2002 – amounting to 63%. The share of the bond funds amounts to approximately 35% in Slovakia and the bond funds have shown a permanent share of 20%<sup>6</sup> since year 2002 in the Czech Republic. As far as other countries under review are concerned, the bond funds are most popular in Denmark (66.65%) and Austria (52.79%), the same funds gain the least popularity in Belgium (9.2%, minimally 10% less than in other countries under review).

It goes without saying that investment in bond funds are more than in the case of other fund investments affected by the overall economic situation in the particular country, primarily by inflation, setting of interest rates and estimation of proceeds from bond funds in the future. Concurrently, the bond funds are considered as securing investments for investments in equity funds.

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<sup>5</sup> Polish investors tend to make use of balanced funds in the long-term horizon, primarily for pension savings.

<sup>6</sup> The Czech Republic also reports the lowest inflation rate and interest rates out of the four countries.

Taking this point of view, the European investors are more conservative in their investments than “the world” investors (see Table no.5).

## **5. Conclusion**

The collective investment funds have begun to play a substantial role on the financial markets of the Visegrad Treaty countries, which is projected to gain even more significance in the future.

Unless a considerable change in the situation on the world financial markets is to be observed along with a negative event, which would affect the capital and money markets of the Czech Republic, Slovakia, Hungary and Poland, investors on these markets shall carry on investing into the collective investment funds. It may be presumed that the volume of investments into these funds shall continue to rise in the future since these investments are rather low compared to the selected European countries. Hence, there is a wide room for further growth, primarily in relation to their overall improvement of their economic advancement.

It is also likely that financial means shall be transferred between the individual fund types – investors shall pass from the funds on the money market to bond funds, especially to equity funds, as it is commonplace in the more advanced European countries and in the world.

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# INSTITUTIONAL INVESTORS IN THE SLOVAK REPUBLIC<sup>1</sup>

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## **Abstract**

*The behavioural characteristics of institutional investors, therefore, will be an increasingly determinant of domestic and international financial market conditions, and the implications for financial market stability warrant serious consideration. The role of banks and institutional investors allowed us characterise phases of financial development: bank-oriented, market-oriented a securitized. Situation in Slovak Republic is closely to situation in rest of Europe (apart from Great Britain). Ageing of population required change of thinking both on-coming pensioners and governments. Saving for retirement increasingly taking place via insurance companies, mutual funds and newly opened pension funds in Slovak Republic.*

**Keywords:** *institutional investor; financial intermediaries; mutual funds;*

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## **1. Introduction**

Institutional investors are a permanent feature of the financial landscape, and their growth will continue at a similar, and perhaps faster pace. The behavioural characteristics of institutional investors, therefore, will be an increasingly determinant of domestic and international financial market conditions, and the implications for financial market stability warrant serious consideration. The role of banks and institutional investors allowed us characterize phases of financial development: bank-oriented, market-oriented and securitized.

## **2. Characteristics of institutional investors**

Institutional investors may be defined as specialized financial institutions that manage savings collectively on behalf of small investors toward a specific objective in terms of acceptable risk, return maximization, and maturity of claims. Videlicet entity with large amounts to invest, such as investment companies, mutual funds, brokerages, insurance companies, pension funds, investment banks and endowment funds. Institutional investors are covered by fewer protective regulations because it is assumed that they are more knowledgeable and better able to protect themselves. They account for a majority of overall volume. Institutional investors are part of non-bank financial intermediaries.

Non-bank financial intermediaries (NBFIs) comprise a mixed bag of institutions. They included all financial institutions that are not classified as commercial banks. But with the assimilation of building societies and other thrift deposit institutions with commercial banks as institutions that accept deposits and make loans, NBFIs mainly include venture capital companies, leasing and factoring and as well as various types of contractual savings and institutional investors. The common characteristic of these institutions is that they mobilize savings and facilitate the financing of different activities, but do not generally accept deposits from the public at large.

NBFIs play an important dual role in the financial system. They complement the role of commercial banks, filling gaps in their range of services, but they also compete with commercial banks and force them to be more efficient and responsive to the needs of their customers. Most NBFIs are also actively involved in the securities markets and in the mobilization and allocation of long-term financial resources. The state of development of NBFIs is usually a good indicator of the state of development of the financial system as a whole.

## ***2.1 Contractual savings institutions***

As already noted, contractual savings institutions are by far the most important NBFIs. They have the potential to accumulate vast amounts of long-term financial resources and to literally transform the structure and functioning of capital markets. Countries vary considerably in the relative importance of their contractual savings institutions. We can usefully distinguish three levels of development:

- countries where the assets of pension funds and insurance companies correspond to less than 10% of GDP;
- countries where they are over 10% but less than 50%; and
- countries where they exceed 50%, in some cases by a wide margin.

The first group covers most Latin American countries (with the exception of Brazil, Colombia and most notably Chile), all Francophone African countries, and all Eastern European and Asian countries (except the Asian countries listed below).

The second group covers Brazil and Colombia among Latin American countries, such Asian countries as India, Indonesia, Korea, the Philippines and Sri Lanka, all MENA and Anglophone African countries, and all continental European countries (except Scandinavian countries as well as the Netherlands and Switzerland).

The third group covers mainly Anglo-American and Scandinavian countries (i.e. US, Canada, UK, Ireland, Australia, New Zealand, Denmark, Finland, Norway and Sweden) as well as Switzerland and the Netherlands among European countries, Hong Kong, Japan, Malaysia and Singapore among East Asian countries, South Africa and Chile. Contractual savings institutions experienced rapid growth in the 1980s in most countries of the third group. In four of these countries (the Netherlands, Switzerland, South Africa, and the United Kingdom), the total assets of pension funds and insurance companies exceeded 100% of GDP in the early 1990s, growing from less than 50% in 1970. Among East Asian countries, Singapore and Malaysia have long had sizable contractual savings sectors, with resources corresponding to between 50% and 70% of GDP, while in the 1980s, following the radical reform of its social security system, the total assets of contractual savings institutions in Chile expanded from less than 1% in 1980 to 30% in 1990 and 52% in 1993. The main factors explaining the high rate of growth in these countries were expansion of coverage and/or high investment returns, especially in the 1980s.

## ***2.2 Contractual Savings Institutions and the Capital Markets***

Contractual savings institutions can play a very important role in the development of a country's capital market. This depends on the allocation of their assets, which varies considerably from country to country, reflecting both historical traditions and differences in regulation. Real assets, and especially equities, are heavily represented in the portfolios of UK pension funds. This is generally attributed to the equity cult that UK fund managers have developed since the mid-1960s in response to the high rates of inflation experienced by the UK economy between 1960 and 1990. But this pattern is also explained by the absence of legally imposed minimum funding requirements and by the use of pension obligations that are quasi-indexed to inflation. Real assets represent a smaller proportion of pension fund assets in the United States and other Anglo-American countries and even smaller ones in continental European countries.

In continental Europe, pension funds (as well as life insurance companies) place the largest part of their assets in government, corporate and mortgage bonds and in long-term loans. This is partly the result of investment regulations and partly the result of a traditional emphasis on conservative investment policies. Although pension funds and insurance companies are subject to upper limits on their holdings of equities (as well as overseas securities) and although their managers are seeking either increases in these limits or their complete abolition, restricted investments are well below the specified limits. But a gradual shift of asset allocations of Dutch and Swiss pension funds in favour of equity investments is taking place and this has major implications for the size and liquidity of their respective national markets.

In most countries around the world, investments in foreign assets have been constrained by regulations, either foreign exchange controls or unnecessarily tight prudential controls. Following the removal of exchange controls and the relaxation of investment rules, pension funds in several countries have built up substantial holdings of foreign equities and bonds, reaching to well over 20% in Australia, New Zealand and the United Kingdom and around 60% in Hong Kong.

International diversification may increase portfolio returns, especially if pension funds become too big for the local markets, but a more general result is a reduction in investment risk, stemming from the less than perfect covariance of returns in different national markets. Contractual savings institutions in most countries tend to display a strong "home bias", which may be attributed to the nature of their liabilities, the absence of efficient hedging facilities, and their preference for investing in markets and securities

they know better. Nevertheless, international diversification has been growing fast. Most countries, especially those with undiversified economies dominated by a few industries and a few family groups, should allow some foreign investments once a new pension system is well established.

### ***2.3 Growth Factors of institutional investors***

Growth of institutional investors can be described on two sides: supply and demand.

#### **2.3.1 Supply sides factors**

A, Institutional investors can offer the possibility of investing in large-denomination and indivisible assets.

B, Also professional management costs are shared among many investors and are marketly reduced.

C, The direct costs of acquiring the information and knowledge needed to invest is eliminated.

D, Ability to move money around among funds is in attraction so we call it customer services.

E, Institutional investors can also better control the companies than individual investors.

F, Specializing in certain types of asset can offer a wider range of options not only to households but also to other institutional investors.

G, They offer liquidity insurance to customers by allowing redemption of funds to cash without notice.

H, They also offer forms of insurance as a consequence of the pooling of risks.

I, Institutional investors can also decrease transaction and cost of diversification by large amount of trading.

#### **2.3.2 Demand side factors**

The key demand side factors underlying the growth of institutions are demographic developments and their link to saving patterns. The population is aging, owing to a decline in birth rate and rise in life expectancy, saving for retirement is increasingly taking place via institutional investors.

### ***2.4 Impact on Capital Market Efficiency***

The impact of contractual savings institutions on capital market efficiency depends on their size, their investment policies and their

management practices. From a quantitative point of view, there is a certain correlation between the size of contractual savings and the development of equity markets, but the pattern is far from clear. The equity market is very large (in relation to GDP) in the United Kingdom and South Africa where pension funds invest heavily in equities, but it is also very large in Switzerland and Chile, where pension funds invest relatively little in equities. Also, in Malaysia and Singapore, the equity market is very large with high trading volumes even though direct investments by the respective provident funds in equities are either minuscule or nonexistent. Other investors, especially foreign institutional investors, probably account for the large capitalization of the equity markets, and the large volume of trading, in these two countries. Levine and Zervos emphasized the importance of the value of trading as an indicator of market efficiency, low transaction costs and market liquidity. They found that market liquidity is positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation, and productivity growth. Recent years have witnessed very big increases in trading volumes in many stock markets around the world as well as growing equity markets, measured in terms of market capitalization in relation to GDP. In countries, such as Malaysia and Singapore, the growing internationalization of portfolio investing must clearly be a major factor in the veritable explosion of trading volumes on their equity markets. From 7% of GDP in 1985 (admittedly a recession year with depressed market prices and activity) trading volume exploded to 250% in Malaysia and 150% in Singapore in 1993 (though trading volumes suffered substantial falls in 1994). In contrast, in European countries, in addition to international investors, domestic institutional investors must also have contributed to the growth of trading volumes. This is especially in those countries where contractual savings institutions are in the process of redefining their investment policies in favour of equity holdings. Swiss trading volume was much higher than those of the US and UK markets in 1993, while the Dutch and Swedish markets reached in 1993 the level of the UK market in 1990.

Contractual savings institutions have the potential to act as catalysts for the modernization of securities markets, the development of efficient trading and settlement systems, the adoption of modern accounting and auditing standards, and the promotion of information disclosure. In the United States, the growing market power of pension funds and insurance companies has undermined the dominance of corporate bond markets by the traditional investment banks, that long after the passing of the Glass-Steagall Act in the 1930s continued to operate effectively as a cartel, with rigid hierarchical structures in syndicated issues. Institutional investors have been a major contributing factor to the advent of competitive bidding for corporate

issues, the abolition of minimum commissions on equity trading and the restructuring of stock exchanges. The hedging needs of US corporate pension funds, operating under strict minimum funding requirements, have been instrumental in stimulating the development of immunization techniques and new products, such as zero-coupon bonds and collateralized mortgage obligations as well as index options and futures. More recently, institutional investors have become more actively involved in monitoring corporate performance and exerting direct and indirect pressure for better and more effective structures of corporate governance.

The role of pension funds and insurance companies in the capital markets has also come under criticism for allegedly causing greater market volatility, adopting a short-termist attitude on investments, and neglecting the financing needs of smaller firms. Because they trade more actively, institutional investors increase the liquidity of markets and lower volatility. However, their proneness to herding behaviour exposes markets to sudden changes of sentiment that may cause abrupt fluctuations in prices. The evidence on short-termism is also somewhat mixed and not particularly strong. Moreover, recent developments underscore the growing involvement of pension funds and insurance companies in corporate governance issues and suggest an increasing concern for the long-term performance of the corporate sector. Nevertheless, fund managers are themselves subject to short-term performance evaluations and are therefore forced to pay close attention to short-term prospects. With regard to financing smaller firms, contractual savings institutions need to rely on other specialist institutions such as banks as well as leasing, factoring and venture capital companies.

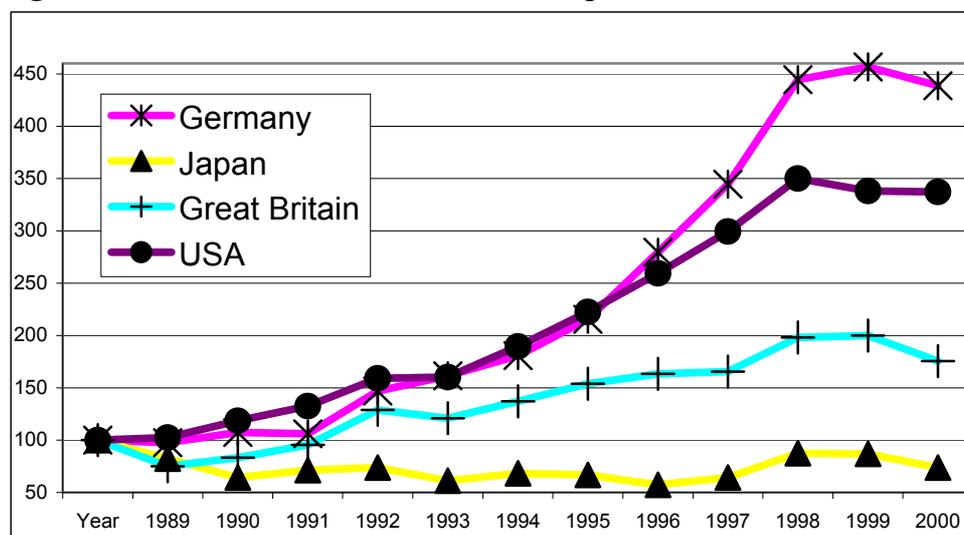
### ***2.5 Mutual funds companies***

Mutual funds investing in equities or bonds have been developed over time as means for offering to small individual investors the benefits of professional fund management and efficient risk diversification. Their number has proliferated in recent years, especially in the financial systems of high income countries. There are now mutual funds specializing by sector or by country or region as well as mutual funds following active investment management policies or passive ones using published indices of various types of securities. The proliferation of specialized mutual funds has allowed their use by pension funds and other institutional investors for their asset allocation, provided a reduced management fee can be negotiated.

Pension funds and other institutional investors clearly lack the specialist skills needed to invest in particular economic sectors or in particular regions or countries. Using well established and successful mutual funds is an economically viable and efficient alternative. Mutual funds, in the

form of venture capital funds, are also established by successful venture capitalists. Such funds have also become an important outlet for the financial resources controlled by pension funds and other institutional investors. Institutional investors often lack the skills for dealing with small firms and new ventures, both in selecting promising projects and in monitoring their performance. Participating in venture capital funds, that may also be listed on the stock exchange and may thus be easy to dispose, is an effective alternative that is gaining popularity around the world. Such funds or investment trusts may also be used for financing infrastructure projects, real estate development, and other forms of private equity. The latter usually offers higher returns than publicly listed and traded equity and is also gaining in popularity among institutional investors in America, Europe and Asia.

**Figure 1 Financial assets of investment corporations as a % of GDP**



Source: Author's calculation

### 3. Situation in Slovak Republic

#### 3.1 Banking sector

Banks is still dominated in Slovak Republic at the volume of deposits. Their assets reached volume 1 162 935 mld. Sk at the end of 2004. Development of bank's assets in past few years is shown in the next table.

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**Table 1 Bank's assets as a % of GDP**

In mil. Sk	1997	1998	2000	2001	2002	2003	2004
Assets	796256	769764	846954	928808	1014014	985445	1162935
As % of GDP	119	113	123	130	135	126	141

Source: NBS

On the other side development of bank's assets were slowly than increase assets of the others Slovak institutional investors. Last five years banks assets contribution gradually descent on total financial sector assets as marketly shown in the next table.

**Table 2 Bank's assets contribution on total financial sector assets as a %**

	1997	1998	1999	2000	2001
Commercial banks	90,0	89,9	89,6	89,2	87,7
Insurance companies	4,9	5,4	5,9	5,7	6,3
Voucher privatization funds	0,7	0,5	0,6	0,0	0,0
Investment companies	0,3	0,3	0,4	0,6	0,8
Voluntary pension funds	0,0	0,1	0,2	0,3	0,5
Leasing companies	4,1	3,7	3,4	4,1	4,7

Source: IMF

We can see the most enlarge insurance companies reducing bank's fraction.

### 3.2 Mutual funds

Mutual funds are significant institutional investors in Slovak Republic. Growth of net cash flow was nobody assuming. Mutual funds became important institutions transferring cash from primary investors to ultimate creditors in that manner. Slovak mutual funds get record in 2003 of net cash flows EFAMA<sup>2</sup> countries. Net cash flow reach amount 138 % on annual basis. Next year was very successful again with 39 % growth. At the end of 2004 was in mutual funds over 30 mld. Sk but begging of 2005 was very amazing. First February week net cash flows attack 2 mld. Sk limit.

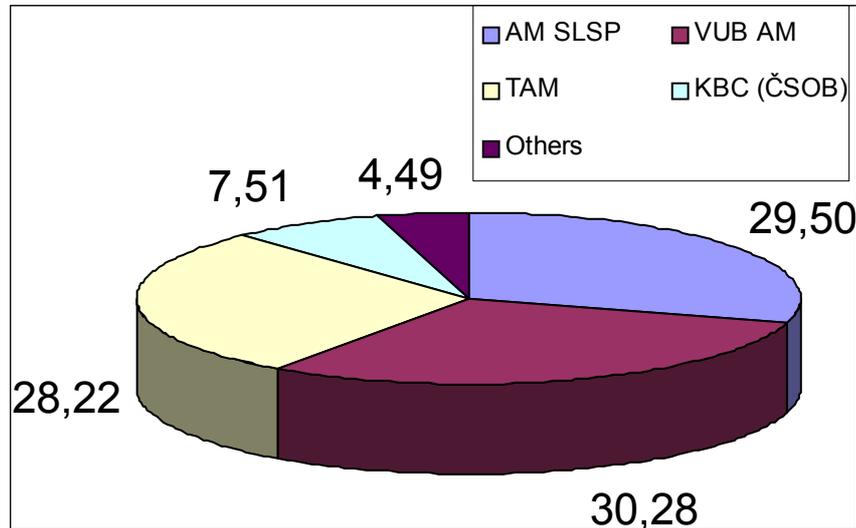
Structure of cash invested to fund follow Europe investment sentiment. Investors mainly prefer not risky type of funds like money-market and bond.

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<sup>2</sup> Formerly FEFSI

In spite of constantly enlarging supply of new funds administering mainly foreign asset companies this market is relatively little competitive. Market is dominated by four companies established by substantial banks operating in Slovakia. Their market shares are exhibit in the chart.

**Figure 2 Market shares of mutual funds companies in Slovak republic at the end of 2004**



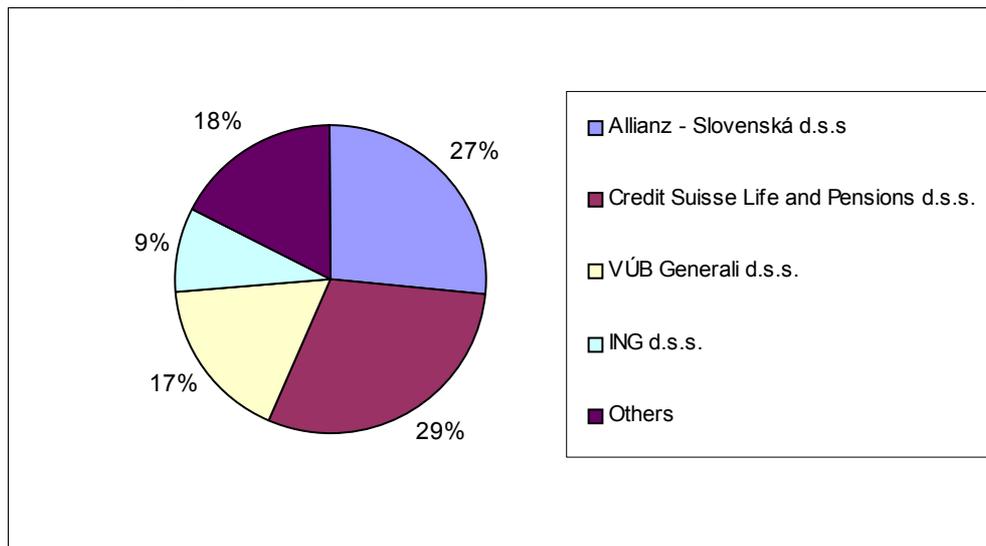
Source: ASS

The three biggest Slovak banks: Všeobecná úverová banka, Slovenská Sporiteľňa a Tatra Banka control near 90 % of all deposits to mutual fund industry. At this point of view we can say that individual investors move the cash from bank time deposits to their mutual fund companies.

### **3.3 Pension funds**

At the beginning of the year 2005 enters into force pension reform enabling to save for working people on retirement in pension funds. Much more people rebound favour about this pension reform than initially expected and now is registered over 1 million people in pension funds. Financial market authority approval eight companies due this reform in which was near 5 mld. Sk at the end of September 2005.

**Figure 3 Market shares of mutual fund companies in Slovak republic at the end of September 2005**



Source: ADSS

As like mutual fund biggest banks or insurance companies operating in Slovakia dominated to the market, exemption Credit Suisse relatively new company, focusing particularly for retired payment. Four companies managed till 80 % of invested capital.

#### **4. Conclusion**

Situation in Slovak Republic is closely to situation in rest of Europe (apart from Great Britain). Ageing of population required change of thinking both on-coming pensioners and governments. Saving for retirement increasingly taking place via insurance companies, mutual funds and newly opened pension funds in Slovak Republic. New act prefer to this by lowering tax. But we can analyze it after few years, but growth of mutual funds can confirm this.

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# INVESTMENT INTO THE UNIT TRUSTS IN THE EUROPEAN UNION AND IN THE SLOVAK REPUBLIC

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## **Abstract**

*For beginning of a new stage in the development of collective investment in Slovakia it's possible to regard the acceptance of legislature valid from 2000, which has in an imported measure converged to the state usual in the high developed countries. The law made it possible to transform and form new home subjects – trustee companies which manage unit trusts but also entree of foreign subjects of collective investment into the slovak market. The slovak investors have got the possibility to deposit their savings into the standard funds, which activities are high transparent and active regulated. At the beginning of the year 2000, the volume of the assets in the funds of Slovakia doesn't reached a fraction of the assets in banks. The growing of the consciousness in the community about the collective investment and the overall view of subjects activ on the market and decline of the interest for the bank deposits have speeded up the interest for the collective investment through funds.*

**Keywords:** *collective investment, trustee companies, unit trusts, finance investments, yield*

## **1. Introduction**

The most usual way to valorize the finances in Slovakia is still their bearing interest on the current bank deposits. Bank products as current accounts, forward deposits and checkbooks offer a high level of security of the deposited funds, but the yield for such deposits is very low. Nevertheless is this method the most current and that for two reasons: It's altogether the first possibility, which was for the slovak investors at disposal and also the mistrust to other meaner of investing. The reason was the crash of many non bank subjects. Nevertheless straight dealing with securities offers a high yield, however it bears also the risk of loosing. Somewhere between the two a.m. ways of valorizing the finances is the collective investment. Also the open unit trusts offer a very interesting combination of three ground parameters which have to be judged by each investment how the yield, risk and liquidity. The advantage of the unit trusts is, that despite the inspect paradox, that according to the law the trusts can't guarantee a fixed yield. And therefore the client can get higher yields as by current bank productes. The motive of collective investment can be, that the client have to play in the bank that he doesn't loose and the investor in unit trusts play with the goal to win.

The activators of the collective investment in Slovakia have been from the year 2000 mainly consulting firms. Banks also startet their activity and moved the savings of the clients in the trusts. Today we can say, that the move of the savings from the current bank products into the vehicles of collective investment is in Slovakia a trend matter.

The main reason is, that the current bank products reached a negative net yield so the real value of the bank savings is going down. For many years was the reality, that the majority of population has deposited the savings in banks, today each 10th saved crown is invested in unit trusts. That's the proof, that collective investing in unit trusts combine a non risk deposit of money with reaching an overaverage profit.

## **2. Collective investment in Europe**

Collective investment is developing in Europe already over 40 years, but the biggest boom has stated in last six years. The value of the assets rose almost triple. This big increase was connected with an inflating bubble of the prices on the security markets. After the valuations of the security funds multiple exceeded the average valuations nobody want to stay outside. Interesting is the fact, that the crash of this investment bubble has not damaged the assets of the trusts. According to the statements from the European association of national units for trustee companies (FEFSI) the

whole value of assets reached in 20 European countries (EU + Switzerland and Norway) the sum of 4.761 Bi. EUR. The most important segment on the market of collective investment are the open-end unit trusts (UCITS) which bear assets about 3.511 Bi. EUR. In the countries united in FEFSI exist approximately 28.000 unit trusts UCITS, what in literal translation means „enterprises of collective investment into transferable securities“.

European legislature knows also real estate trusts, commodity trusts, hedging trusts which up to now in Slovakia not exist. Even if the unit trusts are developing in each country, on the European market of collective investment are dominant four countries. The most assets of the world fortune in unit trusts are invested in France (8,05 %), Luxembourg (7,61 %), Great Britain (2,67 %) and Germany (1,93 %).

The importance of collective investment grew in the last years significantly. For example if the value of the investment assets in unit trusts in 1995 reached 23 % of the European GDP (15 EU member countries + Poland, Czech Republic, Hungary, Norway and Switzerland), in 2002 the part reached already 52 %. In the USA the part is even 70 %. That reflects the increase of the value of assets shared for one inhabitant from 4.000,- EUR to the present 11.000,- EUR.

The period after 1995 is covering with the stage of investment bubble, when the prices of shares strongly increased. The part of shares in portfolio of European UCITS increased from 25 % to 45 % whereas the part of obligations dropped from 36 % to 24 %. In the years 2001 till 2003 the situation has changed and investors began to buy more less-risk instruments of the capital market. The part of shares in UCITS so dropped to 31 %. That was the proof, that the investors are overall in the world the same. As the share bubble was inflated and the share titles were expensive, European investors bought them. Inverse, after bursting of the bubble, when it's possible to buy shares of good quality cheaper, the part of investments in shares dropped.

Interesting is the difference of the investor-preferences. Whereas the north countries of the EU (Sweden, Belgium, Denmark, Finland) have had a part of shares more as 50 % (Great Britain even 70 %), investors in south and middle Europe have been more carefully with shares. In south Europe was the part of the shares in portfolio 30 – 40 %, in Poland and Austria even only 10 – 15 %.

The average European trust has today assets under administration about 140 Mio. EUR whereas five years ago it was only 90 Mio. EUR. Despite the strong increase the European trusts remain relatively small in comparison with the US trusts. The average size of a US trust has a level

about 875 Mio. EUR. An average trust in USA has a volume of assets like all unit trusts together in Slovakia. Even happened cases when a open unit trust closed for new investments, only to protect the existent investors.

One of leading european countries is Luxembourg, where we can observe a concentration of collective investment despite a small number of population. We can say, that the fund industry, built in this country, was exclusive construed for finance institutions, which distribute funds in the whole world. The first trust was founded in 1959 and today the number of trusts exceeds 1.500. The reasons, why Luxembourg had become the finance center in the area of trust industrie are as follows:

- *taxation*: the luxemburgian trusts are not subject of profit-taxes, taxes from capital yields, there is no taxation of dividend payments and by chance deducted tax. Luxembourg has signed an agreement about avoiding of double taxation with some countries inclusive Slovak republic,
- *favourable legislature area*: The luxembourg law is an ideal area for trusts since 1983. Luxembourg was altogether the first country, which has implemented the regulations of the EU in 1988. Practical it means, that trusts, which are subject of luxemburgian law have a „passport“ and can be distributed in the entire EU,
- *perfect finance infrastructure*: high qualified staff of luxemburgian firms is the guarantee that international investors are interested to register and to provide administration of trusts in Luxembourg.

### **3. Collective investment in Slovakia**

In 2000 passed the legislation the law No.385/1999 about collective investment, which replaced the law No. 248/1992 about investment trusts and companies, which already not corresponded to the changed conditions on the slovak capital market. The law solved complex the problems of collective investment with stress to appropriate regulation and supervision about the subjects of collective investment. At the same time the law solved the problems of investment trusts founded for the first wave of coupon privatisation. According to this law the investment companies, investment trusts and depositories have to be adated to the new legislature till 30.06.2000 and to order a new licence. Already in the first quarter there were first signs that the interest in the population to invest is reviving particularly through the opened unit trusts. The home-trustee companies have reinforced and have got a new profile and there was interest from international trustee companies.

The market for open participate letters in Slovakia exceeded the double in 2000. To it paticipated also relatively a significant decrease of interest rates in banks.

At the beginning of the year 2001 through the collective investment there was collected almost 7 Bi. SKK and in 2002 the trustee companies had under administration together 14,7 Bi. SKK. It's all the strangely that in the given period, ruled on the markets an unfavourable development for the yields of trusts. Regarding the yields in the given period under unfavourable conditions the best results have reached conservative investments: loan trusts and monetary trusts. This situation emerged as consequence of decreasing the interest rates through the central banks meant that the prices of loans soared.

Disastrous development reached the stock unit trusts, because it follows a correction of overvalued stock prices in the technological area and except of that hapened a whole recession of global economy. That caused a 30 % decrease of the fortune-value belonging to the trusts activ in the technological sector. Moreover trusts with investments on the US market have registered a dropp of their value as a consequence of decreasing the stock prices in the USA as consequence of the terrorist attacks, the consequence was the move of funds from stock markets to the loan trusts with a lower risk and a stable yield.

Regulation of collective investment has been amended from the 01.01.2002 through the law No.566/2001 concerning the securities and investment services. The law liberalized the admittance of international trustee companies to the slovak market with the objective to distribute their trusts through security dealers with the permission to grant investment services.

The entire sum allocated in unit trusts amounted to 14,7 Bi. SKK on the market were activ 39 home and 93 international open trusts and 53 closed unit trusts. In 2002 growed the market in dollar expression over 179 %, on the other side the amount invested in unit trusts have been only 5 % of the deposits of the population in banks. The best sell performance reached the currency market trusts because their performance was double higher as by deposits on the current accounts, into the stock trusts has been invested only 1,5 Bi. SKK.

Already in the first six months of 2003 the volume of the administrated fortune was over 50 % higher than in 2002. In the given period has Slovakia in the growth dynamic overtaken all middle european countries because in 2003 the volume of funds administrated through the trustee companies grew about 140 %. By the end of the year the unit trusts registered nearly 37,3 Bi. SKK. To an important measure that was caused also through the decrease of interest rates through the NBS in 2002 with which the term deposits in banks lost the interest by investors. In the category of money and

loan funds the best performance reached the funds, orientated to the slovak crown. The performance of the crown funds was at the level 3-4 % which was caused through a slow down dropp of the crown interest rates. The stock funds have reached a performance about 10 and more percent and the mixed funds 5 -10 %.

The volume of funds invested in unit trusts has increased in 2004 about 30 Bi. SKK. Similar as in 2003 the slovak market of unit trusts reached one of the highest rises in the european countries. Under 17 countries in the european federation which units the national associations of trustees, the Slovakia register the highest percentage increases of funds, invested in unit trusts. The reason is the delayed entrance of that kind of investment in comparison with other members, which have already passed the first boom. Despite this dynamic development Slovakia is still the member country with the with the lowest volume of assets in unit trusts, by conversion to one citizen the Slovakia is on the 15th range. The entire volume of funds invested in unit trusts mounted to the end of the year 2004 already round 70 Bi. SKK.

In comparison with other FEFSI countries in Slovakia are dominant money market funds. In this funds investors placed in 2004 74,6 % of funds, which have benn directed to unit trusts. For comparison in the association reached this part 12 %.

According to statistics of Slovak assciation about trustee companies nearly 75 % of all invested funds have been invested in money funds. Because of multiple decrease of interest rates through the NBS reached these funds an overaveraged value on the level 4-5 %.

Till 17 % of all new investments have been directed to the loan money funds. The drop of key interest rates supported the profits of loan money funds, which reached a valuation in average of 6,4 %. The key factor of this valuation was the decrease of the interest rates through the central bank, because by decrease of interest rates the value of purchased loans is growing and that caused the growth of the unit value.

A good valuation on the level about gross 10 % reached the loan trusts which invested their funds in government loans in middle Europe. Investments in stock trusts reached a part only about 2,6 % which is only 50 % against 2003.

The present valid law No.594/2003 about collective investment has increased the protection of the investors with the obligation of the trustee companies to fulfill the criterions of the capital appropriation in dependence to the fortune under administration of the unit trusts. By the sale of unit trusts is an important factor the width and quality of the distribution net. That

confirms the development of sales for two last years because the sale of unit shares through the branches of strong banks is the biggest competition advantage.

**Table 1 Net sales OPF in Slovakia (in SKK, 01.05.2004 – 12.31.2004)**

	<b>2004</b>	<b>2003</b>
<b>Asset Management SLSP</b>	9 771 179 249	6 423 478 550
<i>VÚB Asset Management</i>	8 422 032 603	6 593 548 318
<i>Tatra Asset Management</i>	7 308 617 755	6 145 815 313
<i>KBC (ČSOB)</i>	2 410 845 588	1 634 509 040
<i>Pioneer Investments</i>	946 251 889	380 505 673
<i>Istro Asset Management</i>	552 243 405	753 713 542
<i>AMSLICO AIG Funds</i>	489 216 088	261 314 787
<i>WIOF (SFM Group)</i>	271 316 159	177 598 978
<i>Dexia</i>	192 302 919	–
<i>ING Bank</i>	134 401 821	–
<i>Capital Invest, Invesco (HVB Slovakia)</i>	126 470 915	463 533 942
<i>ABN AMRO</i>	3 816 402	–
<i>Volksbanken (Ludová banka)</i>	3 524 256	78 612 207
<i>Investičná a Dôchodková správ. spol.</i>	-17 609 951	54 900 794
<i>PRVÁ PENZIJNÁ</i>	- 351 332 945	- 359 392 392
<i>J&amp;T Asset Management</i>	–	- 833 435 003
	30 263 278 158	21 774 703 748

Source: [www.ass.sk](http://www.ass.sk)

The prove is also the reality, that between the three biggest net sellers are the trustee companies of the three biggest banks: Slovak saving bank (AM SLSP), Tatrabank (TAM) and VUB - General saving bank (VUB AM). This three leading companies share one below the other 80 % of the market. The mentioned banks are using a wide net of branches and cross-selling when the bank employees recommending the depositors, who are not satisfied with the traditional deposit products, the diversion of the money into the trusts.

The more demanding the administration of the trust is, the more employees and analyses are required. Because of frequent changes in portfolio the trust manager has to pay higher transaction costs and with it the fee in the trust is higher. The lowest fee have the money funds and the highest fee have the stock funds.

The managers of the trusts ordinary share entrance fees with the distributors, come out fee is a motivations factor, that the share holder doesn't leave the fund. Some trustee companies indicate this fee, but often they remit it, if the share holder persist in the fund a sufficient long time.

The growth dynamics of sales of participation letters has had a big speed also at the beginning of the year 2005. The net sales of open unit trusts in Slovakia have in February reached a value about 1,8 Bi. SKK. That was the second best result in the history. The entire net sales in the present year already exceeded the limit of 10 Bi. SKK. In comparison with the same period in 2004 the sales have increased quadruple and exceeded already one third of net sales of the whole last year.

Probably in the current year it will not be possible that the crown loan funds can repeat the success from the last year, the expected yielding is at the level 3,5-4 %. Money crown funds may reach a valuation between 2,5 and 3 %.

Measures of the NBS against a strong increase of the crown caused a decrease of interest for government securities and the consequence is a reduction of the yields for crown loan funds.

According to the some analytics, in the current year we can expect a more favourable development by the international stocks and by international loans, mainly by multinational european and japanese firms which have to be able to overcome the expected low growth of the economics in this areas. On the other side is to take into the consideration the move of the slovak crown rate against international currencies.

In this year it's assumed a partial increase of the part of investments to the mixed and stock funds how far will continue the growth on the global stock markets. Higher valuation is expected in case of european firms because they state a higher measure of undervaluation.

Slovakia belongs also in the fund branch to developing countries with a big potential. The collective investment started in the last period a trend of a steep developing segment of capital market. This trend will continue and that's obvious from the increase of the volume of administrated fortune in trusts of collective investment. The volume of administrated fortune by the end of the first six months of the year 2003 was 1,55 times bigger then to the end of the year 2002 and 2,1 times bigger in comparison with the same period in 2002. In 2002 the assets in unit trusts in Slovakia increased round 179 % which was in the given year the biggest increase in the world. Even if we are according the volume only a grain in the sea of sand, in the dynamik-coefficient of growth we clear also henceforth overtake other middle european countries. In 2003 no one of these countries had an increase of fortune about 98 % under administration of the trustee companies. The sector of collective investment again confirmed, that it is already some years the most dynamic part of the home finance market. In 2004 the averaged entire deposits to the open unit trusts were weekly in average 500 Mio. SKK.

**Table 2 Structure of net sales OPF in SR (in Mio. SKK, 02.18.2005)**

	<b>2004</b>	<b>2005</b>
<i>Money Funds</i>	22 588,5	6 601,1
<i>Funds of Bond</i>	5 136,5	3 629,0
<i>Funds of Share</i>	780,6	189,0
<i>Mixed Funds</i>	1 652,7	193,3
<i>Funds of Funds</i>	104,1	0,3
	<b>30 262,4</b>	<b>10 612,7</b>

Source: *www.ass.sk*

Net sales of funds in Slovakia had in the first quarter 2005 the following structure: 38,2 % loan funds, 3,1 % stock funds, 2,4 % mixed funds and 56,3 % money market funds. The average investment shows the differences of the slovak investors to the relevant averages in Europe, America or the world. Slovaks are extremely careful and conservative, when they over 50 % of their investments entrusted to money market funds. The stock funds in Slovakia extremely lag behind. If we look at the dates from the end of 2003 in Europe, America or in the whole world, the importance of money market funds sank eventual stagnated. Against that in Slovakia grewed the importance already about 7 %.

On all sophisticated markets of finance investments are valid the same basic rules. The first is about risk and yield. Simplified it can be interpreted: The bigger the yield, the bigger the risk. The money market funds are the most conservative manner of investing, follow the loan funds and to the most risky investments are belonging the stock funds. The second basic rule is the longer investment horizon is at disposal, the higher risk the investor can allow to undergo. This rule can't be generalised because exist investors who don't want, can't or don't accept whichever fall of value of their fortune also when only temporary. The last rule is, that the historic yields are not a guarantee and not a determination factor for yields in the future.

#### **4. Conclusion**

The slovak capital market has a specific character and also the slovak investor has an other position in connection to this rules. He is influenced through a lot of specific factors from which probably sourced his extremely conservativity and difference opposite the more sophisticated markets. The market with slovak stocks is weak and investor in Slovakia who will take more risky investments is forced to take international investments in stocks and automatically undertakes also the currency risk. Except the moves of

share prices which can influence his yield, the move of the exchange rate of the slovak crown against EURO, USD or against other currencies can also influence his yield. The strengthening of the crown drops the profits, which can the investors gain from the stock funds. Maybe therefore the slovak investors avoid the stock markets.

The next of the factors which can influence the investors in Slovakia are historically interesting yields of crown money market funds and loan funds caused through high starting point interest rates and their gradual decreasing. Thanks to that the conservative funds also reached above the average yields. By high yields in the past the investors didn't like to undertake an additional risk in connection for instance with stock funds. In Slovakia high yields definitely not exist and in this direction the market get a standard quality. The interest rates are low and if we deduct the administration fees, the yields by loan or stock funds are more attractive as yields, which we can suspect from the money market funds. The mentioned fact may lead to more popularity of more risky funds and to a progressing approximation the structure of slovak investments to sophisticated markets.

The structure of the slovak investments was influenced through demanding of separate kinds of investments. The easiest, at least complicated and most secure is the investment in the money market fund. But that doesn't mean, that this is for the investor most suitable and most advantageous. But that's a certain tax for the inexperience.

The structure of the trust market in Slovakia has changed in the last two months radical. Market in the year meantime comparison grows, but the investors move their money from the low yielded money market funds into other types of assets. In the last year into the money funds have been directed 75 % of investments, from August of the present year there appear withdrawals from this funds.

At present the biggest increase of investments is recorded by loan funds, but a surprising big share represent investments in stock- and roof funds. In September of the present year 1/4 of entire investments have been directed into stock funds and into the roof funds even 1/3 of entire investments. Last year investors placed into the roof funds ca. 100 Mio. SKK during the last three months of this year almost 2,4 Bi. SKK.

The most important reason of this trend is a weaker performance of crown money funds, but it's also the fact, that the clients are better informed and have got some experiences from the money funds.

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# EXCHANGE TRADED FUNDS IN CAPITAL MARKETS

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## **Abstract**

*Paging through professional financial publications or regular press nowadays we see analysts split over their opinions and recommendations regarding investments in different types of funds marked by varying degrees of risk and return. However, both analyses and experience from collective investments overseas, especially in the U.S., give evidence that, in the long run, index funds replicating the market portfolio yield approximately the same return as the best-performing and most profitable risk equity funds or hedge funds, which often focus on a specific market segment. Latest trends in the fund industry around the world show an increasing number of investors turning their attention to index funds, which limit the risk to investors by diversification.*

**Keywords:** *Index funds, market portfolio, exchange traded funds, innovation ETF*

## 1. Introduction

Index funds are based on Markowitz's market portfolio theory, which says that a market portfolio represents a risk weighted average return of the entire market assuming the existence of a risk-free asset. This important conclusion has led to the construction of index funds in the early 1970s, initially open to institutional investors only. The first index portfolio was set up in 1971 by the bank Wells Fargo, followed in 1976 by the introduction of the first public index fund by the investment company Vanguard and its renowned manager J. C. Bogle. This facilitated access to capital market investments to the lay public as well.

Index funds are a special type of equity mutual funds whose portfolio contains all shares included in a relevant market index, both in terms of structure and value. In other words, an index fund is a perfect copy of its benchmark index. This sort of funds combine the best virtues of open-end mutual funds (UCITS) and investment funds (Open End Investment Companies – OEICs, or investment trusts). Dividends earned on individual constituent equities are reinvested into portfolio equities, while respecting their share based on weights in the index. This ensures that the fund and the benchmark index perform along the same lines.

An index fund may sometimes fall short of the returns posted by the index it mirrors. It is due to a so-called tracking error, which gauges the deviation from the index performance. Where does the deviation come from? It is mostly from various broker fees and the funds' operating expenses or other technical factors.

### *1.1 What are the advantages of index funds?*

- The biggest asset of index funds is their passive management and, consequently, low operating costs. The only operations carried out by fund managers are those required to preserve the appropriate portfolio structure. This means they only purchase securities which are added to the index, or sell those which drop out.
- Index funds have small staff, and since there is no need to analyse securities, there are no analyst bills.
- Empirical and statistical data shows that index funds actually outperform a number of actively managed funds.
- Since their costs are low, customers pay minimum or no fees (e.g. the Vanguard 500 index funds charges a mere 0.18%).

Index funds are distinguished by the type of index they track. Many target or copy a broad market – market-wide indices (Wilshire 5000 Index, S & P 500, and the like). Some funds mirror the dynamics of a particular sector, industry (DJ U.S. Financial Sector Index), or international indices (MSCI Europe Index).

## **2. Exchange traded funds**

This form of investments, known to investors as exchange traded funds (ETF), experienced a boom in the 1990s. Their securities became tradable in secondary markets as well. The first exchange traded funds appeared and received their name in 1993 on the AMEX market (American Stock Exchange). It was mainly in the 1990s that they attracted growing interest from investors, yet the trend has continued after 2000. Investments in ETFs totalled USD 87 billion in 2002, but exceeded the USD 187 billion mark by 2004.

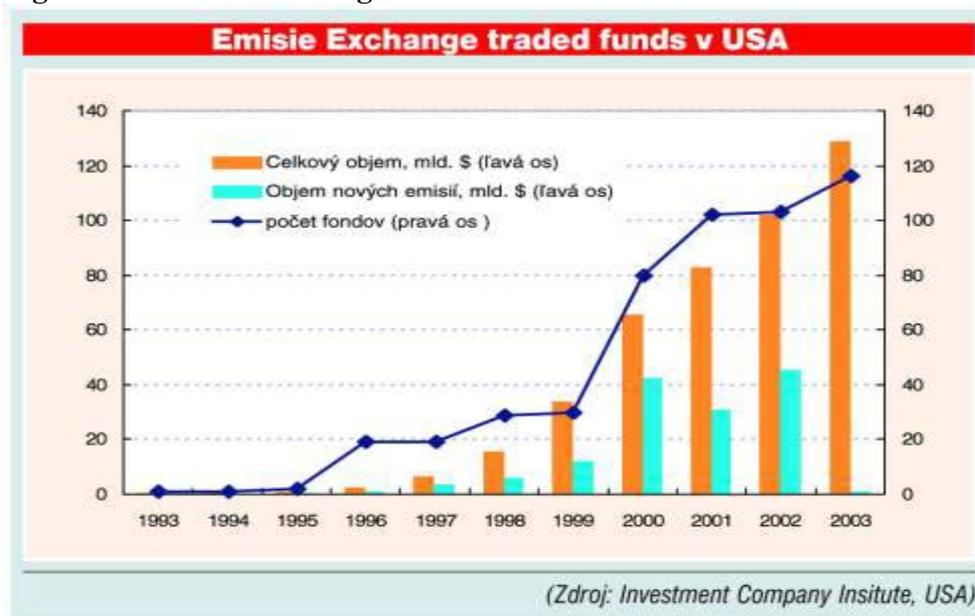
Exchange traded funds are open-ended. They have general meetings, a board of directors, executive officers (unlike classic mutual funds) and an obligation to audit their assets every year. Apart from that, there is another essential difference between classic open-end mutual funds and ETFs. Since open-end mutual funds have their asset management costs to cover, their buy and sell rates are different. The spread (premium) pays for management and trading fees. An ETF issues no unit certificates, but rather regular shares which an investor is free to buy or sell at any time.

ETFs are valued much in the way shares are rated at a stock exchange on a trading day. Their price is derived from the value of the benchmark index, or its components. Gaps, if any, between the index value and the fund price resulting from the interaction of supply and demand are offset by arbitration. The value of individual ETFs does not precisely reflect that of the benchmark index. It is determined as a percentage of the benchmark index value. For a fund replicating, for instance, the NASDAQ 100, whose value is set to  $\frac{1}{4}$  of index, if the index scores 1,200 points, the ETF will be worth USD 30 per share.

An investor may thus take long or short positions, or buy on margin from a broker. Daytrading allows institutional investors in particular to conduct arbitration operations. The very composition of ETF makes it possible. Investors take advantage of the difference between the price of ETF securities and their net asset value (NAV). Stock brokers handling arbitration transactions seek out and buy cheaper ETF shares and trade them for more expensive securities included in ETF portfolios. As the demand for ETF

securities rises, their price begins to grow and near the NAV. As soon as the price of ETF securities exceeds the NAV, the arbitrators carry out a counter operation. However, these operations are only affordable to institutional investors, as they require a large number of securities. That is the reason why the greatest interest in exchange traded funds also comes from hedge funds, which among other things deal in arbitration and other speculative trade. The development of ETFs is illustrated in the chart below.

**Figure 1 Issues of exchange trade funds in the U.S.**



Total volume in USD billion (left axis)  
 New issues in USD billion (left axis)  
 Number of funds (right axis)  
 Source: Investment Company Institute, U.S.

ETFs offer investors a wide variety of investment opportunities. As with index funds, investors can invest in the whole market, a single sector, in bonds, international equities, etc.

Among the first ETFs emerging in 1992 were SPDRs (Standard & Poor's Depository Receipts) which tracked the S&P 500 index. Traded on AMEX since 1993, they still rank among the most popular exchange traded funds today. SPDR issue deposit certificates the value of which mirrors that of equities pooled in the S&P 500 index. Investors are paid a regular quarterly dividend. Unlike early index funds, SPDRs have a lifespan till 31 December 2099. SPDRs currently copy sector indices as well, allowing

investors to diversify their portfolios in certain economic sectors. They also played a special role in the technological sector investment spree in the late 1990s.

Also enjoying great popularity among investors are EFTs based on the Dow Jones Industrial Average and NASDAQ 100 family. Known as DIAMONDS and QQQs, they entered AMEX in the late 1990s. AMEX is considered the “cradle” of exchange traded funds today. In mid-2004 it listed 139 ETFs (out of 159 registered in the U.S. at that time).

The table below gives an overview of the biggest exchange traded funds and their basic characteristics.

**Table 1 Exchange traded funds**

<b>Title</b>	<b>S&amp;P Depository Receipts Trust Series 1</b>	<b>DIAMONDS Trust Series 1</b>	<b>NASDAQ 100 Index Tracking Stock</b>
Acronym	SPY	DIA	QQQ
Slang name	Spiders	Diamonds	Cubes
Index	S&P 500	DJIA	NASDAQ 100
Price/index ratio	1/10	1/100	1/40
Trading launch	29/1/1993	20/1/1998	10/3/1999
Assets (as at 26/7/2004)	USD 41.07 billion	USD 7.55 billion	USD 23.08 billion
Daily trading volume*	USD 43 million	USD 6.7 million	USD 106 million

\* 3-month average as at 26/7/2004.

The market is still dominated by Spiders and Cubes, which make up 80% of total trading volume in exchange traded funds.

In 2002 practically all indices were already occupied by ETFs. Many analysts were sceptical about the future of these funds, in particular those linked to equity indices.<sup>1</sup> In response to that, new ETFs emerged, this time referring to indices of fixed-income securities. Branded as bond exchange traded funds, they were rolled out in the U.S. market on 26 July 2002 by Barclay’s Global Investor. Their indices follow price trends in corporate and government bonds. They are traded similarly as ETFs tied to equity indices. Trademarked iShares<sup>2</sup>, the Barclay’s Global Investor ETF brought larger trading opportunities for those seeking short-term profits. The new iShares allowed investors to focus on the yield curve, taking both long and short

<sup>1</sup> Jim Shirley (a well-known Lipper analyst) says that “the emergence of too many new exchange traded funds investing in equities may have a negative impact.”

<sup>2</sup> The company uses the same trademark for its equity ETFs.

positions in bonds with different returns and maturities responding to interest rate movements.

Bonds index funds are a risk-hedging tool appealing to conservative investors above all. There are only 10 bond index funds in the U.S. at present. To some extent, this appears to be related to the tightening of the Fed's monetary policy. The most popular bond fund among investors is Lehman 20+ Year Treasury (TLT).

Since 2000 ETFs have gone through some innovation in equity indexed funds. The index fund pioneer Vanguard introduced what it called VIPER ETFs – Vanguard Index Participation Equity Receipts. VIPERs can be traded like any other stock. But rather than a stand-alone ETF, they are a distinct class of shares in Vanguard index funds. The company did not stop there and went on to launch Extended Market VIPERs, later followed by Total Stock Market VIPERs. In January 2004, it unveiled a VIPER fund based on sector indices and indices clustering large-capitalisation firms. In doing so, the company broke away from traditional indices such as S&P, Russell and Barra, and switched to Morgan Stanley Capital International (MSCI) indices. ETFs based on MSCI indices emerging since 1996 cover a larger number of world regions and sectors.

Barclay's followed suit with its new iShares MSCI EAFE Index ETF which replicates an international equity index. Another application is the iShares MSCI Japan Index ETF.

Holding company depositary receipts (HOLDS) are a specific ETF category. Introduced in 1998 by Merrill Lynch, they are known for the Semiconductor HOLDRs Trust securities. Each portfolio is a package of 20 equities, their number decreasing whenever a merger or acquisition happens. The structure of depositary receipts implies that the holder owns all shares included in the package. Bank of New York acts as the holder's agent and can be approached by investors to trade HOLDRs for shares featured in the portfolio (in lots of hundreds). Investors may also choose to sell unprofitable shares and keep the most profitable ones.

ETF took some time before arriving in Europe in April 2000, when they started trading on the London and Frankfurt stock exchanges. In London, ETFs are set up mostly by Barclay's and investment banks Merrill Lynch and Bloomberg. The London Stock Exchange created a special trading platform for ETFs called extraMARK.

The major indices currently tracked by exchange traded funds are listed in the following table:

**Table 2 Market indices and ETF**

Market-wide indices	Dow Jones U.S. Total Market, Russell 3000
Large-capitalisation (Large-Cap) indices	Dow Jones Industrial Average, Russell 1000, S&P 500
Medium-capitalisation (Mid-Cap) indices	Russell Mid-Cap, S&P Mid-Cap 400
Low-capitalisation (Small-Cap) indices	Russell 2000, S&P Small-Cap 600
Sector indices (technological, internet, Multi-Cap)	Nasdaq 100, Nasdaq Composite
Fixed-income instrument indices	Lohman Aggregate Bond, Goldman Sachs \$ Inves Top Corporate Bond
International indices	MSCI EAFE, S&P Europe 350
Emerging market indices	MSCI Emerging Markets
Specialised indices	Intellidex Indexes, S&P 500 Equal Weighted Index

**Large-Cap ETFs** track indices pooling companies with high market capitalisation (over USD 4 billion) such as General Electric, Microsoft, IBM, Johnson and Johnson, 3M Co, Boeing Co, Procter and Gamble and the like. These ETFs are marked by relatively lower volatility compared to others and have also paid higher returns in recent years.

**Mid-CAP ETFs** cover the market segment comprising firms with market capitalisation of USD 1-4 billion. They are typical for seeking value growth. They already fall into the higher-risk category, and their portfolios feature corporations such as Washington Post, Coach Inc, XTO Energy Inc, Tyson Foods, or JeBlue Airways Corp.

**Small-CAP ETFs** monitor the performance of firms with market value of up to USD 1 billion. Since they primarily seek rising equity value, they entail higher volatility. Notwithstanding that, in the past few years we have seen these funds perform better than those mentioned above. They list companies such as IDEX Corp, First Midwest Bancorp Inc, Valeant Pharmaceuticals, Human Genome Sciences Inc, etc.

### 3. Innovation in the ETF market

In the past five years, the number of exchange traded funds shot up and, apart from bond ETFs and many other innovations, ETFs have been looking for ways to other segments as well. Specialised ETFs are set up, with assets linked to commodity prices.

In 2003 the first gold-backed securities had their market debut, introduced by the Gold Bullion Securities fund under the label GOLD. The Gold Bullion Securities shares represent 1/10 of troy ounce of gold. Their

issue was supported by the World Gold Council and the Australia-based Gold Bullion Ltd. In December 2003 they entered the London Stock Exchange under the acronym GBS. In the same year, the World Gold Council asked the SEC for permission to trade them on the U.S. market as GLD. The first license for a “gold fund” was granted to Barclay’s Global Investors, whose iShares COMEX Gold Trust trade on AMEX as IAU. One indisputable quality of this sort of funds is the high credibility enjoyed by their financial intermediaries (e.g. Barclay’s is regarded the top player in index trading).

The successful takeoff of gold ETFs set the example for other funds in other countries. Today they relate not only to gold, but to oil as well.

The interest in stock exchange operations in the U.S. has been largely fuelled by the regulation policy. The SEC discarded restrictions to the volume of investments in ETFs imposed by the Investment Company Act, whereby a fund was not allowed to invest more than 5% of its assets in a single firm.

Another change in the world of ETFs is a move to actively managed ETFs which, rather than tracking an index, would modify their portfolios depending on market situation. Such funds, however, require active management and would therefore lose their competitive edge in the form of low fees. ETFs using leverage can borrow funds.

In 2002 the European Central Bank allowed mutual funds to invest a part of their assets in exchange traded funds. Certain limitations remain in Europe, as EU legislation does not allow mutual funds to borrow in the market.

Forecasts envision the assets managed by ETFs to swell to one billion dollars by 2007, posing serious competition to mutual funds. As a result, mutual funds will likely be forced to cut their management fees.

### ***3.1 Advantages of ETFs***

In a nutshell, the advantages of exchange traded funds can be described as follows:

1. The prices of securities in capital markets develop according to the “random walk” theory, meaning that an investor cannot earn returns above market average in the long run. This implies that at a given point his return can be higher or lower than the market average. ETFs always pay the long-term market average.
2. Unlike other mutual funds, they let investors trade throughout the stock exchange trading day, using short selling, margin trading as

well derivatives. It is this high flexibility that has contributed to ETFs being used not only for long-term investments, but for daytrading as well.

3. ETFs cost less. So from the investor's perspective, they are also attractive for low fees. There is no initial fee. The only fee charged is for asset management, withheld from dividend payouts, which usually does not exceed 0.5% of assets annually. As opposed to ETFs, non-index funds often charge investors not only higher initial fees, but also management fees and exit fees. Since these fees are included in reported returns, the investor's actual net (real) gain may be much lower. ETFs usually ask no initial or exit fees.
4. Unlike non-index funds, index funds hardly trade, only if they need to realign their portfolios. An ETF buys or sells securities only if a new security is added or one removed from the benchmark index to reflect the new index composition. This results in low portfolio turnover as a ratio of total transactions to total assets held by the fund. ETFs can thus avoid the high costs involved in trading, such as all kinds of broker fees, analyses, etc.
5. The low portfolio turnover also implies tax savings. While high turnover rates in non-index funds often generate considerable capital gains, which is subject to taxation, ETF can save on taxes with their lower turnover.

### ***3.2 Disadvantages of ETFs***

1. Each purchase and sale involves broker fees which reduce return. This is in particular true for daytrading, where the investor needs to trade a large bulk of securities to cover fees when price movements and gains are small. That is why daytrading involves the application of margin systems, where the investor pays down only a margin (a fraction of the original price) and takes advantage of the leverage effect to earn higher gains.
2. Disadvantages can also be seen for investors using the dollar cost averaging technique, investing certain sums at regular intervals to eliminate and average rate fluctuations. The broker fees incurred naturally reduce the bottom line.
3. As normal index funds, ETFs also encounter tracking errors, meaning that they not always mirror the net value of assets held. In case of a more substantial tracking error, arbitrators intervene by purchase or sale, as necessary.
4. Professionals start to appreciate ETFs in particular for the flexibility they offer in portfolio diversification. As a consequence of ongoing

globalisation and rapid technological progress in financial market trading, risk diversification is becoming increasingly problematic.

This problem is a part the research program VEGA “Europa as the international financial centre” 2005-2008.

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*European Union  
and Euro*

# FINANCIAL INTEGRATION PROCESS IN THE EUROPEAN UNION

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## **Abstract**

*The process of European financial integration is one of structural reforms, which were defined in the Lisbon strategy in 2000. Financial integration became a prime objective of the economic policies of the European Union. It is generally accepted that financial integration fosters financial development, which in turn creates potential for higher economic growth. There are many researches studying quantitative and qualitative indicators of financial integration process. Most of the studies concern with estimation of benefits or state and evolution of financial integration. One of many aspects of financial integration process is monitoring and measuring of achieved level on the financial market segments. Paper is focused on selected questions of European financial integration, deals with financial development, definition and benefits of financial integration and presents methods of measuring and monitoring achieved degree of integration process.*

**Keywords:** *European Union; financial markets; integration; measuring; monetary union*

## **1. Introduction**

The paper is focused on the selected issues of financial integration as one of primary objectives of the European Union today. The aim of the paper is to explain the need for monitoring of financial integration in the European Union and present various indicators of financial integration. In the first chapter the financial integration of the European Union is assumed in the context of globalisation and its international financial integration is expressed. Then, the impacts of financial integration are described and the main steps of European authorities to foster the creation of single European financial market are introduced. The crucial part of the paper is chapter four that deals with measuring of financial integration in the European Union. The main and frequently used approaches to measuring the integration and the most common indicators are explained there.

## **2. Globalisation and the financial integration**

European financial integration process calls for many changes in the structure and operation of the financial services sector across the EU member states. Barriers to trade in financial services and financial assets have been gradually eliminated in the whole world and interaction among national economic systems is becoming still greater. It is generally accepted that the financial integration can have a positive influence on economical development, namely for many reasons.

Many studies are engaged in examination of evidence that the financial integration supports economic growth<sup>1</sup>, in particular through financial innovations and investments. Financial integration would further reduce volatility and help to stabilise fluctuations in consumption relative to income. The mentioned effects of financial integration are generally accepted, but in fact it is difficult to establish a strong relationship between financial integration and growth; there is also little evidence that financial markets would be more stabilised<sup>2</sup>. It is needed to realize that there are also negative effects of financial integration, for example: financial crises become more frequent; volatility of financial markets is increased; the extent of financial integration by measures of financial liberalisation is unequal; the rate of financial integration (measured by gross capital flows) is also uneven, net capital flows from poor to rich countries; financial integration can make

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<sup>1</sup> e.g. Cecchini report (1988), The London Economics Study (2002), CEPR study (2002), Gyllenhammer report (2002)

<sup>2</sup> BIS Paper No 23. Access from: < <http://www.bis.org/publ/bispap23.htm>>

countries exposed to external shocks (that reduce growth and consumption smoothing benefits).

Based on experience, we can state that enhanced financial integration has resulted in higher growth and greater convergence among economies in general. Liberalisation of capital movements, financial services, deregulation and further opening of markets to trade and investment are one of major forces contributed importantly to the globalisation process. On the other hand, one of important features of globalisation is the high integration of financial markets.

## ***2.1 Indicators of international financial integration in the European Union***

As mentioned in the previous chapter, the degree of financial integration is increasing. Foreign assets and liabilities in advanced countries have grown rapidly relative to GDP in recent years. Similarly, the portfolio equity and foreign direct investment categories have grown in importance relative to international debt stocks. Is it possible to distinguish between European integration and international integration in Europe? We can describe the broad trends in international financial integration of the European Union on the basis of countries' portfolios of external assets and liabilities – the so-called international investment position<sup>3</sup>.

Summary volume-based measure of international financial integration (Lane, Milesi-Ferretti, 2003) is:

$$IFIGDP_{it} = \frac{(FA_{it} + FL_{it})}{GDP_{it}}, \quad (1)$$

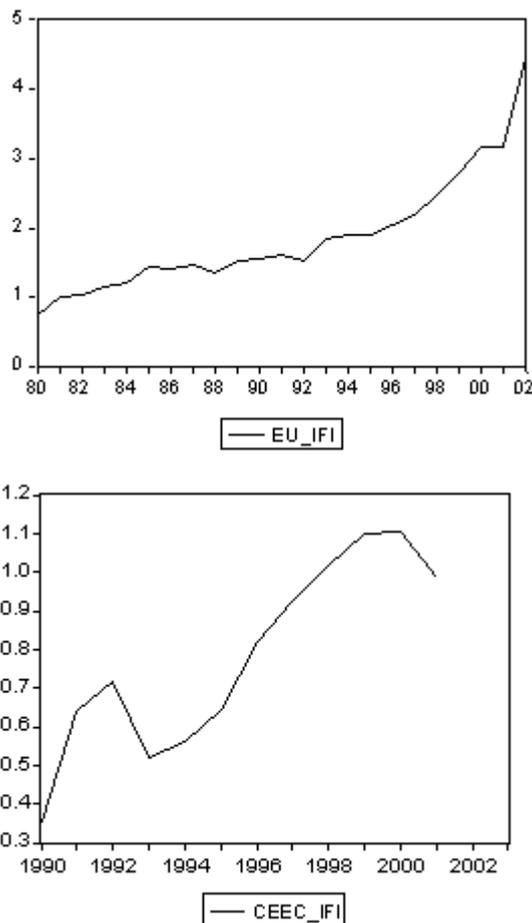
where  $IFIGDP_{it}$  expresses the international financial integration for country  $i$  at time  $t$ ;  $FA$  refers to the stocks of aggregate foreign assets and  $FL$  represents the stocks of aggregate foreign liabilities<sup>4</sup>. The European Union is characterised by an increasing trend (see Figure 1) for the whole period of observation. In case of new member states, the indicator increased four times over 1990s. The figures of these countries are much lower than in EU-15 member states.

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<sup>3</sup> LANE, P. R. and MILESI-FERRETI, G.M. International Financial Integration. IMF Staff Papers. Vol. 50, Special Issue. International Monetary Fund, 2003.

<sup>4</sup> External assets and liabilities characterize the international investment position – summarize total holdings by domestic residents of financial claims on the rest of the world and non-resident' claims on the domestic economy. External liabilities are divided into four main categories (foreign direct investment, portfolio investment – equity and debt securities, financial derivatives and other instruments – monetary authorities, general government, banks, etc.), assets are represented the same categories plus official reserves (Volz, 2004).

**Figure 1: International Financial Integration in EU-15 and CEE countries**



Source: Pungulescu, 2003. Access from:  
< <http://venus.ci.uw.edu.pl/~rubikon/forum/crina.htm> >

### **3. Integration of financial markets in the European Union**

Process of financial integration in the European Union has been proceeding very intensively in recent years. We can assume that the introduction of euro should speed up the integration process - main reasons are the elimination of the exchange risk and obstacles to the free flow of financial assets and services. The European Commission DG Internal Market

has asked for quantification the macroeconomic benefits of full integration of European financial markets. Based on the study of London Economics (2002)<sup>5</sup>, the process of European financial integration will have significant impacts on the functioning of financial markets.

The study identified number of major expected impacts:

- increased competition among exchanges/market places,
- increased competition among financial intermediaries,
- lower costs due to economies of scale,
- banks and other more traditional sources of corporate finance face tougher competition from financial markets,
- improved price transparency,
- increased market depth and lower liquidity risk,
- larger markets for high risk capital such as venture capital.

More open and effective European financial market could be favourable for both investors and the corporate sector. Investors will benefit from higher risk-adjusted returns on savings, through enhanced opportunities for portfolio diversification and more liquid and competitive capital markets. The corporate sector will benefit from generally easier access to financing capital. Competition in the financial intermediation sector will offer corporations a wider range of financial products at attractive prices.

The economy-wide improved allocation of financial resources to investment projects should impact positively on the equilibrium level of GDP and potentially also on GDP growth. The study deals with macroeconomic impacts on the economic growth process and estimates that the level of EU-wide real GDP should be raised by 1.1% in the long-run, total business investment should be almost 6.0% higher, private consumption should be up by 0.8% and total employment should be 0.5% higher. Results not only of the study mentioned above can be considered just as indicative of the potential benefits of European financial integration that underscore the validity of European policy on financial integration.

Responsible institutions and authorities pay to the process of financial integration in the EU member states great attention. Various measures,

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<sup>5</sup>Quantification of the Macro-Economic Impact of Integration of EU Financial Markets. Final Report to European Commission-DG for the Internal Market. London Economics, 2002. Access from: <[http://europa.eu.int/comm/internal\\_market/securities/overview\\_en.htm](http://europa.eu.int/comm/internal_market/securities/overview_en.htm)>

strategies and documents were gradually adopted to foster the creation of single European financial market. We can point out namely the Lisbon strategy, Financial Services Action Plan, Lamfalussy process and Green Paper on Financial Services Policy for the years 2005-2010.

### ***3.1 Framework for integrated financial markets in the European Union***

One of structural reforms defined in 2000 by the *Lisbon strategy* is the process of European financial integration. The next document called *Financial Services Action Plan* (2000, FSAP) proposed concrete policy objectives and specific measures for improving the single market in financial services. Broadly, the action planned is in the areas of wholesale market, retail market and strengthening prudential structures. Main topics<sup>6</sup> are:

- establishing a common legal framework for integrated securities and derivatives markets;
- removing the outstanding barriers to raising capital on an EU-wide basis;
- moving towards a single set of financial statements for listed companies;
- creating a coherent legal framework for supplementary pension funds;
- providing the necessary legal certainty to underpin cross-border securities trading;
- creating a secure and transparent environment for cross-border restructuring;
- information and transparency;
- balanced application of consumer protection rules;
- electronic commerce, insurance intermediaries, cross-border retail payments;
- moves to bring banking , insurance and securities prudential legislation up to the highest standards;
- prudential supervision of financial conglomerates, etc.

The most actual document is the *Green Paper on Financial Services Policy* (2005-2010). The material seeks ideas on the future of European financial service policy and concurs in FSAP.

The overall objective<sup>7</sup> over next 5 years is

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<sup>6</sup> Financial Services Action Plan (FSAP). Access from: <  
<http://europa.eu.int/scadplus/leg/en/lvb/l24210.htm>>

<sup>7</sup> Green Paper on Financial Services Policy (2005-2010). Access from:  
<[http://europa.eu.int/comm/internal\\_market/finances/docs/actionplan/index/green\\_en.pdf](http://europa.eu.int/comm/internal_market/finances/docs/actionplan/index/green_en.pdf)>

- to consolidate progress towards an integrated, open, competitive and economically efficient European financial market and to remove the remaining significant barriers;
- to foster a market where financial services and capital can circulate freely at the lowest possible cost through the EU;
- to implement, enforce and continuously evaluate the existing legislative framework.

As Jean-Claude Trichet, President of the ECB, said<sup>8</sup>: “*However, although the public authorities can, and must, provide an adequate framework conducive to financial integration, financial integration is ultimately a process driven by market forces and decisions taken by the private sector.*”

### **3.2 Need for monitoring of financial integration in Europe**

What the definition of financial integration? We can use the explanation of the European Commission<sup>9</sup> that considers financial integration as a process, driven by market forces, in which separate national financial markets gradually enter into competition with each other and eventually become one financial market, characterised by converging prices, product supply and converging efficiency/profitability among the financial services providers.

Seeing that the financial integration is one of objectives of the European Union, the need for regular monitoring is necessary to map out the state of advance in the creation of a single European market in financial services. As mentioned above, the choices involved in the integration process should be market-driven. However, lack of integration may indicate the existence of market barriers, which effectively prevent the realisation of an efficiently functioning European financial market.

A question arises in achieved level of financial integration assessment. Is it possible to measure financial integration? There are methods using different approaches that are based on two main types of indicators - volume and price indicators. The indicators provide complementary information and help to identify and diagnose market obstructions. It is essentially important that measuring approaches and methodologies of

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<sup>8</sup> Financial Markets Integration in Europe: the ECB’s view. Speech by Jean-Claude Trichet, President of the ECB, May 2005. Access from: <  
<http://www.ecb.int/press/key/date/2005/html/sp050718.en.html> >

<sup>9</sup> Financial Integration Monitor, 2005. Access from:  
 <[http://europa.eu.int/comm/internal\\_market/finances/docs/cross-sector/fin-integration/050708background.pdf](http://europa.eu.int/comm/internal_market/finances/docs/cross-sector/fin-integration/050708background.pdf)>

integration are in evolution. The basic and currently used methodology in measuring financial integration is described in the next part of the paper.

#### 4. Measuring financial integration in the European Union

Financial markets are integrated when the law of one price holds. It implies that assets with the same risk should have the same expected return, regardless of the domicile of the issuer and of the assets holder. Based on the definition, financial market integration can be measured by comparing the returns of assets that are issued in different countries and generate identical cash flows. The mentioned way of testing the degree of financial integration assesses the price convergence of financial assets. The methods are called as the “**price-based**”, “arbitrage” or “law-of-one-price” tests. We should consider that while using the price-based methods, it is usually difficult to identify comparable assets. Generally, when given identical assets command different returns, financial markets are apparently not integrated. The causes for the status are persisting legal barriers such as capital controls, tax codes, accounting and auditing differences, different bankruptcy law, different quality of judicial enforcement; we have to mention also potential economic barriers<sup>10</sup>.

The second approach represents so-called “**quantity-based**” tests and the measurements of financial integration are then based on asset quantities. We can mention also tests based on flow measurements (international capital flows) or stock measurements that identify the amount of cross-border holdings of debt or equity. Generally, in a system with no financial barriers, the domicile of assets issuers and holders should play a decreasing role over time<sup>11</sup>.

As described above, the crucial issue for measuring financial integration is identification of assets generating identical cash flows. In case of no identical assets we can wrongly conclude that financial markets are segmented even when they are integrated and vice versa. Moreover, any measurement of financial market integration must refer to specific assets and specific market, because we need to compare assets issued in different

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<sup>10</sup> For instance situations of asymmetric information induce investors to evaluate differently assets that are otherwise identical. (Adam et al., 2002)

<sup>11</sup> For more see for example:

BAELE, L. et al. Measuring Financial Integration in the Euro Area. (ECB, 2004).

KIEHLBORN, T. and MIETZNER, M. EU Financial Integration: Is There a „Core Europe“ ? (2005)

PAGANO, M. Measuring financial integration.

PUNGULESCU, C. Measuring Financial Integration in the European Monetary Union: An Application for the East European Accession Countries. (2003).

countries. Even if the price-based method is often used in various studies, in terms of mentioned above, we have always to note data under consideration.

An important implication of financial integration is that asset prices should only react to common news<sup>12</sup>. Then we can speak about “**news-based**” measurements in this case. Local shocks are diversified away by investing in assets from different regions on the assumption that there are no barriers to international investment. Expected returns on assets from different countries but with the same risk characteristics should depend on common rather than local news. This is possible to measure by the proportion of assets price changes that is explained by common factors. We can find researches devoted to specifying explicitly the relevant local and common information variables<sup>13</sup>.

#### ***4.1 Indicators of financial market segments in the European Union***

Based on literature, we can mention a classification of existing indicators of financial integration into four broad categories<sup>14</sup>:

- a. indicators of credit and bond market integration;
- b. indicators of stock market integration;
- c. indicators of integration based on economic decisions of households and firms;
- d. indicators of institutional differences that may induce financial market segmentation.

Several studies consider the effects of financial market integration on households’ choices (for example the portfolio choice between home and foreign assets); we can analyse its effects also on companies’ choices (such as mergers with foreign companies or acquisitions of foreign subsidiaries). Further measurements of integration are based on broad market characteristics (e.g. the size of equity, bond and bank markets, or the cross-border penetration of commercial banks and other financial institutions).

Indicators for measuring of financial integration mentioned above are in detail described in next chapters. The presented survey is processed on the basis of the Adam et al. study (2002).

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<sup>12</sup> BAELE, L. et al. Measuring Financial Integration in the Euro Area. (ECB, 2004).

<sup>13</sup> See e.g. Barr and Priestly (2002)

<sup>14</sup> ADAM et al. Analyse, Compare, and Apply Alternative Indicators and Monitoring Methodologies to Measure the Evolution of Capital Market Integration in the European Union. (2002).

### 4.1.1 Credit and bond market integration

Indicators of credit market integration can be classified into two categories:

- return-based (price-based) measurements and
- quantity-based measurements.

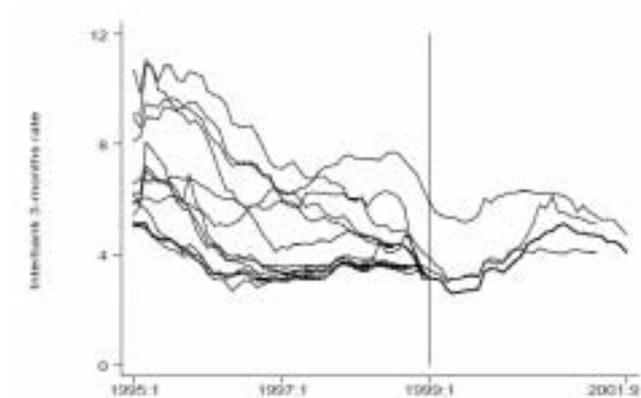
The most common measurement of credit market integration is the assessing of *interest rate differentials*. In case of elimination of transaction costs or any other type of market segmentation, net-of-tax interest rates for assets of the same maturity and the same credit risk class should be identical. In principle, this measurement may be computed for interest rates on public debt, on corporate debt, mortgage debt, and consumer credit. The determination and assessment of differentials between the interest rates charged by banks in different EU countries could be also one of possible ways of measuring the degree of integration<sup>15</sup>.

The Figure 2 plots the level of the inter-bank rate in all EU member states. Before 1999, the highest spread occurs in Greece, Italy and Portugal. After the launch of the Euro, the 11 Euro-zone inter-bank rates converge to the common Euribor rate (the spread is therefore zero). The spread on the 10-years benchmarked bond yield is plotted in Figure 3. Contrary to the inter-bank rate, the 10-years benchmark bond yield spreads don't fall in each country. Generally, the data indicate that convergence has taken place in this market as well, but to a smaller extent than in the inter-bank market.

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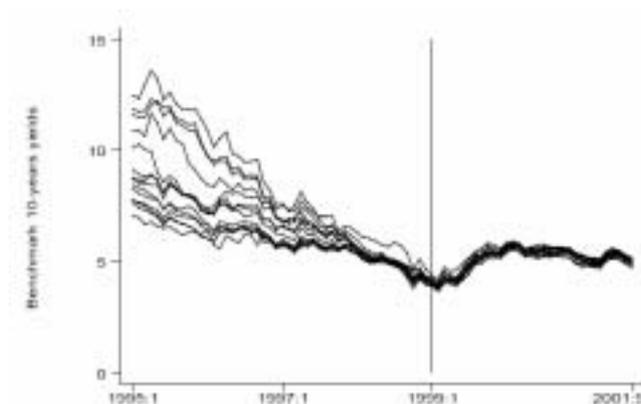
<sup>15</sup> A number of authors have used such measurements, e.g. Stigler and Sherwin (1985), Bodehorn (1995), Jackson (1992), Heitfield (1999), Centeno and Mello (1999), Kleimeir and Sander (2000), De Bandt and Davis (1999).

**Figure 2: Inter-bank 3-months rate in EU-15 (January 1995 to September 2001)**



Source: Adam et al. (2002). Access from:  
<[http://europa.eu.int/comm/internal\\_market/en/update/economicreform/020128\\_cap\\_mark\\_int\\_tables\\_en.pdf](http://europa.eu.int/comm/internal_market/en/update/economicreform/020128_cap_mark_int_tables_en.pdf)>

**Figure 3: Ten years government bond benchmark yield in EU-15 (January 1995 to September 2001)**



Source: Adam et al. (2002). Access from:  
<[http://europa.eu.int/comm/internal\\_market/en/update/economicreform/020128\\_cap\\_mark\\_int\\_tables\\_en.pdf](http://europa.eu.int/comm/internal_market/en/update/economicreform/020128_cap_mark_int_tables_en.pdf)>

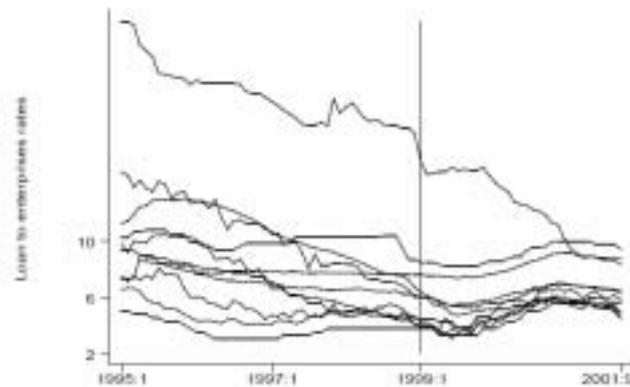
The effect of regulatory changes on banking competition<sup>16</sup> is also evident in declining *price differentials for the same banking services* (credit

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<sup>16</sup> An important step in the removal of barriers to cross-border banking competition in Europe was the adoption of the Second Banking Directive (1989) that is based on the principle of a single passport.

cards, loan and deposit rates, corporate loan rates, current cheque accounts, personal equity transaction costs, cross-border transfers of fund). A study of De Bandt and Davis (1999) finds that the level of competition in chosen EU countries (compared to the U.S.) is quite low. The case of loan to enterprises rates in the EU is expressed in the Figure 4. Even though the corporate loans rates are considerably less volatile than other interest rates, the broad picture is similar to that of the 10-years benchmark.

**Figure 4: Interest rates on corporate loans in EU-15 (January 1995 to September 2001)**



Source: Adam et al. (2002). Access from: [http://europa.eu.int/comm/internal\\_market/en/update/economicreform/020128\\_cap\\_mark\\_int\\_tables\\_en.pdf](http://europa.eu.int/comm/internal_market/en/update/economicreform/020128_cap_mark_int_tables_en.pdf)

We can also assume the degree of *cross-border banking activity*. The more financial markets are integrated the more cross-banking activity can be observed. A cause of increased cross-border transactions is especially the elimination of barriers to international capital-flows.

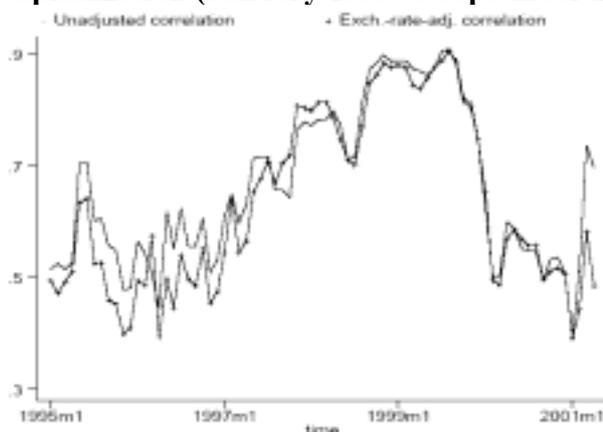
#### 4.1.2 Stock market integration

The indicators can be again divided into two categories: *returned-based* and *quantity-based* measurements. The question is how stock market integration affects stock market returns. It is supposed that stock market returns should be more correlated in the single and integrated capital market. Is it possible to measure the phenomenon under the consideration, that markets are hit by the same shocks (oil shock, monetary policy shock etc.)? That is actual namely in the European Union, where the ongoing integration process of goods and labour markets can speed up the transmission of shocks between countries. Measurements based on ex-post data are not suitable for

this purposes from these reasons and therefore new asset-pricing models (CAPM) based on ex-ante returns have been derived.

Tests of capital market integration are based on estimating if the evolution of the risk premium on domestic stocks is sensitive to the country-specific risk in relation to the covariance with an EU-wide portfolio<sup>17</sup>.

**Figure 5: Stock market returns correlation, weighted by stock market capitalization (January 1995 to September 2001)**



Source: Adam et al. (2002). Access from:

[http://europa.eu.int/comm/internal\\_market/en/update/economicreform/020128\\_cap\\_mark\\_int\\_tables\\_en.pdf](http://europa.eu.int/comm/internal_market/en/update/economicreform/020128_cap_mark_int_tables_en.pdf)

Based on Figure 5, the average stock return correlation appears to be quite unstable in the European Union over time.

The second way of measuring the capital market integration is based on quantities such as the size of capital flows or the composition of portfolios (stock measurements). The widely studied indicator is the share of domestic stocks in household portfolios compared to the share of these stocks in the world market portfolio<sup>18</sup>.

#### 4.1.3 Indicators based on household decisions

This way of measuring deals with effects of financial integration on the relationship between private savings and corporate investment and the relationship between private consumption and income. It is assumed that the saving decisions of domestic households should have no effect on the

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<sup>17</sup> A number of authors have used such measurements, e.g. Bekaert and Harvey (1995), Hardouvelis, Malliaropoulos and Priestley (1999), Sentana (2000), Chen and Knez (1995), Ayuso and Blanco (1999).

<sup>18</sup> More in Tesar and Werner (1992), Lewis (1999), Ayuso and Blanco (1999).

investment decision of domestic firms, when international capital markets are well functioning (firms can borrow on international debt markets).

Classic tests are based on the *saving-investment correlation*. We can assume that under perfect capital mobility and unchanged investment opportunities the following statement is accepted: an increase in the saving rate in one region would cause an increase in investment in all regions. Large correlations between national saving and investment have been achieved in many studies (e.g. Feldstein and Horioka, 1980). One of disadvantages of this approach is an inability to identify financial markets insufficiently integrated.

The next used indicator is based on idea that integrated financial markets allow for *international risk sharing*. The question then arises if financial markets afford full risk sharing to consumers located in different jurisdictions<sup>19</sup>. The further possible way is a finding of capability of distinguishing the contribution of different financial markets and of public tax-transfer mechanism.

#### **4.1.4 Indicators based on corporate policy**

An increasing financial integration supports the consolidation of banks and companies across geographic borders. Then we can monitor and compare both the development of *mergers and acquisitions* (M&A), namely M&A activities in the banking and securities industry, and the share of bank branches controlled by foreign banks<sup>20</sup>.

Mergers can be defined as the combination of two organisations (with comparable size) into one legal entity. Acquisitions are transactions where one firm purchases a controlling stake of another one, without necessarily combining the involved firm's assets. In terms of numbers, mergers and acquisitions among domestic credit institutions represent about 80% of total consolidation activity in the EU in each year since 1992. The only clear pickup in cross-border mergers and acquisitions is evident in the run up to the creation of the single market in 1992, when the share of domestic mergers fell to about 60%. However, cross-border mergers and acquisitions have never come close to exceeding domestic mergers and acquisitions<sup>21</sup>.

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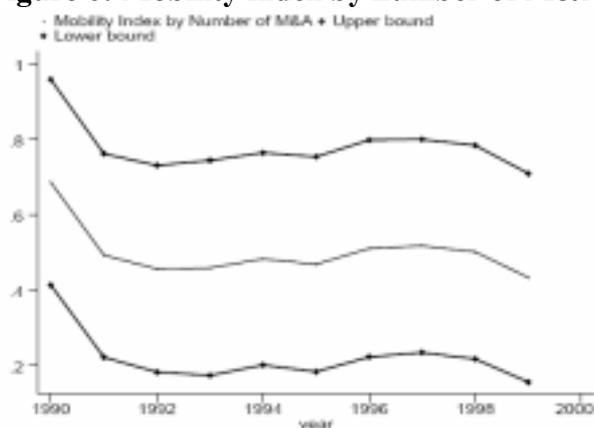
<sup>19</sup> A number of authors have used such measures, e.g. Cochrane (1991) and Mace (1991), Obstfeld (1994), Wincoop (1994), Townsend (1994), etc.

<sup>20</sup> M&A activities in Europe have taken place mainly within national boundaries rather than across them, the state is more favourable within the frame of insurance (Adam et al., 2002).

<sup>21</sup> See: WALKNER, CH., RAES, J.-P. (2005) Access from:  
<[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/2005/ecp226en.pdf](http://europa.eu.int/comm/economy_finance/publications/economic_papers/2005/ecp226en.pdf)>

The negative trend in the European Union is evident in the Figure 6 that represents cross-border mergers and acquisitions expressed by the mobility index based on the relative number of cross-border M&A<sup>22</sup>.

**Figure 6: Mobility index by number of M&A (1990-1999)**



Zdroj: ADAM et al. (2002). Access from:

<[http://europa.eu.int/comm/internal\\_market/en/update/economicreform/020128\\_cap\\_mark\\_int\\_tables\\_en.pdf](http://europa.eu.int/comm/internal_market/en/update/economicreform/020128_cap_mark_int_tables_en.pdf)>

The integration of financial markets substantially affects also the corporate financing decisions of firms. Firms in such environment can issue a wider range of financial instruments at the same standard terms, risk of the instruments then corresponds to each firm's debt or stock irrespective of their nationality. It comes to this, that we can measure the achieved level of financial integration also by the development of *international issues* (debt or equity finance) of European companies relative to their investment or their total debt or stock issuance<sup>23</sup>.

The previous text pointed out that the level of financial integration can be measured by different indicators as the case may be on the segments of financial market. But there are some special factors that should be taken into consideration:

*Data quality and availability* – it is the crucial factor. Both price-based and return-based indicators have clear advantages over quantity-based indicators. E.g. security price and return data are available at higher-frequency (monthly or even daily frequency) and are more accurate than the data on financial flows and stocks (quarterly or even longer frequency); in the

<sup>22</sup> You can find the calculation and definition of the index in the study of Adam et al. (2002).

<sup>23</sup> The large development of international issues has been noted since the launch of European monetary union (particularly by reason of currency risk elimination).

case of household or firm decisions, the choice is between micro and macroeconomic data sources. The bigger problem is certainly to devise the effects of legal institutions on financial markets.

*Price and return data* – computing return-based indicators requires sophisticated estimated procedures in comparison with quantity-based indicators that are generally easier to implement (data are available with sufficient international comparability).

*Indicators based on economic decisions and on legal institutions* – household and corporate decisions indicators can be quite easily benchmarked (the lack of correlation between investment and saving signals that capital is perfectly mobile across countries). However, empirically estimated full-risk sharing doesn't have to mean the perfect financial integration, because risk-sharing can be achieved through other channels. As for differences in legal institutions, they don't tell us if financial markets are segmented or integrated. They can refer to reasons why the markets may be segmented (e.g. institutional characteristics can help us understand reasons of interest rate differentials of identical instruments in two countries).

*Convergence criteria* – the process of financial integration can be assessed through the indicators then summarise the convergence or divergence over time of financial variables. The below mentioned equation is used to determine if the integration occurs and how its degree changes over time (Adam et al., 2002).

$$\Delta i_{ct} = \alpha_c + \beta i_{ct-1} + \sum_{l=1}^L \gamma_l \Delta i_{ct-l} + \varepsilon_{ct} \quad (2)$$

where  $c$  is country,  $t$  is time,  $\Delta i$  is the change in the interest rate, and  $\alpha_c$  is the country dummies. The error term on the right-hand side of the equation denotes exogenous shocks that force interest rate differentials between considered countries. A negative  $\beta$  signals convergence (if  $\beta = 0$  there is no convergence); the magnitude of  $\beta$  denotes the speed of convergence.

#### ***4.2 Degrees of integration in EU financial markets: some empirical results***

We can find many economic studies, namely in recent years; that focus on questions of measuring of financial integration. Such studies pursue the examination if financial integration occurs across the EU member states and frequently focus on European monetary union. As mentioned in the chapter three, financial integration could have positive macroeconomic

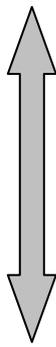
impacts on the economic growth process. The process of financial integration (in terms of integration of financial services, creation of single European capital and money markets) is one of priorities of the European Union, as indicated in above mentioned Lisbon strategy, Financial Services Action Plan and next strategies and documents. Many steps have been implemented till this time, primarily in a creation of conditions for further development (especially legislation area). These actions claim for efforts of EU responsible institutions and authorities of individual member states. Then we can conclude that the measuring of achieved degree of financial integration is one of possible ways to monitor the progress of the integration and the effectiveness of adopted measures.

The research of Thomas Kiehlborn and Mark Mietzner (2005) focuses on identifying groups of financially integrated countries from macro-level view in their study. They calculate cross-sectional dispersions by applying an inter-temporal cluster analysis to eight euro area countries for the period 1995-2002<sup>24</sup>. Their results show that euro countries were divided into two stable groups of financially more closely integrated countries in the pre-EMU period. However, this situation has changed remarkably with the introduction of the euro. EMU has led to a shake-up both in the number and composition of groups. The findings suggest as well that financial integration in Europe takes place in waves and degrees of integration differ notably in separate financial markets (see Table 1). The research encourages policymakers to move forward courageously in the post-FSAP era, and provides comfort that the substantial difference between the current and potentially new euro states can be overcome. The analysis could be extended to the new EU member countries, to the global level, and to additional indicators.

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<sup>24</sup> KIEHLBORN, T., MIETZNER, M. EU Financial Integration: Is There a 'Core Europe'?- Evidence from a Cluster-Based Approach. No. 130, March 2005 (with updated graphs). ISSN 1434-3401. Access from: <<http://ideas.repec.org/p/fra/franaf/130.html>>

**Table 1: Degrees of integration in EU financial markets**

<i>Financial market segment</i>	<i>Selected sub-segments</i>	<i>Degree of financial market integration</i>
<i>Wholesale markets: Money market</i>	Unsecured Secured	High +  Low -
<i>Derivates</i>	Interest rates swaps Government bond futures	
<i>Bond market</i>	Government bonds	
<i>Equity market</i>	Equity	
<i>Retail markets: Credit market</i>	Corporate loans Mortgage loans ST letter of credit Consumer loans	

Source: Kiehlborn, T. - Mietzner, M. (2005)

#### 4.2.1 Integration of financial markets in the European monetary union

Integration of financial markets is an important presumption for the smooth functioning of European monetary union. The main reason is that it can function as an insurance mechanism facilitating adjustment to asymmetric shocks. The introduction of euro has eliminated one of the most significant obstacles to the complete integration of financial markets but there still remain important differences in legal systems.

European Central Bank strongly supports the Commission's policy of the European financial integration. ECB plays an important role in fostering financial integration and takes adequate steps to support the process. The introduction of the euro played an important catalyzing role for the financial integration process. The time since the introduction is still too short but we can consider the euro is one of factors contributing to the financial integration. We can assume that a well integrated financial system increases the efficiency of the euro area economy (by reducing the cost of capital and improving the allocation of financial resources). ECB began to publish an overall assessment, based on a series of indicators, of the degree of financial integration in the most important segments of the euro area financial markets, ranging from retail loans to wholesale equity trading. These indicators will be regularly updated and published twice a year. The report will be produced on an annual basis with the aim of monitoring the progress of financial integration in the euro area. In these reports, the range of indicators will be extended over time, in line with improvements in the availability of statistics

and advances in research and general economic analysis.<sup>25</sup> The latest report suggests that the degree of integration varies greatly depending on the market segment, analogous to the rest of the Union<sup>26</sup>.

Degree of integration in the European monetary union differs quite between the market segments – is almost perfect in the money market, very well advanced in the government bond market, fairly high in the corporate bond market, and least advanced in the equity market; there still exist obstacles to cross-border securitisation in Europe. Integration of banking market is fairly well advanced in wholesale and capital market-related activities, but in retail market<sup>27</sup>, it is clearly lagging behind (Trichet, 2005).

#### 4.2.2 Financial integration of new EU member states

The financial structure of new member states differs significantly from many reasons, namely with respect to different political and economical development. Financial systems also vary in terms of integration with the euro-area financial system. However, it could be expected that the progress of the financial development will result in progressive convergence with the overall financial structure of other EU member states.

Generally, separate financial market segments in new member states are commonly much smaller than in original EU countries. Banking systems represent a special case because they are contrary to other EU member states characterized by high degrees of foreign ownership (see Table 2) that generally involves a powerful driving force for further financial integration.

**Table 2: Share of foreign ownership in the new member states**

2003	CY	CZ	EE	HU	LT	LV	MT	PL	SI	SK	NMS	EU-15
<i>As a % of total assets</i>	12.3	96	97.5	82.3	95.6	46.3	67.6	67.8	36	96.3	70	24

*Source: Financial Integration Monitor (2005). Background document*

Based on Convergence report (2004), the evidence suggests that financial integration between new member states and the euro area is quite advanced<sup>28</sup>. Over time, the process of financial integration is associated with

<sup>25</sup> See <<http://www.ecb.int/press/key/date/2005/html/sp050930.en.html>>

<sup>26</sup> See <<http://www.ecb.int/pub/pdf/other/indicatorsfinancialintegration200509en.pdf>> for the „Integration of the Financial Integration in the Euro Area“ (2005) report

<sup>27</sup> In 2002, more than 90% of the loans granted by banks in Euro-area went to domestic residents (DeGrauwe, 2003).

<sup>28</sup> See Convergence report (2004).

an increase in domestic financial deepening and the removal of barriers to capital mobility.

## **5. Conclusion**

The European Union pays to the integration of financial markets across EU member states increasing attention. The financial integration could positively affect the economic growth in the long-run, based on several researches. This is one of many reasons why to foster the process of integration from the side of European authorities. It is appropriate to consider that the process of integration is taking place in the framework of the globalisation of the international financial system, major technological advances, improvements in the cross-border regulatory environment, the introduction of the euro, and a diminishing effect of so-called natural barriers such as language and culture. The European Union has to create the conditions for further development that is above all related to the elimination of barriers of free movement of financial services.

One of many aspects of financial integration is monitoring of achieved degree of the integration process. Different methods are used to evaluate the level of integration of individual financial segments. Main approaches are price-based, quantity-based and news-based measurement s. Empirical results indicate that the achieved level of integration differs due to financial market segments. The highest degree is characterized for the wholesale money market, whereas the lowest for the retail credit market. We can say this holds almost for all EU member states, both the euro-area and new member states. The level of integration in national financial segments evidently differs but we can expect a positive development. However, the integration of financial markets across the EU member states is an ongoing process and became one of principle objectives of the European Union for the next years.

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# THE INTERNATIONAL MONETARY SYSTEM AND THE EURO

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## **Abstract**

*This paper analyses the impact of the Euro on the international monetary system, and especially the effects of the Euro on the function and role of the International Monetary Fund. The use of the Euro in international transactions and the fact that it was adopted by countries which are not members of the European Union, can turn this currency into an international one. The relationship between the European Union and the International Monetary Fund is a delicate problem that must be clarified by each country which is a member of the International Monetary Fund, because on that level, each country is being represented and all transactions taking place within the International Monetary Fund are being conducted in the currency of each member state. I will try to show the international role of the Euro, the relationship between the Euro and the International Monetary Fund and the role of the Euro within the framework of the International Monetary System.*

**Keywords:** *Euro; International Monetary System; International Monetary Fund; international money.*

## **1. Introduction**

Ever since the 1<sup>st</sup> of January, 1999, the Euro has become the national currency of 11 European countries, which were joined by Greece, on the 1<sup>st</sup> of January, 2001. Without any doubt, the Euro will become the national currency of the other 13 EU-member states, which joined the EU later on, and in the future, it is very likely that the Euro become the national currency of thirty European countries. One thing is certain: essential matters have become reality. On one hand, we consider that it was essential to start the process of introducing the single currency, a process which was successfully finished in 2002, when the single European currency literally entered the pockets of the European Union founding member states citizens, a fact which represents a world premiere; on the other hand, the first 11 member states of the European Union are large, important countries, the states which are about to adopt the new currency being smaller-sized ones<sup>1</sup>. Due to these aspects, we believe that we can proceed, in order to look at the impact of the single currency on the international monetary system.

The international monetary system has been defined within the conference from Bretton Woods. But from that moment on until now, the system underwent a lot of changes, with the passing of time a huge market emerged, the national currencies of different states being negotiated on it. The incurring changes were so radical, that today, one is no longer talking about reforming the International Monetary System, but about rebuilding – as if it had been destroyed – the international financial architecture. The question which arises is: did architecture replace the system, respectively, did finances replace the currency? A fact that can be easily understood is difficult to contest.

## **2. The international role of the single European currency (Euro)**

The international role of the Euro depends on its use within international transactions, which can be the following ones:

- Transactions of the 25 countries with third states, transactions of Euro-zone residents with non-residents. For instance, France is paying in Euro for the oil, a Spanish tourist travels to Argentina with Euros in his pockets.

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<sup>1</sup> The 12 EU member states own approximately 24% of the IMF amount holdings.

- Transactions between third states, transactions between non-Euro zone residents. For instance, Norway and Sweden are trading in Euros, Canada issues Euro-bonds in Switzerland.

The Euro will become an international currency, if it is being largely used for such transactions. It can be used as a unit of account when invoicing exchanges of goods and services and when expressing (labelling) financial assets. Finally, it can be used as a reserve currency, respectively reserve hard currency, on one hand, by Central Banks which are using the Euro in order to intervene on the financial market, on the other hand by private agents. Without any doubt, we can affirm, that the Euro is fulfilling today all the traditional monetary functions of the coin.

The reason mostly referred to is the *economic power of the Euro-zone*, from this point of view, the Euro-zone being on the same economic level with the USA. The GDP (Gross Domestic Product) of the Euro-zone is very close to that of the United States of America, representing 87% from the GDP of the USA, while the populace living in the Euro-zone is higher than the American one. But what we consider to be very important is the fact that the Euro-zone is very open towards world economy. The exports and imports of the member states represent, on the average, 24% from their GDP, while the imports and exports of the United States represent 12% from the GDP of the United States. Euro-zone member states hold 30% of world trade, twice as much as the USA. This percentage, we can affirm, lost some of its significance once the Euro was introduced. And this due to the fact that nearly half of the world trade of the Euro-zone member states is being conducted between them, that is, in the bosom of the European Union. This means, that invoices are being issued in Euros, while payments are being made in Euros, which means that at least part of the invoices are being paid in the national currency. The question is: are we still talking, in this case, about world trade? Despite this fact, the world trade share of the European Union stays at the same level with the one of the United States.

But there are also other factors supporting the international role of the single European currency. One of them is *tourism*, which represents an important factor of income for many EU-countries, a fact favouring the use of the Euro by non-residents. It also represents an important expense for countries residents often travel abroad from: thus, the use of the Euro by non-residents is being facilitated. An other factor can be considered *corruption* as well as the circulation of *laundered money*, due to the fact that high-value banknote owners, like, for instance, the banknote of 500 Euro, will, in fact, stay anonymous.

A second reason is the *banking structure of the Euro-zone*. Thus, international payment systems were harmonized, each country implementing a real time gross settlement system (RTGSS), a system known under the name of TARGET, guaranteed by the Central European Bank. The goal of this system was to ease higher-value transactions and especially transactions connected to monetary policy. Transactions that took place between non-residents or with non-residents can be found, naturally, treated and compensated, together with those that took place between residents. Even more, the system of compensation, initiated by the ECU's Banking Association, remained in effect, and the banks situated outside the Euro-zone, like Switzerland, Russia or Japan, take part or are associated to this system. (Lelart, 2001. page 5)

The ability of the Euro-zone's banking systems to cope with the international role of the currency can be seen if looking at the importance of international operations. Regarding the engagements of non-residents' banks, placed in the zone examined by the Bank of International Settlements, the participation of the banks from the Euro-zone was, on the 30<sup>th</sup> of June 2000, of 34%, that of the banks from the United Kingdom of 21%, that of American banks of 11% and that of Japanese banks of 5.4% (BIS 2000, pages 2 and 4).

These percentages underwent no essential variations during the last three years, but the payments of European banks in what foreign currencies are concerned, fell from 35% to 26%, once the Euro was introduced, while payments in national currency increased from 32% to 48.5%. This evolution is normal, since, for instance, French banks' DM payments became payments in Euros. But the percentage of 48.5% is extremely significant: foreign payments of European banks are by far larger than payments in dollars of the American banks (30%).

A third reason is connected to "*developed financial markets*", like those in Paris, Frankfurt or Milan, without even talking about the city of London. During recent years, we saw that agreements were signed between large European financial markets, agreements leading to the emergence and development of a European financial mega-market, which is going to "stretch" the European financial area, born at the beginning of the 80es, when capital flows were liberalized. We can say that the Euro had the chance to become and it became a placement currency, since non-residents got accustomed to invest more in the Euro-zone countries, as well as in the United States – which must finance their current account deficit – than in Japan (IMF; 2000).

**Table 1 Direct and portfolio investments by area in which they were realised (billions USD)**

	<i>Euro-zone</i>	<i>USA</i>	<i>Japan</i>
<i>Direct investments</i>	1.082	2.194	0.046
<i>Portfolio investments</i>	3.321	3.443	1.165
<i>Total</i>	4.403	5.637	1.211

*Source: IMF report, 2000*

Euro-bonds can be issued by Euro-zone countries, countries which have to borrow more and more amounts of money in national currency (Euro), since this became their common currency, but bonds can be also issued by others who borrowed amounts of money in a certain currency and now have to borrow more and more Euros. By the end of 1998, circulating international bonds were labelled (BIS, 1999, pages 70 – 71)<sup>2</sup>:

**Table 2. Bonds and notes by currency in which they are issued**

	<i>In European currencies</i>	<i>In US dollars</i>	<i>In yens</i>
<i>Long-term bonds</i>	27.8%	45.2%	11.7%
<i>Short-term bonds</i>	18.5%	57.3%	2.5%

On the 30<sup>th</sup> of September 2000, long-term, Euro-labelled bonds amounted to 28%, while short-term, Euro-labelled bonds amounted to 31%.

In 2004, at the end of the year, circulating international bonds and note were labelled 48.37% in euro, 34.94% in USD and 3.11% in JPY. We can say that the euro labelled bonds had a real success.

One last reason is a reason of political nature and it refers to the ***credibility of the European Monetary Union***. Here, we must have in view the irreversible character of the Union, no state which agreed upon its creation being able to leave it easily, the Union being about to be continuously enlarged. We are talking about the existence of a single monetary law (one should not forget the Resolution of the European Council from the 3<sup>rd</sup> of May, 1998, which ensured the continuity of existing contracts

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<sup>2</sup> Bonds issued in European currencies also include ECU bonds.

at the moment of the introduction of the Euro and the preparations of the switch to the single European currency). Last, but not least, it refers to the status of the European Central Bank, which is an independent bank and which, in its mission, resolved, as it is being several times reiterated in its statute and in its founding treaty, to ensure the stability of the single currency exchange rate and to maintain a low level of inflation. And we have to admit to the fact that, in the last year, this proved to be a very difficult thing to manage. We can add that the Euro became the national currency of 12 countries, other thirteen countries trying to cope with the criteria necessary in order to be able to adopt it. From the outside, we consider that the transition to the Euro was a soft one, without encountering major difficulties.

**We consider that all these factors did nothing else than to turn the single European currency into an international one.** The following examples are supporting this statement:

- *bond issuing*: net bond issuing in European currencies and then in Euros quickly increased, their number being even higher than that of USD bonds, but they slowed down in 2000.

**Tabel 3. Net issuance of international bonds and notes by currency (in billion USD)**

<i>Year</i>	<i>euro</i>	<i>In %</i>	<i>USD</i>	<i>In %</i>	<i>Total</i>
<i>1998</i>	224	24.00%	411	59.00%	467.7
<i>1999</i>	571	46.99%	545	44.85%	1215.1
<i>2000</i>	472.1	37.97%	613.3	49.32%	1243.5
<i>2001</i>	597.3	44.30%	652.6	48.40%	1348.3
<i>2002</i>	522.7	51.71%	419.1	41.46%	1010.8
<i>2003</i>	832.9	28.86%	461.6	15.99%	2885.2
<i>2004</i>	923.2	27.96%	372.3	11.27%	3300.7

This evolution may seem to be a surprising one, but it can be explained, first, by the attractiveness of a new currency, and then, by the debtors' preference of resorting to a hard currency, when the exchange rate of the currency plummeted. But after the year 2000 the net issuance in euro grow up quickly, in 2004 the net issuance in euro being bigger than the net issuance in USD.

- *holdings of the Central Banks*: The currency structure of the reserves of the Central Banks is as follows<sup>3</sup>:

**Table 4. The currency structure of reserves of Central Banks**

<i>Year</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
<i>USD</i>	66,2%	68.2%	68.3%	64.8%	63.8%	65.9%
<i>EUR</i>	12.5%	12.7%	13%	14.6%	19.7%	24.9%

*Source: imf reports 2000 – 2005, statistical appendix*

As we can notice, the American dollar continues to rank first within the reserves of the Central Banks. But ever since the introduction of the single currency and until the end of the year 2004, we have to notice that, in fact, the amount of the single currency within the foreign currency reserves of the banks has doubled. In 1999, we could not compare the holdings in ECU of the Central Banks, from previous years, which were connected to the functioning of the European Monetary System, with the holdings in Euro from the end of the same year. Even more, holdings in USD could not be compared with the holdings in European currency of the 11 states, because the latter ones were reduced, as a result of the fact that the 11 states, later 12, compensated the holdings of national currencies from the foreign currency reserves between them. Central Banks outside the Euro-zone will hold more Euros, since this one replaced the DEM or the FRF, for instance. In 1999, it was difficult to estimate the extent to which the Euro will replace the dollar. Today, we can say that, although it did not dethrone the dollar, it doubled in what foreign currency reserves of Central Banks are concerned. What we cannot see in the Table 4 is the fact that in the meantime in which the euro doubled the weight in foreign currency reserves of the Central Banks and the dollar kept its position the share of Japanese yen in total foreign exchange reserves declined from 7% in 1997 to 4% at the end of 2004. During the past decade the share of pound sterling has been in the 2%/3% range.

Using the Euro as a reserve currency also depends upon the number of countries outside of the Euro-zone, which will tie their own national currency to the Euro. The countries from the Franc-zone did this and we believe that others will follow. Other countries left their national currency floating along with the Euro: Poland, Turkey, Chile... There is no doubt that there will be more and more countries which will do this, and the Euro will become not only a reserve currency, but also a currency of intervention on foreign currency markets.

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<sup>3</sup> Data retrieved from IMF reports 2000 – 2005, [www.imf.org](http://www.imf.org)

Obviously, there are also other factors which will influence and do influence the international use of the single European currency. On short term, the preference for the Euro depended and continues to depend upon the evolution of its exchange rate referred to the USD, upon the economic situation between Europe and the USA, upon the evolution of the interest rate in Europe and the USA. We believe that the replacement of the dollar by the Euro will incur at a slower or faster pace and will take effect more or less constantly. On long term, due to the fact that the Euro can be owned by non EU-residents, it will have to get out of its zone, to be more precise, it will be transferred into the rest of the world, by dint of international transactions of the EU-zone member states. This means that these countries will import more than they export – which is the opposite of what is happening today, or that they loan more than they borrow – which, in fact, is happening in an alert way. Even more, can foreign Euro holdings increase by dint of transactions conducted by the banks outside the Euro-zone, for instance in London, Montreal, Singapore or Hong Kong? The question we did not find the answer to is “which would be the place of the Euro in the bosom of Euro foreign currencies?”<sup>4</sup>

Another problem is that of the dimension of the Euro-zone, which, as we could notice, keeps enlarging, which was, in fact, to be expected. If, in 1998, it included 11 countries, from 2000, the number increased to 12 countries, and in 2004, the number of these countries was 2,2 times higher than at the beginning, the number of member countries amounting to 25. For the year 2007, Bulgaria is about to join the European Union, and we hope that Romania will join as well. Practically, what could be foreseen in 1998, in what the enlargement of the EU is concerned, became true.

### **3. The Euro and the International Monetary Fund**

The statute of the IMF is based upon the idea that each country can dispose of its own currency. Thus, this institution is “*country based*” and not “*currency based*”. The countries are members of the IMF, but the IMF is using their currencies. But what happens with the Euro: 12 countries, 15 countries, 25 countries, one currency?

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<sup>4</sup> These transactions do not really affect the amount of international currency, but lead to an increase of international liquidity. The same will apply both for the Euro and for the dollar.

### ***3.1 The structure of the IMF***

Each country which becomes a member of the IMF, must pay the so-called assigned quota, which stands for the size of the subscription each country makes with the IMF. The help the country can obtain and ask from the IMF depends upon this assigned quota, as well as the number of votes the country in question disposes of. Initially, the volume of imports and exports of the respective country and the level of foreign currency reserves used to be the criteria which determined the assigned quota of the IMF member countries. The emergence of the European Monetary Union did not change, at least so far, anything about this fact for the member countries. Assigned quotas are being revised every 5 years, the last revision (the twelfth since the founding of the IMF) took place on the 31<sup>st</sup> of January 2003, when it was decided that the assigned quota remain unchanged. The question is whether, for the EU-zone, the trade conducted in Euro between the member states can any longer be considered as international trade? Given the fact that, during the last revision, the level of assigned quota did not change, we tend to believe that, from the IMF's point of view, the answer is a positive one. Anyway, it remains a problem which needs a direct answer.

Moreover, the level of the foreign currency reserves in the case of the countries which adopted the Euro diminished, or the structure of the foreign currency reserves was, at least, modified, if they were not reduced. Anyway, in a first phase, the level of the foreign currency reserves was reduced once the Euro was introduced, the single currency emerging instead of the national currencies, a currency we can no longer consider a foreign currency, but a national one.

In the future, according to Quota Formula Review Group (which was established in 1999), the GDP is likely to become the prime variable in quota calculations for industrial countries, while the role of reserves and foreign trade would decline.<sup>5</sup>

I was saying that, based on the assigned quota, the number of votes of each country is being determined. In early 2002, the aggregate voting power of the 15 members of the EU was of 29.9%, well above the voting power of the USA (17.2%) and Japan (18%). The enlargement of the EU (2004) increased the EU's aggregate voting power by 2.8%, to 32.8%. But due to the structure of the board of administration, these votes are not being owned by a single person. It is, in fact, normal for the number of votes which should stand for the Euro-zone to be so high, compared to the USA and Japan, since the assigned quota for EU member states represent 30,4% of the volume of

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<sup>5</sup> Leo Van Houtven, *Governance of the IMF*, Pamphlet Series, no. 53, IMF, Washington D.C., August, 2002, ISBN – 1-58906-130-6, pp. 9

the IMF assigned quota, while in the case of the United States, we are talking about 17.4%, or, in the case of Japan, of 6,23%.<sup>6</sup>

The board of administration of the IMF consists of 24 administrators. Eight countries, out of which five are the ones who own the highest assigned quota, appoint each an administrator to exert their right to vote. The other countries are grouped according to geographical, linguistic or other criteria, totalling 16 groups, each of them appointing an administrator. Even if administrators are being chosen from the ranks of EU member countries, those representing a group of countries will dispose of the number of votes of the respective group, which means that they are going to vote according to the interests of that group. Basically, we cannot say that, within the framework of the IMF, the representatives of EU countries have the last word, but their votes weigh a lot in the scales.

At the present moment, it is more and more problematical to establish whether the criteria, based upon which the IMF establishes the assigned quota, is still actual. Thus, on the 4<sup>th</sup> of November, 2005, the IMF is hosting a round table meeting on the topic of the governance of the IMF and the role of the executive board. One of the subjects to be debated is related to the way the quota system can be reformed in, in order to ensure fair representation to all member states and guarantee to the IMF the legitimacy that is essential for its effectiveness.

### ***3.2 The role of the IMF***

The role of the IMF is, first of all, to **ensure financial assistance to the member states**, which are being temporarily confronted with a deficit of the external balance of payments. The emergence of the European Monetary Union has two consequences. The first one refers to this help the IMF is granting to its members. Approximately 30 years have already passed, with no industrialized country “shooting” at the IMF. But it is possible for the EU countries to be exposed to asymmetrical shocks, which could deteriorate the external situation of these countries to such an extent, that they be compelled to resort to the help of the IMF. The second consequence refers to the way this help can be granted in. The IMF cannot impose to any of these countries an increase of the rate of interest or the depreciation of its national currency, since both the monetary and the foreign currency are decided on EU level and not on the level of the country in question. There is nothing left, except

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<sup>6</sup> These figures were determined based upon the data published in the report of the IMF for the year 2005, appendix VII

for the economic policy, on which level the IMF could intervene with certain stipulations.

Given the international role of the single European currency, we can imagine that one day, the member countries of the EU could like to wish the stabilization of the exchange rate of their national currency in relation to the USD or to the JPY, and that, in order to do this, they would have to resort to the IMF. As the EU is not an IMF-member, the EU, and, at the same time, IMF member states, should be the ones to request this help. The question is with whom the IMF is going to negotiate the conditions: with the Council of Europe, in what the economic policies are concerned? But the Council of Europe is an organism with informative character; with the European Central Bank, in what monetary policies are concerned? But the bank is an independent body; with the Council of Ministers, in what the foreign currency in relation to non-communitarian models are concerned? But the Council of Europe has never made arrangements in this sense, except for extreme situations. These are questions the answers are still being looked for to.

The IMF has also the role of ensuring the **supervision of currency exchange evolution**, due to the fact of the floating exchange rate system. According to article IV of the IMF statute, each country, which is a member of the IMF “has the obligation to collaborate with the IMF...in order to promote a stable system of the currencies exchange rates...the IMF will exert a rigorous supervision on the foreign currency policy of the member countries...Each country will provide the IMF with the information, which is necessary to enable this supervision, on demand of the IMF, and will consult the latter one”. The emergence of the European Monetary Union had important consequences upon this mission of the IMF. Due to the fact that the monetary policy is unique within the Euro-zone and due to the fact that economic policies of the member states have an impact upon other countries, the IMF has decided to intensify discussions with European institutions. The consultations taking place with each state are being doubled by the discussions with the European Central Bank, with the Council of Ministers and the Economic and Financial Committee. The envisaged modalities include semestral meetings between the IMF services and the EU institutions which are responsible for the common policies within the Euro-zone, a yearly report of the IMF services, debates of the monetary and foreign currency policy on Council of Ministers level. These relations are being facilitated by the decision of the Council of Europe in Vienna, regarding the representation of the EU in the Board of Administration of the IMF, as well as due to the fact that the IMF has given the European Central Bank the statute of an observer. The Bank is invited to delegate a representative to take part in the

reunions of the Board of Administration of the IMF, whenever the agenda reads problems referring to “the supervision of the communitarian monetary and foreign currency policies, the supervision of the Euro-zone countries economical policies, the role of the single European currency in the international monetary system...”, as well as within the reunions when the agenda reads “problems considered by both institutions to be of common interest, in order to comply with their mandate”<sup>7</sup>.

### ***3.3 The transactions of the IMF***

Given the fact that the IMF is “country based”, it conducts most of its operations using the currencies of the member states, deposited into the accounts of their Central Banks. Since the 1<sup>st</sup> of January 1999, its holdings in what the currencies of the 11 European currencies are concerned – and since the 1<sup>st</sup> of January, 2001, its holdings in Greek drachms- were converted into Euros, kept in the 12 Central Banks. Each trimester, the Fund chooses the currencies it will dispense or receive. This is the budget of the IMF operations. It withholds the currencies of the countries whose position is, or seems to be good, solid, because of their good balance of external payment, and due to the fact that they have enough reserves. Every time it conducts an operation, the IMF uses the chosen currency, in order to have proportional quantities for the reserves of each country. This procedure was altered a little, as a result of the emergence of the Euro.

- *A choice does not exist any more*: the Euro is, in a normal and natural way, permanently being withheld in the budget, even if the 12 member state do not always have a solid position...Anyway, we cannot imagine that, at a certain moment, all the members of the Euro-zone would record simultaneous deficits...
- *The amount of money used*: The reserves have become less important, on one hand, due to the introduction of floating currency exchange rates and on the other hand due to the fact that the reserves of the 12 countries were affected by the introduction of the Euro. Because of this, the IMF decided that, in the future, it will consider the assigned quota of each country. To put it in other words, this assigned quota will increase in importance.

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<sup>7</sup> IMF, 1999, pp. 187

- And, of course, without this being an effective change, *the IMF must impute Euro-operations to one or other member country*. Given the fact that the holdings in the national currency of a country of the IMF determine the position of that country in regard to the IMF, which allows the evaluation of its receivables and debts the country has with the IMF, they will be the basis of the remuneration the country will get or of the commission it will have to pay.<sup>8</sup>

To put it in other words, whenever the IMF dispenses or receives Euro, it must know whether it is dealing with French, Spanish or Greek Euros...

At the same time, the IMF conducts a part of the transactions in SDR, ever since the first allotment, which took place in 1970. The introduction of the single European currency had a minor impact upon these transactions, given the fact that the appointment procedure, by which the IMF was appointing the partner which was to get the SDR a country wanted to use, in exchange for the currency it needed, fell in disgrace. Moreover, for the time being, the European Central Bank is not recognized as a “desired holder” of SDR, thus, it cannot conduct transactions with SDR on its own behalf. The Euro can be traded for SDR, because it is recognized as a “freely usable currency”. Like the DEM and the FRF used to be.

The impact rather refers to the value of one SDR, which is determined based upon a currency basket. Before the 31<sup>st</sup> of December, 1998, the basket contained five currencies (USD, GBP, JPY, DEM and FRF), after the 31<sup>st</sup> of December, 1998, four currencies remained, due to the fact that the DEM and the FRF were replaced by the Euro. As in the case of the assigned quota, the composition of the new SDR is updated every five years. The importance of each currency of the basket is determined based on the exports of each country and of the holdings of the Central Banks in each of these currencies. In the case of the new basket, where only four currencies remained, the importance of each currency has been updated, and the amount of currency which influences the value of an SDR has been recalculated.

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<sup>8</sup> The difference between the assigned quota of a country and the holdings of the IMF in the national currency of that country represent the Reserve Position of that country, which is initially equal with that part of the assigned quota which is paid in gold or other reserve assets, here USD or SDR, these being those 25% of the assigned quota. The difference between the holdings of the IMF in the national currency of a country and the assigned quota of that country stands for the Credit Access, that is the debt position to the IMF.

**Table 5. Old and New Composition of SDR Basket**

Currency	Initial importance (%)	Initial amount of currency	Amount of currency after the introduction of the Euro	New importance (%)	New basket of currencies
USD	39	0.5821	0.5821	45	0.577
EURO–DEM	21	0.446	0.3519	29	0.426
EURO – FRF	11	0.813			
JPY	18	27.2	27.2	15	21
GBP	11	0.105	0.105	11	0.0984
	100			100	

The basket is also relevant in order to establish the interest rate of the SDR, which can be considered as an efficacy for collecting countries, respectively of cost for paying countries. This rate of interest represents, at the same time, the remuneration received by countries which have a credit position with regard to the IMF and it is also the basis of determining the commission debtor countries must pay to the IMF. It is equal to the weighted average interest of certain short-term credit instruments, labelled in the four currencies. This rate of interest was not altered, once the Euro was introduced. But since in its determination, different credit instruments from corresponding markets are being taken into consideration – three-month treasury bonds in Paris, three-month interbank deposits in Frankfurt, - there still has to be a distinction, in the new basket, between the interest rate of the Euro in Paris and the interest rate in Frankfurt... The Euro-zone has one single currency, but it is not a single country and it is not a single financial market.

#### **4. Conclusion**

The emergence of the single European currency has strongly influenced the international monetary system. It has all the attributes of a hard currency and, as we could see in recent years, it has the power to compete with the American dollar and the Japanese yen. The countries which

adopted the Euro are completely integrated in what international finances are concerned and they are holding an important position within the framework of world trade. Today, the place of the single European currency is very well specified within the international monetary system, but it is hard to establish to what extent it succeeded in stabilizing this system. On the other hand, there are more and more voices speaking about an international financial architecture to the disadvantage of the notion of international financial system. Moreover, the Euro continues to be a young currency, which has to confirm its value. Starting with 2001, we noticed a continuous enlargement of the Euro-zone, an enlargement which is far from being over, a fact which creates a certain state of uncertainty concerning the evolution in its own rows, given the changes it generates for each new member state. The relationship between the European Union and the IMF must be well defined and clarified, the external representation of the European Union must also be clarified. It is hard to forecast the future exchange rate between the dollar and the Euro, given the floating exchange courses we had to notice in recent years. One thing is certain: the emergence of the single European currency opened a new page in the history of the international monetary system.

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# ECONOMIC CONVERGENCE IN THE SLOVAK REPUBLIC AND IN THE SELECTED COUNTRIES OF THE EU

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## **Abstract**

*The article analyses the state of the economic convergence in 11 member states of the European Union and that in the Czech Republic, Estonia, Cypre Lettland, Latvia, Hungaria, Malta, Poland, Slovenia, Slovakia and Sweden. It have used uniform starting points, which affect the price development, the deficit of the common budget, national debt, the development of the currency rate, long term interest rates and other factors. The articles show actual reference values of the price stability, stability of state in public finance, stability of the exchange rates and of the long term interst rates.*

**Keywords:** *economic convergence, reference value, price development, fiscal development, exchange rates, long term interest rates, surplus, deficit common administration, brutt debt,*

## **1. Introduction**

The last convergence report of the ECB analyses the state of the economic convergence in 11 member states of the European Union and that in the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, Slovakia and Sweden. By this analysis the bank used uniform starting points, which affect the price development, the deficit of the common budget, national debt, the development of the rate of currency, long term interest rates and other factors, like the results of integration of the markets, the situation and development on the current accounts on the balance of payments, development of the unitary labor costs and other price indices. The judgement of the maintenance of convergence have to be emphasised.

The single criterions have to be used in accordance to the exact stated manner:

1. It's inevitable to safeguard, that membership of the Euro-zone can get only member of the EU which have reached economic conditions leading to maintenance of price stability and keep the Euro-zone viable,
2. the convergence kriterions form a whole and strong system and therefore it's inevitable to fulfil all
3. convergence kriterions on the basis of current statements
4. application of the convergence criterions have to be uniform, transparent and simple.
5. The fulfilment of the convergencies will be judged not only at a fixed time but also on a preserved ground. For this reason the judgement of the single countries is directed at the maintenance of the convergence and the single statements will be judged retrospective for the period of the past 8 years. Further the forecast view has to be applicated in a suitable measure.

## **2. Price development**

The criterion of the price stability which means, that the member country maintains a long term price stability and an average rate of inflation announced in the run of the year before the observation doesn't exceed more as 1,5 % of the rate of inflation in max. 3 member states, which reached in the area of price stability the best results. The rate of inflation will be calculated like an increase of the last accessible 12 month average. For this reason, for the evaluation of the ECB - convergence one took the period from september 2003 till august 2004.

For the judgement of the reference value of inflation in 2004 has been applicated a non weithed arithmetic average of the rate of inflation in 3

following EU countries Finland (0,7 %), Denmark (1 %) and Sweden (1,3 %). The average rate of inflation so can reach the value of 0,9 % and with the addition of the a.m. 1,5 % has been stated the reference value about 2,4 %. The inflation will be measured on the basis of HICP ( harmonized index of custom prices ) which have been formed for the purposes of valuation of the convergence in the area of price stability.

### **3. Fiscal development**

To maintain the criterion of stability of state in the public finance resources means that "in the time of statement the decision of the EU council about existence of an excessive deficit doesn't refer to the member country".

By existence of an excessive deficit the European Union will prepare a message about nonfulfilment of the budget discipline requirements and that particularly:

- a) if the relation of the planned or the real deficit to the GDP (gross domestic product) exceed the reference value of 3 % except the cases:
  - if this relation essential dropped or it permanent goes down and reach a level which comes closer to the reference value
  - or if the exceeding over the reference value is only exceptionally or transitional and if this relation is moving near the reference value
- b) if the relation of the national debt to the GDP exceed the reference value stated on the level about 60 % of GDP except the cases when this relation adequate decreases and with a suitable speed comes closer to the reference value.

The report prepared through the European Commission have also to supervise, if the national debt exceeds the government spending for the investment and also for other relevant factors incl. middle periodic economic and budgeted situation of the member country. For the purposes of convergence the ECB expresses its opinion too, which examine the main indicators for the development of the budget finances but unlike the commission the ECB haven't a formal task. The task for the ECB is only to state if the government really reached an excessive deficit.

### **4. Development of the exchange rates**

By exchange rates is required to pursuit the floating band determined through the mechanism of exchange rates of the European Currency System, min. during 2 years before the pursuit without devaluation opposite of the

currency of each other member country. Through it the ECB pursuit, if the country take part in the mechanism ERM II during the period of min. 2 years before the pursuit without causing considerable pressures to the currency mainly without devaluation of the currency against the EURO.

The valuation of stability of the exchange rate against the EURO is aligned to the fact, if the exchange rate is moving near the central parity ERM II, how is to pay attention to factors which can lead to devaluation of the currency. The width of the floating band in the mechanism ERM II has with it no influence on valuation of the criteria of the stability of the exchange rate.

The question of absence of „significant tension“ have to be valued as follows:

- relevant to the deviation of the exchange rates from the central parities against the EURO in the mechanism ERM II,
- relevant to the differentials of the short term interest rates in the Euro-zone and their development relevant to the task, which played the exchange interventions.

Except the development of the nominal currency rates against the EURO have to be valued also the maintenance of the actual currency rates in connection with the development of real and effective currency rates from the current capital- and finance accounts of the balance of payments from the part of the country trade with the Euro-zone on the whole foreign trade and from the clean international investment position of the country in long-term horizon.

## **5. Development of long term interest rates**

The convergence criterion of the interest rates requires a „constant convergence, reached through the member country and his participation in the mechanism of exchange rates and which reflects in long term levels of the interest rate“. This criterion requires, that in the course of one year before the pursuit, the average long term nominal interest rate of the member country not exceed more than round 2 percent the interest rate of these three countries, which reached in the area of price stability the best results. The interest rates have to be valued on the basis of long term government obligations or comparable securities how is to consider the different definitions in single member countries.

The average long term nominal interest rate have to be calculated according to ECB in the course of one year before the pursuit and expressed the interest rate, which was calculated as arithmetic average in the last 12

months, for which are accessible the statements of the index HICP. For the needs of valuation in the convergence message have been used long term interest rates from Finland (4,2 %), Denmark (4,4 %), and Sweden (4,7 %). Afterwards the average rate have reached the level 4,4 % and additional 2 % we will get the reference value about 6,4 %.

## 6. Valuation of the state of economic convergence

All 11 countries valuated in the last convergence message the ECB have in connection to the third stage HMU a valued exception but not a particular status. According to the agreement the countries are obliged to take the EURO with the consequence, that they are obliged to try to fulfil all convergence criterions. The state of fulfilment of the indicators of the economic convergence is described in the following table No. 1.

**Table 1 Indicators of economic convergence in 2004**

Member country	Inflation (HICP)	Long term interest rates	Surplus + Deficit-common adm.	Brutt debt of the common adm.
Česká republika	1,8	4,7	-5,0	37,9
Estónsko	2,0	.	0,3	4,8
Cyprus	2,1	5,2	-5,2	72,6
Lotyšsko	4,9	5,0	-2,0	14,7
Litva	-0,2	4,7	-2,6	21,4
Maďarsko	6,5	8,1	-5,5	59,9
Malta	2,6	4,7	-5,2	73,8
Poľsko	2,5	6,9	-5,6	47,2
Slovinsko	4,1	5,2	-2,3	30,8
Slovensko	8,4	5,1	-3,9	44,5
Švédsko	1,3	4,7	0,6	51,6
<b>Referenčná hodnota</b>	2,4 %	6,4 %	-3 %	60 %

*Source: Report of Convergence, ECB, Eurostat and European Commission.*

### 6.1 Reference value

During of the last two years the inflation have reached in the countries, which are not members of the euro-zone a relative low level. It lowered from the level of 10 % in the year 1997 to the level of approximately 2 % in the middle of the year 2002, where remained till the beginning of the

year 2004. Later increase of the inflation has been caused mainly through some factors connected with the entry into the EU, how the increase of the indirect taxes and regulated prices, strong increase of the domestic demand and the increasing energy prices. Advanced increasing of prices as consequence of increasing of the demand and wages can be expected in the near future. Some central banks have reacted to this development through increasing of interest rates.

The table No. 1 shows, that 5 from 11 valuated countries – Czech republic, Estonia, Cyprus, Lithuania and Sweden – have reached an average value of inflation rate HICP under the limit of the reference value. Inflation in Poland and Malta have only moderate exceeded the reference value. In other countries the inflation considerable exceeded the reference value: Slovenia 4,1 %, Latvia 4,9 %, Hungaria 6,5 % and Slovakia 8,4 %.

We suppose, that in the majority of countries the inflation will decline, mainly in the countries with a high level of inflation in 2004. This assumption based on the expectation of weakly consequence from the increasing of indirect taxes and regulated prices. In the new member countries the inflation can be more volatile as consequence of always significant part of food on the total living costs, and price increase in energy- and raw material sector. New member countries need a strict controlling of the domestic price pressures, which are connected without others with the income costs, the fiscal policy, the reform of product market, the labor and the processing of catch up the high developed member countries.

The fiscal policy has moved very slowly, how the majority of countries just only have to reach the level which can be regarded in wider degree to maintain in the middle term horizon. In this area it's necessary to reach an important progress and so to make it possible to guarantee a sustainable agreement with the fiscal criterion in sense of the requirements through the pact of stability and growth and to fulfil the middle term objective of the budget position which comes closer to the balanced budget or to a budget with surplus.

In the position of an excessive deficit are at the present 6 countries – Czech Republic, Cyprus, Hungary, Malta, Poland and Slovakia. The reference value of the national debt in connection to the GDP exceed only two countries (Cyprus 70,9 % and Malta 71,1 % but in more countries, which joined the EU on 01.05.2004 the national debt is strong growing, because some of them have important structural problems as consequence of state guarantees and pension protection.

All member countries which show in the present a deficit, need a considerable consolidation and have to be interested to reach a permanent

fulfilment of the fiscal criteria and the medium term objective of the budget position, so a balanced or a budget with surplus according to the pact of stability and growth.

After the period of significant decrease of the long term interest rates the yields from the long term obligations began to grow, the differences in some countries in comparison with the Euro-zone increased, which was connected with fiscal problems and inflation pressures. The consequence was the need of an enduring convergence.

By development of the exchange rates no one of the new member countries was member in the ERM II during at least two years before the valuation. Estonia, Latvia and Slovenia have joined the ERM on 28. June 2004. Estonia and Latvia have kept after joining to ERM II as unilateral obligation its currency rates. At the present in Estonia soared a significant deficit on the current capital account of the balance of payments, which have reached a level about 12,7 % which led to increasing of its pure foreign commitments. In Latvia also soared the deficit of the connected current and capital account and reached a level about 6,5 % of the GDP. In both countries was the agreement about participation in the ERM II with the obligation to realise healthy fiscal policy as condition of maintaining macroeconomic stability and keeping of the convergence process. The monetary policy of Slovenia after joining the ERM II was orientated to keep a relative stable currency rate against EURO and to balance the decreasing off the tolar value against EURO. The tolar maintained closer to the central parity.

The majority of currencies, which remained outside the mechanism ERM II against EURO has eased off. The development of the rate of the slovak crown against EURO have been characterized through an initiate period of whole stability till to the third quarter of 2003 and afterwards the rate of the crown has increased in stages. The NBS has regarded the increasing of the crown for too fast and the reaction was the decrease of the key interest rates and intervention on the foreign currency markets. The volatility of the slovak crown against EURO was during the reference period too high and the level of the spread for short term interest rates against euro-zone was significant.

The development of the exchange rates during the last two years was in the single valued countries significant different. In some countries the exchange rates have stated a significant stability, but in other countries have occurred significant fluctuations caused through an uncertainty in the area of fiscal consolidation a high deficit of the current account of the balance of payments, an increasing of private credits and through an increasing of home

demand.

## 7. State of economic convergence in the Slovak Republic

**Table 2 Development of the inflation rate, debt and the deficit of common administration.**

Years	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
HICP	5,8	6,0	6,7	10,4	12,2	7,2	3,5	8,5	7,6-8,4	4,5
Debt CA	30,3	33,3	34,0	47,2	49,9	48,7	43,3	42,6	44,0	44,2
Exchange debt CA	11,2	5,9	3,8	15,7	7,2	2,6	-1,5	3,0		
Deficit -	-7,4	-6,2	-3,8	-7,1	-12,3	-6,0	-5,7	-3,7	-3,3	-3,8

*Source: Report of Convergence, ECB, 2004*

From the table No. 2 follows, that the inflation in the Slovak Republic exceeds the reference value and in the year 2004 have reached a level of 8,4 %. The inflation grew from the initial value of 5,8 % in 1996 to 12,2 % in 2000 and in the following years dropped to 3,5 % and in the year 2003 again grew to the level of 8,5 %.

The assumption for the decrease of the inflation in 2005 is, to finish the corrections on the regulated prices (28 % share on the commodities HIPC), the indirect taxes and to slow the increase of the wages. The risks of inflation increasing follow mainly from possible secondary influences of high rate of inflation in the last period, from the development of the wages and from the fiscal imbalance.

The deficit of common administration durable exceeded the reference value, but now it tends to decrease. The relationship of the national debt to the GDP was under the reference value, announced an increasing trend but the increase of the national debt was in other years slower ( in the year 2002 even a decrease of 1,5 %) and in 2003 soared about 3 %. If we review the period from 1996 to 2003 we can see that the relationship of the national debt to the GDP soared about 12,3 %. Until 2007 we expect, that the relationship of the deficit to the GDP will go down to the level of 2 % and the relationship of national debt will moderate soar to 45,5 %. In the future a new fiscal consolidation will be necessary with it the Slovakia can fulfil the middle term requirement of the pact of stability and growth, which can be a balanced or a surplus budget.

The slovak crown is not connected to the ERM II and the central parity REM II is not determined. The development of the currency rate will be pursued on the basis of the own reference value ( 41,8 SKK/EUR correspond to 100 %). The development of the currency rate against EURO announced a considerable volatility measured with annualised standard deviations from the daily percent alteration. From october 2002 till september 2004 the max. above deviation from the double central parity against EURO reached the level about 4,7 % and the max. below deviation 0,7 %. The average % deviation of the double SKK currency rate against EURO for the period 1999 till september 2004 reached 20,3 %.

**Table 3 Key pressure indicators on the currency rate of the slovak crown**

	December 2002	March 2003	Jun 2003	September 2003	December 2003	March 2004	Jun 2004
Volatility exchange rate	5,4	5,4	3,7	3,8	2,7	3,1	2,9
Diferent between short term exchang rates	3,8	3,5	3,8	4,2	3,8	3,7	2,8

*Source: Annual Report National Bank of Slovakia, 2003, 2004*

The average level of long term interest rates was in the last two years under the reference value of the criterion of interest rates and has now the value 5,1 %.

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# THE CZECH REPUBLIC ON THE ROAD TO THE EURO-ZONE – NOMINAL CONVERGENCE CRITERIA<sup>1</sup>

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## **Abstract**

*Prior to its EU entry, the Czech Republic accepted the obligation to exert maximum efforts in order to fulfill conditions in the possible shortest time, on whose basis it will be able to accept the common European currency – the Euro. During the proper examination of the readiness of the Czech Republic for fulfilling this criterion one has to take into account both prerequisites, which are necessary for the integration of the Czech Republic into the Euro-zone, and the dispositions of the Czech economy to maintain positive effects arising from this membership. Since such a complex analysis concerning the preparedness of the Czech Republic for accepting the Euro would be rather extensive, we paid our attention merely to the examination of the extent, to which the Czech economy meets Maastricht nominal convergence criteria. Based on the analysis, we come to a conclusion that the Czech economy will not be able to meet this obligation in the following three years, mainly due to high deficits of public finances. In the last part, based on our estimates we claim that the Czech Republic could become a member state of the Euro-zone as early as in 2010.*

**Keywords:** *exchange rate stability criterion; government debt criterion; government deficit criterion; long term interest rate criterion; price stability criterion*

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## 1. Maastricht nominal convergence criteria

Although the Czech Republic became a member country of the European Union on May 1<sup>st</sup> 2004, one cannot name this momentous day as a moment, at which the process of the European integration was definitely concluded. Prior to the EC entry, the Czech Republic, likewise the remaining nine new member states, pledged that following its entry it would exert maximum efforts in order to comply with the conditions in the possible shortest time too, on which basis it would be able to accept the common currency – the Euro. If we are to evaluate the preparedness of the Czech economy for fulfilling this objective, then we have to take into account both the prerequisites, which are inevitable for the integration of the Czech Republic into the Euro-zone (Maastricht nominal convergence criteria) and its dispositions for maintaining positive effects resulting from this membership (compatibility of the Czech economy with the economies of the Euro-zone). Since such a complex analysis concerning the preparedness of the Czech Republic for accepting the Euro would be rather extensive, we will pay our attention in this article merely to the examination of the extent, to which the Czech economy fulfils Maastricht nominal convergence criteria (hereafter also MNCC).

Event though the professional public is well acquainted with the substance of MNCC, at the beginning it appears to us as appropriate to mention that one standardly distinguishes between monetary nominal convergence criteria, which determine the maximum permissible level of the growth rate of the consumer prices, long term interest rates, and the movement of the exchange rate around its central parity and between fiscal nominal convergence criteria, which determine the maximum permissible level of government deficit and government debt. It is evident from the above stated that while monetary criteria in the case of the Czech Republic are primarily affected by the monetary policy of the Czech National Bank, the level of the fulfillment of fiscal criteria is mainly influenced by the fiscal policy of the Czech Government. At the same time, we would like to remind that the main reason for accepting these criteria was an effort of the EU member states in 1992 to prevent from the fact so that countries, whose economic instability would endanger the stability of the newly arising common European currency, would enter the future Economic and Monetary Union (hereafter EMU).

## 2. Monetary Maastricht nominal convergence criteria

### 2.1. Price stability criterion

According to the Protocol of Convergence Criteria (hereafter also “Protocol”), whose version proceeds from Article 121 of the Treaty on the Establishment of the European Community (hereafter also “Treaty”), the member country complies with price stability criteria if ... *in the long term, it shows a sustainable price stability and the average inflation rate, which is measured in the course of one year prior to the examination carried out, does not exceed more than 1.5 percentage point of the inflation rate of three member states at the most, which have achieved the best results in the area of the monetary stability.* (ECB) Based on that definition, the European Central Bank determines then the reference value of the inflation criterion as ... *the non-weighted arithmetic average of the inflation rate in three countries, which have reached the lowest inflation rate, provided that this rate is in accordance with the requirements of the price stability.* (ECB) The own inflation in individual countries is measured by means of the current average of the harmonized index of the consumer prices for over twelve months in comparison with the previous average of twelve months (HICP 12:12).

**Table 1 – The price stability criterion for the Czech Republic in the years 1999-2007 (HICP; average of the last twelve months against the average of the previous twelve months; %)**

Indicator	1999	2000	2001	2002	2003	2004	2005 <sup>p</sup>	2006 <sup>p</sup>	2007 <sup>p</sup>
Inflation rate	1.80	3.90	4.50	1.40	0.10	2.60	2.56	1.99	1.24
Criterion I	2.07	2.67	3.13	2.90	2.70	2.17	2.09	1.97	1.25
Criterion II	2.07	2.67	3.13	2.90	2.70	2.17	2.09	1.97	2.01
Criterion III	3.00	3.37	2.77	3.43	3.63	3.37	3.17	3.12	3.22
Criterion I	yes	no	no	yes	yes	no	no	no	yes
Criterion II	yes	no	no	yes	yes	no	no	no	yes
Criterion III	yes	no	no	yes	yes	yes	yes	yes	yes

Source: Eurostat and one's own calculation

Note: Data concerning the development of the inflation rate and of the price stability criteria for the years 2005-2007 are the author's own estimates based on the analysis of the respective time series by means of the model ARIMA. They years, for which data was estimated, are marked with a symbol P.

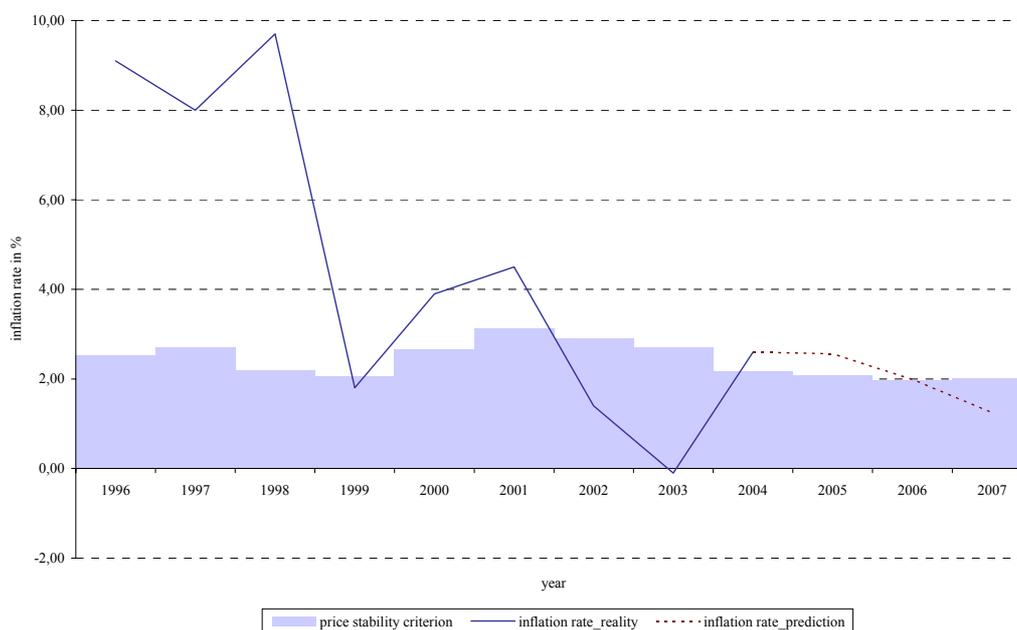
As it is apparent from the above stated, the reference value of the inflation rate is not unequivocally determined within the Protocol, in consequence of which this criterion is a target for member countries of the Economic and Monetary Union, and it is constantly changeable. Moreover, it is necessary to state that the relatively vague definition of this criterion has enabled the economists to interpret the “lowest inflation rate, which is in accordance with the requirements of the price stability” in several possible ways. If we proceed from these opinions, then we can determine the reference value of the inflation rate as an arithmetic average of the inflation rate, which has been reached:

- In three countries of the European Union with the lowest inflation rate (see criterion I in table 1),
- In three countries of the European Union with the lowest inflation rate, at the same time the countries are not included in this group, where this rate has achieved negative values (see criterion II in table 1)

Or in three countries of the European Union, which meet the requirement of the price stability best with the low inflation rate at present time (see criterion III in table 1).

It proceeds from the data showed in table 1 that if we did not take into account only the low inflation rate when determining the reference value but also the ability of the country to meet the requirement for the price stability (criterion III), then the Czech Republic would do well as for fulfilling the corresponding convergence criterion with a considerable large reserve as early as in 2002. If we proceed from another our prediction of the development of the inflation rate for the years 2005-2007, one can assume then that by fulfilling this criterion the Czech economy should not have any problems in the future either. Furthermore, it is necessary to note that this reference value corresponds to the inflation target as well, which the Czech National Bank determined with the national index of the consumer prices for this period (the target was set at the level of 3%).

**Figure 1 – The inflation rate measured by HICP (12:12) and by the price stability criterion (criterion II) in the Czech Republic in the years 1996-2007**



*Source: Eurostat and one's own calculation*

We will arrive at somewhat different conclusions than if we consider as relevant, similarly like the Ministry of Finance of the Czech Republic, the criterion, which takes into account the average inflation rate of three countries with the lowest positive inflation (criterion II). As it is obvious from table 1, in that case, according to our projection, the Czech Republic would be able to fulfill the inflation criterion for accepting the Euro only in 2007, moreover, in 2006 it would relatively and more noticeably come closer to its reference value.

In the case of the price stability criterion, we have to say that even though the Czech Republic has maintained the standard of the low inflation economy since 1999, one cannot rule out the Czech Republic might have certain problems as for fulfilling this criterion in the coming years. The estimate of the potential product<sup>2</sup> leads us primarily to this conclusion, from which arises that the Czech economy has been in the expansion production

<sup>2</sup> We have estimated the value of the potential product by means of Hodrick-Prescott's filter, which we have applied to the time series containing the annual seasonally cleaned data concerning the development of gross national product in the stable prices of the year 1995.

gap since 2003, and at the same time the value of GAP rose by 2,69 p. p. in the years 2003-2004. Should this development continue, one can relatively expect significant inflation pressures in the Czech Republic, which could be the cause of not fulfilling this criterion.

## 2.2 Long term interest rate criterion

It is evident from Article 4 of the Protocol of Convergence Criteria that a member country of the Economic and Monetary Union fulfils the long term interest rate criterion only if ... *in the course of one year, prior to the examination, the average long term interest rate of the member state did not exceed 2 percentage points of the interest rate of three member states at the most, which have reached the best results in the area of the price stability.* (ECB) In that case, the European Central Bank determines the reference value of this criterion as ...*the non-weighted arithmetic average of the long term interest rates in three countries, which have attained the lowest inflation rate.* (ECB) In this case, interest rates from the long term government bonds or comparable securities are considered as corresponding and at the same time, the European Central Bank, for calculating the long term interest rate, considers as relevant the proceeds up to the date of maturity of ten year government bonds on the secondary market.

Shall we in this case also consider the three countries with the lowest inflation rate as the countries, which have achieved the lowest positive inflation in the given period, subsequently we come to a conclusion that in the case of this criterion, the Czech Republic had no problems fulfilling it in the past, simultaneously, the same development, according to our prediction, we are expecting in the coming years. In the case of this convergence criterion, we can determine trust or distrust of the financial markets in stabilizing the Czech Republic finances as a risk factor. Should the trust be violated in the coming three years, then we can rather expect the long interest rates considerably to grow in that period.

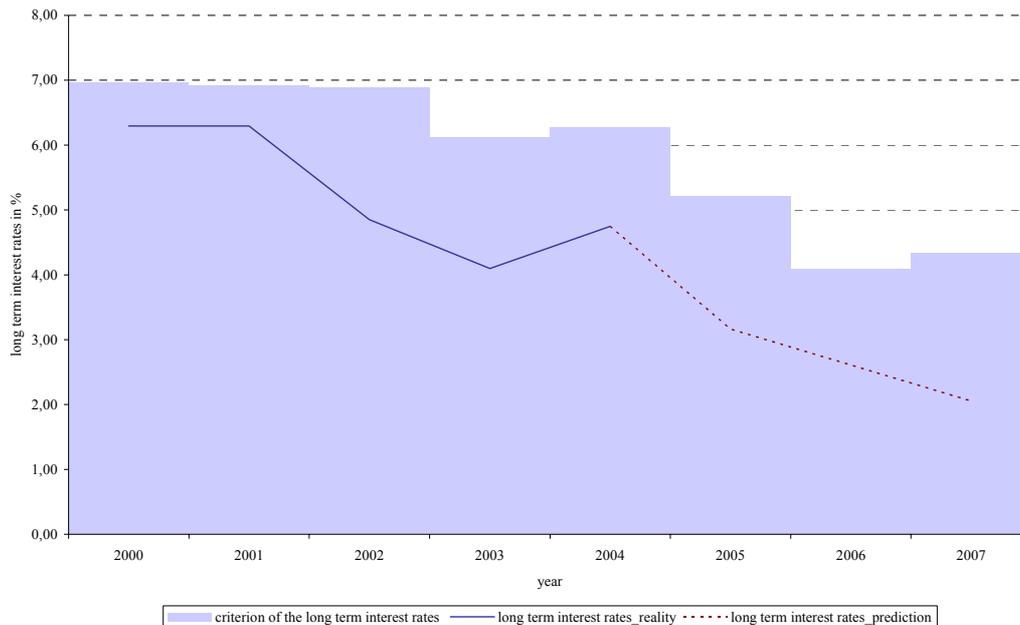
**Table 2 – The criterion of the long term interest rates for the Czech Republic in the years 1999-2007 (10 year interest rates from the government bonds on the secondary market; the average over the last twelve months; %)**

<i>Indicator</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005<sup>p</sup></i>	<i>2006<sup>p</sup></i>	<i>2007<sup>p</sup></i>
<i>Interest rates</i>	.	6.29	6.29	4.85	4.10	4.75	3.16	2.61	2.05
<i>Criterion</i>	.	6.97	6.91	6.88	6.11	6.27	5.21	4.09	4.33
<i>Criterion</i>	.	yes	yes	yes	yes	yes	yes	yes	yes

*Source: Eurostat and one's own calculation*

*Note: Data concerning the development of the long term interest rates and the development of the long term interest rate criterion for the years 2005-2007 are the author's own estimates based on the analysis of the respective time series by means of the model ARIMA. They years, for which data was estimated, are marked with a symbol P.*

**Figure 2 – Ten year interest rates from the government bonds on the secondary market and the long term interest rate criterion in the Czech Republic in the years 2000-2007**



Source: Eurostat and one's own calculation

### 2.3 Exchange rate stability criterion

Only that member state fulfills the exchange rate stability criterion, which according to the Protocol of Convergence Criteria ... *has observed the fluctuation range stipulated by the mechanism of the exchange rates of the European Monetary System at least for the last two years, and the exchange rate has not been exposed to hard pressures...*, simultaneously what is applicable is that in that given period it should not have ... *devalued the bilateral average rate of its own currency at its own suggestion against the currency of any other member state.* (ECB) It unequivocally follows from this definition that the respective country is able to comply with the exchange rate stability criterion only if:

- It has been in the last two years, prior to the examination carried out, a participator of the European mechanism of exchange rates, which has been the ERM II mechanism since January, 1999,
- Its exchange rate follows the nominal fluctuation range, i.e. if it moves within this mechanism near its central parity
- And the development of the exchange rate interventions and short term interest differentials against the Euro-zone do not lead to distinct tensions or strong pressures on this exchange rate.

**Table 3 – The exchange rate stability criterion for the Czech Republic in the years 1999-2007 (CZK/EUR, CZK/ECU; December of the given year; fluctuation range  $\pm 15\%$  from central parity)**

<i>Indicator</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005<sup>P</sup></i>	<i>2006<sup>P</sup></i>	<i>2007<sup>P</sup></i>
<i>Exchange rate</i>	36,66	36,66	36,66	36,66	36,66	36,66	36,66	36,66	36,66
<i>Depreciation (-15%)</i>	27,09	27,09	27,09	27,09	27,09	27,09	27,09	27,09	27,09
<i>Depreciation (-2,25%)</i>	32,59	32,59	32,59	32,59	32,59	32,59	32,59	32,59	32,59
<i>Depreciation (+15%)</i>	28,03	28,03	28,03	28,03	28,03	28,03	28,03	28,03	28,03

*Source: Eurostat and one's own calculation*

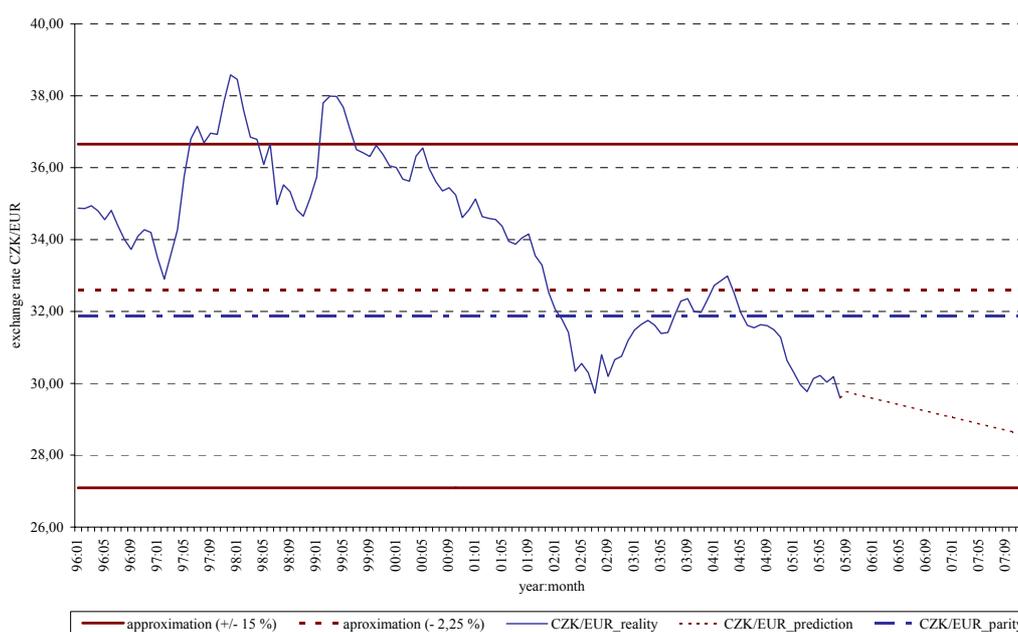
*Note: Data concerning the development of the exchange rate and the development of the exchange rate stability criterion for the years 2005-2007 are the author's own estimates based on the analysis of the respective time series by means of the model ARIMA. They years, for which data was estimated, are marked with a symbol P.*

We consider the determination of the “normal fluctuation range” as the main methodological problem of the exchange rate stability criterion, which can be defined in this case by one of the three following manners:

- The first possibility is to determine the normal fluctuation range in a way, as it was intended at the time of drawing up the Treaty on the Establishment of the European Community, i.e. as a range determined by the variance of  $\pm 2,25\%$  from the bilateral central parity, and exceptionally, this variance can reach up to  $\pm 6,00\%$ ,
- The second possibility is to proceed from the decision, which the Council EMI accepted in August, 1993 and on which basis, the fluctuation range was extended to  $\pm 15,0\%$

- And the last, the third possibility is to accede to a compromise solution, which is referred to by some economists of ČSOB and within which the fluctuation range is determined as a asymmetric range, in which a bigger space for depreciation is given for the currency of the candidate country (appreciation variance is set to +15%) and simultaneously there is a smaller space for depreciation, when the respective variance reaches only - 2,25%.

**Figure 3 – The nominal exchange rate CZK/EUR (ECU) and the exchange rate stability criterion in the Czech Republic in the years 1996-2007**



Source: Eurostat and one's own calculation

Note: The central parity was estimated by the author by means of the average monthly exchange rate of CZK against Euro for the period of 1996-2007.

If we proceed from the above given, it is apparent that in the case of the Czech Republic, formally, we are not able to assess the level of fulfilling the exchange rate stability criterion at present. The main reason for this argument is the non-participation of the Czech Republic in the ERM II mechanism and thus there is the non-existence of the officially determined central parity of the exchange rate of CZK/EUR. Still, if we wanted to partially assess the chances of the Czech economy for fulfilling this criterion, then we could use for these purposes for instance the central parity stimulated

by means of the average of the exchange rates of CZK/EUR for the years 2003-2004. As it obvious from figure 3, since the beginning of the year 2002 the fluctuation of the currency exchange rate of CZK against Euro has been, apart from the first quarter 2004, smaller than the hypothetical asymmetric range [+15 %; -2,25 %], and at present, the significant variances of this exchange rate are taking place from its central parity. If we follow strictly the above stated conditions in this situation, then we can state that the Czech economy could have certain problems regarding its fulfilling the exchange rate stability criterion in the future. It all depends on the fact how the European Commission will view this criterion as well as the European Central Bank.

### **3. Fiscal Maastricht nominal convergence criteria**

#### ***3.1 Government deficit criterion***

The Treaty on the Establishment of the European Union in Article 121 requires member states to strive for ... *a long term sustainable state of public finances apparent from the state of public budgets, which do show an excessive deficit ...*, and simultaneously, as an excessive deficit is considered such an deficit, according to which ... *a ratio of the planned and actual deficit of public finances to the gross domestic product exceeds the reference value (stipulated in the Protocol regarding the excessive deficit procedure of 3 % GDP)....* (ECB) A certain exception of fulfilling this criterion can be made to such member states, where:

- The ratio of the deficit of public finances to GDP markedly and continuously decreased in the past, and in consequence of this fact it reached the maximum, which was close to its reference value at the given moment,
- Or in the case where the exceeding of the reference value took place entirely exceptionally, and at the same time temporarily. In that case, it is assumed that the actual value will be close to the reference value of the given criterion.

The government deficit is then monitored in particular countries by means of the pure loan of the government institution sector, whose value is calculated on the basis of the methodology of the system of national accounts ESA 95.

Speaking of the government deficit criterion one mustn't forget the meeting of the European Council of Finance Ministers (ECOFIN), which took place in March, this year, and in which the representatives of ECOFIN agreed to some partial amendments of the "Stability and Growth Pact", which

significantly affected the conditions, under which a member state is able to fulfill this criterion. According to these conclusions:

- ECOFIN and the European Committee, following the implementation of the compulsory fund system by the member state, can take into account net costs connected with this reform when assessing the development of the government deficit. This consideration will be then applicable in the first five years following the introduction of the reform and will have a regressive character, i.e. 100% of net costs could be taken into account in the first year, and the volume will be gradually decreasing to 80, 60, 40 and 20 % in the coming four years,
- The member states are bound to observe the middle term target, what means the maintaining of almost balanced or surplus state budget and further a share of periodically cleaned government indebtedness in GDP can reach -1% in the long term period in countries with low indebtedness and high potential growth, whereas in countries with high indebtedness and low potential growth, the state budget must be balanced or surplus,
- The Euro-zone member states and ERM II ought to base their predictions concerning the development in the area of public budgets on the same assumptions as the European Committee.

**Table 4 – The government deficit criterion for the Czech Republic in the years 1999-2007 (pure loans of the government institution sector in the methodology ESA 95; December of the given year; %)**

<i>Indicator</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005<sup>p</sup></i>	<i>2006<sup>p</sup></i>	<i>2007<sup>p</sup></i>
<i>Deficit / GDP</i>	- 3.65	- 3.65	- 5.92	- 6.75	- 11.65	- 3.02	- 4.15	- 2.39	- 2.10
<i>Criterion</i>	- 3.00	- 3.00	- 3.00	- 3.00	- -3.00	- 3.00	- 3.00	- 3.00	- 3.00
<i>Criterion</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>

*Source: One's own calculation based on data of CSO*

*Note: Data concerning the development of the share of the government deficit in GDP for the years 2005-2007 are the author's own estimates based on the analysis of the respective time series by means of the model ARIMA. They years, for which data was estimated, are marked with a symbol P.*

As it obvious from data depicted in figure 4, the Czech Republic has not been able successfully to fulfill this government deficit criterion since 1998 up to now. In this connection, one has to state that the Czech Republic

will be in all likelihood confronted with these problems in the following three years, furthermore our conclusion confirms the obligation of the Czech Government to lower public finance deficit in the years 2005-2007 from a forecast figure of -4,7 % in 2005 to the final figure of -3,3 % in 2007. It is apparent from the given that the first year, when the Czech economy ought to be able to fulfill the government deficit criterion should be in 2008. As it obvious from the above stated our prognosis of the development of government deficit can be referred to as very optimistic in this case.

**Figure 4 – The share of pure loans of government institutions (methodology ESA 95) in GDP and the government deficit criterion for the Czech Republic in the years 1996-2007**



Source: OECD and ones' own calculation

### 3.2 Government debt criterion

Article 104 of the Treaty on the Establishment of the European Union refers to the fact that ... *an EU member state does not meet the requirements of budget discipline ... if ... a ratio of public indebtedness to gross domestic product exceeds the recommended limit (stipulated in the excessive deficit procedure of the Protocol as 60% of GDP) ...* (ECB) Similarly, as in the case of government deficit, an exception of the government debt criterion can be made to a respective member state only at the moment, when this ratio of public indebtedness to GDP is sufficiently decreasing and at a satisfactory

pace it is nearing the determined reference value. As government debt is considered total gross debt of the government institution sector, which is in this case calculated on the basis of the methodology of national accounts ESA 95.

If we proceed from data depicted in table 5, then it is apparent that the government debt criterion was and in all probability will be the only criterion, with which the Czech Republic will not have any more serious problems in the future.

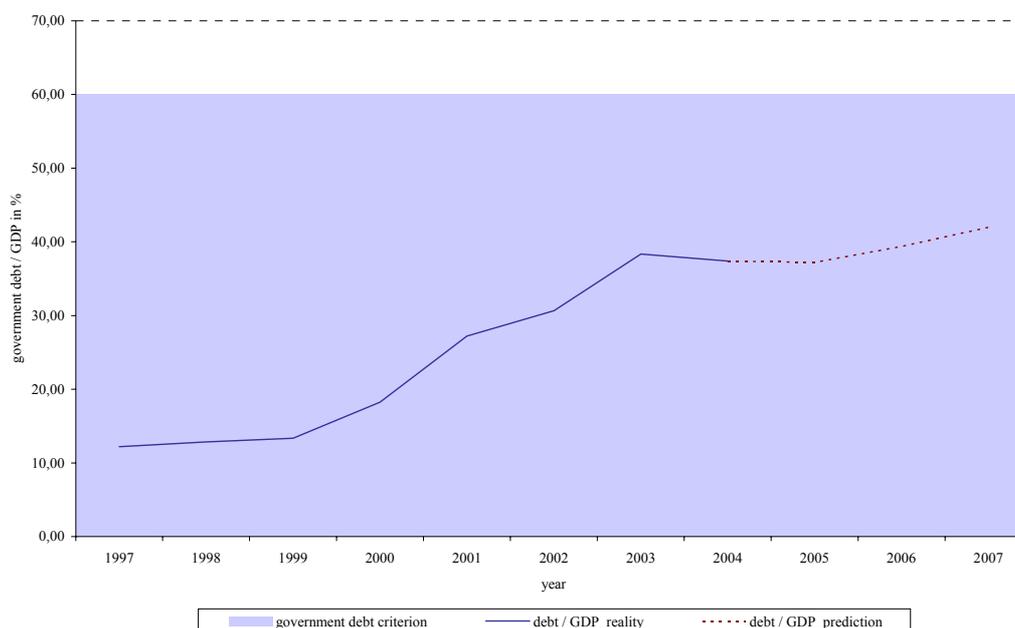
**Table 5 – The government debt criterion for the Czech Republic in the years 1999-2007 (total gross debt of the government institution sector in the methodology ESA 95; December of the given year; %)**

<i>Indicator</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005<sup>p</sup></i>	<i>2006<sup>p</sup></i>	<i>2007<sup>p</sup></i>
<i>Debt / GDP</i>	13.35	18.24	27.21	30.66	38.34	37.39	37.19	39.38	41.97
<i>Criterion</i>	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
<i>Criterion</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>

*Source: OECD and one's own calculation*

*Note: Data concerning the development of the share of government debt in gross national product for the years 2005-2007 are the author's own estimates based on the analysis of the respective time series by means of the model ARIMA. They years, for which data was estimated, are marked with a symbol P.*

**Figure 5 – The share of total gross debt of the government institution sector (ESA95) in GDP and the government debt criterion in the Czech Republic in the years 1997-2007**



Source: OECD and one's own calculation

#### 4. Conclusion

As we have already stated at the beginning of this paper, the Czech Republic, prior to its EU entry, accepted an obligation to exert maximum efforts in order to fulfill conditions in the possibly shortest time, on whose basis it will be possible to accept the common European currency – the Euro. If we are to state whether the Czech Republic is capable of meeting the obligation, then we have to state that in all probability it will not, mainly due to the inability to fulfill the public deficit criterion in the long run. If we proceed from the assumption that the Czech economy could be able to fulfill this criterion as early as in 2008, then we could expect that in the same year, the Czech Republic would enter the exchange rate mechanism ERM II, what would mean that the Czech Republic would become a member state of the Euro-zone not earlier than in 2010.

**Table 6 – The fulfillment of Maastricht nominal convergence criteria by the Czech Republic in the years 1999-2007**

<i>Indicator</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005<sup>p</sup></i>	<i>2006<sup>p</sup></i>	<i>2007<sup>p</sup></i>
<i>Price stability</i>	yes	no	no	yes	yes	no	no	no	yes
<i>Long term interest rates</i>	.	yes	yes	yes	yes	yes	yes	yes	yes
<i>Exchange rate</i>	<i>Czech Republic was not a member of ERM II</i>						.	.	.
<i>Government deficit</i>	no	no	no	no	no	no	no	yes	yes
<i>Government debt</i>	yes	yes	yes	yes	yes	yes	yes	yes	yes

Source: Eurostat, OECD and one's own calculation

Note: The years, for which data was estimated, are marked with a symbol P.

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# PORTUGAL – AN EXPERIENCE FROM THE TRANSITION TO THE ECONOMIC AND MONETARY UNION

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## **Abstract**

*Generally speaking, Portugal is considered to be a good example of the European integration. The 20-year-old membership in the EU clearly shows an impact of this institution on the stability of democracy in the country, especially during a period of transition – after the fall of non-democratic regime and during the negotiation about the entering EU as well. With the help of structural and cohesive funds the country was directed to the successful economic development. In comparison with the period after so called “the Carnation revolution” in 1974 the image of the country changed. Portuguese political leaders gradually understood that the success of the country’s membership is based in its active approach and participation in the process of the European integration. As a country on the geographical and economic periphery it tried to be in the centre of everything, they took an active part in all significant integration activities, including EMU, the Schengen area, an enlargement of the EU etc. The aim of this article is to point at the Portuguese experience from this process and to present Portugal as a good example for new EU countries, especially for those ones that belong to a group of small or middle-sized countries with many historical, political and economic parallels in their development. It also concerns the Czech Republic and Slovak Republic.*

**Keywords:** Portugal, EMU, Experience, periphery, new EU countries

## **1. Introduction**

Portugal has been a full member of the European Economic Community since 1 January 1986, after the signature of the Accession Treaty, on 12 June 1985. Both Portugal and Spain – and the latter signed the Accession Treaty and joined the European Economic Community on precisely the same date – became members of what was then known as the „Europe of the 12“. The two Iberian Countries had managed to free themselves successfully in the mid-seventies of the dictatorship that had oppressed them for several decades, and with equal success had managed to establish democratic, pluralist regimes. Nineteen years after Portugal joined what was at the time the European Economic Community it is clear that this choice was one of the most important decisions taken by Portuguese political leaders in this century. Joining the European project therefore reflected a solid determination to ensure that the country would return to its historical and cultural origins and to its undeniable European vocation. The desire to consolidate Portugal’s democracy was a major factor in the country’s accession to the European Community. After the accession, there followed a period during which a virtually exclusive priority was given to economic and social development. Initially, the viewpoint was eminently national – an approach shared by the other “cohesion countries”, notably Spain. The challenge of identifying Portugal’s priorities is also a consequence of European economic and monetary integration.

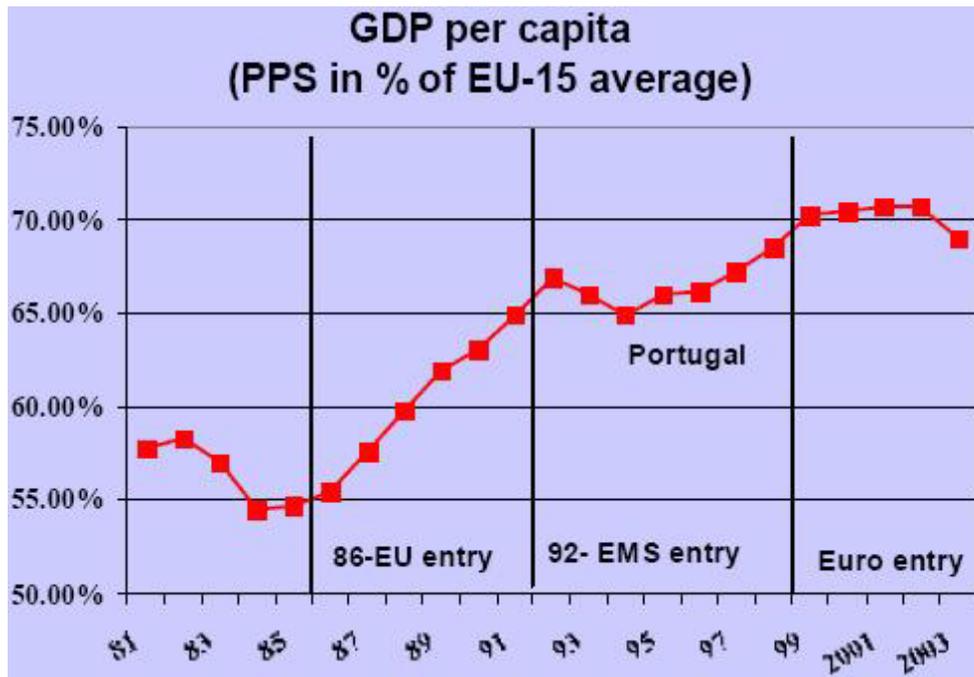
## **2. Portugal’s Transition to Economic and Monetary Union**

### ***2.1 Exchange Rate Mechanism participation***

The Portuguese case is a good illustration of both the benefits and the risks associated with monetary integration. To properly assess its case, however, we should consider the long period of membership since 1986. In this time span we can certainly be seen as a success story, which is also true if we start the analysis in 1992 when Portugal joined the Exchange Rate Mechanism (ERM).

As in most other EU countries, perhaps even more so in the case of Portugal, the challenge of Economic and Monetary Union (EMU) has worked as a mechanism for economic stabilisation and as a pre-condition for structural reform and long-term development.

**Figure 1 GDP per capita**



Source: Banco de Portugal

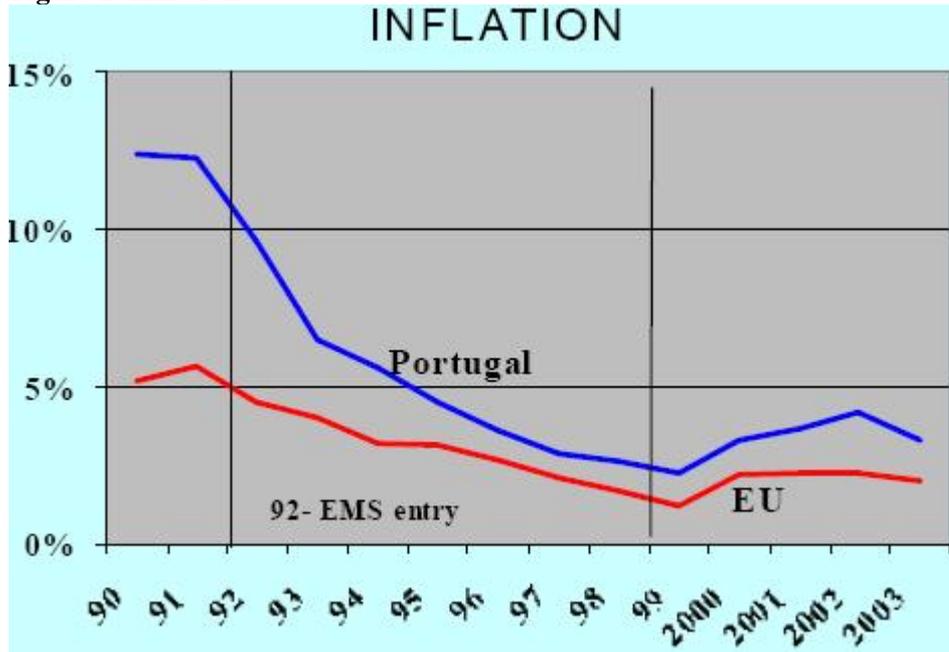
The Portuguese experience has some lessons of interests both for the case of ERM participation and of euro adoption. According to Vitor Constancio, President of the Portuguese Central Bank (Banco de Portugal) „ERM is both a test of the capacity of countries to participate in a monetary union and a useful mechanism to steer economies to comply with the Maastricht criteria“<sup>1</sup>. V. Constancio can understand the reluctance of some new member States in accepting the need to go through ERM participation before joining the euro. Small countries with fixed exchange rate regimes can understandably envisage staying in the ERM for a short a period of time as possible. For countries with flexible exchange rate regimes, including those shadowing ERM, participation in the ERM can be useful as the  $\pm 15\%$  band allows exchange rate flexibility to help stabilization and absorb inflationary pressures. At the same time, ERM acts as a disciplinary framework as adequate domestic policies are essential to ensure compliance with the commitment to exchange rate stability. But the ERM is also a flexible framework as realignments are possible and should be used if necessary. This

<sup>1</sup> Constancio, V.: European monetary integration and the Portuguese case. (presented at the Third ECB Central Banking Conference, Frankfurt, 21 and 22 October 2004). In: Detken, C., Gaspar, V., Noblet, G. (editors): „The new EU Member States: convergence and stability“, ECB 2005, p.2.

means that the initial central rate should not be seen as the future conversion rate. Also, with the wide bands, the ERM - although giving priority to exchange rate stability - still allows room for an independent monetary policy to target inflation, in what is a workable hybrid system.

The Portuguese experience illustrates many of the points just mentioned about the Exchange Rate Mechanism. Portugal initiated an exchange-ratebased stabilization program in 1990 and entered the ERM in April of 1992. Inflation reduction was consistently achieved throughout the decade.

**Figure 2 Inflation**



*Source: Banco de Portugal*

Entry into the ERM was helpful notwithstanding the initial turmoil in the system. Portugal was victims of contagion and the escudo was under attack after September 1992, when Portugal did not follow a realignment of central rates by other countries. This led to a significant speculative episode that was nevertheless successfully resisted. The policy response consisted in a determined and simultaneous use of interventions in forex markets and interest rate moves. Active episodes of intervention (interventions or interest rate moves above 2.5 standard deviations of the period) were 4.4 % of total days of the period and were successful 91% of the time. Successful in the sense that after an intervention the exchange rate appreciated (Frankel criterion 3) or depreciated less than before (Humpage criterion 4). During

the period of turmoil in the system Portugal changed the escudo's central parity three times (Nov 1992, -6%, March 1993, -6.5%, May 1995, -3.5%) without ever having reached the band limits. These realignments helped to offset the initial high appreciation of the currency. Also, they did not harm the disinflation process, which continued to be based on a tight monetary policy and a nominal exchange rate that did not completely offset inflation differentials. As it is stressed in an IMF working paper 5 on exchange-rate-based stabilizations in Greece, Ireland, Italy and Portugal, there was no relation in all these countries between fiscal policy and disinflation. Credibility of the disinflation process was more related with a general sustainability assessment than with the speed of deficit reduction. All these points prove the flexibility of the ERM and the advantage in not seeing the initial central rate as the future conversion rate.

Portugal stayed in the ERM for six years with exchange rate stability after 1993, as domestic policies gradually gave credibility to the objective of participating in the Monetary Union. The disinflation proceeded smoothly, without excessive demand pressures or inflation surges. This development has been influenced by very high interest rates in the first few years and by the European recession of the early 90's that also led to a recession in Portugal in 1993. So, during this period, Portugal did not suffer the Exchange Rate Based Stabilization syndrome of high growth, high capital inflows, high real appreciation, and high Current Account deficits, common features in other experiences. That came later as euro adoption approached and during the first two years of monetary union membership.

In different experiences where inflationary pressures become intense, a contradiction may appear between the Maastricht criteria of exchange rate stability 6 and of inflation performance. This may explain why some countries would like to stay only a very short period in the ERM. That is more understandable for countries with hard pegs as pressures for higher inflation could not be offset by allowing the currency to appreciate within the band. For countries with flexible exchange rate regimes, the possibility of allowing exchange rate moves within the wide bands may be useful, provided they will not stay long without achieving, with credibility, a situation approaching compliance with the Maastricht criteria. That is why they should carefully consider the timing of joining the ERM. It would be preferable if they were to join when already well advanced on the path to compliance with the criteria. In practice, of course, the concrete situation of each country has to be properly assessed.

The first condition for successful preparation of the way for entry into the euro area is the correct use of participation in the ERM as a disciplinary

framework and as a flexible way to manage the pressures associated with the convergence process.

## ***2.2 Monetary Union participation***

In spite of being many times referred to Portugal as a success in terms of European integration, namely with regard to EMU, the political merits of the Portuguese experience are in general over-estimated. In fact, until 1992, the ambiguous Portuguese response to the need for institutional reform and European integration was mirrored by complete discretion regarding the future course of exchange rate policy and the timing of monetary reform. It was only with the Country's first presidency of the European Council in 1992 that Portugal's attitude towards European monetary integration changed and the escudo joined the ERM. According to Francisco Torres „joining a monetary union that is based on institutions that deliver price stability is probably the best way to implement a solid strategy of sustained economic development. The reason is that this option also precludes many of transition costs (the output losses of a disinflation strategy) of such a regime changed. Fixed exchange rates, unlike other policy targets, are easily observable by the private sector but also easily implemented by the authorities“<sup>2</sup>.

The discussion about Portugal's participation in EMU evolved significantly since the objective was put forward in the Delors plan. Initially, the idea of a monetary union in Europe was well received by the public in general as a long-term European goal, although there was some scepticism as to Portugal's capacity to participate. The Portuguese economy was presented to the public, by the government, opposition and social partners, as a peripheral country that was still catching up making a long transition period for monetary and financial liberalisation necessary while concentrating on how to cope with the more immediate challenge of the International Market Portuguese public opinion and polity became used to what was until then the norm, namely that Portugal would be granted yet another transitional period.

Negotiators (the monetary authorities and the administration in general, supported by reactive political parties, resist to any substantial changes, to any increased sharing of national sovereignty, until the important decisions are taken at the top political level. Negotiators and reactive politicians adapt then quickly to the new rules. That was the case of EMS membership and of all the intergovernmental conferences.

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□ Torres, F.: Lessons from Portugal's Long Transition to Economic and Monetary Union. In: Portugal. A European Story. Principia 2000, p.101

The tendencies for higher inflation and possible overheating will continue to exist in a Monetary Union and can even become stronger and unavoidable. There is a sort of EMU shock as countries undergo a true change of economic regime. The main features of this change of regime with the adoption of the euro are, in Vitor Constantio's opinion, the following:<sup>3</sup>

- a) Increased substitutability of financial assets
- b) Consolidated reduction in the cost of capital
- c) Increase in wealth and reduced liquidity constraints.
- d) Different meaning of the current account and primacy of credit risk<sup>3</sup>.

All these aspects are a direct result of monetary and financial integration that equalizes monetary rates, reduces risk premium as national currencies disappear and promotes integration of capital markets. This facilitates debt financing and equity issuance with an overall reduction in the cost of capital. Member countries no longer suffer from what Eichengreen and Hausman 7 called «original sin», i.e. the difficulty of long term domestic financing at fixed rates or of issuing external debt in their own currency. As a result, the current account deficit is financed in their own currency and ceases to be a macro-monetary problem to become just the result of the budget constraints of all resident economic agents.

For countries coming from an economic regime of higher inflation all these features create the conditions for demand/credit booms and possible overheating that may emerge through the following two channels:

- a) The drop in interest rates increases wealth, reduces liquidity constraints and favours consumption intertemporal smoothing, which decreases savings in the present period.
- b) The reduction of the cost of capital and the prospects of higher growth as a result of goods markets integration (the so-called Rose effect 9), lead to investment growth.

The two types of mechanisms just mentioned are two of the more important channels of transmission of the positive effects of euro membership. Nevertheless, they create risk, thus confirming that there can always be too much of a good thing.

The most important instruments to deal with these problems are the anti-cyclical use of fiscal policy; sensible wage policy; and good prudential supervision of the financial sector.

The Portuguese case is a good one to illustrate some of the developments just mentioned. In fact, the drop in interest rates was

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<sup>3</sup> See Constantio, p.8

significant after 1995 and by then membership of Monetary Union seemed more assured.

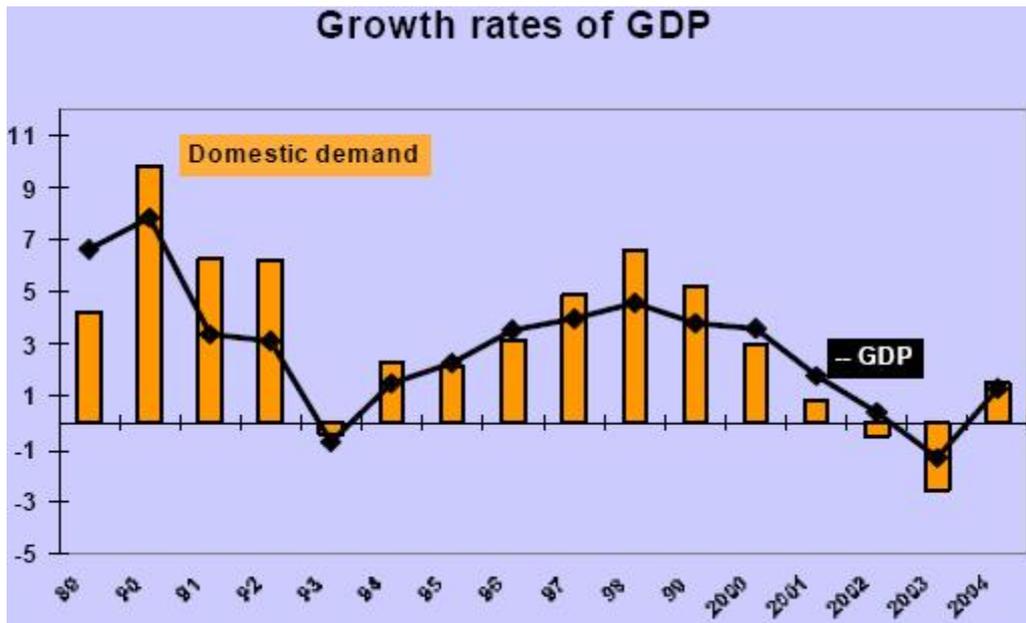
There was, of course, an explosion of debt in both households and companies, which was possible because total interest rate charges increased only marginally for households and actually decreased for firms throughout the decade. Total financial charges (interest and principal) for families stand now at 14% of disposable income, as indebtedness was overwhelmingly related to housing in the form of long-term credits with low annual amortization.

However, the current account of a member of a monetary union has a totally different meaning from the case of a country that has its Portuguese currency. In a monetary union, the financing of a member country current account is carried out in the common currency with reduced liquidity constraints. The balance of payments is no longer an autonomous macro monetary restriction, it is the result of the borrowing requirements of domestic agents conditioned by their own budget constraints. Rational agents' behaviour will reflect these constraints and microeconomic credit risk analysis as it is performed by the financial sector is now the important mechanism of control. The consequence of all these factors is a gradual decline in the Horioka/Feldstein effect within the euro area. In fact, investment can become less correlated with domestic savings as a result of in-depth monetary and financial integration. After 2000, the external deficit started to decrease and it is important to underline that this evolution resulted from the spontaneous change of behaviour of indebted private agents, proving that the two mentioned self-correcting mechanisms were playing their role.

The private sector as a whole had in 1995 a positive financial balance of 5.7% of GDP but this changed to a deficit of 5.8% in 2000, whereas the public sector reduced its excess of investment over saving. Since 2000 private agents have started to reduce investment and increase savings, reaching a balanced position last year. What happened was clearly a market-driven adjustment by the private sector. The initial surge of expenditure was as unavoidable as the correction was spontaneous and equally rational.

More recently, however, Portugal has suffered a marked slowdown in growth and in 2001 Portugal breached the 3% budget deficit limit imposed by the Treaty (Figure 4). The slowdown, which attained recession level with -1.3% growth last year, was very much influenced by the international economic slowdown, but stemmed also from the adjustment of economic agents after a period of high growth fuelled by a credit boom. This type of see-saw development is the result of a practically unavoidable adjustment to a new intertemporal equilibrium associated with monetary unification.

**Figure 3 Growth rates of GDP**



Source: Banco de Portugal

Nevertheless, the recent economic evolution also stemmed from some mistakes of their own. It can be said that the macroeconomics of a successful monetary integration is about economic agents adopting new rules regarding fiscal policy and wage behaviour. Fiscal policy needs to play a countercyclical role to act as a shock absorber. Wage behaviour should take as a reference wage cost developments in the euro area as a whole and should deviate from these only if there is a productivity growth differential. A different performance can lead to dangerous losses of competitiveness and can feed a divergent inflation process. In a Monetary Union, however, no country may for a long period have an inflation rate very much different from the average. Only inflation differentials that are justified by equilibrium movements of the real exchange rate are sustainable. In view of the recessionary nature of the adjustment, when price and cost inflation diverges, a sensible wage behaviour is essential to minimize future unemployment.

These new realities of life in a monetary union are only with difficulty taken on board by economic agents used to other regulation mechanisms for decades. As a consequence, Portuguese fiscal policy has been mostly procyclical and the relative unit labour costs have increased more than the euro area average. Portugal has aggravated, therefore, the risks of boom and bust behaviour. This is a considerable risk which, at an initial stage, confronts all

countries coming from a relatively high inflation regime to join a low inflation monetary union.

Regarding the more recent developments of the Portuguese economy, it should be stressed that the drop in domestic demand associated with the self-correcting adjustment of the private sector contributed to the recession Portugal has last year. Another important factor was the big decrease of external demand directed to the Portuguese economy. This fell from an average of 9% (1995-2000) to 1.4% in 2001 and 0.8% in 2002. Fiscal policy didn't help either as after breaching the 3% limit in 2001 we had subsequently to adopt a pro-cyclical stance.

### **3. The role of fiscal policy**

Portugal misused fiscal policy twice in the decade. The first time at the moment of entering the ERM, which may have contributed to some contagion effects at the time of ERM turmoil in 1992. The second time after 1996, when the savings from the decrease in public debt interest charges were used to increase current expenditures. In fact, twice in the decade Portugal had significant increases in current primary expenditures, basically the wage bill.

The reduction in interest payments generated an unjustified optimism about what the State could spend. The consequence was a pro-cyclical fiscal policy, which, when the economic deceleration came in 2001, led suddenly to a deficit above 4%. To correct this excess, policy had to continue to be pro-cyclical, this time in the restrictive direction. The lesson to draw from this is that a country within the euro area must always keep a margin of safety in fiscal policy to be able to face an economic slowdown without the risk of breaching the 3% limit. Another point worth mentioning refers to the limits of fiscal policy in the context of the initial stages of monetary union participation. As Portuguese case illustrates, the budget stance did not create a demand boom and it would be asking too much of fiscal policy to think that it could have been able to significantly offset the explosion of private expenditure. Fiscal policy should undoubtedly, have been countercyclical in terms that would have allowed us to avoid breaching the Stability Pact. Nevertheless, it is also important to note that a reasonable policy could not have smoothed the cycle very significantly. The reason is that the budget multipliers of very open economies like ours are in general fairly small.

Simulations using the Banco de Portugal model show that to bring the 2001 budget deficit 2 percentage points lower, through a policy of slowing down primary expenditures since 1998, the cost in terms of GDP growth would have been 3.5% in accumulated terms, i.e. around 20% of the growth

achieved in that period. In such a scenario, the current account deficit would have been reduced only from 8 to 6% of GDP.

It should be underlined that fiscal policy, in spite of its limitations, is essential to counter the more negative effects of a demand/credit boom and partially smooth the cycle. In particular, the Portuguese experience shows the importance of some other points. Countries should maintain at all times an anti-cyclical fiscal policy. A prudent approach requires that real budget consolidation with a deficit well below 3% should be achieved before adopting the euro. On the other hand, the structural deficit should never exceed the level compatible with the full play of the automatic stabilizers without breaching the 3% limit. Finally, countries should introduce structural reforms early on to contain future budget pressures, and should adopt efficient institutional procedures for the preparation and implementation of the budget. These should include, for instance, multi-year expenditure commitments approved by Parliament. Also, in view of the need to invest in infrastructure and the limitations of the Stability Pact, which does not allow the use of debt over the cycle to finance those expenditures, adequate rules for Public Private Partnerships and project finance should be introduced to ensure real transfer of risk, transparent accounting of multi-year commitments and limits to future expenditures.

#### **4. Conclusion**

Portugal is generally considered to be a European integration success story. Over the last 19 years democracy has become consolidated, the sense that Portugal was marginal in Europe is being overcome. The benchmark argument for Portugal to join a monetary union was based on institutions delivering price stability – a means to implement a solid strategy of sustained economic development.

There are several causes for the initial effect of acceleration of growth or even for real overheating. The first one stems from the decrease, and possible temporary misalignment, of interest rates and the credit boom that follows from that. The second reason is associated with large capital inflows that add to demand pressures and may be caused either by Foreign Direct Investment or short-term capital movements related with interest rates convergence plays. Finally, the third group of causes is related with more direct pressures on prices coming from several possible factors.

All the preceding points justify some general conclusions about the appropriate policy responses for countries acceding to the European Union and the euro. The list is very simple and contains very well known points:

1. Adequate use of the ERM should be ensured with flexibility but also with a sense of the primacy of the exchange rate commitment. This implies that monetary policy cannot be conducted according to a regime of pure inflation targeting and this fact must be clear to the markets. Also, the initial central rate should not be seen as being necessarily the future conversion rate into the euro.
2. A permanent anti cyclical fiscal policy has to be applied to be able to absorb shocks coming from fluctuations of external demand or capital inflows. In this perspective, a very solid and cautious budget position should be built before joining the euro.
3. A realistic wage behaviour has to be ensured to avoid excessive real appreciation in terms of relative unit labour costs.
4. An efficient prudential supervision of the financial sector must be guaranteed, taking financial stability risks seriously.

Besides the aspects related with macroeconomic stability, openness of the economy and non-distorted markets, the modern approach underlines the importance of institutions and good governance. Countries should make sure that they are continuously making progress in this respect. In Portuguese case we have made great strides in the past couple of decades. However, having attained a good intermediate position we now face the difficult task of making further progress. In the present world conditions, no country can rest on past achievements. A permanent and determined policy of structural reforms is essential to increase or even just to maintain the rate of potential growth. Combined with the need to achieve a real fiscal consolidation, the effort to increase our growth potential constitutes the main challenge that Portugal now faces. A challenge that we are certainly better positioned to overcome within the demanding framework of the European Monetary Union.

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# THE STRATEGIC CONTRIBUTIONS OF TURKEY'S FULL MEMBERSHIP TO EUROPEAN UNION ALONG WITH THEIR FINANCIAL DIMENSIONS

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## **Abstract**

*In this paper, the contributions of Turkey's full membership to the EU is emphasized in contrast to the usual approach. In EU countries as well as in Turkey, the issue is limited to the subjects of the criteria that Turkey fulfills and the burdens of membership on the union. However originating from EU's structure as well as from Turkey's geographic, economic, demographic characteristics, Turkey has strategic contribution dynamics toward EU. The structural characteristics of EU that distinguish strategic contribution that Turkey will provide can be listed as the low population increase of the EU countries, low growth rate, the limited possibilities of reaching to the world through seaways, high labor cost, the geographic distance to the Middle Asia, Middle East and Balkans. The contribution parameters of Turkey's full memberships to the European Union that originates from the outstanding and superior position of Turkey, the parameters which can be specified as having three distinct seaway routes, high growing rate, widespread entrepreneurship culture, young population, nearness to the Middle East, high labor motivation, the large size of population, the existence appropriate potentials for foreign investment. This paper also focuses on the financial dimension (export, import, foreign direct investment) of Turkey's full membership to EU.*

**Keywords:** *EU, Turkey, full membership, financial dimensions*

# **1 The Strategic Contributions of Turkey's Full Membership That Originate From the Structural Characteristics of the EU.**

## ***1.1 Economic Stagnation and the Low Growth Rate***

Starting from the 1990's, the EU countries have grown at the rate of 1 % at most within the last 15 years. On the other hand, Japan and China have had growth rates exceeding 5%. The economic potential of USA is obviously clear. From the viewpoint of the EU who has assertions to become a super power, this aspect of evaluation is quite thought provoking. Though, probably resulting from the fact that these countries have reached to a high level of economic accumulation which has created a point of no-growth situation that requires new partners to realize a positive growth rate.

## ***1.2 High Labor Cost and Low Labor Motivation***

The labor motivation is low due to the fact that a level of prosperity has been reached. The high costs and low productivity are the expected consequences of powerful labor unions and the well established social security organizations. Specifically, the labor cost in the EU is 20% higher than the ones in the US and in Japan, and the productivity is 10% lower. The unemployment rate is approximately 10 %<sup>1</sup>.

## ***1.3 The Loss of Super Power Status Against USA and Japan***

The EU, described originally by some as the super power project, is losing ground when compared to Japan, China, and USA in terms of economic growth, economic size and consequently political superiority.

## ***1.4 The Competition of the Far East Countries, the Low Level of Entrepreneurship Motivation***

The competition capacity of the EU countries against the products coming from the Far East is quite low due to high labor costs and the low labor motivation. The share of the Far East countries in world exports is increasing while the share of the EU countries decreases.

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<sup>1</sup> TUSIAD, Going Through A Performance Worldwide, UNICE, Competitive Force Report TUSIAD, t/95, 4 , 178, İstanbul, 1995, p.12

### ***1.5 The High Level of Investment Costs and Tax Rates***

The public expenditures are quite large resulting from social security expenses and social government budget. Thus, naturally these are the causes for rising tax rates<sup>2</sup>.

### ***1.6 Export Restrictions to Formerly Soviet Countries***

The exports realized to former Soviet countries are not increasing as much as the imports from these countries. In this context, for the EU countries to establish a higher export possibility, they have to set up better situated connection points in this geographical area<sup>3</sup>.

## **2 The Strategic Contributions of Turkey's Full Membership That Originate From Turkey's Geographical, Economic, Demographic, Cultural Advantages**

Contrary to the unfavorable aspects of the EU which were summarized above, the advantages that Turkey has that would compensate the adverse circumstances and provide strategic contribution to the EU.

### ***2.1 Turkey Has A High Growth Potential***

Beyond the economic crisis Turkey had faced, it has potential growth rates of 5-10% which were realized during the past years. Within the past year 2004, Turkish Economy has shown a growth rate of more than 9%. With Turkey's full membership to the EU, the incoming EU investments will definitely exhibit further acceleration. The greater growth rate of Turkey will create a mediation to the growth rate of EU.

The present level of Turkey's GNP which is calculated as 200 billion US Dollars is rather a low level for the Capacity of Turkey. However the present level of the actual state of economic size bears a great potential of higher growth in the coming years. On the other hand the developed economies of the EU countries have a much lower level of growth potential.

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<sup>2</sup> TUSIAD, p.36

<sup>3</sup> "EU Foreign Trade and Formerly Soviet Countries", Spot Magazine, Y.1., S.21, 1995, p.19

## ***2.2 The Low Level of Labor Costs***

When compared to the EU, the labor costs are low and the labor potential seem to be high. For the investments that originate from the EU countries, the low labor cost will provide a high competitive advantage to the EU based companies. Being in the status of a developing country, Turkey has a high labor productivity and motivation rate.

## ***2.3 Development Potential of Tourism***

The tourism income which is presently at 12 billion US Dollars level, can also be expanded. It is obviously clear that with full membership, Turkey's tourism activities will develop to a great extent.

## ***2.4 To Provide Support To EU's Mediterranean Policy***

Though some of the EU countries have Mediterranean link, in commercial area the Mediterranean sea has a very high strategic importance for the EU. As an advantageous Mediterranean country, Turkey will play a prime role building a bridge between the EU and the other Mediterranean countries in commercial and political fields. To create Mediterranean policies at the macro levels, Turkey's full membership will bring certain advantages<sup>4</sup>.

## ***2.5 The Reduction of Destructive Competition of Far East Through Turkish Connection***

Turkey who has similar structural characteristics with Far East countries, has better possibility to compete with these countries compared with the EU countries. Furthermore, the EU companies who invest in Turkey will be in a position to produce in a more competitive structure.

## ***2.6 Geographical and Cultural Proximity To Balkans***

Almost in all the Balkan countries there is a sizable Turkish and Muslim population. These people feel themselves very close to Turkey. The Turkish and Muslim Demographic status in Bulgaria, Albania, Greece, Bosnia-Herzegovina, Macedonia, Romania and Kosovo is important for Turkey as well as for the EU.

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<sup>4</sup> Saim Kohen. "We Are In Mediterranean", Milliyet, 28 October, p.14

***2.7 The Black Sea Factor and BSEC (Organization of the Black Sea Economic Cooperation); Turkey, Bulgaria, Romania, Moldova, Georgia, Ukraine, Russian Federation Constitute the Black Sea Countries***

Turkey who has the longest shore to the Black Sea also has two strategic straits (the Canakkale and the Bosphorus Straits) which tie the Black Sea to the Mediterranean Sea. When the term the Black Sea basin is mentioned, it does not refer to these 6 countries only. The Black Sea is also the area that opens the Caucasus to the world. Almost all of the North Balkans area takes place in this basin. By means of the Danube River, many Middle and Eastern European Countries reach to the Black Sea and then from here to the Mediterranean. The region is the cross point of Asia-Europe which is also at the critical passage from South to North.

The Organization of the Black Sea Economic Cooperation which was established with the initiatives of Turkey does not include only the countries who have shores to the Black Sea, but also include Albania, Azerbaijan, Armenia and Greece who do not have shores to this sea. Some consider it as an alternative to the EU, however BSEC is an organization which supports the EU initiative.

***2.8 Proximity to the Middle East; Turkey's Neaeness to the Middle East Is Not Only Geographical But Cultural at the Same Time***

When energy factor and intensive destabilization is taken into account, the presence of the EU in the Middle East can not be avoided. Thus with the full membership of Turkey, the EU will be closer to the Middle East in terms of economic, commercial and political aspects.

***2.9 Proximity to Asia; the Middle Asian Republics, Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, and Kirghizistan are considered and named as Turki Republics. In terms of Cultural Composition, They have major Similarities with Turkey.***

These countries have first of all very important natural gas and oil energy resources and agricultural product potentials that attract attention. For the EU countries to have dependable and stable dialog with the Middle Asian countries, it is clearly obvious that Turkey can play an intermediate role.

***2.10 Proximity to Caucasia; In the Caucasus, Georgia, Azerbaijan, Armenia, Turkey, Russia, and Iran are located.***

Oil has a special position for the region to gain importance. Specifically the Azerbaijan oil resources bring forth the region as very important.

### 3. EU Turkey Financial Relations

Turkey-EU Financial relations can be analyzed in three periods namely “Pre-Customs Union Period”, “Customs Union Period” and “Candidacy period”:

#### 3.1. *Pre-Customs Union Period (1963-1995)*

Prior to the completion of the Customs Union, financial relations between Turkey and the EU have been conducted within the framework of Financial Protocols. During this period financial assistances, which are mainly credits, are composed of grants and credits. Community resources and European Bank of Investment are the main sources of credits.

Statistics of the commitment and use of the financial assistance in this period are as follows

<b>Credits</b>	
Commitment: 927 Million Euro	Use: 927 Million Euro
<i>Grants</i>	
Commitment: 78 Million Euro	Use: 78 Million Euro
<i>Total (*)</i>	
Commitment: 1005 Million	Use: 1005 Million Euro

Source : [www.dtm.gov.tr](http://www.dtm.gov.tr)

\*In this period, the fourth Financial Protocol worth 600 million Euros could not be materialized due to the veto of one member state. .

#### 3.2. *Customs Union Period (1996-1999)*

With the Association Council Decision No.1/95, credits and grants are envisaged for Turkey after the Customs Union, within the framework of sources of EU’s Budget and Mediterranean Programs. Although, the said assistance, which was made trough a unilateral Declaration of the Community, are designed to eliminate the negative effects of the Customs Union on Turkish Economy, they were far from satisfying their target both in terms of quality and quantity.

Statistics of the commitment and use of the financial assistance in this period are as follows:

<b>Credits(*)</b>	
Commitment: 2.062 Million Euro	Use: 557 Million Euro
<b>Grants(**)</b>	
Commitment: 754 Million Euro	Use: 393 Million Euro
<b>Total</b>	
Commitment: 2.816 Million Euro	Use: 950 Million Euro

Source : [www.dtm.gov.tr](http://www.dtm.gov.tr)

(\*) The European Investment Bank credit worth of 750 million Euros envisaged by the additional protocol of Customs Union Decision could not be materialized due to the veto of one member state.

(\*\*)The grant worth 375 million Euros envisaged to support competitiveness of Turkey in the context of the Customs Union Decision was vetoed by one member state.

### **3.3. Candidacy Period (1999-2006)**

With the Helsinki Summit held on 10-11 December 1999 at which Turkey was recognized as a candidate state, Turkey-EU relations entered a new phase. With the candidacy, some noteworthy changes were seen in terms of both quality and the quantity of the financial assistances.

In this context, the regulation, known as “Single Framework” which is prepared to combine the EU’s grants assistances under a single framework, was adopted at the Fisheries Council on 17 December 2001. Single Framework aimed to guarantee the use of assistance exclusively for Accession Partnership priorities. To this end, new structures have been established in Turkey, as done in other candidate states.

New structures, established with regard to usage of assistance provided from EU are as follows:

- The state Minister in Charge of EU Affairs has been designated as the “National Aid Coordinator” to ensure the allocation of the EU grants to the Accession Partnership and National Programme priorities.
- A “Financial Cooperation Committee” has been established to set the priorities, to prepare the annual financing plans and to oversee the allocation of the available resources in line with the priorities. The Committee is composed of the representatives of the Ministry of Foreign Affairs, Ministry of Finance, the State

Planning Organization, and the Undersecretariat for Treasury and General Secretariat for the EU.

- A “National Fund” to which the EU Funds will be transferred was established within the Undersecretariat of Treasury, and the State Minister in charge of the economy has been designated as the National Authorizing Officer who will manage the Fund.
- In addition a “Central Finance and Contracts Unit” was established for the overall budgeting, tendering, contracting, payments, accounting and financial reporting of all procurements through the EU Funds.

Presidency Conclusions of the Copenhagen Summit noted that financial assistances to Turkey will be increased and allocated under the "pre-accession expenditure" of the budget heading. Moreover, Accession Partnership, which is adopted on 19 May 2003 by European Council concluded that 250 million Euro in 2004, 300 million in 2005 and 500 million in 2006 will be allocated to Turkey.

Statistics of the commitment and use of the financial assistance in the candidacy period are as follows:

Title	Amount (m €)	Character	Period
MEDA-II***	889	Grants	2000-2006
EUROMED-II	1.470	EIB loan	2000-2006
European Strategy for Turkey***	150	Grants	2000-2002
Strengthening and Deepening of Customs Union	450	EIB loan	2000-2004
Pre-accession Facility *	8.500	EIB loan	2000-2003
Euro-Med Partnership Facility **	1.000	EIB loan	2001-2006

Source : [www.dtm.gov.tr](http://www.dtm.gov.tr)

\*Credits provided under the Pre-Accession Facility were allocated to Turkey and 12 candidate countries, some of which became EU members very recently.

\*\*Credits provided under the Euro-med partnership Facility were allocated to Turkey and other MEDA countries.

\*\*\*From 2002, financial assistances provided under these titles incorporated into Pre-Accession Strategy for Turkey budget heading of the EU Budget.

## 4. Capital Market Integration

Integration of capital markets in Europe has taken a significant leap forward with the Single Act and the endorsement by the Council of Ministers (in Madrid in May 1989) of economic and monetary union (the Delors Report). These call for removal of virtually all barriers to free trade in financial services and the acceptance of rights of establishment of one member country's financial institutions in any other<sup>5</sup>.

Capital market integration is a natural extension of the economic integration that was set by the Treaty of Rome. With this treaty economic and financial integration went hand in hand with political integration. Capital market liberalization and financial integration make factor and goods mobility available. Capital market restrictions distort product market behaviour. Interest rate ceilings artificially depress savings and raise investment; credit controls interfere with domestic sectoral allocations; capital controls impede efficient allocation of resources internationally; and limitations on the free transfer of ownership undermine productive efficiency<sup>6</sup>. Financial integration also has been promoting cross border banking since 1980.

**Table 1- Liberalization Of Banking Activities In EU Member States**

	Lifting of capital controls	Interest rate deregulation	First Banking Directive	Second Banking Directive
Belgium	1991	1990	1993	1994
Denmark	1982	1988	1980	1991
France	1990	1990	1980	1992
Germany	1967	1981	1978	1992
Greece	1994	1993	1981	1992
Ireland	1985	1993	1989	1992
Italy	1983	1990	1985	1992
Luxembourg	1990	1990	1981	1993
Netherlands	1980	1981	1978	1992
Portugal	1992	1992	1992	1992
Spain	1992	1992	1987	1994
UK	1979	1979	1979	1993

*Source : Financial Integration in Europe and Banking Sector Performance, Claudia M. Buch, Ralph P. Heinrich, Kiel Institute of World Economics, January 2002*

<sup>5</sup> European Financial Integration, Alberto Giovannini, Colin Mayer, Centre for Economic Policy Research, 2005, p.1

<sup>6</sup> European Financial Integration, Alberto Giovannini, Colin Mayer, Centre for Economic Policy Research, 2005, p.1

The first EU Member that lifted the control of capital is Germany in 1967. Interest rate deregulation first made by UK in 1979. Although individual countries had opted to liberalize capital flows earlier on, agreements to abolish capital controls on a European wide level were adopted only in the 1980s

**Table 2 – Openness of Banking System Towards Foreign Competition**

	EU	Euroland	Developed countries	High income	Upper middle income	Lower middle income	Lower income
Limits on foreign bank ownership of domestic banks	0.00	0.00	0.08	0.17	0.44	0.19	0.14
Limits on entry of foreign banks	0.00	0.00	0.04	0.07	0.11	0.24	0.14
Concentration ratio	59.19	56.17	60.92	63.75	66.48	72.35	72.91
Foreign bank ownership	16.29	19.97	24.81	33.57	31.72	33.75	33.59
Government-owned banks	9.98	12.97	10.27	10.28	12.32	28.32	35.36
No entry applications	0.00	0.00	0.04	0.09	0.14	0.13	0.00
Domestic	0.21	0.27	0.24	0.31	0.25	0.30	0.11
Foreign	0.08	0.10	0.08	0.16	0.30	0.43	0.22
Fraction of entry applications denied	3.67	3.23	3.21	7.69	11.99	32.22	49.32
Domestic	5.42	3.37	2.13	7.16	8.33	28.04	79.82
Foreign	1.67	2.22	3.21	6.91	16.85	30.83	37.85

All variables are averages by income level or region, respectively. Limits on foreign bank ownership of domestic banks = maximum fraction of banking system assets that can be held by banks that are 50 percent or more foreign-owned. Bank concentration ratio = fraction of deposits held by the five largest banks. Foreign bank ownership = fraction of banking system's assets that are held by banks which are 50 percent or more foreign-owned. Government-owned banks = fraction of banking system's assets held by banks that are 50 percent or more government-owned. No entry applications = dummy variable which assigns a one if applications for licenses have been received in the past 3 years. Fraction of entry applications denied = fraction of applications denied in the past 5 years.

Source: Barth et al. (2001)

Europe is one of the most open regions worldwide towards foreign competition in banking. Table 2 gives an overview of the prudential regulations affecting foreign financial institutions. In Europe there are virtually no restrictions to the market entry of foreign banks in place, indicating a slightly more liberal regime in comparison to high income countries on average and to less developed countries in particular. EU countries as well as developed countries in general also have a lower share of entry applications being denied in comparison to lower income countries.

As it comes to the point of financial liberalization in Turkey; in 1989, the debt-ridden state moved to systematically and completely deregulate Turkey's financial markets. Together with the ongoing processes of liberalizing commodity markets and integrating with global capital markets, financial liberalization was expected to achieve fiscal and monetary stability,

stimulate business confidence to invest in productive sectors, produce stable growth, encourage privatization and control inflation. However, the new hegemony of the capital markets has gone hand-in-hand with deteriorating macroeconomic performance, a worsening income distribution, the discrediting of politics and its isolation from society<sup>7</sup>.

The foundations of the capital markets in Turkey were laid down during the 1980s but, since then, the development of the capital markets in Turkey has not been entirely satisfactory for a variety of reasons. Macroeconomic and political inconsistencies, the shadow economy, high domestic debt stocks and interest rates obstructed the development of fully fledged capital markets with sufficient depth. The market also suffered from more specific securities problems, such as lack of a corporate and individual investor platform and lack of diversity in the capital market instruments.

On the other hand, the Turkish capital markets are poised to emerge. The high-standard legal framework of the capital markets in Turkey, along with the well-operating institutional structure of the Turkish Capital Markets Board, gives the Turkish capital markets potential for new developments that will lead to an increase in investment in securities. Recent developments, such as the introduction of private pension funds, also bolster the liquidity of the Turkish markets. Lastly, even the mere possibility of Turkey acceding the EU has triggered an influx of foreign capital.

The proposed accession of Turkey to the EU requires harmonization of domestic legislation with the EU legislation in many areas, including capital markets. This harmonization is not only vital for Turkey's accession to the EU, but is also necessary for Turkish capital markets to compete globally in terms of economic development.

While the regulatory authorities in the Turkish capital markets are working on integration to the EU legislation, the EU legislation is leading its way to a harmonized capital market within the EU member states. It is assumed that an integrated capital market throughout the EU will decrease the cost of capital and transaction costs, resulting in market growth and lower unemployment.

Representatives of the Capital Markets Board foresee that the amendments on primary and secondary capital markets legislation for purposes of integration with the EU legislation will be completed by the end of 2005.

The Law on Capital Markets 2499 is the main piece of legislation regulating capital markets in Turkey. In turn, the Capital Markets Board is the independent government authority regulating and monitoring the capital

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<sup>7</sup> Politics, Society and financial liberalization: Turkey in the 1990's, Ümit Cizre Sakallıoğlu, Erinc Yeldan, Development and Change, Volume 31, Issue 2, p. 481, March 2000

market activities through issuance of regulations and communiqués, which are in line with the Capital Markets Law.

The Ministry of Council's decision dated June 24 2003 sets out the primary steps required to be taken in many areas, including the capital markets, to adopt EU legislation.

According to this decision, harmonization of the capital markets legislation, particularly in the area of financial services, will be among the regulatory authorities' main objectives. Also, the regulatory authorities' supervision powers will be strengthened, making them structurally independent.

Another crucial amendment to the Capital Markets Law will be the abolition of the restrictions imposed on EU-based foreign investors that prevent them from investing in Turkish industries. Allowing public offerings of foreign securities in the Turkish market and loosening the restrictions on foreign financial service providers will facilitate integration of EU legislation into the Turkish finance sector.

The amendments that are envisaged for the Capital Markets Law can be summarized under seven headings. The amendments will relate to: (i) publicly listed companies; (ii) brokerage houses and their activities in the capital markets; (iii) corporate investors; (iv) private pension funds; (v) stock exchanges and other capital markets institutions; (vi) taxation in the capital markets; and (vii) effects of penalties and measures.

#### ***4.1. Publicly listed companies***

As a result of the amendments to the Capital Markets Law, corporate governance principles will be widely applied by publicly listed companies. A Corporate Governance Principles Index will be used, whereby companies will be rated based on their compliance with corporate governance principles, and investors will be able to detect which companies are corporate governance friendly. Mergers and spin-offs in publicly held companies will be governed in compliance with EU legislation. Furthermore, the authority of the board of directors under the authorized share capital system to increase the capital of public companies will be limited to a maximum of five years. The scope of public disclosure in special cases will be extended and the voting rights of those that do not comply with the mandatory tender offer requirements will be suspended by court decision. Currently, persons who acquire 25% of the voting stock of public companies are compelled to launch a mandatory tender offer for the remaining shares. Lastly, the Capital Markets Board will be granted the authority to regulate the purchases of treasury shares, which is prohibited under the existing capital markets legislation.

#### ***4.2. Brokerage houses and their activities in the capital markets***

Individuals will be entitled to be involved in capital markets activities within a framework to be determined by the Capital Markets Board. The activities in the capital markets will be divided into two groups, classified as primary and secondary activities.

#### ***4.3. Corporate investors***

The antitrust drawbacks imposed on corporate investors will be abolished during the integration process.

#### ***4.4. Private pension funds***

The restrictions imposed on the incorporators of private pension funds will be abolished and the conditions for incorporation of pension funds will be simplified. The principles for valuation of capital in kind invested in real estate investment trusts will be re-determined. Portfolio custody principles will be set out and the restrictions regarding securities that are traded by investment funds will be abolished.

#### ***4.5. Stock exchanges and other capital markets institutions***

The Istanbul Stock Exchange and Istanbul Precious Metals Exchange will be reorganized to suit competition grounds that will be established throughout the integration process. The terms and conditions for quotations on the Istanbul stock Exchange will be reviewed and amended as per the terms and conditions of the EU member states. Lastly, the transition from physical shares to registered shares will become effective, which will lead to electronic record keeping of the shares of joint stock companies.

#### ***4.6. Tax in the capital markets***

The tax system will be simplified, with a special focus on the taxation of foreign corporate investors. Government bonds that used to have tax advantages over corporate bonds will become subject to the same taxation principles as corporate bonds.

#### ***4.7. Penalties and measures***

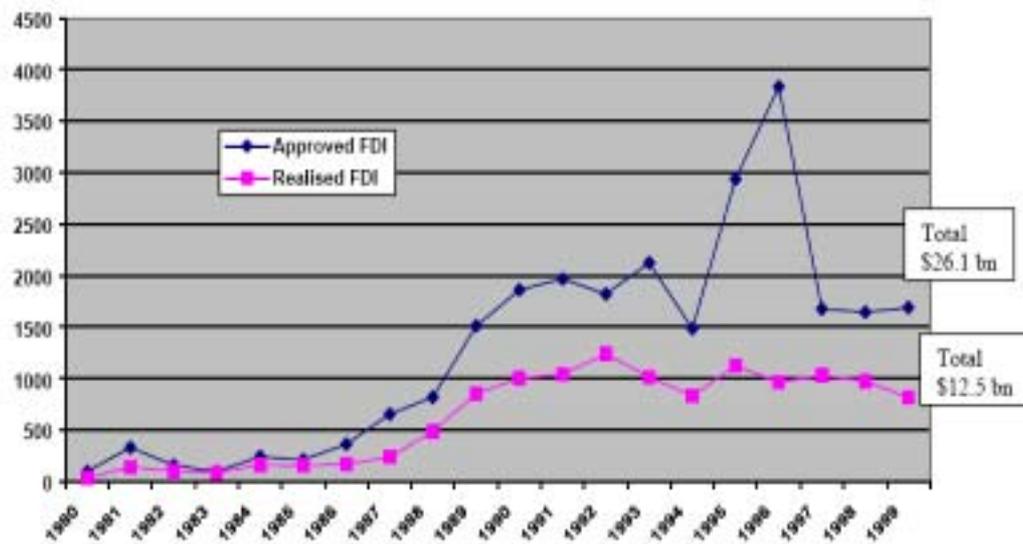
Measures for insider-trading activities will be harmonized with EU legislation. Public prosecutors will only be able to examine defendants and

witnesses in the presence of supervisors from the Capital Markets Board. Those who engage in capital markets activities without obtaining the required permits will become individually subject to bankruptcy proceedings. It has also been stated that monetary penalties will apply to financial crimes. The Capital Markets Board will be granted the authority to request from the courts the deposition of joint stock company directors who infringe the relevant laws and regulations and will be entitled to request that the courts appoint new directors. The Capital Markets Board will further be granted the authority to fine those that fail to fulfil the public disclosure requirements imposed by the Capital Markets Law. And new penalties will be incorporated with respect to joint stock companies that proceed with public offerings without fulfilling the Capital Markets Board's registration requirement.

## 5. Foreign Direct Investment Relationship Between Turkey and European Union

The stock of FDI (foreign direct investment) in Turkey was only \$300 million in 1971, and up until 1980 the average annual inflow of FDI was only \$90 million. But Turkey's FDI inflows significantly when trade regime turned into export oriented economic liberalisation in the mid 1980's (Figure 1)

**Figure 1- Foreign Direct Investment in Turkey 1980-2000, US\$ Million**



Source: [www.treasury.gov.tr](http://www.treasury.gov.tr)

If we look at the main sources of FDI using data we can see that mainly European countries dominate FDI in Turkey (Table 3). France and Germany are the major investors in Turkey in terms of approved investment. In terms of approved investment. In terms of the number of foreign equity companies, Germany is by far the most important source of FDI – accounting for almost 18% of all projects in Turkey.

**Table 3 – Main Sources of FDI in Turkey**

Country	Approved investment, US\$m	Number of foreign equity investment projects
France	5,364.78	243
Germany	3,487.14	897
US	3,028.38	316
Netherlands	2,972.69	316
Switzerland	2,001.55	198
UK	1,825.21	317
Italy	1,598.26	182
Japan	1,284.24	49
Other countries	4497,98	2,506
<b>Total</b>	<b>26,060.4</b>	<b>5,024</b>

Source : [www.treasury.gov.tr](http://www.treasury.gov.tr)

Table 4 shows the breakdown of FDI by sectors and sub sectors. Manufacturing and services dominate FDI in Turkey and there has not been much change in their share of total FDI over time. The table also shows the contribution of foreign capital in the total capital of the foreign equity ventures for each sector. This gives us an accurate indicator of the role of joint ventures in Turkey.

In the 5,024 foreign equity ventures, foreign capital accounted for 56% of the total. Another way of looking at this is that FDI leveraged an additional 44% of domestic investment, which shows the extent of joint ventures between foreign owned and Turkish firms and the spill-over contribution of FDI to Turkey's economy. In fact, up to half of all foreign equity ventures have been joint ventures.

However, government investment agencies across the world only record joint ventures that involve foreign capital, and therefore do not capture new forms of investment that have no cross-border capital flows.

Table 5 compares FDI in Turkey and its key competitor locations, using balance of payments FDI data as provided by UNCTAD. WE can see

that Turkey was the fourth major destination for FDI from 1987-1992, but only the eighth major location from 1993-1999. The key reason for this change in position was sustained growth of FDI in Israel and Central Eastern European Countries. Over this period, Poland attracted nearly six times more FDI than Turkey. When adjusted for GDP, Turkey is by far the worst performing country. Hungary, Czech Republic, Poland, Romania and Bulgaria were the best performing countries. As a proportion GDP, Hungary attracted almost 13 times more FDI than Turkey from 1993-1999.

**Table 4 – Breakdown Of Actual FDI by FDI by Sub-Sector (1980-March 2004)**

Sector	Number of projects with foreign equity	% of total FDI	% of FDI in total capital of projects
<b>Agriculture &amp; Mining</b>	<b>186</b>	<b>1.3%</b>	<b>49%</b>
<b>Manufacturing</b>	<b>1,251</b>	<b>44.4%</b>	<b>50%</b>
of which:			
Food & Beverage	146	5%	50%
Tobacco	10	2.8%	91%
Textiles & garments	220	2.2%	36%
Chemicals	165	8%	79%
Plastics	52	2%	88%
Cement	9	2.8%	46%
Iron and Steel	15	1.9%	19%
Electrical machinery	69	1.9%	65%
Electronics	72	1.7%	70%
Automotive	28	8%	45%
Auto side industries	102	2.9%	53%
<b>Services</b>	<b>3,587</b>	<b>54.3%</b>	<b>63%</b>
of which:			
Trade	1,949	9%	77%
Hotels	279	2.6%	61%
Communication	14	1.7%	30%
Financial services	37	18.2%	75%
Investment finance	47	4.5%	30%
Social services	216	10.6%	77%
<b>TOTAL</b>	<b>5,024</b>	<b>100%</b>	<b>56%</b>

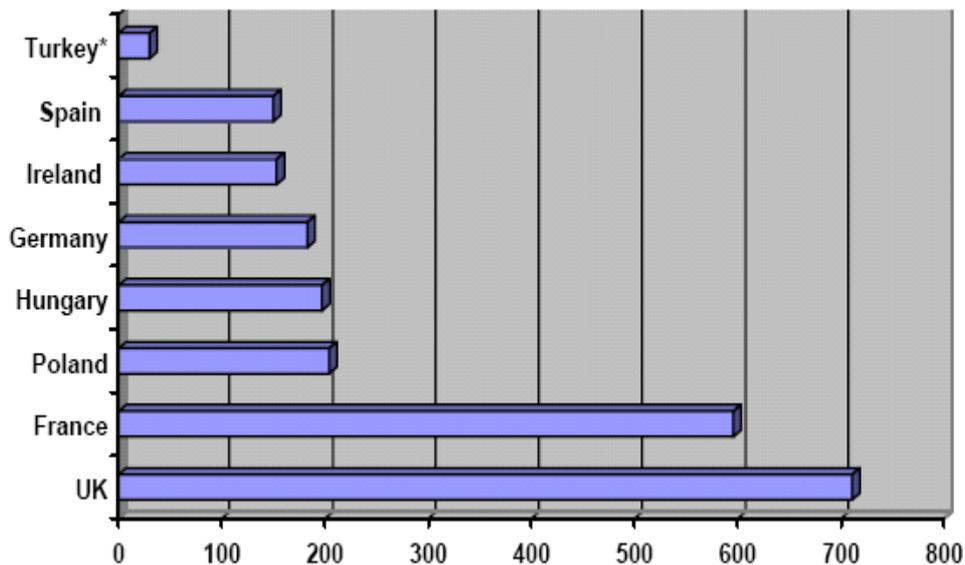
Source : [www.treasury.gov.tr](http://www.treasury.gov.tr)

**Table 5 – FDI in Turkey and 9 Competitor Locations, US\$ mil**

	1987-92 per annum	1993	1994	1995	1996	1997	1998	1999	Total 1993-9	% of total 1993-9	Total FDI/ GDP*
Poland	183	1715	1875	3659	4498	4908	6365	7500	30520	25.99%	19.25%
Russia	na	1211	640	2016	2479	6638	2761	2861	18606	15.85%	6.73%
Hungary	675	2339	1146	4453	2275	2173	2036	1944	16366	13.94%	34.23%
Czech	533	653	869	2562	1428	1300	2720	5108	14640	12.47%	25.97%
Israel	187	429	432	1337	1382	1622	1850	2256	9308	7.93%	9.26%
Greece	938	977	981	1053	1058	984	700	900	6653	5.67%	5.51%
Turkey	578	636	608	885	722	805	940	783	5379	4.58%	2.71%
Romania	61	94	342	420	265	1215	2031	961	5328	4.54%	13.96%
Egypt	806	493	1256	596	637	888	1077	1500	6447	5.49%	7.79%
Slovakia	91	168	245	195	251	206	631	322	2018	1.72%	9.91%
Bulgaria	34	40	105	90	109	505	537	770	2156	1.84%	17.59%
Total	4086	8755	8499	17266	15104	21244	21648	24905	117421	100.00%	10.55%

Source: UNCTAD, WIR 2000-1999; World Bank 2000

**Figure 2 – Manufacturing FDI Projects (new and expansions) in Europe, January 1997- June 1999**



Source : Ernst & Young, Corporate Location, 2000

If Turkey is to increase its share of FDI projects, it is important to understand Turkey's competitive position relative to first tier locations in the Eastern Europe – Turkey region. At present Turkey is losing projects to Hungary and other countries. For example, Samsung's \$21 million, 500 job

plant in Hungary is actually going to supply the Turkish market. In many cases Turkey is simply not on the investment map. But still foreign direct investment plays a major role in the Turkish economy. Turkey is more dependent on foreign investors than most other countries for technological and innovation activities. However, when compared to its main competitors for inward investment, which we identified to be primarily in Eastern Europe, Turkey has been less successful in attracting FDI relative to the size of its economy and population. A key reason is the minimal level of privatisation – related investment in Turkey.

But if we look at the Table 6 and Table 7 we can understand that in the future Turkey will attract much more foreign direct investment than ever before.

**Table 6 – Engineering and Science Indicators**

Country	Science and engineering students, % of total tertiary students	Patent applications filed by non-residents	R&D expenditure, % of GNP
Russia	50	32,943	0.88
<b>Turkey</b>	<b>45</b>	<b>27,985</b>	<b>0.45</b>
Hungary	32	29,331	0.68
Ireland	31	82,484	1.61
Czech Republic	28	29,976	1.20
Poland	28	30,137	0.77
Greece	26	82,390	0.47
Egypt	12	706	0.22

Source : World Bank 2000

**Table 7 – Turkey’s Location Advantages for FDI**

Key location factors	Competitive position
<b>Market seeking FDI</b>	
Economic size	Strong
Economic growth	Strong
Population size	Strong
Per capita incomes	Medium
<b>Efficiency seeking FDI</b>	
Labour costs	Strong
Labour productivity	Strong
Regional integration zone	Strong
Labour skills and supply	Strong
<b>Asset seeking FDI</b>	
Supply of engineers and technicians	Strong
R&D and innovation base	Weak
Telecoms & Internet infrastructure	Medium
<b>FDI enabling environment</b>	
FDI legislation (independent FDI)	Strong
FDI legislation (privatisation/infrastructure FDI)	Weak
Facilitation process	Medium
Political commitment	Weak
Incentives	Strong
Investment promotion	Weak
<b>Institutional-Political environment</b>	
Economic instability (inflation, exchange rates, debt)	Weak
Policy certainty	Weak
Political interference, bureaucracy, and corruption	Weak
Justice system and intellectual property rights	Weak
Internal social tensions	Weak

*Source : Pricewaterhouse Coopers, Solutions for Business Location Decisions, 1999*

Turkey offers huge opportunities for inward investors, not least because of its large, dynamic economy, quality labour force, and position at the centre of a growing \$1.5 trillion regional economy. The IMF agreement and EU membership promise to remove many of the obstacles to inward investment in Turkey, in particular relating to minimal privatisation, chronic inflation, and obstacles to EU market Access.

## 6. Foreign Trade Relationship Between Turkey and European Union

Beginning from the year 1980, Turkey changed its economic development policy from “import substituting industrialization” to “export led growth” strategy. Economy opened up to world trade, export-promoting incentives were initiated (including tax exemptions, rebates and favorable credit terms), direct import controls have been eliminated, and quantity restrictions have been dismantled. State intervention in the economy was reduced to minimum level. As a result of these efforts, Turkey has increased her share from world markets, from 0,15% in 1980 to 0,6% in the year 2003. Between 1980 and 2004 exports of Turkey has increased from 2,9 billion dollars to 63 billion dollars. Structure of exported goods has also changed much from mainly agricultural products and raw materials to higher value added industrial products. Transformation still continues with increasing exports of transportation vehicles and office equipments.

**Table 8 – Turkey’s Foreign Trade**

	Turkey's Foreign Trade (\$ Million)							% Change
	1990	1995	2000	2001	2002	2003	2004	
<b>Exports (FOB)</b>	12 959	21 637	27 775	31 334	36 059	47 253	63 121	33,6
<b>Imports (CIF)</b>	22 302	35 709	54 503	41 399	51 554	69 340	97 540	40,7
<b>Volume</b>	35 261	57 346	82 278	72 733	87 613	116 593	160 661	37,8
<b>Balance</b>	- 9 343	- 14 072	- 26 728	- 10 065	- 15 495	- 22 087	- 34 419	55,8
<b>Exp./Imp.</b>	58,1	60,6	51,0	75,7	69,9	68,1	64,7	-5,0

Source : [www.dtm.gov.tr](http://www.dtm.gov.tr)

Western Europe is the most important market for Turkish exports. In particular, European Union (EU) members is a country group that has a major share in it. The share of EU in total exports has always been above 50 percent. Exports to the EU (15) were 7.2 billion dollars in 1990 and mounted to 11 billion dollars increasing by 10.9 percent annually during the period from 1990 and 1995. In 2000, exports to EU (15) reached to 14.5 billion dollars, but its share in total exports fell down to 52.2 percent. Although at the end of 2004 exports to EU (15) has reached to 32.5 billion dollars, it’s share in total exports decreased to 51.6 percent. In the year 2004 EU has enlarged to include 10 new members; but to these ten members Turkey’s exports are not as high yet; these countries have around a total of %3 share in total exports of Turkey.

One of the main developments in the second half of 1990s was the increase in the import of consumption goods. Especially, in 3 years period after 1996, the policy implementation of international liabilities arising from the WTO membership and entering the final stage of customs union with European Union, led the import of consumption goods to grow by 38.8 percent in the period of 1995-2000. Related to the pace of economic recovery and rising income levels the imports of consumer goods increased by 57.8 percent in 2003 and 55 percent in 2004. It can be observed that imports of consumption goods fluctuate more than total imports. During the growth years, positive expectations of consumers determine their consumption demand. In the last 10-15 years, when expectations about the economic condition improve, consumption demand expands.

Between 1995-2002 investment goods imports increased at lower rate compared to total imports, while the trend changed in 2003. In 2003 the rate of increase went slightly above the increase in total imports, but in 2004 capital goods imports enlarged by 53,6 percent while that of total imports was 40,4 percent. The main determinant of this development was the result of the rise of private investments by %54,6 in 2004.

**Table 9 – Exports by Country Groups**

<i>Exports by Country Groups (\$ Million)</i>							
	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>EU (25)</b>	7 327	11 722	15 085	16 854	19 468	25 899	34 399
<b>EU (15)</b>	7 177	11 078	14 510	16 118	18 459	24 484	32 538
<b>EFTA</b>	333	294	324	316	409	538	657
<b>CIS</b>	531	2 066	1 649	1 978	2 279	2 963	3 956
<b>RUSSIA</b>		1 238	644	924	1 172	1 368	1 859
<b>NORTH AMERICA</b>	1 032	1 610	3 309	3 297	3 596	3 973	5 174
<b>USA</b>	968	1 514	3 135	3 126	3 356	3 752	4 832
<b>LATIN AMERICA</b>	44	110	239	329	257	215	420
<b>AFRICA</b>	747	1 062	1 373	1 521	1 697	2 131	2 963
<b>MIDDLE EAST</b>	1 527	1 944	2 211	2 892	3 105	4 994	7 238
<b>OTHERS</b>	1 417	2 829	3 586	4 146	5 248	6 540	8 315
<b>TOTAL</b>	<b>12 959</b>	<b>21 637</b>	<b>27 775</b>	<b>31 334</b>	<b>36 059</b>	<b>47 253</b>	<b>63 121</b>

*Source : www.dtm.gov.tr*

**Table 10 -Turkey's Imports by Country**

<i>Turkey's Imports by Country Groups (\$ Million)</i>							
	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>EU (25)</b>	10 219	17 255	27 388	18 949	24 519	33 495	45 428
<b>EU (15)</b>	9 898	16 861	26 610	18 280	23 321	31 696	42 347
<b>EFTA</b>	597	892	1 155	1 481	2 512	3 396	3 890
<b>NORTH AMERICA</b>	2 464	4 017	4 167	3 390	3 421	3 741	5 066
<b>USA</b>	2 282	3 724	3 911	3 261	3 099	3 496	4 697
<b>CIS</b>	1 247	3 315	5 693	4 630	5 555	7 777	12 886
<b>RUSSIA</b>		2 082	3 887	3 436	3 892	5 451	9 027
<b>LATIN AMERICA</b>	546	704	620	447	635	1 169	1 470
<b>AFRICA</b>	1 336	1 384	2 714	2 819	2 696	3 338	4 781
<b>MIDDLE EAST</b>	2 513	2 645	3 122	2 811	2 983	4 059	5 139
<b>OTHERS</b>	3 380	5 497	9 643	6 872	9 234	12 365	18 880
<b>TOTAL</b>	<b>22 302</b>	<b>35 709</b>	<b>54 503</b>	<b>41 399</b>	<b>51 554</b>	<b>69 340</b>	<b>97 540</b>

Source : *www.dtm.gov.tr*

European Countries have an important share in Turkey's imports, largely due to their geographical proximity to Turkey and their level of economic development. Among the country groups of Europe, European Union Members are in the first rank. EU is followed by CIS because of the imports of crude oil and natural gas from that region.

In brief Turkey's foreign trade has developed much in terms of quantity and quality since 1980s. Export performance is spectacular especially in the last two years, thanks to both domestic developments and international developments. Turkey has been implementing new strategies to make this development sustainable and to diversify her exports and imports more on the regional and sectoral basis. Turkey aims to go beyond 500 billion of exports by the year of 2023 and and more than 45% of this is planning to be with EU.

**Table 11 – Turkey’s Imports by Country Groups**

Turkey's Imports by Country Groups Annual % Change						
	95/90	00/95	2001/2000	2002/2001	2003/2002	2004/2003
<b>EU (25)</b>	13,8	11,7	-30,8	29,4	36,6	35,6
<b>EU (15)</b>	14,1	11,6	-31,3	27,6	35,9	33,6
<b>EFTA</b>	9,9	5,9	28,2	69,6	35,2	14,6
<b>NORTH AMERICA</b>	12,6	0,8	-18,6	0,9	9,4	35,4
<b>USA</b>	12,6	1,0	-16,6	-5,0	12,8	34,4
<b>CIS</b>	33,2	14,4	-18,7	20,0	40,0	65,7
<b>RUSSIA</b>		17,3	-11,6	13,3	40,1	65,6
<b>LATIN AMERICA</b>	5,8	-2,4	-28,0	42,2	84,1	25,7
<b>AFRICA</b>	0,7	19,2	3,8	-4,3	23,8	43,2
<b>MIDDLE EAST</b>	1,1	3,6	-10,0	6,1	36,1	26,6
<b>OTHERS</b>	12,5	15,1	-28,7	34,4	33,9	51,1
<b>TOTAL</b>	12,0	10,5	-24,0	24,5	34,5	40,7

Source : *www.dtm.gov.tr*

## 7. Conclusion

Up to today, the main approach for Turkey's full membership has been from the viewpoint of the contributions that the EU will provide to Turkey and the criteria that Turkey should fulfill. Whereas the picture also has another face. When the underlying goals of the EU's establishment are analyzed, it is clearly observed that steering of the world politics, economic power domain, creation of a prosperity area and becoming a super power can be seen as the main objectives. However when we look at the present status, to accomplish these goals, Turkey stands as a potentially meaningful power and having economic, demographic advantages within the region who should be perceived as important. It is necessary to think what Turkey expresses for the EU. Turkey who is rehabilitating its democratic, cultural and economic institutions has more to contribute to EU than to receive from. It can be seen very clearly that the regional potential, labor potential, investment potential, tourism and entrepreneurship potential, the factors of the Mediterranean, the Black Sea, the Straits, the proximity to Balkans, to Middle Asia, the Caucasus and the geographic nearness to the Middle East could provide strategic contributions to the strategic goals of the EU.

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# **MARKET RISK DYNAMICS AND COMPETITIVENESS AFTER THE EURO: EVIDENCE FROM EMU MEMBERS<sup>1</sup>**

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## **Abstract**

*In this paper we propose an empirical model that considers theoretical facts on the relationship between real exchange rates and the net exports of the economy to supplement the interaction of a number of financial and economic factors with the stock market. We discuss the impact of exchange rate fluctuations on market risk in terms of Value at Risk (VaR). Our empirical findings show that common currency introduction produced increments in VaR whereas European stock returns are more sensitive to changes in competitiveness regarding the EMU rather than national exports. Finally, we show that the synchronisation of variation in competitiveness through the introduction of a single currency has made these changes more decisive in explaining financial market fluctuations.*

**Keywords:** *Euro, Competitiveness, Market Risk, Value-at-Risk, Volatility*

## **1. Introduction**

Over the past decade the world economy faced significant changes in financial markets and international competitiveness. More recently, the growth of trading activity in financial markets coupled with numerous instances of financial instability and a number of widely publicised losses in financial institutions have resulted in a re-analysis of the risks. The most widely advocated approach to have emerged to measure market risk is that of Value-at-Risk (VaR).

Parallel with this development, turbulence in the foreign exchange markets has also undergone significant changes compared with the pre-euro period. This effect was foreseen by various economists (Ghironi and Giavazzi, 1997; Martin, 1997; Benassy et al., 1997; Gros and Thygesen, 1992; Kenen, 1995; Aglietta and Thygesen, 1995; Cohen, 1997). But were these two developments really correlated? And, if so, how exactly could monetary reform be held responsible for higher stock market risk?

One can consider several potential links between exchange rates and stock market. For example, exchange rates may affect a firm's value by means of its impact on the liquidity of a firm's shares. There is a growing literature on the effect of liquidity on firm value. The pioneer work by Amihud and Mendleson (1986) present the first evidence to support the

hypothesis that asset liquidity is priced in equilibrium. Among more recent papers, Datar et al. (1998), Brennan et al. (1998) and Easley et al. (1999) all suggest that asset liquidity affects a firm's value through its impact on the firm's expected return. If the asset liquidity, influenced by exchange rates, determines the firm's value and expected returns, then it is pertinent to study the link between the exchange rate and the market risk, which is the scope of this study.

However, the phenomenon of higher risk is not easily explained in such a straightforward context, as there is no obvious modification in this mechanism ascribable to the introduction of a currency. We consider stock prices and real exchange rates to be intermediated by changes in corporations competitiveness reflected in variations in trade flows directions. In turn, the changes in competitiveness are reflected in company's stock prices and related market risk.

In a multicountry world, movements in one exchange rate can be offset by other factors, such as movements in other exchange rates or interest rates. There are many studies that examine the relationship between exchange rate volatility and international trade.

Asseery and Peel (1991) examine the influence of volatility on multilateral export volumes finding that volatility of exchange rates has significant positive effects on exports. At the same time, Bini-Smaghi (1991) finds strong support for the conventional assumption about volatility effects on trade. Cushman (1983), Kenen and Rodrick (1986), Giovannini (1988), Franke (1991), Pozo (1992), Sercu (1992), Sercu and Vanhulle (1992), Chowdhury (1993) and Kroner and Lastrapes (1993) among others, provide evidence that the level of exchange rate volatility impacts the volume of trade flows. On the contrary, Koray and Lastrapes (1989), Lastrapes and Koray (1990), Gagnon (1993) in their studies on the effect of exchange rate volatility on trade conclude that the relationship between the volatility and trade is weak.

Moreover, it is accepted that if the volume of trade flow is impacted by exchange rate volatility so will the value of firms. But the conclusions of relevant empirical studies are quite different. Amihud (1994) examines a sample of 32 top US exporters and concludes that their stock returns are not affected by changes in the value of the dollar. Bartov and Bodnar (1994) find that the abnormal returns of 208 firms are uncorrelated with changes in the value of the dollar. Griffin and Stulz (2001) noted that changes of weekly exchange rates had negligible impacts on industry stock indices in developed countries. In contrast, Bartov et al. (1996) finds that the return variability of US multinational corporations increases with an increase in exchange rate

volatility. Bodnar and Gentry (1993), studying industry portfolios in the US, Japan and Canada, find that only 30% of them are significantly affected by exchange rate changes. He et al. (1996) examine a large sample of Japanese firms and find that of the 422 exporting companies, 25% are significantly affected by exchange rates fluctuations. Nevertheless, the discussions and arguments indicate that there is a relationship, which seems stronger or weaker in the light of different samples and studies. In our opinion this interrelation between the exchange rate and corporation value is the one most likely to be the link between higher stock market risk and a common currency in the context of structural changes accounted after the euro.

We have constructed a monthly series of market risk as monthly averages of daily VaR (Jorion, 1997) estimated by means of GARCH model (Bollerslev, 1986). GARCH(1,1) was used since it is found to be adequate for many financial time series (Bollerslev, Chou and Kroner, 1992). McNeil and Frey (2000) use GARCH in yet another way to get value at risk. They use GARCH to estimate the volatility, and extreme value theory to get tail probabilities. Ahlstedt (1998) argues that the GARCH models represent a methodological and empirical improvement over other estimates. Therefore, the estimated impact of changes in Euro/USD exchange rates on net exports of EMU countries to the USA is the key regressor of our interest explaining the dynamics of the level of market risk in our empirical model.

Several potential factors of stock market risk are also included in the model in order to make it more specific. In particular, the remaining regressors in the model (referred to below as we further reference them) include proxies for business cycles, domestic market demand as well as bond yields, traded volume of stocks, and foreign reserves variables. Most of these factors are discussed in different contexts of interaction with financial market in financial and economic literature.

The impact of different interest rates on stock returns is studied by a number of researchers (e.g. Gallant and Tauchen, 1997; Peiro, 1996). A similar study by Rapach et al. (2004), among other factors, reveals that relative long-term government bond yields have negative impact on real return from holding stocks. Pavlova and Rigobon (2003) identify interconnections between stock, bond and foreign exchange markets and characterize their joint dynamics as a three-factor model.

Dumas et al. (2003) develop a “dynamic single-index” statistical model capturing the “world” business cycles as well as country-specific fluctuations. They consider current and past production as the information variable that investors use in their investment decision, as a way of predicting their decisions on which stage of the business cycle the economy is currently

running. In our model we use unemployment as a mirror of the business cycle stage. Rapach et al. (2004) also consider change in the unemployment rate as a macroeconomic factor of stock returns.

Cuñado et al. (2004) show that growth in traded volume, the next factor in our empirical model, has a significant impact on stock market volatility in Spain. They, however, conclude that it was not just the acceleration in trading volume that brought about the increased volatility but most likely the intensification of the process of economic development and opening the borders. Thus, to reflect the process of economies development a proxy for domestic market demand (changes in retail trade) is considered as another explaining variable in the model.

An ample part of the foreign exchange reserves is usually invested in international financial markets (mainly in the liquid bond markets) and consistently the changes in the volumes of reserves will somehow be reflected in the financial market volatility. Thus, covering this variable which potentially may impact on general stability of the currency market (Masson and Turtleboom, 1997; Leahy, 1996; Hening, 1997) is also important in our study.

Our empirical research discusses how the set of above mentioned factors explain the market risk dynamics in a sample of EMU countries. The empirical results make it possible to obtain additional findings on how the competitiveness of companies and stock markets interact within the sample of the countries under consideration.

The outline of the remaining sections will be as follows. In Section 2, the changes in market risk before and after the introduction of the euro are discussed. Section 3 presents our empirical model describing the dynamics of stock market risk in competitiveness-exchange rates framework. Section 4 reports the empirical results and section 5 is the conclusion.

## **2. Market Risk Dynamics in pre- and post-Euro Periods**

Financial risk is the prospect of financial loss (or gain) due to unforeseen changes in underlying factors. The changes that euro introduction in 1999 caused in stock markets is the target of particular study. To evaluate the market risk before and after the euro we used the Value at Risk indicator (see e.g. Jorion, P., 2000; Goorbergh and Vlaar, 1999). Value at Risk (VaR) is defined as the maximum potential change in value of a portfolio of financial instruments with a given probability over a certain time horizon, with the assumption that the composition of the theoretical portfolio remains

the same<sup>2</sup>. VaR measures have many applications, such risk management and for regulatory requirements. In particular, the Basel Committee on Banking Supervision (1996) requires financial institutions such as banks and investment firms to meet capital requirements based on VaR estimates. The description of different possible techniques of VaR estimation is beyond the scope of our study. We simply apply just one to monitor the changes in stock market risk in the context of euro introduction.

Estimating volatility is the essence of evaluating of market risk. Among the variance methods of VaR estimation the static models do not take volatility clustering into account. By far the most popular model which captures this phenomenon is the Generalised Autoregressive Conditional Heteroskedasticity (GARCH), introduced by Bollerslev (1986) as an extension of the Autoregressive Conditional Heteroskedasticity (ARCH) model by Engle (1982). The GARCH model defines an innovation  $\eta_{t+1}$ , i.e., some random variable with mean zero conditional on time  $t$  information,  $I_t$ . This time  $t$  information is a set including not only the innovation at time  $t$ ,  $\eta_t \in I_t$ , and all previous innovations, but also any other variable available at time  $t$  as well. In finance theory,  $\eta_{t+1}$  might be the innovation in a portfolio return. In order to capture serial correlation of volatility, or volatility clustering, the GARCH model assumes that the conditional variance of the innovations depends on the latest past squared innovations as is the assumption in the less general ARCH model, possibly augmented by the previous conditional variances. In its most general form, GARCH(p,q), can be written as:

$$\sigma_t^2 = \omega + \sum_{j=1}^p \beta_j \sigma_{t-j}^2 + \sum_{i=1}^q \alpha_i \eta_{t-i+1}^2 \quad (1)$$

$p$  lags are included in the conditional variance, and  $q$  lags are included in the squared innovations. In our study we regard these innovations as deviations from some constant mean portfolio return:

$$r_{t+1} = \mu + \eta_{t+1} \quad (2)$$

expressed  $\eta_{t+1}$  as  $\sigma_t \varepsilon_{t+1}$ , where  $\varepsilon_{t+1}$  is assumed to follow some probability distribution with zero mean and unit variance, such as the standard normal

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<sup>2</sup> Analytically, the VaR is defined by the top limit of integral of the probability density

function (P) of expected returns (r)  $\alpha = \int_{-\infty}^{E(r)-VaR} P(r) dr$ .

distribution. The parameters are conditioned as  $\omega > 0$ ,  $\beta \geq 0$  and  $\alpha \geq 0$  to ensure positive variances. If the market was volatile in the current period, the next period's variance will be high, and is intensified or offset in accordance with the magnitude of the return deviation this period. Naturally, the impact of these effects hinges on the parameter values. Note that for  $\alpha + \beta < 1$ , the conditional variance exhibits mean reversion, i.e., after a shock it will eventually return to its unconditional mean  $\omega/(1 - \alpha - \beta)$ . In this way, if  $\alpha + \beta = 1$ , this is not the case, we would have persistence.

In order to estimate these parameters by means of likelihood maximisation, one has to make assumptions about the probability distribution of the portfolio return innovations  $\eta_{t+1}$ .

Considering Gaussian innovations

$$\varepsilon_t \stackrel{iid}{\sim} N(0,1), \quad \eta_{t+1} | I_t \sim N(0, \sigma_t^2) \quad (3)$$

leading to a conditional log likelihood of  $\eta_{t+1}$  equal to:

$$\ell_t(\eta_{t+1}) = -\log \sqrt{2\pi} - \frac{1}{2} \log \sigma_t^2 - \frac{\eta_{t+1}^2}{2\sigma_t^2} \quad (4)$$

The log-likelihood for all series is  $\sum_{t=1}^T \ell_t(\eta_{t+1})$ .

The GARCH (1.1) is used to predict the volatility dynamics during VaR estimation period for a sample of 10 EMU member states. The daily VaR estimates, for left tail probability of 1% according to Basel Accord (1996) are reflected in figure 1 in appendix 1 while the average VaR for the pre- and post- euro periods and the corresponding growth in absolute terms is reported in the table 1. The increase in average daily VaR is obvious in EMU major stock markets. Among the countries with significant growth in market risk are the two largest economies of the EMU – Germany and France, only Italy and Austria produced a slight reduction in VaR.

The volatility of exchange rates is of high importance because it affects decisions of market participants. The consequences of exchange rate volatility on trade have long been at the centre of the debate on the optimality of alternative exchange rate regimes.

In fact, the volatility of exchange rates has also grown. For the first four years of the post-euro period the variance of percentage changes in

monthly real exchange rates was 1.191 against 0.745 points of a similar pre-euro period<sup>3</sup>. By the 08/2004 the figure had already reached up to 1.235.

**Table 1: VaR before and after euro and the growth in absolute terms**

Country	Index	Exante	Expost	Growth (% points)
		(%) (1995/01-1998/12)	(%) (1999/01-2004/08)	
Germany	DAX30	-2.97	-3.97	1.00
Belgium	BEL20	-2.16	-2.76	0.60
France	CAC40	-2.94	-3.50	0.56
Ireland	ISEQ40	-2.09	-2.55	0.46
Spain	IBEX35	-2.96	-3.36	0.40
Finland	HEX25	-3.53	-3.88	0.35
Portugal	PSI20	-2.31	-2.45	0.14
Netherlands	AEX24	-2.66	-2.78	0.12
Italy	MIB30	-3.43	-3.19	-0.24
Austria	ATX20	-2.42	-2.18	-0.24

Note: For normal distribution assumption of returns VaR is computed as:  $VaR = -V(e^{\mu + \sigma\phi^{-1}(\alpha)} - 1)$ , where  $V$  represents the initial value of some theoretical portfolio and  $\phi(\cdot)$  is the cumulative distribution function of the standard normal probability distribution.  $\mu$  and  $\sigma$  with GARCH(1.1) are the estimates of the parameters of normal probability distribution function.  
Source: Our own estimates based on Reuters data.

Further, we construct and apply an empirical model to explain how the introduction of euro could impact stock market risk.

### 3. Empirical Model

The starting point is the relationship between financial market risk ( $\phi$ ), estimated on stock price volatility, and a sample of explaining variables – changes in exchange rates ( $\varepsilon$ ), changes in domestic market demand ( $\lambda$ ), traded volume of stocks ( $\nu$ ), bond yields ( $\tau$ ), foreign official reserves ( $\varpi$ ) and the business cycles ( $\rho$ ).

$$\phi = \phi(\Delta\varepsilon, \Delta\lambda, \nu, \tau, \varpi, \rho) \quad (5)$$

We assume that the main link between the stock market risk and exchange rates, which maybe affected by the common currency introduction,

<sup>3</sup> Our own calculations based on monthly series of real exchange rates by ERS, United States Department of Agriculture.

is the change in general competitiveness of the economy, reflected in terms of changes in net exports.

The relationship between real exchange rates and net exports is widely discussed in the financial literature. A number of comparatively older studies (e.g. Ethier, 1973; Cushman, 1986; Peree and Steinherr, 1989) have shown that an increase in exchange rate volatility will have adverse effects on the volume of international trade. More recent studies have demonstrated that increased volatility can have ambiguous or positive effects on trade volume (Viaene and de Vries, 1992; Franke, 1991; Sercu and Vanhulle, 1992). Barkoulas et al. (2002) concludes that under risk aversion, the benefits of international trade are reduced, resulting in a decrease in the volume of international trade. The trade surplus or deficit is reduced as well. However, they note that analysis which considers only the (often indeterminate) effects of exchange rate uncertainty on the volume of trade will not be capable of generating predictions of optimal behaviour.

Our interest in this relationship is limited to the most general ideas on the relationship of net exports with the exchange rates and its volatility by estimating the impact of changes on net export, without any requirement of model modifications or prediction making.

Relating the macroeconomic dependence of import ( $\tau$ ) and export ( $\iota$ ) with the exchange rates, GDP ( $\psi$ ) and GDP of the counterpart ( $\psi'$ ) we have:

$$\xi = (\tau - \iota) = \tau \left( \begin{matrix} - & + \\ \varepsilon, & \psi' \end{matrix} \right) - \iota \left( \begin{matrix} + & + \\ \varepsilon, & \psi \end{matrix} \right) = \xi \left( \begin{matrix} - & - & + \\ \varepsilon, & \psi, & \psi' \end{matrix} \right) \quad (6)$$

Hence, the net export ( $\xi$ ) changes caused by the exchange rate fluctuations from Eq.6 could be expressed as  $\left( \Delta \varepsilon \left( \frac{\partial \xi}{\partial \varepsilon} \right) \right)$ :

Thus, our model describing the dependence of market risk from factors including changes in competitiveness for a single country is:

$$\phi = a_0 + a_1 \left( \frac{\partial \xi}{\partial \varepsilon} \right) \Delta \varepsilon + a_2 \Delta \lambda + a_3 \nu + a_4 \tau + a_5 \varpi + a_6 \rho \quad (7)$$

These particular changes in net exports reflect the changes in competitiveness of the output of the country vs. the output of the trade party. Hence, the proxy for the general competitiveness of EMU countries is the change in the EMU net exports ( $\hat{\xi}$ ) equal to:

$$\Delta \hat{\xi} = \sum_{i=1}^n \left( \Delta \varepsilon_i \frac{\partial \xi_i}{\partial \varepsilon_i} \right) \quad (8)$$

The main assumption is that after introducing the euro the changes in net exports of all the member states reflect the fluctuations of the single currency ( $\hat{\varepsilon}$ ).

$$\Delta \hat{\xi} = \Delta \hat{\varepsilon} \sum_{i=1}^n \frac{\partial \xi_i}{\partial \hat{\varepsilon}} \quad (9)$$

Thus, the changes in net exports of separate countries caused by the exchange rate changes are of the same sign. A single currency has a synchronising effect on general competitiveness changes, so that EMU has a larger  $\Delta \hat{\xi}$  in the case of the euro.

By replacing this term in the equation (7) for the  $i$ -th from the  $n$  countries we obtain:

$$\phi_i = a_0 + a_1 \left( \Delta \hat{\varepsilon} \sum_{i=1}^n \frac{\partial \xi_i}{\partial \hat{\varepsilon}} \right) + a_2 \Delta \lambda_i + a_3 v_i + a_4 \tau_i + a_5 \bar{\omega}_i + a_6 \rho_i \quad (10)$$

From that our proposition is that the exchange rate driven changes of general competitiveness determine the level of financial market risk, which explains the phenomenon of higher value-at-risk in case of a vulnerable euro. These ideas are summarized following two propositions.

**Proposition I.**

In case of a single currency the  $\sum_{i=1}^n \left( \Delta \varepsilon_i \frac{\partial \xi_i}{\partial \varepsilon_i} \right)$  is replaced with

$$\Delta \hat{\varepsilon} \sum_{i=1}^n \frac{\partial \xi_i}{\partial \hat{\varepsilon}}, \quad \text{where} \quad \left| \Delta \hat{\varepsilon} \sum_{i=1}^n \frac{\partial \xi_i}{\partial \hat{\varepsilon}} \right| \geq \left| \sum_{i=1}^n \left( \Delta \varepsilon_i \frac{\partial \xi_i}{\partial \varepsilon_i} \right) \right| \quad \text{because of the}$$

synchronised impact on foreign trade. The currency fluctuations cause greater fluctuation in general competitiveness of EMU production and result in higher volatility and risk in stock markets.

**Proposition II.**

The more significant variable  $\sum_{i=1}^n \left( \Delta \varepsilon_i \frac{\partial \xi_i}{\partial \varepsilon_i} \right)$  (compared with

$$\Delta \varepsilon_{it} \left( \frac{\partial \xi_i}{\partial \varepsilon_i} \right) \text{ national alternative) in}$$

$$\phi_i = a_0 + a_1 \left( \sum_{i=1}^n \left( \Delta \varepsilon_i \frac{\partial \xi_i}{\partial \varepsilon_i} \right) \right) + a_2 \Delta \lambda_i + a_3 \nu_i + a_4 \tau_i + a_5 \varpi_i + a_6 \rho_i$$

equation, the deeper are particular economies integrated, and euro fluctuations are more decisive for particular stock markets.

To test proposition I empirically, it is sufficient to prove the significance of the  $\varepsilon$  in the eq.6. Therefore, when the empirical results support proposition II, together with higher volatility of real exchange rates in the post-euro period, we can fully explain the indicated growth in VaR after the euro.

## 4. Empirical Findings

### 4.1. Changes in competitiveness vs. exchange rates

Before proceeding to the empirical testing of the stated hypothesis explaining the dynamics in the level of market risk we need to obtain estimated changes in net export. We used balanced monthly panel data 1995/01-2004/06 (see table 4 in appendix 2) for 11 EMU member countries (excluding Greece) to build an empirical model where the counterpart of the EMU is the USA. In context of our study the appropriate panel regression model has fixed individual effects ( $b_{i0}$ ) and different slopes (Cornwell and Schmidt, 1984) for log-exchange rates.

$$\xi_{it} = b_{i0} + b_{i1} \ln \varepsilon_{i(t-l)} + b_2 \left( \frac{\psi'}{\psi_i} \right)_{t-l} \quad (11)$$

Heteroskedasticity adjusted estimates of the model are reported in Table 2.

Based on the  $b_{i1}$  vector and the log-returns of the exchange rates with the five month lag, the impact of the exchange rate fluctuations on the net export of the particular countries (the  $\Delta \varepsilon_{it} \left( \frac{\partial \xi_i}{\partial \varepsilon_i} \right)$  series) is estimated. We interpret these estimates as changes of competitiveness of domestic production in the international market (considering US market). Finland and Ireland are removed from the sample of the countries during further analyses because of insufficient observation during the period of study. At the same time because of non robust  $b_{i1}$  coefficient, the Luxembourg is also excluded from the group.

It is normal to assume that the larger the  $\Delta \hat{\xi}_t$  caused by FX changes, the stronger is the position of European companies' shares at the stock markets. Therefore investors can expect the related market risk (VaR) to fall.

**Table 2: FGLS estimates of the model (eq.11)**

Dependent Variable: $\xi_{it}$			
Country ( <i>i</i> )	$b_{i0}$	$b_{i1}$	$b_2$
Common			0.274* (2.334)
Country Specific			
Austria	883.791	-172.721** (-2.860)	
Belgium	1594.762	-422.875** (-5.282)	
Finland	1391.424	-278.212** (-7.341)	
France	6368.738	-1219.168** (-7.106)	
Germany	16010.822	-2919.492** (-6.719)	
Ireland	11648.354	-2339.249** (-7.451)	
Italy	5265.262	-898.207** (-6.374)	
Luxembourg	-421.855	56.980 (1.140)	
Netherlands	147.510	-222.84* (-1.976)	
Portugal	384.072	-78.044** (-2.727)	
Spain	808.284	-181.321** (-2.675)	
<i>l</i> (lag)		5	6

Unweighted Statistics			
Adj. R-sq.	0.881	S.E. of regression	285.020
Significance of Group Effects Test			
F-stat	34.605 <sup>a</sup>	F-crit. (1%)	2.336
White General Test			
Chi-sq. stat	22.834 <sup>b</sup>	Chi-sq. crit (1%)	15.086
Included Observations			
Total panel obs.	1188	Obs. in cross sections	108

Note:

a)  $H_0 : b_{11} = \dots = b_{n1}$  of common constant term is rejected. We use the regression model with fixed individual effects as all the results are to be applied only on a sample of EMU countries.

b)  $H_0$  of homoskedasticity is rejected.

t-stats. are given in the parentheses.

\*\* significant at 1%, \* significant at 5% confidence level.

## 4.2. Explaining higher stock market risk

### 4.2.1. The choice between two parallel models

Certain proxies are used for the variables in eq. 10 along with estimated proxy of changes of general  $\left( \Delta \hat{\varepsilon}_{(t-5-l)} \sum_{i=1}^n b_{i1} \right)$  and alternatively country individual  $\left( \Delta \varepsilon_{i(t-5-l)} b_{i1} \right)$  competitiveness because of real exchange rate fluctuations. The changes in retail trade volumes are used to proxy the dynamics of domestic market demand ( $\Delta \lambda$ ). We also use the long-term government bond yields, the importance of which already has been discussed ( $\tau$ ). Unemployment rate is included to reflect the particular stage of business cycle ( $\rho$ ). The higher the unemployment, the deeper is the crisis and the higher is market risk.

$$\phi_i = a_0 + a_1 (\Delta \hat{\varepsilon}_{(t-5-l)} b_{i1}) + a_2 \Delta \lambda_{i(t-l)} + a_3 \ln(v_{i(t-l)}) + a_4 \tau_{i(t-l)} + a_5 \ln(\varpi_{i(t-l)}) + a_6 \rho_{i(t-l)} \quad (12)$$

$$\phi_i = a_0 + a_1 \left( \Delta \hat{\varepsilon}_{(t-5-l)} \sum_{i=1}^n b_{i1} \right) + a_2 \Delta \lambda_{i(t-l)} + a_3 \ln(v_{i(t-l)}) + a_4 \tau_{i(t-l)} + a_5 \ln(\varpi_{i(t-l)}) + a_6 \rho_{i(t-l)} \quad (13)$$

We consider two identical models by taking the country individual competitiveness variable in one (1) and the general competitiveness in the other (2) case (see Table 3). Balanced monthly panel data for post euro period (1999/01-2003/12) has been used<sup>4</sup> (see table 5 in appendix 2). The results suggest that replacing the  $\Delta \hat{\varepsilon}_{(t-5-l)} b_{i1}$  in the first model (1) with the

$\Delta \hat{\varepsilon}_{(t-5-l)} \sum_{i=1}^n b_{i1}$  in the second (2) improves the model. If the first variable is significant at a 5% confidence level, the variable of general competitiveness is significant at a level of 1%. The empirical results show that the growth in exchange rates reduces the international competitiveness of particular economies exports, and vice versa, as we know from macroeconomic theory.

We show that the changes in competitiveness in turn cause fluctuations in the level of stock market risk by increasing the risk when the national production loses position on the international markets, and by calming down the stock market when competitiveness grows.

**Table 3: FGLS Estimates of alternative models (eq.12 and eq.13)**

Dependent Variable: $\phi_i$			
Model	(1)	(2)	<i>l</i> (lag)
Constant term	-1.601 (-0.837)	-1.841 (-0.968)	
Competativeness change	-1.91E-03* (-2.311)	-2.65E-04** (-2.647)	0
Change in domestic demand	0.016** (2.732)	0.016** (2.731)	3
Traded stock volume <sup>c</sup>	0.132* (1.953)	0.128 (1.894)	1

<sup>4</sup> Last six months were dropped due to the balanced data use.

Bond yields	-0.396** (-4.564)	-0.402** (-4.623)	0
Foreign reserves <sup>c</sup>	0.342 (1.532)	0.375 (1.684)	1
Unemployment	0.144** (2.753)	0.143** (2.717)	0
AR(1)	0.746** (24.399)	0.749** (24.621)	

Unweighted Statistics

Adj. R-sq.	0.603	0.604
S.E. of Regression	0.842	0.841

Significance of Group Effects Test

F-stat	1.1424 <sup>a</sup>	1.1276 <sup>a</sup>
F-crit. (1%)	2.6772	2.6772

White General Test

Chi-sq. stat	29.6992 <sup>b</sup>	28.1000 <sup>b</sup>
Chi-sq. crit (1%)	27.6882	27.6882

Included Observations

Total panel obs.	480	480
Obs. in cross sections	61	61

Note:

a)  $H_0 : b_{11} = \dots = b_{n1}$  of common constant term is accepted.

b)  $H_0$  of homoskedasticity is rejected.

c) Variables are expressed in logs.

t-stats. are given in the parentheses.

\*\* significant at 1%, \* significant at 5% confidence level.

Hence, the growth in exchange rates results in higher stock market risk. A set of other factors of stock market risk and volatility, already discussed, are also incorporated in the particular model.

While explaining the growth in market risk we made another, a more significant finding, in the context of European integration. Nowadays the situation (risk, volatility, etc.) in particular EMU stock markets is more

affected by the general competitiveness of the sample of European economies. So the contemporary level of European integration already acknowledges the concept of “General Competitiveness of European Economy”. In fact, the introduction of a single currency in EMU was another major step in this direction.

#### **4.2.2. Robustness checks**

This section investigates the robustness of the empirical findings to a number of experiments with the estimated models (see appendix 3 tables 6-7). First, we tried the robustness of model one by one excluding the regressors. Signs and statistical significance are as expected, so that robustness with respect to EMU8 is not lacking. The other regressors are robust as well.

Next, a number of different lag structures were tried. We experiment with different lags for the regressors in the model (0, 3, 6, 9 and 12 month lags were tried one by one), to see how the EMU8 behaves. EMU8 is again robust. Coefficients and statistical significance for the other regressors in most cases also behave in an appropriate manner. However, in the case of change in domestic demand (TRADE), the coefficient keeps the positive sign for 3 and 6 month lag options, while the maximal significance is obtained for 3 month lag. Statistical significance of unemployment (UNEMPLOYMENT) lacks since 3 month lag and registers change in sign in the 6 month lag option. These cases can be interpreted as specific time limitations of the impact of these two factors and, in general, do not affect the robustness of the empirical model.

### **5. Conclusion**

The stock markets of most EMU member states registered higher market risk after euro introduction. First of all, higher volatility of exchange rates affects the stock markets through consequent changes in the stock market value of firms. We show that exchange rates fluctuations affect the stock market risk by causing fluctuations in trade flows of the countries – our proxy for international competitiveness of the national economies.

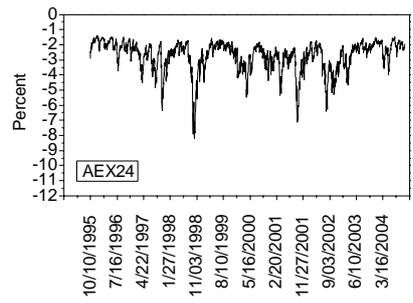
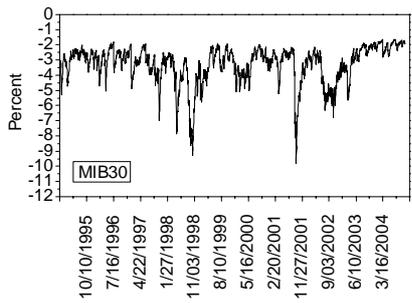
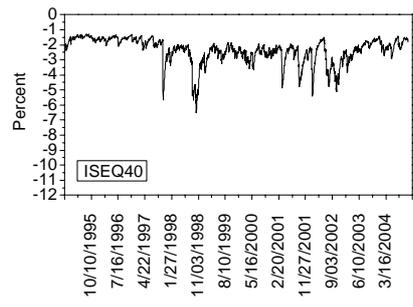
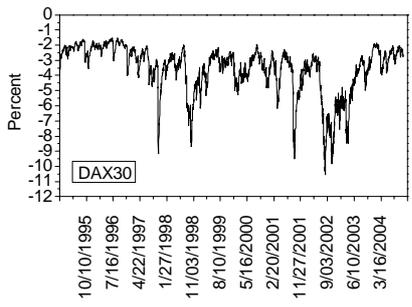
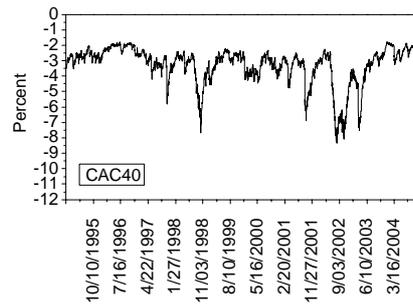
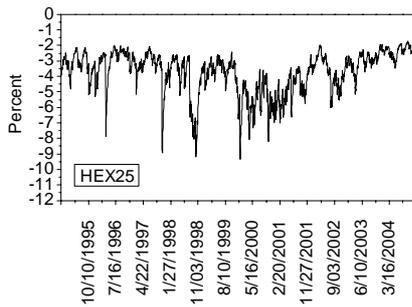
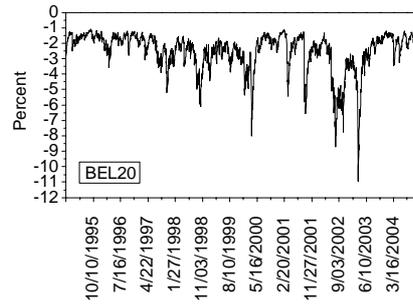
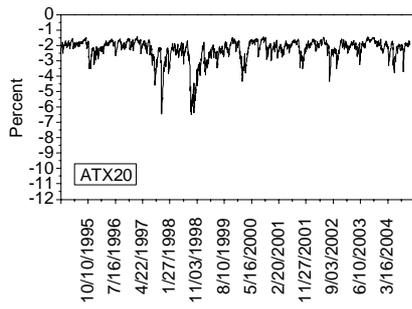
Moreover, an even more interesting fact regarding this is that common currency strengthens the “net volatility” of changes in competitiveness for the entire sample of countries by synchronising the changes of relative prices. Hence, the growth or reduction of Euro/USD exchange rates has a similar (positive or negative) effect on international

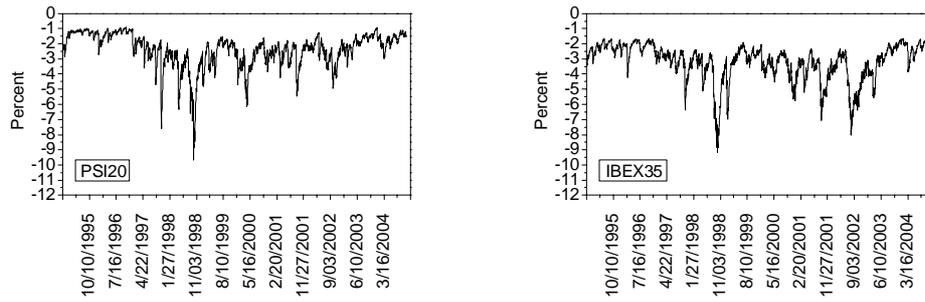
competitiveness of all the economies of the Monetary Union (at least for the observed 8 member states).

The empirical study also shows that due to the deep economic integration of particular European economies at both governmental and corporate levels, the changes in “General competitiveness” are more significant in explaining the stock market risk in separate countries than the changes in competitiveness on national levels. This phenomenon indicates a new stage of European economic integration where a European corporations and brands are represented on the international market of goods and services.

Summarising, the stock markets of most EMU member states registered higher market risk after euro introduction. Our analyses show that the Euro introduction had a triple effect on market risk, as it (1) resulted in higher volatility of exchange rates, (2) increased market risk on the stock markets because of higher synchronised fluctuations in general competitiveness, taking into account that (3) for the sample of countries it becomes more significant in explaining the dynamics of stock prices than the competitiveness changes at the national level.

## Appendix 1. Market risk dynamics





**Figure 1: Value-at-Risk dynamics in EMU major stock markets:  $VaR = -V(e^{\mu + \sigma\phi^{-1}(\alpha)} - 1)$ ,**  
 where  $V$  represents the initial value of some theoretical portfolio and  $\phi(\cdot)$  is the cumulative distribution  
 function of the standard normal probability distribution. GARCH (1.1) model is used for volatility  
 forecasting.

## Appendix 2. Data description

**Table 4: Descriptive statistics for monthly data for the panel with 11 cross sections: 1995/01-2004/06**

<b>NET EXPORT</b>											
	Austria	Belgium	Finland	France	Germany	Ireland	Italy	Luxembourg	Netherlands	Portugal	Spain
Mean	83.4	-390.1	104.0	628.2	2270.5	669.0	1036.3	-20.8	-890.0	40.1	-42.9
Median	55.1	-380.3	103.7	576.5	2241.3	454.2	1057.7	-2.5	-899.7	33.5	-54.5
Maximum	379.0	-22.9	270.4	1437.2	4269.5	2163.0	1759.4	16.1	-465.0	159.5	238.9
Minimum	-150.1	-693.1	-194.6	-32.4	753.0	-126.5	329.1	-226.5	-1213.9	-167.7	-325.8
Std. Dev.	103.7	142.6	70.8	336.6	861.4	629.1	287.3	54.4	179.3	45.5	111.9

<b>GDP RATIO</b>											
	Austria	Belgium	Finland	France	Germany	Ireland	Italy	Luxembourg	Netherlands	Portugal	Spain
Mean	44.8	37.6	73.0	6.5	4.5	94.9	8.0	479.8	23.2	82.8	15.2
Median	44.9	38.0	74.8	6.7	4.5	96.3	8.0	473.3	23.8	82.9	15.4
Maximum	55.3	46.1	85.9	8.0	5.8	109.0	9.6	792.7	28.0	141.9	18.5
Minimum	30.4	25.5	55.0	4.6	2.9	78.0	6.2	412.4	17.0	66.6	12.2
Std. Dev.	8.0	6.5	9.7	1.1	0.9	7.7	1.1	62.4	3.1	13.0	1.7

<b>REAL EXCHANGE RATE (EURO/USD)</b>	
Mean	111.7
Median	112.1
Maximum	141.3
Minimum	84.8
Std. Dev.	16.4

Note:

NET EXPORT	Net exports to USA (ml. USD) $(\xi)$ . Our own evaluations based on U.S. Census Bureau data
GDP RATIO	USA GDP/GDP $(\psi'/\psi)$ of the EMU member state ratio. Our own calculations based on Eurostat's quarterly data
REAL EXCHANGE RATE	Real exchange rates $(\mathcal{E})$ index (2000 average=100%). Source: ERS, United States Department of Agriculture.

## Appendix 2. Data description (continued)

**Table 5: Descriptive statistics for monthly data for the panel with 8 cross sections: 1998/10-2003/12**

<b>MARKET RISK</b>								
	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	2.248506	3.011755	3.820158	4.304242	3.745171	3.027104	3.00624	3.760452
Median	2.086519	2.617973	3.435668	3.812825	3.5486	2.837025	2.818665	3.482125
Maximum	4.973214	7.139443	7.469823	8.607236	7.730505	6.4128	7.326068	7.698977
Minimum	1.560709	1.24687	2.394064	2.330409	2.318071	1.889673	1.530123	2.163114
Std. Dev.	0.578273	1.312033	1.257402	1.603473	1.229161	0.932797	0.995916	1.177494

### **EMU8**

Mean	-	1.938133
Median	-	18.95272
Maximum	-	253.2226
Minimum	-	380.4286
Std. Dev.	-	157.9432

### **MEMBER**

	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	-	-0.134036	-	-0.925374	-	-0.070635	-0.024737	-
Median	0.054746	1.310721	0.386433	9.049102	0.284699	0.690725	0.241902	0.562013
Maximum	7.152762	17.51223	50.48853	120.9028	37.19679	9.228603	3.231992	7.50892
Minimum	-	-26.30946	-	-181.6381	-	-13.86457	-4.855576	-
Std. Dev.	10.74594	31.49134	75.85134	75.41103	55.88252	5.75618	2.015898	11.28101

### **TRADE**

	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	2.247619	2.88254	4.265079	0.679365	2.261905	3.634921	4.260317	6.031746
Median	1.5	2.3	4	0.4	2.4	3.9	4.3	6
Maximum	13.6	9.8	10.3	6.2	5.4	10.8	16.6	10.5
Minimum	-3.6	-3.7	-0.7	-3.4	-1.1	-7.4	-7.9	1.9
Std. Dev.	3.633751	3.386717	2.150181	2.198985	1.253952	4.089529	4.63808	1.981106

### **LOG (TRADED)**

	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	13.86582	15.04216	17.78988	17.82006	19.8233	15.20609	16.62162	18.40176
Median	13.8928	15.09747	17.93917	17.84267	19.8233	15.25649	16.86611	18.39836
Maximum	14.69503	15.88282	18.71098	18.61468	20.26482	16.03867	17.57519	19.18314
Minimum	13.12981	13.85015	16.58183	16.80993	19.12076	13.98976	14.98853	17.46229

Std. Dev. 0.350807 0.433255 0.68846 0.501226 0.23386 0.370557 0.679087 0.50653

**BOND**

	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	4.854603	4.894921	4.753016	4.649206	4.923492	4.766667	4.913651	4.862381
Median	5.06	5.08	4.93	4.78	5.13	4.92	5.09	5.05
Maximum	5.77	5.79	5.66	5.54	5.75	5.67	5.81	5.76
Minimum	3.74	3.74	3.69	3.62	3.82	3.72	3.77	3.69
Std. Dev.	0.578142	0.577514	0.538863	0.517096	0.556536	0.544311	0.581598	0.572867

**Appendix 2. Data description (continued)**

Table 5 (continued)

**LOG  
(RESERVES)**

	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	9.701383	9.526381	11.06698	11.40466	10.82213	9.852599	9.603671	10.55496
Median	9.768681	9.51392	11.05991	11.42412	10.86735	9.846864	9.634954	10.57457
Maximum	9.982128	9.907743	11.23022	11.51983	10.96809	10.19668	9.850219	11.06093
Minimum	9.21114	9.345133	10.89176	11.2474	10.59122	9.736133	9.224835	9.963123
Std. Dev.	0.211148	0.109276	0.097267	0.070559	0.10271	0.089106	0.157217	0.187303

**UNEMPL**

	Austria	Belgium	France	Germany	Italy	Netherlands	Portugal	Spain
Mean	3.933	7.573	9.360	8.454	9.844	3.048	4.776	11.617
Median	3.900	7.600	9.100	8.300	9.400	3.000	4.500	11.300
Maximum	5.100	9.600	11.400	10.300	11.800	4.400	6.500	15.000
Minimum	2.900	6.100	7.800	7.200	8.200	2.200	3.800	10.200
Std. Dev.	0.624	0.881	0.909	0.775	1.089	0.513	0.876	1.074

Note:

VaR	Stock market risk (%). VaR indicator is estimated for the indexes of particular EMU stock markets ( $\phi$ ).
EMU8	GARCH (1.1) model is used for the parameters estimation. Summed changes in net exports to USA for a sample of 8 EMU member states (Austria, Belgium, France, Germany, Italy, Netherlands, Portugal and Spain) caused by the changes of real exchange rates (ml. USD). Source: Our own evaluations based on U.S. Census Bureau data $\left(\sum_{i=1}^8 \Delta \varepsilon_{i(t-5-l)} b_{il}\right)$ .
MEMBER	Changes in net exports to USA of particular EMU member state caused by the changes of real exchange rates (ml. USD). Source: Our own evaluations based on U.S. Census Bureau data $\left(\Delta \varepsilon_{i(t-5-l)} b_{il}\right)$ .
TRADE	Monthly growth rates of retail trade ( $\Delta \lambda$ ) compared to the same period of the previous year (%). Source: Eurostat.

TRADED	Traded volume of stocks. Source Reuters. ( $\nu$ ).
BOND	Long-term government bond yields ( $\tau$ ) (monthly average, not seasonally adjusted). Source: Eurostat.
RESERVES	Foreign official reserves, including gold in million euros (end of period). Source: Eurostat.
UNEMPL	Harmonised unemployment rates ( $\rho$ ). Unemployment according to ILO definition (%). Source: Eurostat.

### Appendix 3. Robustness checks

**Table 6: Excluding regressors**

Number of regressors excluded from equation	(0)	(1)	(2)	(3)	(4)	(5)
EMU8	-0.0003 (-2.6466)	-0.0003 (-2.5418)	-0.0002 (-2.2362)	-0.0002 (-1.6357)	-0.0002 (-1.7715)	-0.0002 (-1.7811)
TRADE	0.0162 (2.7311)	0.0157 (2.5552)	0.0149 (2.4561)	0.0088 (1.3984)	0.0118 (1.8539)	
LOG(TRADED)	0.1278 (1.8941)	0.2029 (3.2333)	0.2799 (5.1262)	0.2999 (5.1754)		
BOND	-0.4018 (-4.6234)	-0.4389 (-4.8851)	-0.3765 (-4.3043)			
LOG(RESERVES)	0.3748 (1.6841)	0.5289 (2.3873)				
UNEMPLOYMENT	0.1429 (2.7170)					
Adj. R2	0.6044	0.6056	0.6077	0.5989	0.5866	0.5876

Note: t-stats. are given in parentheses.

### Appendix 3. Robustness checks (continued)

**Table 7: Changing the lags for the regressors**

Lags	(0)	(3)	(6)	(9)	(12)
EMU8*	-0.0003 (-2.3723)	-0.0002 (-1.5580)	-0.0003 (-2.0738)	-0.0002 (-1.4863)	-0.0002 (-1.5865)
TRADE	-0.0082 (-1.3247)	0.0125 (1.8725)	0.0092 (1.3306)	-0.0005 (-0.0620)	0.0145 (2.0475)
LOG(TRADED)	0.1470 (2.0918)	0.1514 (2.1711)	0.2088 (2.9526)	0.1481 (2.1064)	0.1745 (2.4948)
BOND	-0.3335 (-3.4699)	-0.3274 (-3.3469)	-0.1923 (-1.8420)	-0.1796 (-1.6741)	-0.0392 (-0.3626)
LOG(RESERVES)	0.3628 (1.5528)	0.4799 (1.8887)	0.6282 (2.3427)	0.7376 (2.8009)	0.8915 (3.2278)
UNEMPLOYMENT	0.1372 (2.5370)	0.0649 (1.1745)	-0.0013 (-0.0231)	0.0365 (0.6747)	0.0173 (0.3135)
Adj. R2	0.6056	0.6049	0.6047	0.6034	0.6033

Note: \* lag is kept invariant as it appears in the original model.  
t-stats. are given in the parentheses.

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# MEASUREMENT OF FISCAL POLICY FLEXIBILITY (FPF) IN MONETARY UNION MEMBER COUNTRIES

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## **Abstract**

*The paper focuses on fiscal constraints imposed on monetary union member countries and a scope of freedom in conducting fiscal policy at the domestic level. Non-european monetary unions: West African Economic and Monetary Union (WAEMU), Central African Economic and Monetary Community (CAEMC) and East Caribbean Currency Union (ECCU) introduced multilateral surveillance and a variety of fiscal convergence criteria. These constraints for domestic fiscal policies were agreed at the regional level for multiple purposes. Among them the most important are: avoidance of time-inconsistent economic policies and free rider problem mitigation. Despite many other benefits, there are substantial potential costs of employing fiscal convergence criteria. They flow from a decrease in fiscal policy flexibility, which is perceived, by many authors, as crucial for monetary union well-being. The paper offers a methodology for assessment of the fiscal policy flexibility when fiscal convergence criteria or fiscal constraints, in general, are present.*

**Keywords:** *monetary union, fiscal convergence criteria, fiscal policy*

## **1. Introduction**

There is a widely recognized need for fiscal convergence in monetary unions, evidenced by multilateral surveillance introduced in member countries of most of existing monetary unions. There is however a threat that imposing limits and requirements on a domestic fiscal policy will have a negative influence on the member's economy. Therefore the framework for fiscal convergence criteria assessment is needed in order to answer the question about their actual influence. The paper develops such a framework and offers a ratio of fiscal policy flexibility when fiscal convergence criteria are present.

The paper is structured as follows: Section I is a literature review that shows fiscal constraints as crucial factors for a successful, long-lasting monetary union and shows consequences of introducing fiscal convergence criteria for fiscal flexibility. Section II presents experiences of WAEMU, CAEMC and ECCU in fiscal convergence. Section III presents formalization for fiscal constraints. Section VI discusses fiscal policy flexibility idea and measurement methodology. Section V concludes about fiscal policy flexibility main factors.

## **2. Fiscal Policy Flexibility as a factor of a successful monetary union**

It is widely recognized that a monetary union agreement brings many benefits. A recent empirical study by Edwards and Magendzo (2002) shows that independent currency union (ICU) member countries experienced lower rates of inflation and higher GDP growth rates (1970 – 1998) than non-member countries, using currencies of their own. However, these benefits expected to materialize due to a membership in such an agreement, are of a conditional nature. Eichengreen (2001) shows that exploiting all possible advantages offered by a common currency and monetary policy is highly conditional.

Benefits flowing from common currency and monetary policy for member countries depend on the correlation of their business cycles. The more correlated they are, the better common monetary policy is suited for every member. Since there is no country-tailored monetary policy, fiscal authorities are responsible for coordinating and converging economic cycles of members in a monetary union. There is no trade-off between fiscal and monetary policy because the latter is set at the regional level and is not influenced by individual countries. Fiscal policy becomes most important for internal and external balance.

Fiscal policy pursued by every country depends on a wide variety of internal and external factors. Masson and Pattillo (2002) show that it is not clear whether monetary union membership helps or hinders fiscal discipline. Lack of this discipline is responsible for divergence of business cycle phases, which is highly undesired under monetary union agreement. So far, empirical evidence, EMU literature and CFA franc Zone experience suggest the possibility that monetary union membership could create incentives for fiscal profligacy. Governments are tempted to undertake over-expansionary fiscal policy. Worrell (2003) shows that failure to make long-term fiscal and structural commitments implies severe penalty: high interest rates, uncertain climate for investment and low growth potential.

The incentive for fiscal profligacy flows from the possibility of a bailout by the common central bank and the distribution of costs following the imprudent fiscal policies among all member countries. The negative externalities will hit other members. They would rather help “the naughty boy” than let their union to fall apart. This scenario is very costly for every union member. The idea behind fiscal convergence criteria is to prevent such a crisis to emerge.

Hefeker (2003) argues that uncoordinated fiscal policies have negative externalities on the common currency. Another argument is pointed by Debrun et al. (2002). Rulers have an interest to benefit certain groups in the economy and it leads to over-expansionary fiscal policy.

Masson and Pattillo (2002) show also that monetary union is successful only when “the hands of the fiscal authorities are tied by a strong set of fiscal restraint criteria”. These are not to be binding before joining a union but throughout its entire life. This point of view is supported by a theoretical study performed by Chari and Kehoe (1998). They show that the desirability of debt constraints in monetary unions depends critically on the extent of commitment of the common monetary authority. If the common monetary authority cannot commit, there is a free-rider problem in fiscal policy, and debt constraints may be desirable.

Monetary union agreement is not a good vehicle for growth, stability and prosperity, unless fiscal policies are tied by a strong set of fiscal restraint criteria. Beetsma and Uhlig (1999) argue that to avoid negative externalities and spillover effects fiscal policy must be coordinated among member countries. To gain possible benefits, member countries governments should define appropriate fiscal convergence criteria at a regional level and introduce a credible multilateral surveillance. There is however a threat. To meet limits and requirements imposed by fiscal convergence criteria, fiscal authorities lost freedom in conducting domestic fiscal policy.

Lack of fiscal policy flexibility is at the roots of the negative evaluation of all fiscal arrangements. It can be found in Debrun (2000) and inferred from Bean (1992), Buitert et al. (1992) or Dornbush (1997) and Sims (1998). Under common monetary policy, fighting country-specific shocks can only be done using domestic fiscal policy. Otherwise asymmetry between member countries' business cycle may increase. Therefore it is very important to recognize fiscal policy flexibility determinants and offer proxies for decision making purposes in the course of reforming monetary union agreements.

### **3. Experience in fiscal convergence in non-european monetary unions.**

The following review of fiscal constraints in the three monetary unions of low-income countries is an attempt to explain the general ideas on which these criteria are based and also to point out differences which exist in their institutional arrangements.

#### ***3.1 WAEMU – West African Economic and Monetary Union***

The West African Economic and Monetary Union is composed of Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo.

Following the CFA franc devaluation in 1994 a system of fiscal convergence criteria and multilateral surveillance was introduced. The aim was to assure greater compliance in terms of the economic policies of member countries, with targets at the regional level.

In WAEMU during the first period: 1994 – 1998, the main fiscal convergence criteria (FCC) were the following:

- the public sector wage bill (WAB) could not exceed 50% of tax revenue. In January 1998 this limit was lowered to 40%;
  - at least 20% of tax revenue had to be used to finance domestic fixed investment (DFI) by the public sector;
  - basic fiscal balance (BAB), that is revenue without grants minus expenditure without public investment financed from external sources, had to be no less than 15% of tax revenue;
  - change in arrears (ARR), internal and external, could not be positive.
- In 1999 the WAEMU entered the second phase of fiscal convergence when the Convergence, Stability, Growth and Solidarity Pact (CSGSP)

was signed.<sup>1</sup> New FCC were defined. The aim was to improve macroeconomic stability, speed up economic growth and develop solidarity among member countries.

FCC were divided into two categories - primary and secondary criteria. The first of the primary criteria was aimed at improving and stabilizing public finance in member countries. According to the CSGSP, the basic fiscal balance (BAB) had to be non-negative until 2002. The second primary criterion referred to the public debt (PD) to GDP ratio and limited the ratio of nominal PD to nominal GDP to 70%. The aim of the next primary criterion was to avoid an alternative non-market financing of fiscal deficits. Change in arrears (ARR) had to be non-positive.<sup>2</sup> Yet another primary criterion was the limit for inflation. It had to remain below 3% per annum. The aim was to keep the difference in inflation rates between the WAEMU and France (Euro zone) at the lowest level possible. It was introduced to avoid pressures on the fixed exchange rate commitment.

The four primary FCC presented above were supported by other limits and requirements. Some of them originated from the 1994 set of FCC. Public investment financed from domestic sources (DFI) had to be at least 20% of tax revenue. The public sector wage bill (WAB) could not exceed 35% of tax revenue. Another secondary criterion required tax revenues (TAR) to be at least at 17% of GDP. The last criterion limited the current account deficit (CAD) in the balance of payments to 5% of GDP.<sup>3</sup>

The system of multilateral surveillance and a set of penalties for noncompliance with FCC was defined in paragraph 74 of the WAEMU Treaty. Depending on the degree of noncompliance and level of cooperation, the penalties were as follows: withdrawing financing by the West African Development Bank and suspending budgets financing by BCEAO (the central bank for WAEMU).

The imposed FCC and accompanying multilateral surveillance were successful in consolidating public finance. Dore and Mason (2002) recognized two distinctive periods under this regime. The first was 1994 – 1997. Much of the adjustment took place before 1998. After 1997 fiscal convergence was much slower and divergence appeared. Despite the negative BAB during the years 1994 – 1997, developments were positive. Public expenditure structure was improved and control was gained over current

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<sup>1</sup> The CSGSP was signed in 1999 and new FCC were binding from 2000. The transition period for adequate adjustments was set at three years. The deadline was December 31, 2002.

<sup>2</sup> This requirement was already present in the previous set of FCC since 1994.

<sup>3</sup> In calculation of this ratio grants received from abroad are excluded.

primary expenditure. The wage bill in the public sector was decreased from 55% to 37,2% in 1998. Only two countries (Niger and Togo) violated this criterion (at 40% of tax revenue). Public investment expenditure rose from 11% in 1994 to 21% in 1998. Arrears (domestic and external) decreased. However, since 1998 those positive trends suffered a steep contraction. Large deficits, slower GDP growth and no control over public expenditure were common in WAEMU member countries. The public sector wage bill increased from 37,2% to 37,9% in 2001. Only three countries (Benin, Mali & Senegal) were in line with this criterion. Public investment rose steadily but differences among members were quite substantial. After 1998 only Burkina Faso and Mali managed to meet this criterion (at 20% of tax revenue). No improvements materialized in terms of tax revenue, which stabilized around 15% of GDP, while the FCC required a ratio of at least 17%.

WAEMU member countries expected a lot from WAEMU Directives. The 2002 deadline for implementation was not met. Countries were adopting them at different paces and with substantial delays. While the directives gave guidance with regard to most important fiscal issues, Mussa (2004) argues that their internal consistency still needs to be enhanced. Otherwise the main goal to harmonize fiscal management within WAEMU will not be attained. Another example of fiscal convergence can be observed in another CFA-franc Zone monetary union – CAEMC.

### ***3.2 CAEMC – Central African Economic and Monetary Community***

The Central African Economic and Monetary Community is composed of: Cameroon, the Central African Republic, Chad, the Republic of the Congo, Equatorial Guinea and Gabon. After devaluation in 1994, the CAEMC underwent an exercise, similar to the WAEMU, which was aimed at intensifying regional integration and to introduce multilateral surveillance. Several macroeconomic convergence criteria were imposed:

- an upper limit for inflation of 3% per annum;
- a public debt limit;
- procedures for foreign exchange reserves accumulation;
- a surplus or zero fiscal balance.

The greatest threat for reaching the criteria was the high dependence of fiscal revenue on crude oil prices and production volumes. Multilateral surveillance in CAEMC was based on a set of quantitative criteria. These were aimed at monitoring for excessive fiscal deficits and observing the economic performance of member countries. In the first phase four ratios were employed:

- foreign exchange reserves (FER) had to cover 20% of money supply,

- basic fiscal balance (BAB) had to be nonnegative,
- change in arrears (ARR) could not be positive,
- changes in public sector wage bill (WAB) could not exceed the growth rate in fiscal revenue.

Some shortages and disadvantages of the above set were noticed. Therefore, on 14<sup>th</sup> of July 2001, the board of the CAEMC Ministers agreed on a new FCC, which were expected to be introduced in January 2002. Since then the following limits constrained fiscal policies of CAEMC member countries.

The first criterion measured the government's ability to finance all current and capital expenditure with domestic resources. Basic fiscal balance had to be positive or zero. The calculation for BAB was as follows: revenue except grants, minus total expenditure. The primary surplus allows for debt repayments and indicates a no debt-trap problem.

The second FCC dealt with the inflation ratio and set the same limit of 3% p.a., as in case of WAEMU. The third FCC limited total public debt (internal and external) to 70% of GDP, starting in 2004.

The last FCC required the change in arrears to be non-positive in the current period. It was aimed at liquidating payment problems, stabilizing economies and national banking sectors and regaining credibility at the international capital markets.

Since 2002, CAEMC countries undertook attempts to meet agreed limits and requirements. After one year of adjustment (in 2003), BAB and PD/GDP criterion was met by four out of six CAEMC members. In 2003 only Republic of Congo experienced increase in arrears and the only country that violated limit for wage bill in public sector increase was Cameroon. Concluding, new set of fiscal convergence criteria was implemented successfully. Most of countries comply with four limits. For those, which violate FCC, substantial fiscal adjustment is required. This is because bringing down public debt from above 250% of GDP to 70% of GDP is not possible in such a short period.

The multilateral surveillance ratios used in the CAEMC were not binding convergence criteria. They served in diagnosing economic and financial condition of member countries. Three kinds of ratios were employed:

- i. general macroeconomic ratios:
  - a. real GDP growth ratio;
  - b. foreign exchange reserve cover of the money supply (at least 20% );
  - c. current account balance to GDP ratio;
- ii. analytical ratios:
  - a. investment ratio (total, public & private), as a % of GDP;
  - b. public sector wage bill as a % of total revenue without external grants;
  - c. changes in competitive position measured by REER;
- iii. indicators of economic policy:
  - a. fiscal policy stance measured by BAB/total revenue, BAB/GDP and OVB/GDP;
  - b. monetary policy stance measured by money and credit supply.

The four FCC binding CAEMC countries were similar to those which were agreed by CFA Franc Zone Convergence Committee, at the super-regional level. Both African monetary unions use the CFA franc as a common currency (names of the currencies are a bit different but both are pegged to the euro at the same ratio). A guarantee by the French Treasury makes this commitment credible. The third non-european currency union that undertook steps toward fiscal convergence between its members is ECCU.

### ***3.3 ECCU – Eastern Caribbean Currency Union***

The Eastern Caribbean Currency Union (ECCU) consists of Anguilla, Antigua and Barbuda, Grenada, Mont Serrate, Dominica, St. Vincent, St. Lucia, St. Kitts and Grenadines. The union's currency is the Caribbean dollar with a fixed parity to USD.

The Eastern Caribbean Currency Union is a special case when considering fiscal convergence criteria. After a substantial worsening in the budgetary situation in member territories during 1990s, the regional central bank undertook an initiative aimed at reverting undesired tendencies.

**Table 1. The actual situation of the six quantitative criteria in 2002.**

ECCB directive	ECCU	Antigua& Barbuda	Dominica	Grenada	St. Kitts & Nevis	St. Lucia	St. Vincent Grenadines
Savings of the central government 4-6% of GDP	-3,8%	-11,8%	-6,8%	1,9%	-3%	-0,9%	1,4%
Overall deficit of central government 3% of GDP	-9,6%	-13,2%	-11%	-8,1%	-13,4%	-7,4%	-3,6%
Public debt 60% of GDP	92,5%	102,3%	105,8%	103,7%	137,2%	56,6%	74,1%
Savings of the public sector 7-8% GDP	-1,4%	-11,8%	-6,8%	2,1%	-3%	7,5%	4,3%
Public sector investment 12% GDP	8,8%	1,5%	5,4%	13,2%	14,4%	10,4%	12,1%
Public sector primary balance	-3,2%	-7,8%	-5,7%	-3,8%	-3,1%	4%	-2,1%

*Source: P. Kufa, A. Pellechio, S. Rizavi (2003): Fiscal Sustainability and Policy Issues in Eastern Caribbean Currency Union, IMF Working Paper, WP/03/162, Washington: International Monetary Fund, p. 9*

The Eastern Caribbean Central Bank is responsible for promoting economic growth in the region under the fixed exchange rate commitment and liberalized balance of payments accounts. To meet this goal and to prevent the monetization of public debt through the financing of fiscal deficits, the ECCB created a set of directives for the public sector. This was aimed at improving the quality of fiscal policy. Quantitative targets were supplemented by structural reforms. It was expected to improve the effectiveness of taxation and the influence of public expenditure on growth.

Introducing directives for public sector was a clear sign that the commitment to abstain from financing fiscal deficits by ECCB was not enough to prevent fiscal profligacy. However, the ECCB directives were not binding and the central bank had no authority to demand compliance with them. ECCB only suggested complying with the following six quantitative criteria:

- savings of the central governments should be at 4 – 6% of GDP annually,
- overall deficit (OVB) should not exceed 3% of GDP,
- public debt (PD) should not exceed 60% of GDP,
- public sector savings, including pensions systems, should reach 7% - 8% of GDP annually,
- public sector investment (PSI) should be at least at 12% of GDP,
- public sector primary balance (BAB) should be nonnegative.

Other general directives are the following:

- liquidation of arrears (ARR),
- public debt repayments due to the creation of amortization funds,
- creating reserve funds for the purpose of mitigating natural disasters .

The ECCB directives were very similar to the FCC implemented in the WAEMU and the CAEMC after devaluation in 1994. In all three monetary unions fiscal convergence criteria were present. The feature that distinguishes them is that, in Africa, FCC are binding while in the Caribbean they are not. In the WAEMU and the CAEMC multilateral surveillance and system of penalties were present. The ECCU case was then only informative because there was no external pressure mechanism for implementing FCC.

**Table 2. Fiscal convergence criteria in monetary unions.**

WAEMU 1994 – 1998	CAEMC1994-2001	WBC quantity directives	Accession criteria
BAB $\geq 15\%$ TAR DFI $\geq 20\%$ TAR ARR $\leq 0$ 1994-1997: WAB $\leq 50\%$ TAR 1998: 45%	CPI $\leq 3\%$ PD/GDP $\leq 70\%$ FOREIGN EXCHANGE RESERVES ACCUMULATION PROCEDURES	OVB $\leq 3\%$ GDP PD/GDP $\leq 60\%$ Public savings $\geq 7\% - 8\%$ GDP PIE $\geq 12\%$ GDP BAB $\geq 0$ Central government savings (4%-6% GDP)	DEFICIT $\leq 3\%$ GDP PD/GDP $\leq 60\%$ GDP
WAEMU 1999 – 2004	Multilateral surveillance	WBC quality directives	S&GP
<b>Primary criteria:</b> BAB $\geq 0$ PD/GDP $\leq 70\%$ ARR $\leq 0$ CPI $\leq 3\%$	<b>Ratios:</b> FER cover 20% M BAB $\geq 0$ ARR $\leq 0$ WAB % change $\leq$ TAR % change	Liquidation of arrears Public debt repayment (amortization funds) Creation of reserves for natural disasters	Balanced budget or surplus penalties, when OVB $\geq 3\%$ GDP (given no special circumstances)
<b>Secondary criteria:</b> DFI $\geq 20\%$ TAR WAB $\leq 35\%$ TAR TAR $\geq 17\%$ GDP CAD $\leq 5\%$ GDP	CAEMC 2002 – 2004 BAB $\geq 0$ CPI $\leq 3\%$ PD/GDP $\leq 70\%$ ARR $\leq 0$ <b>Multilateral surveillance</b> <b>ratios:</b> general mactoeconomic analytical economic policy	<b>WBC structural directives</b> harmonization of tax code effective taxing introduction of VAT reform of budgeting process surveillance over public services incorporation of PIE into general development strategy increase of coordination between phases of investment	<b>Stosowane skróty:</b> BAB – basic budget balance PD – public debt ARR – arrears TAR – tax receipts CAD – current account balance WAB – wage bill in public sector DFI – domestically financed investment PIE – public investment expenditure OVB – overall (budget) balance

Source: Author.

Presentation of fiscal convergence in non-european monetary unions bring closer solutions employed to avoid short-sighted and time-inconsistent policies at a domestic level. Utilization of the WAEMU, CAMC and ECCU experience need formalization of fiscal convergence criteria. This is a next step to define fiscal policy flexibility (FPF).

#### **4. Fiscal constraints measurement methodology.**

Six areas are covered by fiscal constraints. The largest set of them was present in WAEMU, and some of them were present in CAEMC and ECCU. The difficulty in presenting general solutions flowed from different definitions of crucial variables. These included revenue, expenditure, basic/primary balance and investment. The methodology will be applicable to all of them after **concerning** the technical differences.

##### **4.1 Criterion I – public debt (PD)**

This criterion is defined as a maximum level of PD/GDP ratio. Nominal value of PD at the end of period “t” is: PD from the previous period (t-1), overall balance in the current period (OVB), net change in arrears (ARR) in period “t”.

$$PD_{it} = PD_{it-1} + OVB_{it} + ARR_{it} \quad \text{for member country } i=1,\dots,n; \text{ and period } t=1,\dots,T \quad (1)$$

In the case of a debt-trap problem, interest payments were captured either in  $OVB_{it}$  or  $ARR_{it}$ . In the first case, financing was based on the market, while in the other, governments used non-market financing.

##### **4.2 Criterion II – overall or basic fiscal balance (OVB, BAB).**

Fiscal balance is one of the most important fiscal policy stance indicators. There are many different ways of calculating a wide variety of fiscal balances. In general, a balance is obtained when expenditure is deducted from revenue. Adjustments made to these two elements lead to a wide pattern of fiscal balances.

In each of the monetary unions covered by this study different fiscal balance was used as an indicator in multilateral surveillance.<sup>4</sup>

Overall fiscal balance may be decomposed in the following way:

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<sup>4</sup> In CAEMC BAB = revenue (except grants) minus total expenditure. ECCU countries base their multilateral surveillance on two distinctive fiscal balances: overall balance = revenue - expenditure (limit of 3% GDP when deficit appears) and public sector primary balance, which should be non-negative.

$$OVB_{it} = REV_{it} - EXP_{it} \text{ for } i=1, \dots, n; t=1, \dots, T \quad (2)$$

After introducing fiscal constraint, it should satisfy a condition:

$$OVB_{it} = REV_{it} - EXP_{it} \geq 0 \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (3)$$

Using WAEMU's definition of basic fiscal balance as non-grant revenue minus expenditure, excluding foreign-financed investment, one can break down revenue (REV) and expenditure (EXP). This is necessary as other criteria are based on some fractions of those broad categories.

Many concepts are available in the case of the primary basic fiscal balance. A basic fiscal balance in WAEMU, defined as non-grant revenue minus expenditure, excluding foreign-financed investment, serves as one of the primary fiscal constraints. However, for convenience many empirical studies (see for example Dore and Masson (2002), p. 10) used overall fiscal balance in all estimations. This was mainly due to a lack of adequate data for basic fiscal balance.

Overall balance (OVB) is defined above. The concept of basic fiscal balance is based on several exclusions from revenue and expenditure. Let us assume that total revenue (REV) is composed of tax receipts (TAR) and non-tax revenue (NTR).

$$REV_{it} = TAR_{it} + NTR_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (4)$$

Expenditure side of a budget (EXP) is a little more complex and may be divided, at first, into two categories of fiscal payments: current expenditure (CUR) and total public investment expenditure (PIE).

$$EXP_{it} = CUR_{it} + PIE_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (5)$$

Current expenditure (CUR) may be decomposed to wage bill (WAB), interest payments ( $r \times PD_{it-1}$ ) and other expenditure (OTH).

$$CUR_{it} = WAB_{it} + r \times PD_{it-1} + OTH_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (6)$$

Total public investment expenditures (PIE) may be decomposed into two categories: externally financed investment (EFI) and domestically financed investment (DFI). The former is excluded from basic fiscal balance calculation.

$$PIE_{it} = EFI_{it} + DFI_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (7)$$

Summarizing, total public expenditure (EXP) can be written as:

$$EXP_{it} = WAB_{it} + r \times PD_{it-1} + OTH_{it} + EFI_{it} + DFI_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (8)$$

Overall fiscal balance equation takes the following form:

$$OVB_{it} = TAR_{it} + NTR_{it} - WAB_{it} - r \times PD_{it-1} - OTH_{it} - EFI_{it} - DFI_{it} \quad (9)$$

For the purpose of a basic fiscal balance (BAB) calculation, revenue (REV) and expenditure (EXP) must be modified (\* – asterisks denote modified variables):

$$REV_{it}^* = TAR_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (10)$$

Modified revenue covers only tax receipts. In the case of modified expenditure, EFI was excluded.

$$EXP_{it}^* = WAB_{it} + r \times PD_{it-1} + OTH_{it} + DFI_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (11)$$

Basic fiscal balance (BAB) is then given by the difference of modified revenue (REV\*) and expenditure (EXP\*).

$$BAB_{it} = TAR_{it} - (WAB_{it} + r \times PD_{it-1} + OTH_{it} + DFI_{it}) \quad (12a)$$

or

$$BAB_{it} = TAR_{it} - WAB_{it} - r \times PD_{it-1} - OTH_{it} - DFI_{it} \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (12b)$$

According to information from the Bank of France database for CFA franc Zone, on revenue structure in WAEMU and CEMAC, budgetary revenue is composed mainly of TAR and external grants (NTR). In the case of oil exporters in the region, a substantial part of non-tax revenue is from the production of crude oil. Further readings on the topic of natural resources on wealth and fiscal policy in CAEMC countries can be found in Wiegand (2004). The methodology of BAB calculation was then accurate and precise for WAEMU and CAEMC. Furthermore, in WAEMU the difference between OVB and BAB had to be equal to the part of public investment expenditures (PIE) financed from external sources (EFI).

Under fiscal constraints, BAB should have met the following condition

$$BAB_{it} = TAR_{it} - WAB_{it} - r \times PD_{it-1} - OTH_{it} - DFI_{it} \geq 0 \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (13)$$

### 4.3 Criterion III – arrears (ARR)

In this case, two general aims prevailed in the short and the long run. The change in arrears between period “t-1” and “t” could not be positive.

$$\Delta ARR = ARR_{it} - ARR_{it-1} \leq 0 \quad \text{for } i=1, \dots, n; \quad t=1, \dots, T \quad (14)$$

The long-term objective implied reducing arrears to zero.

$$\lim_{t \rightarrow T} ARR_t = 0 \quad (15)$$

Arrears are of a diverse nature. An amount in arrears is understood as the value owed but not yet paid. The question was, from what date was money owed? Arrears emerge when obligations are not met in the period in which they fall due. Government debt is legally binding once goods or services have been delivered. That is the “liquidation phase”. It covers a wide variety of obligations, including these flowing from current expenditure (CUR): WAB, OTH and public debt service ( $r \cdot PD_{it-1}$ ) or repayments.<sup>5</sup>

#### **4.4 Criterion IV – wage bill (WAB)**

The wage bill (WAB) in the public sector belongs to current expenditure (CUR). Remuneration for public sector workers is perceived as a demand-side stimulating instrument and non-productive expenditure with no ability to increase growth. That is why too large burden in the form of WAB is to be avoided for sustainable fiscal policy.

The introduction of fiscal constraint as WAB ratio is aimed at improving the quality of public expenditure when fiscal adjustment is needed. Cuts in wages or public sector employment are politically very unpopular. However, this is sometimes imminent and the only feasible way of arriving at a sustainable and prudent fiscal policy.

$$\frac{WAB_{it}}{TAR} < b \quad \text{for } i=1, \dots, n; \quad t=1, \dots, T \quad (16)$$

When requirements on other expenditures are binding, this constraint points the way for structural changes in expenditure. Once the target level of WAB is set, it is always in connection with a minimum requirement in a category of non-current expenditure. The trade-off effect is expected to

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<sup>5</sup> The simple fact of placing the order does not commit a government to paying or constitute arrears if the payment is not made. Arrears are incurred when the ordered goods or services have been delivered (liquidation phase), but the order to pay has not been given by a credit manager to a public accountant. In this case “administrative” (or technical) arrears appear. Real arrears appear when an accountant is unable to execute an order to pay because of a lack of cash. Lags between order to pay and payment execution flow from imposed spending procedures. Therefore, even when cash is available for all payments due, they are executed with substantial delays. In this case arrears do not appear.

emerge. Decreasing current expenditure (WAB) serves as a vehicle for increasing public investment. Resources saved in this area are redirected to operations aimed at enhancing growth potential.

**4.5 Criterion V – total public investment expenditure (PIE) and domestically financed investment (DFI)**

This FCC is one of the two criteria aimed at improving the quality of public expenditure. A very common feature of central government spending in low-income countries is the lack of non-current expenditure. This short-term nature is explained by political instability. Governments are rarely formed in democratic elections. Lack of stability implies resources management aimed at gaining all benefits in the current period or as fast as possible without considering nationwide utility function in the long run. Political instability hinders economic growth, also in monetary union member countries. The superior examples are Cote d’Ivoire and Togo in WAEMU, Central African Republic and Republic of Congo in CAEMC or Grenada in ECCU.

The criterion based on PIE/GDP (or DFI/GDP) ratio is of dual nature. First, it serves as a growth potential increasing vehicle.<sup>6</sup> However, it also serves the other aim. When primary FCC is intended to decrease fiscal deficit and arrive at surpluses, adjustment might be made by decreasing investment expenditure (if present). In the short run, this is both feasible and an effective way of meeting FCC. When one evaluates the long-term influence of such a policy, negative impact on growth and growth potential is evident.

“c” – minimum requirement as a percentage of tax revenue

$$\frac{DFI_{it}}{GDP_{it}} \geq c \quad \text{for } i=1,\dots,n; t=1,\dots,T \tag{17a}$$

$$\frac{PIE_{it}}{GDP_{it}} \geq c \quad \text{for } i=1,\dots,n; t=1,\dots,T \tag{17b}$$

The equations (16), (17a) and (17b) should then be interpreted as boundary conditions for basic fiscal balance (BAB) criterion.

In CAEMC investment ratios (total, public, private) are used in multilateral surveillance, but they do not bind governments. They serve only to diagnose economic conditions of member countries. ECCB issued a directive aimed at public investment in the Caribbean. This category is much

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<sup>6</sup> Private sector is very often unable to undertake sufficient infrastructure investments. High level of sunken costs, long periods of return and non-monetary benefits from enhancing infrastructure leave infrastructure investments for public authorities.

broader because it covers the whole public sector investment (PIE). PIE in ECCU should be at least at 12% of GDP annually.

#### **4.6 Criterion VI – tax receipts (TAR)**

Public revenue can be broken down as shown in (4). The idea embodied in this requirement is not only to improve the quality of domestic tax systems, but to prevent political instability. Ghura and Marcereau (2004) argue that chronic weak revenue performance led to the accumulation of domestic wage and external debt arrears and the degradation of social services in Central Africa in XX<sup>th</sup> century. Substantial arrears and irregular wage payments to civil servants and military personnel led to prolonged labor strikes and army rebellions. Improving tax revenue prevents the occurrence of the aforementioned situations, which are lethal for growth and stability.

Stable and assured tax receipts are highly valued in every country. However, the monetary union's case is different because fiscal policy influences more than just one territory. Automatic stabilizers make tax receipts highly pro-cyclical. Steep contraction in economic activity leads to a decrease in resources available for fiscal policy. Fiscal constraint based on a minimum requirement for tax receipts is aimed at improving a taxation system and making it more resistant to shocks. Receiving a certain amount of GDP in tax revenue completes the goal of sustainable fiscal policy. Tax revenue at the level at least at a certain minimum allows for a better expenditure management in the long run. Information about revenue in the future leads to expenditure tailoring to available resources. In this way, structural deficits may be avoided. Any unexpected deviations from the minimum level might be used for public debt repayments. This criterion may be written in the following way:

$$\frac{TAR_{it}}{GDP_{it}} \geq a \text{ for } i=1, \dots, n; t=1, \dots, T \quad (18)$$

#### **4.7 Criterion VII rate of inflation**

In both African monetary unions covered by this study, a limit is imposed on the rate of inflation. This is also the case in EMU but not in ECCU. The way this limit is set differs in Africa and Europe. For African monetary unions there is an inflation target set at the regional level by the central banks, for each union. It is a numerical value of annual change in general price level. In EMU limit is not fixed but depends on the inflation in member countries with the lowest growth in general price level. This way flexibility is achieved.

#### **4.8 Criterion VIII foreign exchange cover ratio (FER)**

In CAEMC a special convergence criterion is present, aimed at maintaining sufficient level of foreign exchange reserves relative to money supply. This is not a fiscal constrain. It is introduced because of a fixed exchange rate regime in CAEMC. Credibility of this commitment requires high level of backing money supply. On the one hand – French Treasury guarantees convertibility of CFA-franc. On the second hand, BEAC requires foreign exchange reserves for conducting sovereign monetary policy.

#### **4.9 Criterion IX current account deficit (CAD)**

WAEMU countries introduced a new criterion in 2000, limiting current account deficit to 5% of GDP. In calculating this variable, grants received are excluded. This is another indirect fiscal criterion. Current account balance reflects difference between domestic income and absorption.<sup>7</sup>

$$\frac{CAD_{it}}{GDP_{it}} \geq f \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (19)$$

Expansive fiscal policy is very often responsible for current account deficit. This criterion is intended to impose on governments taking into account fiscal policy influence on external stability, under given income and absorption of other sectors.

#### **4.10 Criteria X and XI government (GOS) and public sector, including pensions systems, savings (PUS)**

There is only one monetary union that tries to cover public savings in a regional coordination of fiscal policies.

$$\frac{GOS_{it}}{GDP_{it}} \geq f \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (20a)$$

$$\frac{PUS_{it}}{GDP_{it}} \geq f \quad \text{for } i=1, \dots, n; t=1, \dots, T \quad (20b)$$

In the Caribbean ECCB issued two directives aimed at increasing domestic savings. In this way resources for investment and debt repayments are expected to emerge. However none of the ECCB directives is binding.

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<sup>7</sup> Lack of direct or portfolio investment inflows – characteristic for low-income countries in Africa – means that there are no sustainable sources of current account deficit financing. To mitigate the problem of foreign exchange reserves depletion, permanent current account deficit should be avoided. Otherwise external instability emerges in the form of devaluation pressures, difficulties for foreign trade and capital flight.

After presentation of fiscal constraints and their interrelations, it becomes possible to show how fiscal policy is constrained at the moment of full implementation and fulfilling commitments flowing from fiscal convergence criteria.

## 5. Fiscal Policy Flexibility (FPF) methodology.

The flexibility of fiscal policy can be defined as a freedom in deciding about spending side of the budget. To measure this freedom one can use a level of independent expenditures. Independent expenditures are defined as the public expenditures that are not constrained directly by any of the fiscal convergence criteria. The higher the value of this indicator, the more flexible the fiscal policy. In this study it is denoted by OTH – other expenditure. Since requirements for revenue and limits on all other expenditure are introduced, little independence is left for governments. The more other expenditure (OTH) is available without breaching fiscal constraints (in UE for example incurring a deficit), the more freedom fiscal policy has. In case of presented non-european monetary unions arriving at nominal levels of fiscal convergence criteria ratios makes fiscal policy vulnerable and not very flexible. There is little freedom in reacting to asymmetric shocks.

Using BAB equation (12b), it is possible to show the level of fiscal policy flexibility when fiscal constraints are met. Satisfying PD limit implies that  $BAB=0$  and  $ARR=0$ , then

$$0 = TAR - WAB - r \times PD - DFI - OTH \quad (21)$$

$$OTH = TAR - WAB - r \times PD - DFI \quad (22)$$

To present the general level of fiscal policy flexibility for comparisons purposes, it is feasible to define it as a percentage of GDP.

$$\frac{OTH}{GDP} = \frac{TAR}{GDP} - \frac{WAB}{GDP} - \frac{r \times PD}{GDP} - \frac{DFI}{GDP} \quad (23)$$

In non-european monetary unions fiscal constraints refer to two categories: GDP and tax revenue (TAR). To employ them all together in equation (23), one should present them with the common denominator. First, it is comfortable to substitute:

$$\frac{TAR}{GDP} \geq A \Rightarrow TAR \geq A \times GDP \quad (\text{GDP is always non-negative}) \quad (24)$$

where “A” is an actual percentage share of public revenue in the form of tax receipts in GDP.

Substituting TAR from (24) to FCC defined in relation to TAR they become:

$$\frac{WAB}{TAR} \leq b \Rightarrow \frac{WAB}{A \times GDP} \leq b \Rightarrow \frac{WAB}{GDP} \leq b \times A \quad (\text{"A" is always non-negative}) \quad (25)$$

b – limit for wage bill in public sector, as TAR percentage

$$\frac{DFI}{TAR} \geq c \Rightarrow \frac{DFI}{A \times GDP} \geq c \Rightarrow \frac{DFI}{GDP} \geq c \times A \quad (\text{"A" is always non-negative}) \quad (26)$$

c – target ratio of public investment, as TAR percentage

$$\frac{PD}{GDP} \leq d \quad (27)$$

d – limit for public debt relative to nominal GDP

Then, fiscal policy flexibility proxy at the moment of compliance with all fiscal constraints, is given by (28) because all “ $\geq$ ” and “ $\leq$ ” become “ $=$ ”.

$$\frac{OTH}{GDP} = A - b \times A - r \times d - c \times A \quad (28)$$

$$\frac{OTH}{GDP} = A(1 - b - c) - r \times d \quad (29)$$

The equation (28) may be used in comparative studies of different fiscal convergence criteria levels. There is, however, one exogenous variable that strongly influences the final score. Interest rate is crucial for fiscal policy flexibility because it influenced directly interest payments which are very often a large part of the public expenditure.

## 6. Conclusions

The main factors of fiscal policy flexibility are: public debt, interest rate and nominal GDP growth rate. All three are beyond any direct influence of fiscal authorities at the domestic level. Public debt is a result, in most cases, of many deficits in the past. Despite debt was created by other policy makers it is required to meet all obligations when they fall due. Emergence of arrears depresses credibility of fiscal authorities as an issuer. Therefore no arrears or refusals to repay “old debts” are possible.

Interest rate depends theoretically on the common monetary policy conducted by the central bank of a union. Under financial account liberalization and fixed exchange rate regime, interest rate depends in fact on the interest rate in a country to currency of which union’s currency is pegged.

In such circumstances interest payments for the debt outstanding can not be influenced by any means by fiscal authorities at the domestic level.

GDP growth rate is very important because it allows for relaxing constraints in nominal terms. However, there is a threat that fiscal authorities would attempt to inflate out the public debt and this way avoid fiscal adjustment to meet convergence criteria. Another way to avoid compliance with fiscal constraints, recognized already in WAEMU, is creative budgetary accounting. A different way of measuring crucial fiscal variables results in business cycle divergence that is most undesired among monetary union member countries.

In the paper a framework for measuring fiscal convergence criteria influence on fiscal policy flexibility is developed. It could be used for evaluating different sets of fiscal convergence criteria, as well as their different levels when considering multilateral surveillance reforms. The methodology would be applicable in the process of creating new monetary unions and designing regional fiscal coordination. It allows for taking into account the current fiscal positions of potential member countries. The limits for fiscal policy should be set at reasonable levels. With too high fiscal adjustments needed – creative budgetary accounting is sometimes employed by member states and fiscal convergence fails. The framework developed in this paper allows also for designing fiscal convergence criteria and their levels according to monetary union well-being in the long run. There is however still the opened question of the optimal set of fiscal constraints to be implemented.

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# THE BANKS AND THE STRUCTURAL AND COHESION POLITICS IN THE EU FOCUSED ON THE ENVIRONMENT

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## **Abstract**

*The realization of the aim of structural and regional policy in the European Union is based on the banks participation. It can be reached by offering long term loans, bridge loans, which can be used to span the temporary shortage of the financial sources, occurred due to the time lag between the debtors' payment of the valid expenses to the creditors and receiving finance sources from EK. It can be reached also by the combination of these loans. The existence of the banks in the process of using financial sources from structural and cohesion fund has its own place in case of project preparation, giving in the application for the project, project adoption by supervising institution, and project coordinating and control.*

**Keywords:** *structural funds, cohesion fund, long term loan, banks, pledge*

## 1. Introduction

At first the financing of the environment protection was the domain of green funds. However, later the banks were involved to the financing process so the environmental ranking enters to the valuation of the commercial banks and insurance companies' loan and investment policy. Due to these circumstances in the 1991 from the initiative of UNEP was found UNEP's Financial Services Initiative, and in 1994 the UNEP Statement on Environmental Commitment of the Insurance Industry. At this stage the banks in developed countries in the client analysis consider also its environmental behavior and joint risks. In recent days the bank credibility analysis of client includes also environmental risks.

## 2. The banks and the environmental risks

In the bank analysis the environmental investments are not accounted as a company expense which decreases its competitiveness but in further circumstances this investments ensure the higher competitiveness on global markets. The environmental character of the company is being enlarged by the new dimension - the system of the environmental management. The companies which are applying this system are in the banks consideration asses as the trustworthy companies with the bright management structure. At this stage it is worth to say that in the recent years the insurance companies increased their interest in the environmental risk assessment due to the dramatically rise in the insurance payments for the damages caused by environmental disasters.

In the recent years the pioneering organizations in the financing of the environmental projects are international financial institutions.

The *World Bank* as the first international institution begins with obligatory assessment of the environmental projects. According to this fact it works out the handbook of the environmental assessment procedure.

The *European Bank for Reconstruction and Development* (EBRD) in the establishment process was given the mandate "to provide the complete support to environmentally acceptable activities". These activities should be focused to meet all the national environmental standards and the EU standards. There are mostly the environmental infrastructure projects i.e. building the water pipes and sewages, waste water treatments, disposal places, energy saving implements, and urban transportation systems.

The *European Investment Bank* requires involving environmental aspects to the all phases of bank financed projects i.e. the bank finance only the projects which satisfy all the economical, environmental and technical criteria.

We can assume that in the most prominent banks the environmentally and socially responsible investment behavior is the component of their image. However it is not the main stream of banking. This statement was confirm by the study which was held by UNEP where from 177 of inquired banks only 31% has the environmental oriented products. At least one half of the banks do not monitor and asses the environmental risks. On the question how further, 88% of them answered that they will involve the environmental risk consideration in the next 15 years. Banks assume the consideration will mainly focus on energy and recycling issues.

In the circumstances of the increasing indirect negative financial impact on the financial environment (energy severe, waste) effected in the situation when, in Germany, the environmental management systems spread also in the bank sector. This is inspiring also for Slovak republic.

Only for completeness, the issue of the impact on the environment is also in the consideration of the stock markets. Due to this the Committee for the Stock in the USA calls for the need of higher commitment in the environmental issues especially in the environmental reporting. It emphasis, that the environmental responsibility has the nature, than only by the overall information we can reach the spirit of non misleading and truly informing financial reports. The aim is the early recognizing of threatening environmental loses.

### **3. The bank associations supporting the environmental protection**

The procedure of environmental protection flow in to establishment of the bank associations. For example in 1994 in Bonne there was the foundation of Association for Environmental Management in banks, saving and insurance companies. The aim of this association is to initiate the exchange of the experience and opinions on the environmental issues. This association was the first which had above mentioned aim. The membership in this association can get only the banks, saving and insurance companies. The association regularly held the courses, where the banks and the other institution often discuss about the environmental issues, because their trading

activities are often accompanied by environmental risks and they have to respond by applying the sophisticated strategy.

The American Bankers Association was established in the USA. The members of this association have adopted the philosophy that predicts the prosperity of the banks only in the case of bank servicing markets prosperity. The markets, according to banks opinion, would not be prosperous if they waste and badly manage the sources they existence depends on. Due to the expectation of the Association the 75% of all American banks at the begging of the 1990 considered the environmental risks in the loan granting procedure.

#### **4. Engagement of the Financial Institutions in SR in the financing of the projects supported from EU structural funds**

The gain of the EU financial sources creates the possibility for the Slovak financial institutions to share on financing of the chosen projects. Banks in these circumstances can provide following services:

- Expert advisory and complex services initiating by filling up the application form for the financial contribution, continuing by the preparation of the project that meets the EU requirements and finishing in the fore financing of the project accompanied by the expert advisory
- The client orientation in EU project
- Work out the project financing model
- Draw up the documents fulfilling the requirements of executing bodies – indicative declaration about preparedness for project co financing and binding credit link
- Selecting and adjusting the client needs according to special bank products
  - Bridge loan
  - Investment loan
  - Banker's guarantee

##### ***4.1. Bank credit procedures***

In the credit transaction process related with the project co financing from the EU financial sources there is the possibility to apply standard methodic procedure, which involves credit process and providing the credit transactions.

*Acquisition activity* in the euro financing procedure is performed not only by the employee of the banks but also by the employee of the consultancy and advisory companies cooperating with bank. At this stage it is important for the employees of the bank to find the clients – borrowers and persuade them about the ability of the bank to support their project in terms of co financing and advisory. Successful acquisition is the first step in building relationship with client and developing other common business activities.

*The advisory* is provided to the client by the credit officers in the scope of basic information about EU funds financial recourses drawing possibilities, the operating programs, priorities and regulations, bank procedures according to governing body and also actual information about existing and new appeals announced by governing bodies.

*Banks and documents relating to euro fund financing*

In the initial stage of the euro financing procedure bank issues indicative statement for client that is required by the governing bodies to approve financial recourses for the project. Client asks the bank to issue the statement in writing. The indicative statement is issued by the bank after preparing the initial rating of the client (only financial risk). For preparing the rating the client has to submit standard records (financial statements), in case that bank do not have them.

Indicative statement is for the bank non committal and it declares the banks ability to cooperate in project co financing assuming the fulfillment of the standard conditions for bank stipulated loan terms.

*Binding credit link – the contract on the future contract on loan* – the condition term its opening is approved client project by the governing body and submitting of the acknowledgement to the bank. The binding credit link procedure is similar to loan transaction process.

*The application for opening of the credit link* – the contract of the credit link is the same to standard procedure except information necessary for grant application. With application form the client enclose the grant application and project and other documentation specified in loan repayment assessment ability.

*Open binding credit link proposal – settlement of credit transaction* is processed by credit officer in standard procedure. If the processor in the proposal states also the conditions, according to which the contract with

client can be settled, it is not necessary to hold the other credit transaction approval procedure.

*On the spot check* – prior to processing the application it is necessary for the banks to do on the spot check. Following check are necessary also during the realization of the project at least quarterly. Above mentioned procedure is due to strict rules applied by EU and breaking of these may result in grant withholding during the realization and also after finishing the project.

*Clients own sources* – in case of investment loans, mid term or long term it is necessary to bind the client in order to get client financial participation on the project. Client's participation depends on the assessment of the business plan and it should be in scope from 5% up to 30% in dependence on the duration of his business.

#### *The limits of commitments*

In the loan transaction assessment process it is necessary to define the limits of commitments on clients. These depend on character of financing – i.e. firstly the credit financing of client's project, next refundment of the eligible costs from the EU grants. The bank wants to know if the client is able to repay the loan without getting EU grant contribution. This situation can occur also in the case of vital and high quality project.

#### *Shortening of approval procedure*

There is the great possibility of occurrence the time stress in the EU co financing process between the time for submitting the project and time of getting the necessary documentation from banks (approximately 4 -6 weeks) so it is important to shorten the banks approval procedure. In means it is necessary to shorten the time for performance all the activities defined in the approval procedure from acquisition to the realization of the transaction and signing the contract on condition that the quality of the procedure will be kept.

#### *Contractual documentation*

The signing of the loan contract is under the condition to submit to the bank the governing body confirmation about its amount of the contribution and the whole amount that is necessary to get by client.

#### *Loan drawdown*

The drawing of the loan is performed according to general procedures and after complying with the loan terms. The specific terms in euro financing are:

- To submit the contract with governing body about granting the financial contribution
- opening the separate accounts for contribution from EU and from state budget

#### *Grant drawdown*

The finance contribution will be paid by installments after client will approve the initiating the realization of the project and he starts to spend money. The first payment request has to be given within 4 months from the date of approving the grant. After this the grant is paid in installments, the client has to submit the realization report and grant payment application form supported by documents approving eligible costs (invoice). The application forms are checked by government body and submitted to financing institution – in order to do a payment.

#### *Loan repayment*

Loan is repaid:

- from clients own sources
- form EU grants
- from the State budget.

### **5. The cooperation of the governing body and bank in the Euro funds financing**

The whole preparation, financing and realization process of the projects from the EU funds is build up on stages entered subsequently by client, bank, governing body or mediator and financing institution. The procedure is following:

Client who applies for the EU fund financing sources is obliged to document financial sufficiency for project realization to governing body. Besides own financial sources there are also sources from EU and from state budget. In case of insufficiency of own sources the client has to right to ask the bank for pre financing loan or co financing loan.

- Indicative statement of a bank agreement to co finance the project is a part of the financial grant application if the governing body asks for
- In case of project approval confirmation of the governing body is produced. This enables client to continue in the project realization (selection of suppliers by public procurement). At this stage bank should issue binding credit link.

- After public procurement procedure the client notice to governing body the results of the competition and the costs of the project. The governing body asses the costs of the project and decides about the high of eligible costs and defines the contribution amount to the project. That the confirmation about the high of contribution and the necessary high of own client sources is issued. According to this confirmation bank conclude the credit contract with client (also the pledge contracts).
- After submitting the credit contract to the governing body the contribution contract is signed. This contract is submitted to the bank, bank allows loan drawn (based on fulfillment of all loan drawn conditions).
- The process of the loan drawn and refundation:
  - ⇒ The client begins to draw the loan according to the terms and conditions in the credit contract crediting the suppliers account. He has to have documentation from his suppliers. The purpose of the credit has to be checked consistently. The bank noticek the governing body about the loan drawing and the amounts of draws.
  - ⇒ The client ask the governing body for a payment according to the contract for providing non-recurring financial contribution
  - ⇒ The governing body checks the eligible costs and after costs aproval submits the application to financing institution
  - ⇒ The financing institution performs preliminary financial check of the client payment application, and after application aproval by this institution, the money are transfer to special bank account of the client.
- The project financing procedure is as follows:
  - ⇒ Firstly client has to invest his own financial sources, that can get by credit
  - ⇒ Then the state budget financial sources are drawn
  - ⇒ Finally the EU fund financing
- The close cooperation of the bank with governing body, financial institution and client is in the EU fund co financing process inevitable.

## 6. Conclusion

In the recent years the bank system begins to consider environment protection need as the part of co financing process. The most popular arrangements in environmental protection are use of the environmental management systems (EMAS). The exploitation of the EU fund financial sources expects the close cooperation of the banks and:

- Investors – the money recipient,
- Governing body,
- financing institution.

In this process the bank accompanied the client in all stages: during the preparation, realization and financing of the project. The scope of the services provided involves the expert advisory, preparation of the project, working out the model of project financing, producing the documents about co financing ability, binding credit link. The selection and adjustments to the client needs can differ in individual banks, according to individual needs and bank abilities.

Unsolved problem in the structural and cohesion fund financing procedure is the issue of the pledge. The solution of this problem in the SR is advantageous for the banks.

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# *Regional Policy*

# EU REGIONAL AND STRUCTURAL POLICY AFTER ENLARGEMENT

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## **Abstract**

*European Union had been created by states with dissimilar economic level. Differences among particular regions are the backwash of cultural, historical, geographical and other differences affecting various income level in particular regions. EU attends considerable attention on regional a structural policy what is testified by increasing part of funds given to achieving regional policy aims. Regional and structural policy primary aim is elimination differences in economic level and rate of unemployment in particular regions. Terms of Structural funds and Cohesion fund deriving are changing in connection with European Union enlargement. The aim are achieving convergence and increasing competitiveness in EU member states. Filling regional and structural policy aims will depend on volume and timely granting funds which particular regions will receive.*

**Keywords:** *European Regional Development Fund, European Social Fund, Cohesion Fund*

## **1. Introduction**

One of the basic objectives of regional and structural policy of the European Union (the EU) is elimination of economical differences between member states that are inevitably caused by cultural, historical, geographical, and other discrepancies between member states. Also increasing share of the EU budget spent on diminishing the regions differences shows the significance of the regional and structural policy of the EU. The share on total budget for the financing period 2000 – 2006 is more than 30 %. Problem of heterogeneity in the EU always come to question and is important issue whenever enlargement was on and higher form of economic integration came (creation of internal market and then the monetary union).

## **2. Financing the regional and structural policy**

Achieving objectives stated by regional and structural policy requires financial resources that come from structural funds and Cohesion fund and that depends on particular objectives of the regional policy. Concerning structural funds, the greatest amount of resources comes from the European Regional Development Fund (ERDF). This fund was established to promote and finance economical and social cohesion through lowering of regional disparities and through the share on reconstruction and development of various EU regions.

Concerning the amount of financial resources, the European Social Fund (ESF) is the second largest fund in regional policy. Main areas that this fund promotes and finances are promotion of unemployment prevention measures, human resources development, equal opportunities for men and women, development of economic and social cohesion.

The third of the structural funds is the European Agricultural Guidance and Guarantee Fund (EAGGF) that is divided into two main sections. These sections are guidance section and guarantee section. Concerning structural funds, only guidance section is a part of the funds that currently comprises approximately 5 % of financial resources of this fund. These resources finance mainly regional policy objectives in the area of rural promotion.

Finally, the last one among the structural funds is the Financial Instrument for Fisheries Guidance (FIFG) that was created to promote and support the fisheries sector, connected industries and marketing for the fish industry products.

In connection with the monetary union creation was also the Cohesion Fund established (CF). It serves as a promotion instrument for member states that are economically lagging behind. It is also used to finance and promote the projects concerning environment. These projects should help to achieve the goals stated and declared by the EU common policy in this area. The Cohesion Fund also helps to finance the projects in the area of transport infrastructure.

New member countries (candidate countries before) that entered the EU in May 2004, were given financial resources prior to the accession through these instruments:

1. **PHARE** – to promote the strengthening of institutional structure, to promote the participation of candidate countries in the EU programs, regional and social development, industrial reconstruction, and small business.
2. **ISPA** – transport infrastructure development and environmental protection.
3. **SAPARD** – agriculture modernization and rural development.

For the New Member states, 2004-2006 is a transitional period which will allow them to become accustomed to managing Structural Funds in accordance with the current rules. They will receive support from those Funds totaling 21.8 billion euro. The measures will concentrate on a limited number of priorities: infrastructure, human resources and productive investment.

### ***2.1 Regional Policy Objectives in 2000 – 2006***

There are three objectives realized through current budget period:

**Objective 1** – this objective was established to help and promote the regions lagging behind. Their GDP per capita is below 75 % of the EU average. Also the less populated regions (French overseas territories, Madeira, Canaria Islands, Azor Islands) that are below 75 % average are supported. This objective is financed through all of the structural funds – ERDF, ESF, FIG, EAGGF guidance section.

**Objective 2** – this objective is aimed at regions where economic and social changes are prevailing in the industry and service sectors, declining rural territories that are subject to economic difficulties caused by economic activity decreasing. This objective is also concerned with the territories and regions dependent on fishing that undergoes through depression phase. This objective is financed through two of the structural funds – the ERDF and ESF.

**Objective 3** – concerning the support in this objective, the intent is to develop activities focused on human resources mainly through the ESF. This objective is chiefly aimed to support the member states in the area of adapting to and modernization of educational systems, professional training, and employment.

The greatest amount of financial resources is allocated in Objective 1. There is, however, condition that states that no region in member states that profits from the support under the Objective 1 can make use of the other two objectives.

Besides the support from structural funds, there also is a possibility to receive the financial resources through the EU Initiatives. There are 4 Initiatives financed in the period 2000 – 2006:

- **INTERREG** - is an initiative aiming to stimulate interregional cooperation in the EU to achieve balanced and sustainable development in the EU (this initiative is financed under the ERDF).
- **URBAN** – initiative aimed to support the economic and social regeneration of cities and urban districts that undergo the crisis (this initiative is also financed under the ERDF).
- **LEADER** – aimed to rural areas and their development (this initiative is financed by guidance section of the EAGGF).
- **EQUAL** – transnational form of cooperation aimed to fight against all the discrimination forms in the labor market.

## ***2.2 A revised Regional and Structural Policy for 2007-2013***

Financial period for the years 2007 – 2013 will be accompanied by the reform of structural and regional policy. This reform will be focused on changing the rules of structural funds using. Basic principles of the regional policy – perennial programming, partnership, cofinancing, evaluation and complementarity – shall not be changed in the next financial period.

According to proposed changes, the European Commission plans to implement the principle of one fund that should prevent using the financial support from more than one fund for the same operational program. Other changes that should be realized are more frequent and more extensive controls focused on drawing of structural funds resources for big projects and simplification of the programming documents system.

The basic document that will state and define the supportive framework of the EU for years 2007 – 2013 through structural funds and Cohesion Fund is the Community Strategic Guidelines for Cohesion. The very first proposal of certain changes in regional policy was revealed in

February 2004 by the European Commission. Each member state is required to adopt this document to National Strategic Reference Framework that is supposed to join priorities on the EU level with the priorities on national and regional level. Ministers for regional policy from member states agreed in the meeting in May 2005 to priorities of the EU in the area of regional policy. They also agreed to support the strategic guidelines from the EU in case they allow for the varieties of different regional needs and that will be flexible enough for member states to state their own priorities according to particular strategic objectives. Many of the member states required greater emphasis on social aspects while stating priorities through the EU regional policy.

National Development Plan approved by the Commission, should be replaced by new type of programming document – National Strategic Reference Framework. Each member state is required to inform about the NSRF the Commission. NSRF should postulate national strategy according and aimed to achieve the three objectives: convergence, regional competitiveness, and employment.

Simultaneously with the preparation of legislative framework at the EU level began the preparation of national documents at the member states level. These documents will provide the basis for drawing the resources from structural funds and Cohesion fund. Priorities of individual member states will be proposed and stated in the operational programs. The main difference concerning current and future operational programs is that there will be no program amendments in the future operational programs. However, prior to submitting the National Strategic Reference Framework the whole financial framework and allocation of the resources for each member state must be approved.

Concerning the financial period 2007 – 2013, there is € 336.1 billion planned for regional policy. Financial resources assigned to regional policy will be distributed according to fulfillment of three new priority objectives:

- Convergence
- Regional Competitiveness and Employment
- European Territorial Cooperation

The first priority – **Convergence** – will be focused on helping the regions where GDP per capita is less than 75 % of the EU average. This priority is actually identical with current Objective 1. Most of the new member states will be supported under this priority. There is also assumption that interim and specific support of descending form will be provided until 2013 for regions where GDP is over 75 % of the EU average as an outcome of statistical effect caused by the EU enlargement in 2004.

National and regional programs co-financing will be oriented to modernization and diversification of regions economic structures, to protection of environment, to improvement in institutions on labor market and to improvement of education systems. Structural funds that will co-finance these activities are: ERDF, ESF, and CF. Financial support from the Cohesion fund will be provided to those member states where GDP per capita is less than 90 % of the EU average.

From the whole sum of € 336,1 billion, the greatest amount will go to the achievement of this priority - € 264 billion or 78%. The structure for allocation is as follows:

- 67,34 % for regions with GDP per capita less than 75 % of the EU average
- 8,38 % for regions influenced by statistical effect
- 23,8 % for regions that draw resources from Cohesion fund
- 0,42 % for peripheral areas (Azor Islands, Madeira, Canaria Islands, particular French overseas territories)

Concerning the second priority – **Regional Competitiveness and Employment** – it will promote two basic goals outside the territory of the most disadvantaged member states. The first goal includes regional programs as support in economic changes in industrial, urban and rural areas. The second goal is focused, through national programs, on helping the people during their adjustment to economic development according to the priorities of European Employment Strategy. Also the support of employment policies, labor productivity, and social integration are included.

Concerning this priority, only those regions that are not included under the Convergence priority will be eligible for drawing up resources through this priority. Regions that are entitled for the support from current Objective 1 but will not be eligible in 2007 to draw up resources from priority Convergence because of their economic progress, will receive until 2013 specific and interim support through this priority in descending form.

This priority will be financed by ERDF through national development programs and by ESF according to the European Employment Strategy.

From the whole amount of the funds for 2007 – 2013, the sum of € 57,9 billion or 18% is allocated for this priority. The structure is as follows:

- 83,44 % for regions that do not draw finances under current Objective 1
- 16,56 % for regions in transition phase

The third priority of the EU regional policy in period 2007 – 2013 is the **European Territorial Cooperation**. This priority is supposed to follow the current INTERREG Initiative. This priority actually means the continuity of integration policy in the EU territory. This priority is supposed to be achieved by supporting of cross-border and transnational cooperation. Cross-border cooperation includes all the regions that neighbor with outer or inner borders on the land or in the sea. Besides it should also help and support the cross-border cooperation under the European Neighborhood Policy, partnership and pre-accession instruments. All of these should replace the current programs – PHARE, ISPA, SAPARD, TACIS, MEDA, and CARD.

There is a sum of € 13,2 billion for this priority which is 4 % of the total sum of € 336,1 billion allocated for regional and structural policy. The distribution of these resources is as follows:

- 47,73 % for cross-border cooperation, from which 35,61 % is allocated for cross-border cooperation on the EU territory and 12,12 % for the European Neighborhood Policy and Pre-accession Instrument
- 47,73 % for the area of transnational cooperation
- 4,54 % for European cooperation and exchange networks

Responsibility and control while drawing up the money from structural funds and Cohesion fund should be moved from the EU level to national level in member states. Regional policy in the future should be financed only through 3 funds – ERDF, ESF, CF. Commission initiatives URBAN and EQUAL should integrate into the operational programs priorities in member states or regions. Operational programs should be financed only by one fund, either ERDF or ESF. There will be an exception, however, concerning infrastructural programs where ERDF and Cohesion Fund should work together.

### **3. Conclusion**

Expenditures on regional policy in the EU will depend on approved financial framework for period 2007 – 2013. Concerning this financial perspective for the future period there are many controversial issues and different positions from member states. The Commission proposed in 2004 budget expenditures to average at 1,14 % GNP of the EU. Some of the member states (Germany, France, great Britain, Netherlands, Sweden) on the other hand propose freezing the expenditures at 1 % GNP of the EU. This evokes the fears in the Commission that lowering the expenditures will not help to achieve all the goals and priorities that are stated in new regional policy for period 2007 – 2013.

Another problem issue is the agreement in former EU-15 that was adopted before the enlargement in 2004 and that is concerned with the freezing of the expenditures on agriculture. Thus it is probable that in case of expenditures decreasing from the common budget, it will not be on behalf of regional policy. Late political agreement concerning the financial period 2007 – 2013 will probably delay the funds drawing which will affect mainly new member states.

The positive effect for member states from regional policy can be disrupted by the principle according to which no member state can draw up money in one year from all the funds that will amount for more than 4 % of member state GDP. This ceiling can potentially limit mainly the small economies in new member states.

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# REGIONAL POLICY AND SLOVAKIA

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## **Abstract**

*Slovakia became, together with other Central and East European countries, a part of the European Union in May 2004. Now as a full member state with all the rights it is possible to make use of the structural funds created to help poorer regions of the Union. In order for the member states of the European Union to use structural funds it is necessary to create a series of documents. First of all is the National Development Plan which is the basis for receiving the money through the structural funds of the European Union.*

**Keywords:** *NDP, Slovakia, EU, structural funds, regional policy*

## 1. Introduction

One of the principles the European Union (EU) is found on is the principle of equality. Equality among the states, but what is more important, equality among the different regions of the EU. Since the creation of the European Communities in the 50s in the 20<sup>th</sup> century, there are many differences between particular regions of member states of the EU. Before the enlargement that took place in 2004, the poorest regions of the EU were located in Greece, Spain and Portugal. After the enlargement, there are even more regions entitled to receive the support from structural funds. Despite rapid economic growth in new member states, they still face wide regional disparities and inequalities both in income and in wealth. For example, Bratislava, the richest region in Slovakia is 20 % above the EU average. On the other side stand the regions of Prešov and Košice, the poorest regions in Slovakia, with only 39 % of the EU average. Concerning the poorest EU regions, 10 poorest regions are located in new member states. Out of these 10 regions, six are located in Poland, including the EU poorest region - Lubelskie.

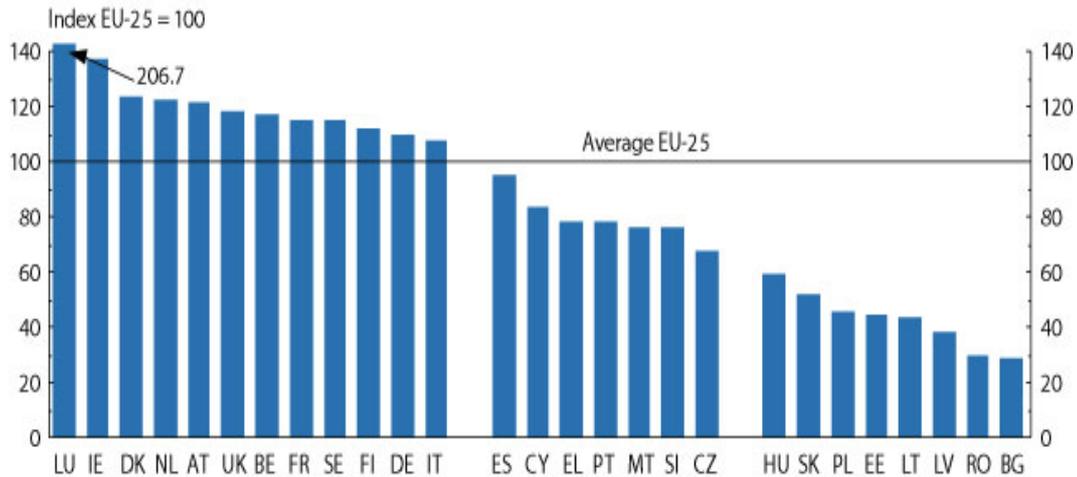
**Table 1 Ten Poorest Regions in the EU**

<i>NUTS 2 Region</i>	<i>GDP p.c. €</i>
<i>1. Lubelskie, Poland</i>	6 764
<i>2. Podkarpackie, Poland</i>	6 891
<i>3. Warminsko-Mazurskie, Poland</i>	7 217
<i>4. Podlaskie, Poland</i>	7 435
<i>5. Swietokrzyskie, Poland</i>	7 557
<i>6. Heves, Nógrád, Borsod-Abaúj-Zemplén, Hungary</i>	7 902
<i>7. Opolskie, Poland</i>	7 917
<i>8. Hajdú-Bihar, Jász-Nagykun-Szolnok, Szabolcs-Szatmár-Bereg, Hungary</i>	7 990
<b><i>9. Prešovský kraj, Košický kraj, Slovakia</i></b>	<b>8 200</b>
<i>10. Latvia</i>	8 249

Source: [www.wikipedia.org](http://www.wikipedia.org)

**Figure 1 Disparities among the Member States**

GDP per head, 2002



Source: Eurostat, national accounts.

Source: [http://europa.eu.int/comm/regional\\_policy/intro/working3\\_en.htm](http://europa.eu.int/comm/regional_policy/intro/working3_en.htm)

The EU helps regions that are behind through the regional policy. Regional policy is based on other principle of the EU – principle of solidarity between the member states. This also includes financial solidarity between prosperous members whose contributions to the budget of the EU go to less prosperous regions of the Union. Prior to the 2004 enlargement transfers between wealthier and poorer regions for the period 2000 – 2006 should account for one third of the EU budget at 213 billion €. Out of 213 billion € 195 billion should be spent by the four structural funds and 18 billion by the Cohesion Fund.

There are four structural funds that help through regional policy to eliminate the regional disparities among the EU regions:

1. European Regional Development Fund
2. European Social Fund
3. Financial Instrument for Fisheries Guidance
4. European Agricultural Guidance and Guarantee Fund.

94 % of structural funding focuses on the following priorities:

- **Objective 1** Helping regions whose development is lagging behind to catch up - 70%
- **Objective 2** Supporting economic and social conversion in industrial, rural, urban or fisheries dependent areas facing structural difficulties - 11.5%
- **Objective 3** Modernizing systems of training and promoting employment. Measures financed by Objective 3 cover the whole Union except for the Objective 1 regions, where measures for training and employment are included in the catch-up programs - 12.3%

There are also four initiatives seeking common solutions to specific problems. They spend the rest of the funding on:

- **Interreg III** Cross-border, transnational and interregional cooperation
- **Urban II** Sustainable development of cities and declining urban areas
- **Leader +** Rural development through local initiatives
- **Equal** Combating inequalities and discrimination in access to the labor market

The structural funds finance multi-annual programs which constitute development strategies drawn up in a partnership with the regions, the member states and the European Commission. The main objectives of the programs are to:

- develop infrastructure, such as transport and energy
- extend telecommunications services
- help firms and provide training workers
- disseminate the tools and know-how of the information society

In addition to the structural funds, there is the Cohesion Fund, which provides direct finance for specific projects relating to environmental and transport infrastructure.

During the pre-accession period ten Central and Eastern European candidate countries received millions euros in EU development aid under these instruments:

- **PHARE** To improve institutions, administrations and public bodies to ensure the correct application of EU law and to assist new investments in the social and economic sectors
- **SAPARD** To support the efforts to join the Common Agricultural Policy

- **ISPA** To finance the construction of large projects in environmental protection and transport.

Currently, the enlarged Union is divided into three main groups:

- 8 new member countries with the lowest income per capita with 20 % of the EU population but only 42 % of the GDP p.c. – Czech Republic, Hungary, Estonia, Latvia, Lithuania, Malta, Poland, Slovakia
- 5 member countries (old and new ones) with 13 % of the EU population and average 71 % of the GDP p.c. – Cyprus, Greece, Portugal, Slovenia, Spain
- 12 remaining old members with 66 % of the EU population and 115 % of the GDP p.c.

## **2. EU Regional Policy**

As mentioned in the introduction, the EU regional policy is policy that promotes solidarity. Regional policy allocates more than one third of the budget of the EU in order to reduce the gaps in development among the European regions and disparities among the citizens. The Union is aimed to three objectives that seek to help the poor regions to catch up with wealthier regions of the EU.

The preamble of the Treaty of Rome, which was signed in 1957, set the basis of what is today known as the EU regional policy: “to strengthen the unity of their economies and to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the less favored regions”<sup>1</sup>. One year later, in 1958, two funds were set up – the European Social Fund and the European Agricultural Guidance and Guarantee Fund. In 1975 the European Regional Development Fund was created aimed at redistribution of part of the Communities budget to the poorest regions. The Maastricht Treaty which came into force in 1993 designates cohesion as one of the main objectives of the Union. It also established the Cohesion Fund that promotes projects in the field of transport and environment in the least prosperous member states.

### ***2.1 Structural Funds and Cohesion Fund***

At present, there are four structural funds that enable the EU to grant financial assistance to less developed regions in the member countries:

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<sup>1</sup> <http://www.bmdf.co.uk/rometreaty.pdf>

1. **European Regional Development Fund (ERDF)** – created to promote economic and social cohesion within the EU through reduction of disparities between regions and social groups

2. **European Social Fund (ESF)** – created as main financial instrument promoting the strategic objectives of the EU employment policy

3. **Financial Instrument for Fisheries Guidance (FIFG)** – created to promote the structural reforms of the fisheries sector

4. **European Agricultural Guidance and Guarantee Fund (Guidance Section) (EAGGF)** – created to promote the structural reforms of the agricultural sector and to promote the development of the rural areas in member states

Concerning the objectives and initiatives under the EU regional policy, each fund is eligible to finance following:

**Table 2 Financing the Objectives and Initiatives**

	<i>Objective 1</i>	<i>Objective 2</i>	<i>Objective 3</i>	<i>Interreg III</i>	<i>Urban II</i>	<i>Leader +</i>	<i>Equal</i>
<b>ERDF</b>	X	X		X	X		
<b>ESF</b>	X	X	X				X
<b>FIFG</b>	X						
<b>EAGGF</b>	X					X	

Source:

[http://www.europa.eu.int/comm/regional\\_policy/funds/prord/sf\\_en.htm](http://www.europa.eu.int/comm/regional_policy/funds/prord/sf_en.htm)

**ERDF** is mainly used to co-finance productive investment leading to the creation or maintenance of jobs, infrastructure, and local development initiatives and business activities of small and medium enterprises. It covers almost all the development areas such as transport, energy, communication technologies, environment, research and innovation, rural development, conversion of industrial sites, tourism, culture, fishing industry, and so on.

**ESF** aims to prevent and combat unemployment and to developing human resources and their integration into labor market. It aims to most endangered social groups – long-term unemployed, young unemployed, persons excluded from the labor market, improving the access of women to labor market. ESF also focuses on improving education and training systems, promoting skilled workforce and boosting human potential in the field of research and development according to the Lisbon Strategy.

**FIFG** seeks to contribute to achieving a sustainable balance between fishery resources and their exploitation. Also it tries to strengthen the fishery sector competitiveness. Main areas of interest include fleet modernization, aquaculture development, marine areas protection, fishing port facilities, processing and marketing of fishery products.

**EAGGF** supports rural development and improvement of agricultural structures. It aims to investment in agricultural holdings, aid for setting up of young farmers, aid for early retirement, compensation for less-favored areas, agri-environmental measures, processing and marketing of agricultural products, development and utilization of forests, encouraging for tourism and craft activities, and so on.

**Cohesion Fund** is a special fund designed to help the least prosperous member countries in the EU. Currently, its funding goes to the 10 new member countries and to 3 old ones – Greece, Portugal, and Spain<sup>2</sup>. The main criterion is that the GNP per capita of particular country is no greater than 90 % of the average of the EU. Cohesion Fund helps member states to reduce economic and social disparities and to stabilize their economies. It was first introduced in 1994. The fund finances up to 85 % of all eligible expenditures of a certain project. Projects must cover two main areas: transport infrastructure and environment.

The EU provided more than 28.21 million € for the Fund. For 2004 - 2006, there is 15.9 million € available, out of which 8.49 million is reserved for new member states.

## ***2.2 Objectives and Initiatives***

All objectives and initiatives of the European Union are financed through the structural funds (see table 2). All of these are financed in both old and new member countries of the EU.

There are three main objectives regional policy works with as mentioned in the introduction.

**Objective 1** is the main priority of the EU cohesion policy. In accordance to the Treaty of Maastricht, the Union promotes harmonious development with special focus on eliminating the gap between various regions of the EU. Currently more than two thirds of structural funding is allocated to this kind of regions where the gross domestic product (GDP) is below the 75 % of the EU average. All regions eligible for funding through Objective 1 have similar economic indicators such as low level of investment, lack of services either for individuals and business, poor

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<sup>2</sup> Until 2003 also Ireland was eligible.

infrastructure, and unemployment rate higher than the average. Concerning current situation, about 50 regions with 22 % of the European population are covered within period 2005 – 2006. According to the NUTS classification, there are three eligible regions in Slovakia covering 4.7 millions inhabitants: Western Slovakia, Central Slovakia, and Eastern Slovakia. There are two Operational programs that cover the Objective 1 priorities: OP Basic Infrastructure and OP Industry and Services.

**Objective 2** is aimed to revitalize all areas facing structural difficulties – rural, urban, and industrial. Despite the fact, that these regions are close to the Union average, they are faced with various social and economic difficulties that are source of high unemployment. These include decline in traditional activities in rural areas, crisis situation in urban areas, awkward evolution of industrial or service sectors. There is only one region in Slovakia eligible to receive the funds – Bratislava with 3.3 % of the total population in Slovakia.

**Objective 3** is a combination of former Objectives 3 and 4 in the 1994 – 1999 programming period. This objective covers all the territory of the EU which is not covered by Objective 1. It serves as a framework for all measures aimed to promoting human resources in the member states. In the period 2000 – 2006 it focuses on promoting active labor market policies to reduce unemployment, on improving access to the labor market with emphasis on people threatened by social exclusion, on enhancing employment opportunities through lifelong education, and on promoting equality for men and women.

**Interreg III** is an initiative aiming to stimulate interregional cooperation in the EU in the period 2000 – 2006. Interreg III is financed under the ERDF. This is the third phase of this initiative and is focused mainly on strengthening economic and social cohesion in the EU through balanced development of the whole continent. This is carried out by three main strands of Interreg III initiative with total budget of 4.88 billion €:

1. **Interreg III A – cross border cooperation** – aims to the cooperation between adjacent regions through common development strategies

2. **Interreg III B – transnational cooperation** – involves national, regional, and local authorities aim to promote better integration within the EU through formation of large groups of European regions

3. **Interreg III C – interregional cooperation** – aiming to improve effectiveness of regional development policies through large-scale information exchange and sharing of experience

Slovakia is currently involved in Interreg III A - CBC with Austria, Czech Republic, Hungary, and Poland.

**Urban II** is also the initiative of the ERDF for sustainable development in troubled urban districts across the EU for period 2000 – 2006. There are two main objectives of the Urban II initiative: promotion of design and implementation of highly innovative strategies of economic and social regeneration in small and medium towns and declining areas in major conurbations, and reinforcement and sharing of knowledge and experience on regeneration and sustainable urban development in the EU. Urban II is concerned with projects that improve living conditions (creating green areas, renovating buildings), create jobs (in culture, services, and environment), integrate less-favored social classes into education and training systems (Roma minority in Slovakia, though there is no such project in Slovakia financed by Urban II), develop environment friendly public transport, create effective energy management systems and make use of renewable energy sources.

**Leader +** is designed to promote rural actors consider long-term potential of their local region. Leader + has a strong focus on partnership and networks of exchange of experience. The budget for 2000 – 2006 period totals 5.05 billion € of which 2.11 billion is funded by Guidance Section of EAGGF and reminder by public and private contributions. The structure of Leader + is as follows:

1. **Action 1** Support for integrated territorial development strategies of a pilot nature based on a bottom-up approach
2. **Action 2** Support for cooperation between rural territories
3. **Action 3** Networking
4. **Technical Assistance**

Currently, there are 73 programs implemented in EU-15 member countries for 2000 – 2006 period.

**Equal** is, together with all three objectives, financed by the ESF. It is a part of the Union strategy for more and better jobs and also for ensuring that no-one is denied access to these jobs. It began in 2001 as a new way of eliminating discrimination and inequality between those who work and those looking for jobs. The total EU contribution to Equal is 3.27 billion € and is matched by national funding. Responsibility for the implementation of this initiative lies with the national authorities. Currently, there are 101 programs running in Slovakia under Equal.

### 2.3 Financial Support

As it was said, more than one third of the total European budget is devoted to regional development and social and economic cohesion through European structural funds and Cohesion Fund.

For closing period 2000 – 2006, 213 billion € was reserved for all the funds to promote activities and projects in the EU-15. Due to enlargement in 2004, additional 22 billion € was dispatched for the period 2004 – 2006 for new member states. Yet another 22 billion € was spent during pre-accession period. Pre-accession aid continues to flow to two countries that did not become part of the EU during 2004 – Bulgaria and Romania. Total of 257 billion € comprises approximately 37 % of the EU budget for the period 2000 – 2006. Most of the money is being spent through multi-annual programs managed jointly by the European Commission, member states, and regional authorities.

Figure 2 shows the funding of all objectives, initiatives, and Cohesion Fund in financing period 2000 – 2006. There is total 21.7 million € spent on new member countries. The largest amount of money goes to the fulfillment of priorities of objective 1, second largest amount is spent through funding by Cohesion Fund. One can see that there is no funding of the Urban II initiative as well as Leader + initiative.

**Figure 2 Structural Funds Budget for Period 2000 – 2006**

Structural Funds budget		(billion EUR, commitments in 1999 prices)								
	Objective 1	Objective 2	Objective 3	Interreg	URBAN	EQUAL	Leader	Fisheries F.	Cohesion F.	Total
EU-15	137.800	22.040	24.050	4.875	0.700	2.850	2.020	1.106	18.000	<b>213.441</b>
EU+10	13.230	0.120	0.110	0.420	0.000	0.220	0.000	0.003	7.590	<b>21.693</b>
EU-25	151.030	22.160	24.160	5.295	0.700	3.070	2.020	1.109	25.590	<b>235.134</b>

Source: [http://www.europa.eu.int/comm/regional\\_policy/intro/working4\\_en.htm](http://www.europa.eu.int/comm/regional_policy/intro/working4_en.htm)

There is a slight change between the numbers in figure 2 and table 3. It is due to the inflation that is present every year in member states of the EU. Figures in figure 2 are presented in nominal 1999 prices, and figures in table 3 are in 2004 prices.

**Table 3 Aid to New Member States 2004 – 2006 (in million €)**

<i>Country</i>	<i>Objective 1</i>	<i>Objective 2</i>	<i>Objective 3</i>	<i>Interreg III</i>	<i>Equal</i>	<i>Cohesion Fund</i>	<i>Total</i>
<i>Cyprus</i>	0.00	28.02	21.95	4.30	1.81	53.94	113.44
<i>Czech Republic</i>	1454.27	71.30	58.79	68.68	32.10	936.05	2621.19
<i>Estonia</i>	371.36	0.00	0.00	10.60	4.07	309.03	695.06
<i>Hungary</i>	1995.72	0.00	0.00	68.68	30.29	1112.67	3207.36
<i>Latvia</i>	625.57	0.00	0.00	15.26	8.03	515.43	1164.29
<i>Lithuania</i>	895.17	0.00	0.00	22.49	11.87	608.17	1537.70
<i>Malta</i>	63.19	0.00	0.00	2.37	1.24	21.94	88.74
<i>Poland</i>	8275.81	0.00	0.00	221.36	133.93	4178.60	12809.70
<i>Slovakia</i>	<b>1041.04</b>	<b>37.17</b>	<b>44.94</b>	<b>41.47</b>	<b>22.27</b>	<b>570.50</b>	<b>1757.39</b>
<i>Slovenia</i>	237.51	0.00	0.00	23.65	6.44	188.71	456.31

Source: <http://www.euractiv.com/Article?tcmuri=tcm:29-12969616&type=Overview>

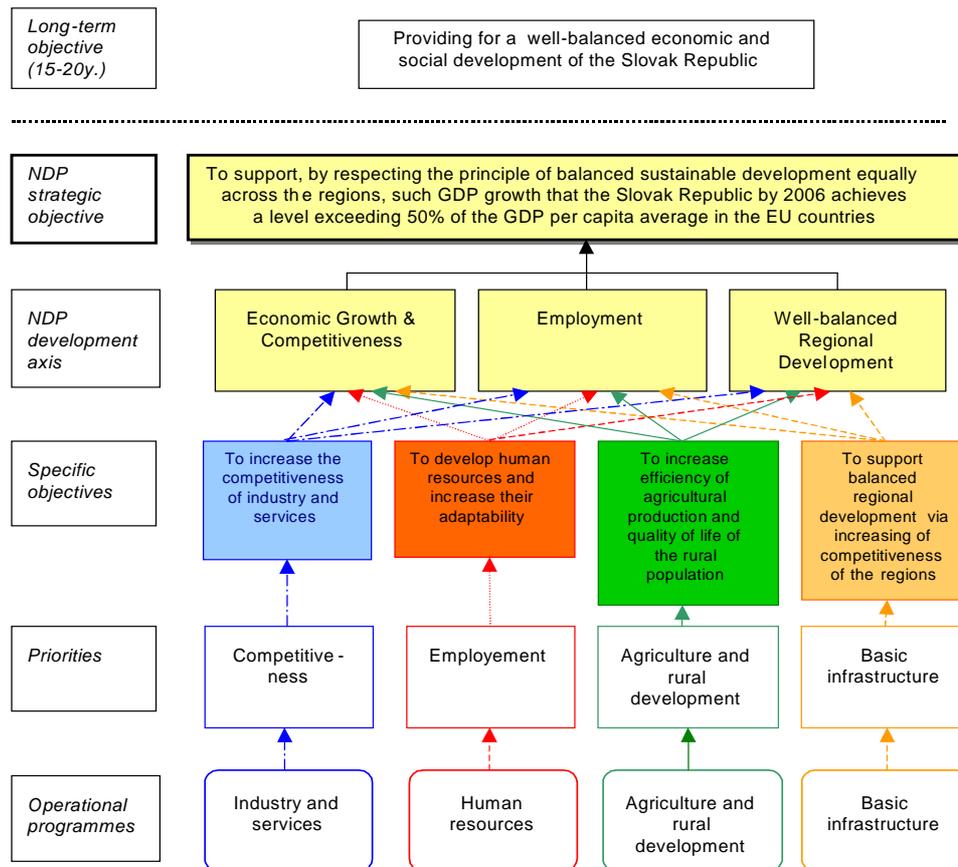
We can see that the greatest proportion of structural funding goes to Poland (12 809.7 million €). Slovakia is entitled to the total amount of 1757.39 million € in 2004 – 2006. The largest proportion of money goes to funding the priorities of objective 1 – 14 959.64 million €. Also there are only three countries eligible to receive funds for fulfillment of the objectives 2 and 3 – Czech Republic, Cyprus, and Slovakia.

### **3. Slovakia and Regional Policy**

Basic programming documents that determine the distribution of structural funds for Slovakia are National Development Plan and Operational Programs. After approval by European Commission, Slovakia in cooperation with European Commission elaborated Community Support framework or CSF. CSF is the basic document, or agreement, concerning the provisions from structural funds of the EU for Slovakia.

The National Development Plan analyses macroeconomic environment, economic, and social situation in Slovakia with emphasis on particular sectors of the Slovak economy. It also comprises the SWOT analysis of Slovakia, as well as main characteristics of individual operational programs. It includes also strategic objective, strategies and priorities necessary for implementation of the NDP. Strategic objective together with priorities of National Development Plan for 2004 – 2006 period are presented in figure 3.

**Figure 3 National Development Plan for 2004 - 2006**



Source: National Development Plan, Amendment

Basic programming documents for Slovakia are: National Development Plan/Community Support Framework, Operational Program Basic Infrastructure, Sectoral Operational Program Industry and Services, Sectoral Operational Program Human Resources and Sectoral Operational Program Agriculture and Rural Development. These documents include the support in Objective 1.

Concerning Objectives 2 and 3 there are separate programming documents of each one of the objectives: for Objective 2 Single Programming Document NUTS II – Bratislava, for Objective 3 Single Programming Document NUTS II – Bratislava. Since priorities of these two objectives are different, there are different managing authorities for these documents in Slovakia. For SPD 2 the managing authority is Ministry of Construction and Regional Development and for SPD 3 is the managing authority Ministry of Labor, Social Affairs, and Family.

There are also strategic documents for the initiatives. For Interreg III there are three Single Programming Documents – Interreg III A, Interreg III B, and Interreg III C. For the Equal initiative there is Single Programming Document SPD Equal.

We can not omit also the Cohesion Fund. There is programming document called Strategy for Cohesion Fund.

According to NUTS<sup>3</sup> classification, Slovakia is divided into statistical units as in table 4:

**Table 4 Territorial Units in Slovakia According to NUTS Classification**

<i>Unit</i>	<i>Number</i>	<i>Territorial Unit</i>
<i>NUTS I</i>	<i>1</i>	<i>Slovakia</i>
<i>NUTS II</i>	<i>4</i>	<i>Bratislava Region West Slovakia Central Slovakia East Slovakia</i>
<i>NUTS III</i>	<i>8</i>	<i>Regions of Slovakia</i>
<i>NUTS IV</i>	<i>79</i>	<i>Districts of Slovakia</i>
<i>NUTS V</i>	<i>2 883</i>	<i>Municipalities of Slovakia</i>

*Source: National Development Plan*

Concerning the Bratislava region, this region is not approved to draw on the aid within Objective 1. Instead, it is eligible for funding of the Objectives 2 and 3 through SPD 2 and SPD 3. The territorial division of units eligible for funding within Objective 1 is presented in figure 4.

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<sup>3</sup> NUTS – Nomenclature des Unités Territoriales Statistiques - a classification system of statistical territorial units introduced by the Statistical Office of the European Union (EUROSTAT), in co-operation with national statistical offices.

**Figure 4 Regions Eligible for Objective 1 Funding**



Source: National Development Plan, Amendment

Table 5 presents NUTS II regions in Slovakia that are eligible to funding through particular objectives:

**Table 5 Territorial Units in Slovakia According to NUTS Classification**

<i>Objective</i>	<i>NUTS II Region</i>
<i>1</i>	<i>West Slovakia, Central Slovakia, East Slovakia</i>
<i>2</i>	<i>Bratislava Region</i>
<i>3</i>	<i>Bratislava region</i>

Source: National Development Plan

### **3.1 Distribution of Structural Funding**

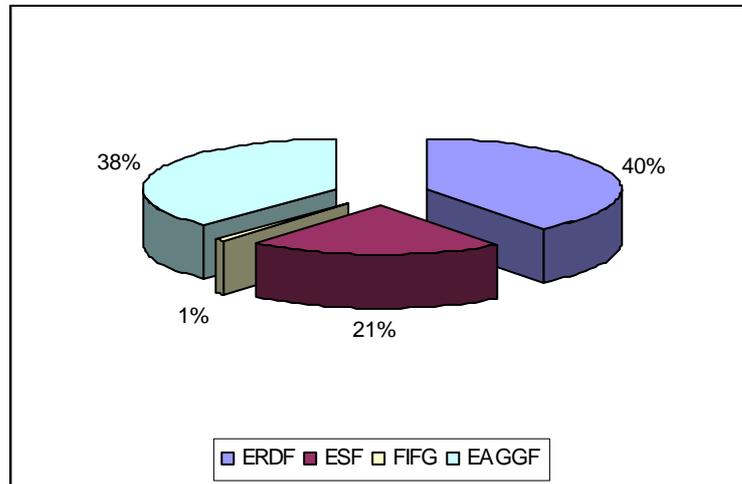
Structural aid in Slovakia in 2004 – 2006 programming period with emphasis on particular objectives, initiatives, and Cohesion Fund is presented in table 3. Total amount of money from structural funding in Slovakia is 1 757.39 million €. Activities undergoing through Cohesion Fund are supported by 570.5 million €. Second largest amount is spent on the Objective 1 – 1 041.04 million €.

Distribution of expenditures by priorities that are set up in National Development Plan is as follows: 40.5 % goes to basic infrastructure, 14.5 %

goes to competitiveness of firms, 27.2 % goes to human resources, and 17.7 % goes to fisheries<sup>4</sup>.

According to the National Development Plan, the distribution of money from particular structural funds is shown in figure 5.

**Figure 5 Proportion of Structural Funds Allocation in Slovakia**



*Source: Authors' Calculation, Data from National Development Plan*

#### **4. Conclusion**

Prior to the accession of Slovakia together with other 9 European countries to the EU, Slovakia benefited in the pre-accession period through pre-accession aid from the EU – PHARE, ISPA, and SAPARD. Since 1<sup>st</sup> of May 2004, the situation has changed. Slovakia is a full member of the EU with all the responsibilities and rights. One of the most important rights is to take advantage of structural funding through which the EU helps poorer regions to catch on with the wealthier ones. This is done through regional policy and its instruments – structural funds. According to the NUTS classification, all of the Slovakia NUTS II regions are eligible for structural funding under the Objective 1 of regional policy except the Bratislava region. However this region is eligible for funding of the Objectives 2 and 3. The total amount of money Slovakia can draw on in the 2004 – 2006 period is

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<sup>4</sup> [http://europa.eu.int/comm/regional\\_policy/atlas/slovak\\_republic/factsheets/pdf/fact\\_sk\\_en.pdf](http://europa.eu.int/comm/regional_policy/atlas/slovak_republic/factsheets/pdf/fact_sk_en.pdf)

1 757.39 million €. This money should help in the current financing period Slovak regions that are lagging behind to catch up with the rest of the regions of the EU. Or, if not catch up with other regions, at least improve the living standards in our regions and to make them closer to wealthier regions of the EU as it was before. In this, the greatest role plays the regional policy based on the principle of equality among the regions of the EU.

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# REFORM OF THE LOCAL TAXES IN THE CONDITIONS OF THE SELF-GOVERNMENT IN THE SLOVAK REPUBLIC <sup>1</sup>

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## **Abstract**

*Implementing of the fiscal decentralization in the field of the self-government in the Slovak republic was an important step for the financing the municipalities, for their possibilities of better provision of the local public properties, and also for finishing of the process of the reform of the public finances in accordance to the European Charter of the Local Self-Government. The new method of financing the municipalities and upper-tier territorial units reacts to the changes that were done after passing some competencies from the bodies of the state administration to the territorial self-governments. The fiscal decentralization could be done only in having adequate legal conditions – mainly the new law about the local taxes. After the first year of effect of this law the reality shows that the local taxes has increased severalfold what was not accepted by the tax payers and this calls for the further adjustments of the municipalities financing rules.*

**Keywords:** *Local taxes, local fees, fiscal decentralization*

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## **1. Introduction**

The reform of public administration belongs to the key system changes that are being realized within the transformation process in the Slovak republic. Its aim is the permanent formation of the modern democratic decentralized state that provides the possibilities for the participation in the public affairs operating to its citizens. The process and the current state of the public administration reform, including its parts – tax reform and the reform of the local taxes have been influenced by different social factors that have markedly influenced the general social development in the country.

Every government that was given a chance by the citizens to realize the necessary changes considered the reform of public administration. None of those governments paid such attention to the reform that it desires. [3] Frequently the political elites, professional groups as well as the representatives of the public administration failed at all its levels. Many of the political nominants leading the individual state offices hobbled the reform process, resp., they acted against the radical reform in the name of political parties they were nominated by. Various domestic and foreign professionals stated that the development in the reform of the public administration until 2002 was not more than a waste of the opportunity. Even despite the fact that many of the partial steps were clear, evident and unforgettable – the reform of the territorial-administration structure, resumption of the territorial self-government at the level of the municipalities and creation of the middle level of the self-government (regional self-government), assignment of the competencies within the frame of the public administration decentralization and the introduction of the tax reform.

## **2. Principles of the fiscal decentralisation and the tax reform**

The year 2002 can be considered as the break-point from the point of reforms in the Slovak republic. In the field of public administration we could see the consecutive shift of the competencies from the bodies of the state government to the municipalities and the upper-tier territorial units. This process was realized according to the law no. 416/2001 of the Code [6] The task of the fiscal decentralization was:

- to strengthen the authority and responsibility of the territorial self-government in decision-making about using the public sources under the self-government bodies – mainly at the local level. It deals mainly with the decision-making about the use of the means gained from the newly introduced local taxes of the municipalities including the

- vehicles taxes at the level of the upper-tier territorial units, but also the shared taxes that are circumvented by the media;
- to contribute to the stabilization of the territorial self-government for longer period of time. Up to that time the financing of the self-government competencies had been every year determined by the law about the state budget for the particular year. Since 2005 the several-years budget is going to be passed and approved. [8] The several-years budget is understood as the medium-term economy tool of the financial policy (of the municipality or upper-tier territorial unit) that in the frame of their activity includes the aims of the territorial development and the local needs of the population for the three budget years;
  - to contribute to more transparent and more rightful disposition of the sources by excluding the subjectivisation in providing the subsidies from the state budget. The financial sources are distributed according to the clear criteria that should be valid and applied to all subjects.

The above mentioned fiscal decentralization deals with the financing of the self- government, original competencies of the municipalities and upper-tier territorial units. Considering the competencies that the municipalities and the upper-tier territorial units perform in the mode of the transferred performance of the state administration, these are still financed by the subsidy from the state budget in the form of the particular chapter of the state budget..

The government of the Slovak republic in its program declaration of 4 November 2002, in the chapter „Economic policy” stated the following aims for the field of taxes:

- to strengthen their own tax incomes of the municipalities,
- to set their own tax incomes of the upper-tier territorial units,
- to make the tax laws more transparent,
- to decrease direct taxes,
- to analyze the possibilities of introducing the direct tax,
- the new system of the horizontal financial compensation,
- to ensure strict, direct, rightful and effective tax collection and to decrease the rate,
- to minimize tax evasion,
- to simplify tax legislation,
- to amend those parts of the tax laws that are the subject of not unified, ambiguous explanation,
- to simplify the vindicatory system in the tax field,
- to consider the possibilities of the unification of the income tax rate,
- the shift of the tax burden from direct toward indirect taxes,

- to reconsider the exercise of the rates of the property taxes,
- to consider the system of the stimulation tax tools for the housing.

The first two aims are directly concerned with the fiscal decentralization and the territorial self-government at the regional level (upper-tier territorial units) and at the local level (municipalities). The rest of the aims are not directly connected with the fiscal decentralization and they deal with the aims of the tax reform. The aims of the above mentioned decentralization had never been elaborated and presented at such level, although the self-governments in the mode of their income base is not less important as it is a part of the same tax reform.

Amongst the most important principles of the tax policy in solving the tax reform belonged the principle of the justice and proportionality; the principle of the neutrality; the principle of exclusion the duplicity of the tax; the principle of simplicity and unambiguity and the principle of effect. Besides the above mentioned general principles of tax policy it is necessary to consider also the following thesis in the formation of the tax system:

- The direct tax of the income should help to fulfill the fiscal aims, and principally it should not be used to fulfill other aims, as e.g. the social policy, structural or regional policy and the economic policy. Introducing the specific tax modes (whatever the reason is) leads towards the increase of the complexity of the tax system, increase of the societal costs to apply it and the increase of the risk of the tax circumvention.
- The tax principles must be realized without regard to the interests, intentions and the aims of the different partial interest groups.
- The unnecessary needs of the state budget will be displayed in the amount of the rates but must not influence the realization of the tax principles.
- The changes in the frame of the tax reform are good to be realized simultaneously if possible and as soon as possible so the tax-payers can experience its advantage sooner and so the new tax system can really function during this electoral period. The first possible term of effect of the new tax laws is 1. 1. 2004. [5]

### **3. Tax reform versus fiscal decentralization**

Enforcement of the fiscal decentralization in the field of the self-government in the Slovak republic was an important step for ensuring the municipality financing, for their possibilities to better provision of the local public goods, but also to round off the process of the reform of the finances

with the European Charter of the Local Self-Government and European Charter of the Regional Self-Government. The new way of financing the municipalities and upper-tier territorial units reacts to the changes that had been realized after transferring some of the competencies from the bodies of the state administration to the local self-governments. The fiscal decentralization could be realized only in the case of ensuring the adequate legal conditions – mainly the new law about the local taxes. The operation of the municipalities in the first year of the validity of this law was as it was expected, i.e. the local taxes and fees were increased several folded what was not accepted with willingness of the tax payers. This evoked the follow-up need to further amendments of the rules of the municipality financing.

Last but one marked reform of the tax system was realized ten years ago under the influence of the serious changes in the economic sphere – shift from the centrally planned economy of the socialistic type towards the market-oriented economy. [2] The tax laws that are valid since 1993 were amended many times, especially with the intention to correct its imperfections. Some changes of the tax laws were also conditioned by the political and other influences based on whose a lot of non-systematic measures penetrated to the tax laws and they gave some groups of the tax payers preferential treatment. The result of this process was a marked complication of the tax law. A lot of exceptions and conditions caused the ambiguity of the laws and consequently it evoked the need to issue further measures or explanations. The next negative phenomenon was that the tax laws were many time suspicious to the tax payers and they lump-sum-“punished” them in advance and most of the tax payers understood it as injustice. Unjust character of some measures in the tax laws at the same time lead to the general tolerance to circumvention and infringement of such “unjust” laws, what is the unwanted tendency of the whole society without dispute. The realization of the process of transferring the competencies from the state administration to self-administration evoked the increased pressure to the deeper and more permanent change of the tax laws. The aim of the recent tax reform was not only the higher level of justice – as it is most often proclaimed aim, but also to ensure the qualified financing of the public goods, that were increased in the process of decentralization. The practical financing lagged behind what was evoking the unwillingness of different subjects of the local and territorial self-government, as well as Združenie miest a obcí Slovenska (Association of the towns and communities) – ZMOS.

In the municipalities’ budgets in their income base there should be one rule valid. The transferred operations of the state administration should have been financed by the state transfer, the originally self-government competencies should have been financed from the local taxes. As the

financing of the public goods in the scope of the transferred competencies was not sufficiently financed, the municipalities were relying on the using of the other source (their own income base), with the use of their own tax incomes. We can unambiguously say that the situation got more complicated especially because of the time disagreement of the transfer of the competencies and the transfer of the finances to the self-government bodies what caused the problems among the main departments of the public administration.

Since passing the basic law that was adjusted the territorial self-government must pass another almost fifteen years till the bodies of the public power started to seriously deal with the issue of the financial decentralization in the field of public administration in practice.[1] In 2004 the new laws about the local taxes and fees were valid already and they should ensure the higher financial autonomy to the municipalities (that they required based on the underfinancing, but also according to European Charter of the Local Self-Government) with the approval of the government. This caused that at the beginning of 2005 people and firms paid for the land, houses, flats, offices or the production halls to some cities several times more than in the period before (the highest increase of the taxes compared to the year before was in one municipality as high as 2 353 %, see table 1). Also, the municipalities set 30-times higher tax to the entrepreneurs than to the citizens. The mostly introduced reasons are that the flat owners and the owners of the family houses create the biggest group of the voters. It is said that this was the reason why the self-governments were more considerate of citizens and the entrepreneurs. In any case, any limitation change we consider to be an intervention that impedes and presents the non-acceptable restriction for the self-governments (right at the beginning of running the new tax system).

The newly appraised adjustment should minimize mainly the extreme increase of the rate mainly in those municipalities whose localization in the social-economic space does not make any rational assumption for such behavior. There was no analysis realized which of the entrepreneurial field was effected by the behavior of the municipalities and/or if they were even effected. The higher real estate tax can decimate only those entrepreneurs that do not use their land and buildings, and they just wait for the appropriate time to sell them or those entrepreneurs whoa are the agricultural subjects in the urban space.

It is interesting to see how the removal of the limitations inspired some of the local assemblies in the rates increases that were firmly fixed until then. Some representatives of the entrepreneurial sector claim that they got into the real economic troubles because of such set down taxes. Such claims

that are also supported by the Ministry of finances should be also supported by the deeper analysis of the reasons but also by the numbers of such subjects to make it objective. However such analysis was not realized till now.

**Table 1 The total yield from the real estate tax in the selected medialised municipalities (in thousands Sk)**

	<i>2004</i>	<i>2005</i>	<i>Increase (%)</i>
<i>Pečeňady</i>	2 085	49 070	2 353
<i>Nededza</i>	137	2 525	1 843
<i>Kalná nad Hronom</i>	6 120	95 600	1 562
<i>Nový Tekov</i>	2 030	27 060	1 333
<i>Veľké Kostolany</i>	2 390	29 250	1 224
<i>Jaslovské Bohunice</i>	9 000	73 140	813
<i>Košice</i>	244 315	450 000	184
<i>Bratislava</i>	556 100	1 122 996	202

Source: MF SR

Probably the most problematic discrepancy is between self-government and the nuclear power station in the municipality Jaslovské Bohunice. The municipality created two tax zones, one for the municipality and the other for the nuclear power plant (table 2), that we introduce in comparison with the capital city Bratislava. We can state that the so-called „zoneness“ in Jaslovské Bohunice seems to be excessive, overblown as the new tax system solves also this one unique problem that directly deals with just two municipalities nuclear facility tax, what lead to possible double taxation (what the reform should be impeding). The amendment of the law does not allow to state different zones for different parts of the cadastral territory even though it is possible to understand the effort of the municipalities to build the sufficient income base for their own development. The anticipated increased yield of the real estate tax should have been the domain of especially the big cities, where the recent tax according to the market values of the real estates is lower than in the small cities or in the country.

**Table 2 Comparison of the rates of the real estate tax (Sk per m<sup>2</sup>)**

	<i>Bratislava</i>		<i>Jaslovské Bohunice</i>	
	<i>centre</i>	<i>other</i>	<i>municipality</i>	<i>Nuclear power plant</i>
<i>Flats and family houses</i>	9	10	1	-
<i>Recreational building and cottages</i>	27	30	4	-
<i>Industrial constructions</i>	81	90	30	500
<i>Constructions for other entrepreneurial activity</i>	112	161	50	500

*Source: Generally binding municipal regulations*

The taxes and fees were set down by the municipalities by themselves for the first time. The realized principles of the fiscal decentralization had the following signs:

- The facultative setting of the tax and the collection of the local taxes by the self-government were introduced,
- the authority and independence of the municipalities was strengthened,
- the rates of the local taxes did not have the set down maximum limit and thus it were the municipalities who made the decisions about the top sum,
- the municipalities can collect not only the taxes but also other payments of the similar character as the local taxes,
- the importance of the generally binding municipal regulations is being stressed and it should be determining in the application of the local taxes in practice. [1]

Currently, the municipalities may impose the following 8 local taxes: real estate tax, dog tax, tax on the use of public space, accommodation tax, vending machine tax, non-gainful (entertaining) slot-machine tax, tax on the entry into and parking of a motor vehicle in a historical part of the city, nuclear facility tax. The regional administration can impose the tax on a motor vehicle. The great media bubble about the local taxes has been already solved by the Financial resort that prepared the draft of the law amendment, although according to the municipalities representatives it was not as dramatic so that the upper limit of the local taxes rate had to be set down. It is necessary to solve just some extremes that are financially insignificant although as to the percents we deal with high numbers. One of the principles of the tax reform says that “tax principles must be realized without regards to the interests, intentions and goals of the different partial interest groups”. It depends only on the point of view what we will understand under the term partial interest group: municipalities or entrepreneurs.

Despite of the unjustified tax rate increase totally, the municipalities did not not increase the real estate taxes unbearably. Local taxes form the share of the expenses of the business subjects (according to the survey of The Business Alliance of Slovakia) only by one per cent. Nowadays, the new law amendment can come in force, and according to it the maximum limit of the real estate tax rate can reach not more than 20-multiple of the lowest year rate.

#### **4. Conclusion**

Even the short effect of the conclusions of the fiscal decentralization and the consequent reform of the local taxes points to the fact that the financing of the municipalities was underdimensioned and thus it leads to an increase of income base of the local taxes, however the financing of the shifted competences from the state administration is being financed insufficiently.

The protest wave of the economic subjects and the citizens against the increase of the own income base of the municipalities does not correspond to the wave of the requirements for higher and higher provision of the local goods and better meeting of the local needs that must be ensured by the municipalities.

From the macroeconomic point of view the realized tax reform is bringing positive effects for the business environment and the self-government space. The selective tax policy that was applied up to that time was based on the advantaging of the certain branches or the types of the business subjects was substituted by the plane tax policy that will create the generally appropriate conditions for entrepreneurship and investments (e.g. by the depreciation policy, longer period of amortization of the tax losses, etc.). The current state of the fiscal decentralization is substantially more transparent, activisating and more modern. It creates the sufficient basis for the own income basis of the municipalities' budgets, thus it is not very appropriate to interfere into the non-stabilized system of the local budgets immediately after the first year of their operation. The found disproportions that evoke the undesirable tax competition could have been solved by the impact of the mechanisms of the public or private markets.

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# *Miscellaneous*

# MEASURE OF CORPORATE GOVERNANCE IN BANKING: A PERSPECTIVE OF FINANCIAL RATIO ANALYSIS

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## **Abstract**

*The international financial aspect is to establish a reregulation process to prevent potential crises and risks from the financial markets. So the potential target for the settlements is the banking organizations which are very likely to create crises and shocks. Banking International Settlements leading this way is trying to improve corporate governance practices in banking systems around the world and increase the efficiency and transparency of the financial system. Therefore, banks are working to meet the new guidelines with corporate governance initiatives that are so special and important for them. The purpose of this paper is to analyze Turkish Banks' performance which is reflected on their financial statements to provide evidence on the level of corporate governance in the banking sector. There are some financial ratios which are attained to interpret the level of corporate governance in banking (Gürbüz, Erginçan; 2004). The study consists of comparing the results of Turkish banks' ratios before corporate governance principles were implemented with the results of ratios after the implementation. It is carried by a comparative analysis of the total system's financial ratios with the foreign banks' ratios in Turkey. The financial analysis with the comparative analysis highlights the need and the importance to improve the corporate governance in the banking system in Turkey.*

**Keywords:** corporate governance, banking, financial ratio analysis; performance

## 1. Introduction

In the wake of the recent corporate scandals, corporate governance practices have received heightened attention. Shareholders, creditors, regulators, and academics are examining the decision-making process in corporations and other organizations and are proposing changes in governance structures to enhance accountability and efficiency.<sup>1</sup> Corporate governance may be identified as a performance evaluation system which requires restructuring of firms and organizations with risk culture and management, transparency, responsibility and inferiority. It suggests that the firms should be high performers and competitive and provide their stakeholders with highest possible income.

Corporate governance looks at the institutional and policy framework for corporations from their very beginnings, in entrepreneurship, through their governance structures, company law, privatisation, to market exit and insolvency.<sup>2</sup>

There has been a great deal of attention given recently to the issue of corporate governance in various national and international fora. In particular, the OECD has issued a set of corporate governance standards and guidelines to help governments "in their efforts to evaluate and improve the legal, institutional and regulatory framework for corporate governance in their countries, and to provide guidance and suggestions for stock exchanges, investors, corporations, and other parties that have a role in the process of developing good corporate governance."<sup>3</sup>

Recent research suggests corporations that have better corporate governance signal better performance. It has been stated that major contributions of corporate governance to the company include enhancing performance (Boubakri, Cosset and Guedhami, 2003) and preventing fraud (Lee, Yeh, Ko, 2002). According to the research of Black, Jang and Kan (2002), companies with better corporate governance have better performance than companies with poor corporate governance. Although the subject of corporate governance in developing economies has recently received a lot of attention in the literature (Oman, 2001; Goswami, 2001; Lin, 2001; Malherbe and Segal, 2001), the corporate governance of banks in developing economies has been almost ignored by researchers (Capiro and Levine,

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<sup>1</sup> Renée Adams; Hamid Mehran, "Is Corporate Governance Different For Bank Holding Companies", Federal Reserve Bank of New York Economic Policy Review, April 2003, p. 123.

<sup>2</sup> OECD, Corporate Governance, [http://www.oecd.org/topic/0,2686,en\\_2649\\_37439\\_1\\_1\\_1\\_1\\_37439,00.html](http://www.oecd.org/topic/0,2686,en_2649_37439_1_1_1_1_37439,00.html) , 2005

<sup>3</sup> OECD, Principles of Corporate Governance, 2004, [www.oecd.org/tr](http://www.oecd.org/tr)

2002). Even in developed economies, the corporate governance of banks has only recently been discussed in the literature (Foerster and Huen, 2004; Macey and O'Hara, 2001). However, recent events, such as the Enron scandal and other corporate governance failures, have put corporate governance on the front.

Because of its unique nature, banking firm, whether in the developed or developing world, requires that a broad view of corporate governance, which encapsulates both shareholders and depositors, be adopted for banks.<sup>4</sup> Banking system is a critical component of any economy. Banks provide financing for commercial enterprises, basic financial services to a broad segment of the population and access to payments systems. In addition, some banks are expected to make credit and liquidity available in difficult market conditions. The importance of banks to national economies is underscored by the fact that banking is virtually a regulated industry and that banks have access to government safety nets. It is of crucial importance therefore that banks have to have strong corporate governance.<sup>5</sup> Sound corporate governance is an essential element of a strong risk-management process. Bankers and bank directors have specific responsibilities to manage the risks at their financial institutions and effectively oversee the systems of internal controls.<sup>6</sup>

Jensen and Meckling (1976) argue that board structure, ownership structure, and compensation structure are determined by one another as well as by a range of variables, such as risk, real and financial assets, cash flow, firm size, and regulation. They suggest that these variables also influence a firm's conduct and performance.<sup>7</sup>

In the case of local banks in Italy, Ferri, Masciandaro and Massori highlight three different forms of corporate governance testing the performance of them.<sup>8</sup> Another study of corporate governance and

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<sup>4</sup> G. Capiro, R Levine, "Corporate Governance of Banks: Concepts and International Observations", Global Corporate Governance Forum Research Network Meeting, April 5, 2002, p. 2

<sup>5</sup> Basel Committee on Banking Supervision (BCBS), "Enhancing Corporate Governance for Banking Organisations", Bank for International Settlements, Switzerland, 1999, p. 6, [www.bis.org/publ/bcbs56.pdf](http://www.bis.org/publ/bcbs56.pdf)

<sup>6</sup> Susan S. Bias, "Bank Performance and Corporate Governance", BIS Review, No: 55, September 28, 2002 <http://www.bis.org/review/r021009e.pdf>

<sup>7</sup> M Jensen; W. Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure" Journal of Financial Economics, No. 3, 1976, pp. 305-360.

<sup>8</sup> Giovanni Ferri; Donato Masciandaro; Marcello Massori, "Corporate Governance, Board Turnover, and Performance: The Case of Local Banks In Italy", Università Bocconi, No.146, November 2001,

performance was put to test using data of banks from Argentina in the 1990s including all types of bank ownership.<sup>9</sup>

This paper discusses the importance of corporate governance of banking institutions. This is an important issue given the essential role banks play in the financial systems of developing economies merely and the widespread banking reforms that these economies have implemented. Following the global crisis, banks all over the world had to go into critical change. Turkey, after two consecutive crises, still tries to reshape its financial system. Therefore, corporate governance principles were issued in the country. The analysis in this paper points that the Turkish Banking System showed progress through the implementation of corporate governance principles but still there is a need for further deliberate applications.

Accordingly, the paper is organized as follows: Section 2 gives information about corporate governance in banking. Section 3 and 4 are related with the Turkish banking sector and the corporate governance settlements. Section 5 provides the data and the methodology in detail. Section 6 discusses the results of the analysis, and Section 7 is devoted to the conclusions of the research.

## 2. Corporate Governance In Banking

Banking supervision cannot function as well if sound corporate governance is not in place and, consequently, banking supervisors have a strong interest in ensuring that there is effective corporate governance at every banking organization. Supervisory experience underscores the necessity of having the appropriate levels of accountability and checks and balances within each bank. Put plainly, sound corporate governance makes the work of supervisors infinitely easier. Sound corporate governance can contribute to a collaborative working relationship between bank management and bank supervisors.<sup>10</sup>

Recent sound practice papers issued by the Basel Committee underscore the need for banks to set strategies for their operations and establish accountability for executing these strategies. In addition, transparency of information related to existing conditions, decisions and

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[http://www.uni-bocconi.it/doc\\_mime\\_view.php?doc\\_id=11368&doc\\_seg\\_id=1](http://www.uni-bocconi.it/doc_mime_view.php?doc_id=11368&doc_seg_id=1)

<sup>9</sup> Allen Berger; George Clarke; Robert Cull; Leora Klapper; Gregory Udell, "Corporate Governance and Bank Performance: A Joint Analysis of the Static, Selection and Dynamic Effects of Domestic, Foreign and State Ownership", **World Bank Policy Research Working Paper**, No: 3632, 2005, p. 1.

<sup>10</sup> BCBS, p. 4.

actions is integrally related to accountability in that it gives market participants sufficient information with which to judge the management of a bank. This guidance refers to a management structure composed of a board of directors and senior management. The Committee recognizes that there are significant differences in the legislative and regulatory frameworks across countries as regards the functions of the board of directors and senior management. In some cases, it is known as a supervisory board. This means that the board has no executive functions. In other countries, by contrast, the board has a broader competence in that it lays down the general framework for the management of the bank.<sup>11</sup>

Basel Committee declared two accords (Basel I and II) to maintain requirement for the banking system all over the world. Basel II is a complex new standard that intends to promote safety and soundness in the financial system, align regulatory capital requirements more closely with underlying risks, provide incentives for institutions to pursue more sophisticated and effective risk management, and demonstrate robust governance, processes, and controls to shareholders and institutions. The final version of the accord was published in 4Q03, with parallel testing with the new and old accords (Basel I) from YE05 through 2006, and the new accord being in place by 2007 (though this date could slip further). Users must not only address Basel II independently, but also coordinate efforts to achieve its compliance with related parallel compliance efforts to both leverage efforts and support the development of more efficient enterprise wide governance programs.<sup>12</sup>

The corporate governance of banks especially in developing economies is important for several reasons. First, banks have an overwhelmingly dominant position in developing-economy financial systems, and are extremely important engines of economic growth (King and Levine 1993; Levine 1997). Second, as financial markets are usually underdeveloped, banks in developing economies are typically the most important source of finance for the majority of firms, Third, as well as providing a generally accepted means of payment, banks in developing countries are usually the main depository for the economy's savings. Fourth, many developing economies have recently liberalized their banking systems through privatization/disinvestments and reducing the role of economic

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<sup>11</sup> *ibid*

<sup>12</sup> John Van Decker; Stan Lepeak, "Incorporating Basel II Requirements Into an IT Corporate Governance Framework: Part 2 The Services Dimension", April 28, 2004, pp. 1-2.

regulation. Consequently, managers of banks in these economies have obtained greater freedom in how they run their banks.<sup>13</sup>

The focus on corporate governance is particularly acute in financial services and, most of all, in the banking sector. The banking sector is already highly sensitized to public scrutiny and has learned to its cost the risk of attracting adverse publicity through failings in governance and stakeholder relationships. Banking is clearly a very special sub-set of corporate governance with much of its management obligations enshrined in law or regulatory codes.<sup>14</sup>

These factors put governance in banks as a considerably more complex issue than in other sectors. Banks will attempt to comply with the same codes of board governance as other companies but, in addition, factors like risk management, capital adequacy and funding, internal control and compliance all have an impact on their matrix of governance.

The board of directors is ultimately responsible for the operations and financial soundness of the bank. The board of directors must receive on timely basis sufficient information to judge the performance of management. An effective number of board members should be capable of exercising judgment, independent of the views of management, large shareholders or governments. Qualified external directors can also become significant sources of management expertise in times of corporate stress. The board of directors should periodically assess its own performance, determine where weaknesses exist and, where possible, take appropriate corrective actions.<sup>15</sup>

Corporate governance for a developing economy has an added dimension. After all, since the late 1980s/early 1990s, the financial sector of a number of developing countries has seen a wave of liberalization and deregulation. Greater deregulation in markets and in banks operations requires better governance as more responsibility rests with the Board and the management.<sup>16</sup> Good corporate governance can help to ensure that the organization is fully prepared to manage potential threats, and to maximize the opportunities to be gained from business risk.<sup>17</sup>

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<sup>13</sup> T.G. Arun; J. D. Turner, "Corporate Governance of Banks in Developing Economies: Concepts and Issues", *Corporate Governance: An International Review*, Vol. 12, No. 3, July 2004, p. 3

<sup>14</sup> Sang-Woo Nam, "Relationship Banking and Its Role in Corporate Governance", ADB Institute Research Paper Series, No. 56, April 2004, p. 3.

<sup>15</sup> BCBS, p. 6.

<sup>16</sup> Shyamala Gopinath, "Corporate Governance: Towards Best Practices", Bankers' Conference, New Delhi, November 10 2004, p. 1, [www.abdi.org](http://www.abdi.org)

<sup>17</sup> Comment, "Emerging 21<sup>st</sup> Century Risks Emphasize Need for Good Corporate Governance", *Corporate Governance*, March 2000, pp. 6-8.

### 3. Turkish Banking Sector

The Turkish economy has been in a continuing progress after the economic program that was launched in 2001. In parallel with the aim of reinforcing the market mechanism, important steps for strengthening the regulatory and supervisory institutions have been taken. The stable growth environment had positive effect on the banking system. To ensure financial stability serious structural reforms have been introduced in the banking system. Thus, the structure of the banking system has become healthier. An independent agency was formed for increasing the effectiveness of banking supervision and control (the Banking Regulation and Supervision Agency-BRSA). The Banking Act and other banking regulations have been considerably harmonized with international best practices.

In the field of banking supervision serious steps have been taken toward the transition from rule-based approach to risk-based approach. Due to this, market discipline has started to have a greater importance in ensuring financial stability. With the aim of providing the public and market participants with the information necessary to make meaningful assessments of banks, the implementations on accounting standards, reporting and public disclosure have been strengthened.<sup>18</sup>

**Table 1: Turkish Banking System (2000-2004)**

<b>Number of Banks</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Total</b>	<b>79</b>	<b>61</b>	<b>54</b>	<b>50</b>	<b>48</b>
<b>Commercial Banks</b>	<b>61</b>	<b>46</b>	<b>40</b>	<b>36</b>	<b>35</b>
- <i>State-owned</i>	4	3	3	3	3
- <i>Privately owned</i>	28	22	20	18	18
- <i>Banks in the Fund</i>	11	6	2	2	1
- <i>Foreign Banks</i>	18	15	15	13	13
<b>Non-depository Banks</b>	<b>18</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>14</b>
- <i>State-owned</i>	3	3	3	3	3
- <i>Privately owned</i>	12	9	8	8	8
- <i>Foreign Banks</i>	3	3	3	3	2

Source: The Banks Association of Turkey (TBAT)

<sup>18</sup> The Banks Association of Turkey (TBAT) (2005), Financial Sector and Banking System in Turkey- March 2005, p. 9, [www.tbb.org.tr/english/TBBBrosur10032005englishi.pdf](http://www.tbb.org.tr/english/TBBBrosur10032005englishi.pdf)

In order to strengthen the capital structure of private banking system a special auditing process as a part of "banking restructuring program" was implemented. Assets of the banks were analyzed in detail, non-performing assets were determined, and necessary provisions were set aside for bad loans. Within the context of the restructuring program the balance sheet structure of state-owned banks was strengthened, and special importance has been attached to the increasing of the efficiency in these banks.

Shareholders' equity of the banking system has strengthened and free shareholders' equity has increased. Exchange rate risk has been considerably reduced. An improvement has been observed in the rates of return on assets and return on shareholders' equity. The practice of full insurance guarantee introduced to the saving deposits in 1994 and even to all liabilities of the commercial banks in 2001, was terminated in the second half of 2004. The insurance coverage over the saving deposits has been limited to 50 thousand YTL since July 2004. With the aim of full compliance with the EU Directives legislative work to amend the Banking Act continues. The amendments are mainly concentrated on improving risk-oriented supervision, strengthening the independent structure of the BRSA, and increasing the effectiveness of supervision in the banking system.<sup>19</sup>

#### **4. Corporate Governance In The Turkish Banking Sector**

In Turkey, Corporate Governance Principles are first issued by Capital Market Board. These Principles were issued to be implemented primarily by the listed companies in ISE. In the draft of new code on banking industry corporate governance principles are required for the financial institutions. Because corporate governance is a new concept for the Turkish companies and the compliance with the Principles is not compulsory, in order to understand the level of corporate governance, a survey among listed companies has been conducted. Although the main purpose of the survey is to understand the position of the companies in corporate governance context, there are other side effects of the survey such as increasing the awareness of corporate governance among listed companies and encouraging them.

The evidence indicates that the companies are eager to work on corporate governance and the number of companies having policies about social responsibility is growing. However, there many firms in Turkey both of the private and public sector that have to adopt corporate governance

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<sup>19</sup> *ibid*, p. 10.

principles. At the same time, Turkey's firm structure made up of family and group holding points to a lack of corporate governance to a great extent.<sup>20</sup>

## **5. Data and Methodology**

The methodology used in this paper is comparing the selected banks' financial ratios. For the purpose of comparative analysis of Turkish Banking Sector's performance, listed banks on the TBAT were selected. These selected banks were compared with the foreign banks in Turkey that fully apply the corporate governance principles. These pair-matched samples are used so that meaningful comparative analysis of performance may be made.

For those selected banks, the performance ratios are calculated from the set of data on TBAT's miscellaneous yearly reports concerning the last five years (2000-2004). The performance ratios are summarized for each year of the past five years in the form of the simple average ratio. These summarized data are presented with the attached tables. Several financial ratios indicate the results of banks' performance. The ratios for this study include those of capital adequacy, assets quality, profitability, liquidity, debt management.

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<sup>20</sup> Doğan Cansızlar, "Capital Markets Board's Role in Shaping Corporate Governance", Roundtable on Corporate Governance United Nation's Economic Commission for Europe, Geneva, Switzerland, 9 February. 2005, p. 3, [http://www.spk.gov.tr/yayinlar/seminerkonferans/IOSCO/files/RTS\\_opening\\_speak.pdf](http://www.spk.gov.tr/yayinlar/seminerkonferans/IOSCO/files/RTS_opening_speak.pdf)

**Table 2: Financial Ratios Of Turkish Banking Sector**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b><i>CAPITAL ADEQUACY</i></b>					
Shareholders' Equity / Total Risk Weighted Assets‡	-	17,5	24,2	30,9	28,8
Shareholders' Equity / Total Assets	7	9,7	12,1	14,2	15
<b><i>ASSETS QUALITY</i></b>					
Total Loans / Total Assets	32,8	21,9	26,5	28	33,7
Loans Under Follow-up (net) / Total Loans	11,5	37,4	6,6	1,4	0,7
<b><i>PROFITABILITY</i></b>					
Return on Assets Net Profit(Losses) / Total Assets	-3,1	-6,6	1,1	2,2	2,1
Return on Equity Net Profit(Losses) / Total Shareholders' Equity	-72,8	-76,5	9,2	15,8	14
<b><i>LIQUIDITY</i></b>					
Liquid Assets / Total Assets	32,1	31	34,3	38,8	37,4
Liquid Assets / Short-term Liabilities	37,9	37,8	75,1	80,5	84,3
<b><i>DEBT MANAGEMENT</i></b>					
Net Interest Income / Total Assets	3,8	6,2	6	4,5	5,8
Total Interest Income / Total Interest Expenses	129,6	147,6	140,5	140,8	177,7

Source: Author's calculation (from TBAT's data)

‡ Risk weighted assets item has not been calculated in year 2000.

**Table 3: Financial Ratios Of Foreign Banks\* In Turkey**

	2000	2001	2002	2003	2004
<b><i>CAPITAL ADEQUACY</i></b>					
Shareholders' Equity / Total Risk Weighted Assets ‡	-	44,2	32,6	36,2	26,9
Shareholders' Equity / Total Assets	10,3	22,2	21	24	20,1
<b><i>ASSETS QUALITY</i></b>					
Total Loans / Total Assets	17,1	26,3	33,9	23,3	24,4
Loans Under Follow-up (net) / Total Loans	2,9	1,4	1,1	1	0,8
<b><i>PROFITABILITY</i></b>					
Return on Assets Net Profit(Losses) / Total Assets	0,7	1,5	1,2	2,7	2,4
Return on Equity Net Profit(Losses) / Total Shareholders' Equity	11,1	6,9	5,9	11,2	11,9
<b><i>LIQUIDITY</i></b>					
Liquid Assets / Total Assets	63,7	41,5	43,4	43,3	42
Liquid Assets / Short-term Liabilities	79,3	77,2	80	83	67,4
<b><i>DEBT MANAGEMENT</i></b>					
Net Interest Income / Total Assets	9,4	12,2	11	9,1	6,5
Total Interest Income / Total Interest Expenses	158,1	193,9	233,5	269	215,1

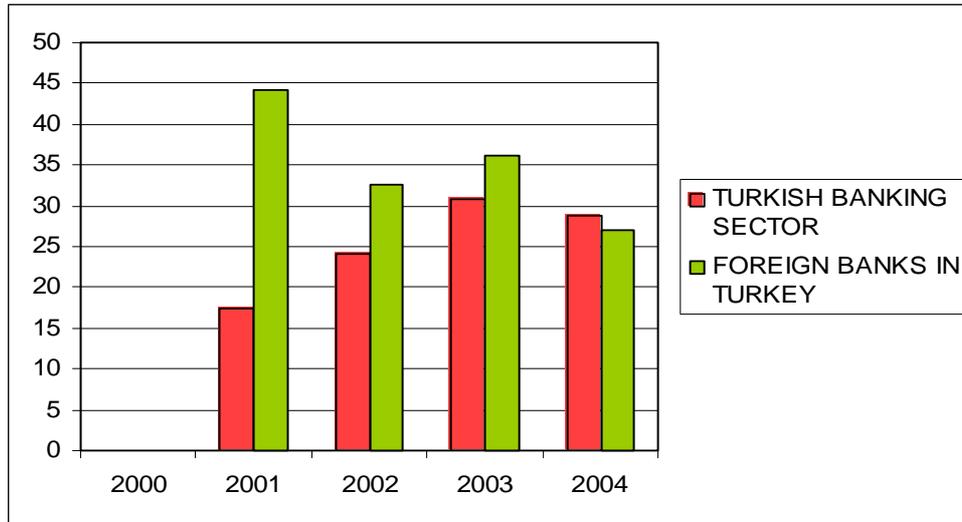
Source: Source: Author's calculation (from TBAT's data)

\* Fully apply corporate governance principles and have a different management style beyond Turkish Banks

## 6. Results of Comparative Analysis

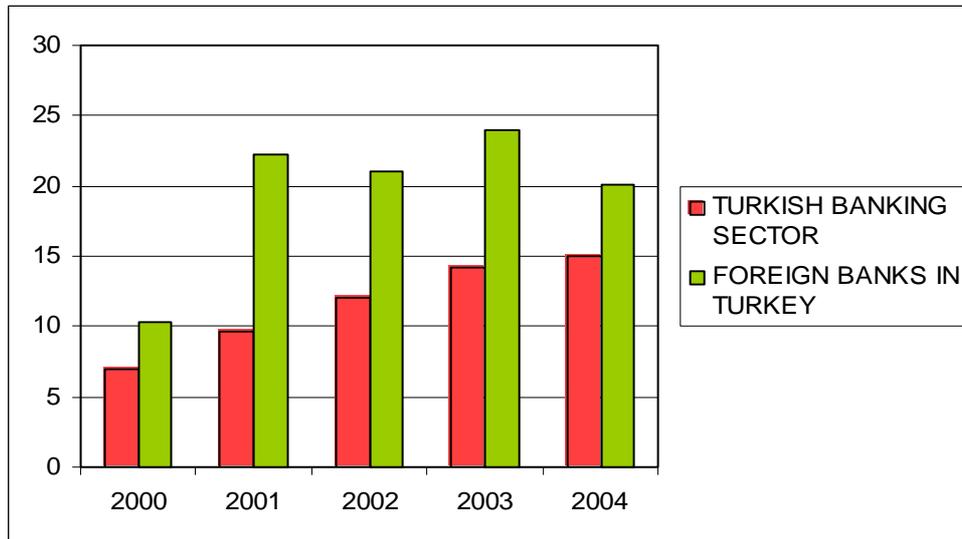
The capital adequacy ratio of Turkish banking sector lays small compared with the foreign banks' and it increases year by year as the corporate governance principles' implementation. The capital adequacy of foreign banks' showed a volatile trend but still higher than the sector's. Risk weighted assets of the sector reached and overtook the foreign banks' in 2004. That's one of the major exceptional results for the sector. At the same time, shareholders equity increases in the sector but remains low compared with the foreign banks'.

**Figure 1: Shareholders Equity / Risk Weighted Assets**



*Source: Author's calculation (from TBAT's data)*

**Figure 2: Shareholders' Equity / Total Assets**

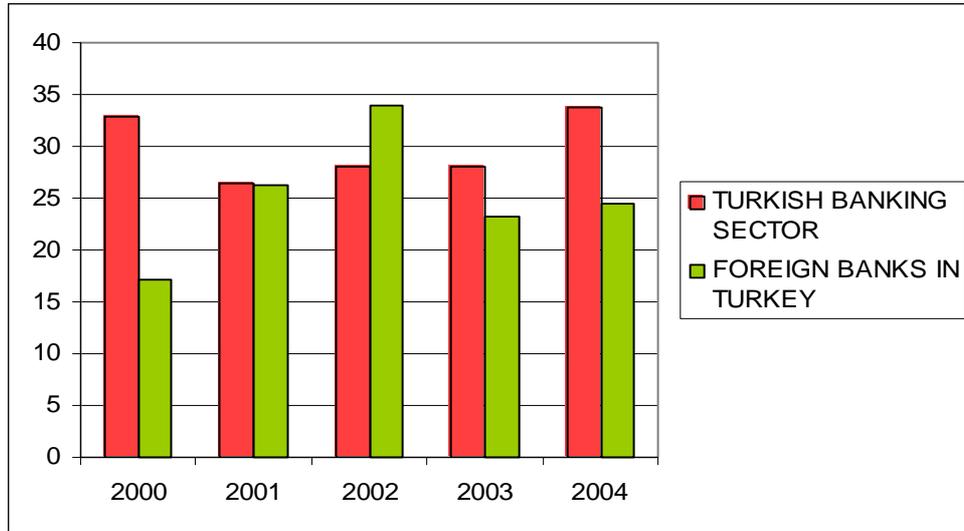


*Source: Author's calculation (from TBAT's data)*

According to assets quality, both the sector and the foreign banks had a volatile trend. The sector's loans grew bigger than foreign banks' thus the loans under follow-up flew high but slowed down in 2003 then catching the foreign banks' in 2004. That considerable change in the attitude towards the loans under follow-up is another important deviation from the result of the rest of the analysis. Just like the change in the risk weighted assets, the

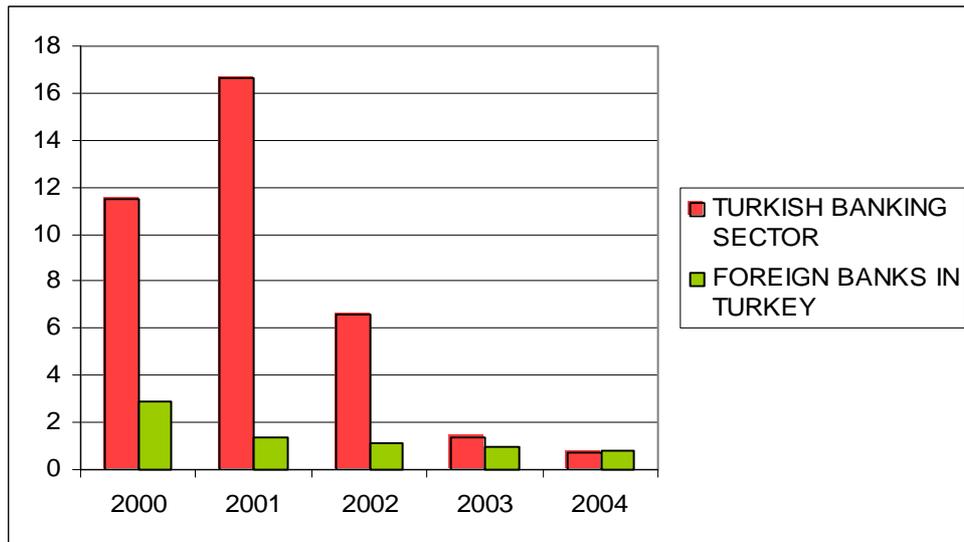
decrease in the loans under follow-up came through the settlement of risk management implementations that exist in corporate governance.

**Figure 3: Total Loans / Total Assets**



Source: Author's calculation (from TBAT's data)

**Figure 4: Loans Under Follow-up (net) / Total Loans**

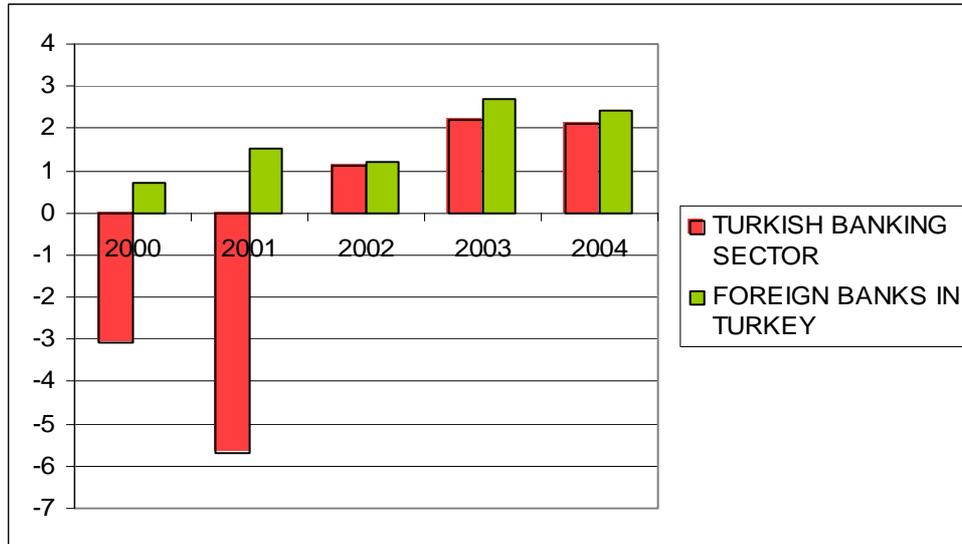


Source: Author's calculation (from TBAT's data)

Profitability of the sector showed considerable positive change especially in the return on equity. After 2001 a big jump started overtaking

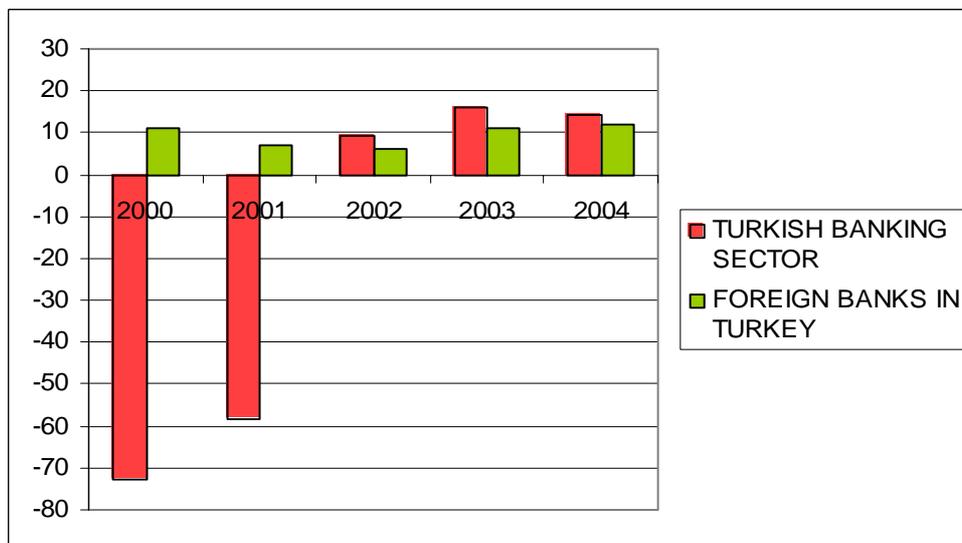
foreign banks' return on equity. On the other hand, rate of return on assets went slow reaching foreign banks' in 2003 and overtaking in 2004.

**Figure 5: Return on Assets**



*Source: Author's calculation (from TBAT's data)*

**Figure 6: Return on Equity**

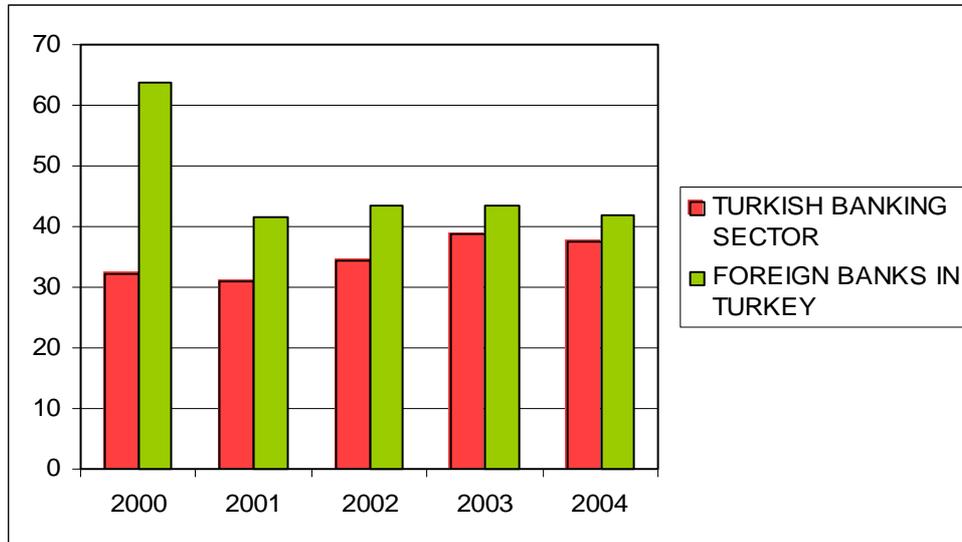


*Source: Author's calculation (from TBAT's data)*

Liquidity of the sector is strengthened and increased year by year. As for the ratio of liquid assets to total assets, sector remained lower than the

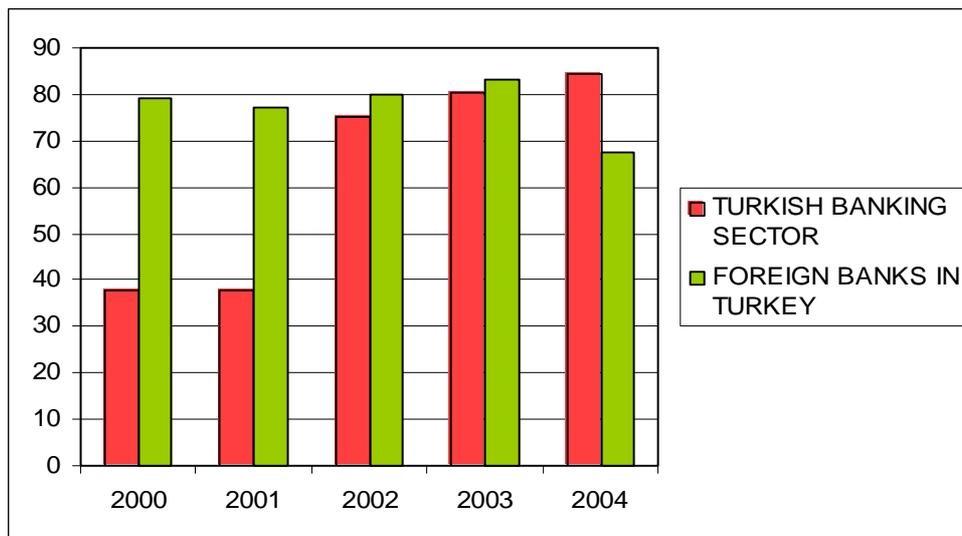
foreign banks at the end of 2004. But the ratio of liquid assets to short term liabilities showed a considerable change and went far than the foreign banks' in 2004.

**Figure 7: Liquid Assets / Total Assets**



*Source: Author's calculation (from TBAT's data)*

**Figure 8: Liquid Assets / Short-term Liabilities**

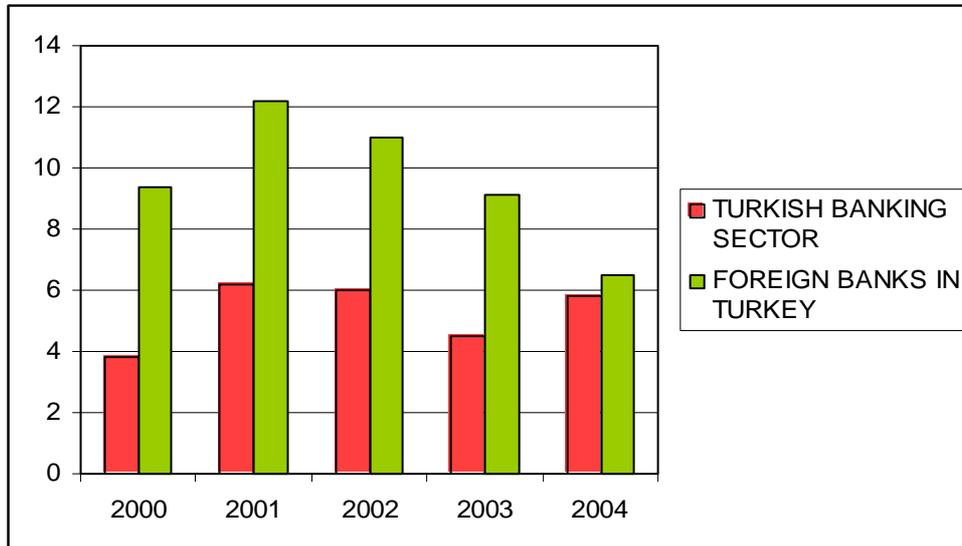


*Source: Author's calculation (from TBAT's data)*

As for the debt management, both the sector and the foreign banks showed a volatile trend in ratios. The ratio of net interest income to total

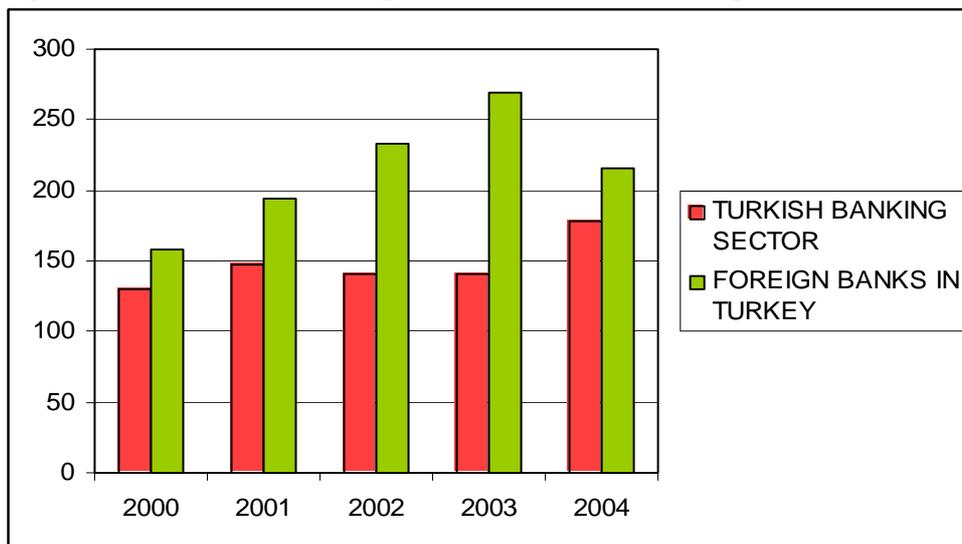
assets of the sector remained lower than the foreign banks'. The foreign banks' ratio slowed down whereas the sector's nearing a little closer in 2004 just like in the case of total interest income to total interest expenses.

**Figure 9: Net Interest Income / Total Assets**



*Source: Author's calculation (from TBAT's data)*

**Figure 10: Total Interest Expenses / Total Interest Expenses**



*Source: Author's calculation (from TBAT's data)*

The results totally show that foreign banks' management and performance in Turkey is much more adequate for the generally accepted corporate governance principles that had been set by OECD and especially BIS. Till 2004, generally ratios of the foreign banks went more adequate when compared with the sector's ratios. At the end of 2004, some of the ratios of the foreign banks started to fall below the sector's (shareholders' equity to total risk weighted assets; loans under follow up to total loans; return on equity, liquid assets to short-term liabilities) but others remained higher or more adequate.

It can be said that the Turkish banking sector showed a considerable change and reached to the level of foreign banks. The fact behind that change is the implementation of corporate governance in the sector and mainly the related issue of risk management. The ratios of the sector before the settlements were far beyond the foreign banks in Turkey. But after corporate governance principles, there happened a dramatic change in the financial management of banking system in Turkey. The sector reached a much more considerable level in ratios that reflect corporate governance. That shows the importance of corporate governance in banking as well as the need in the Turkish Banking System. But at the same time, it should be noted that the results still point to the need to attain stronger and sound corporate governance in the Turkish Banking Sector.

## **7. Conclusion**

The empirical evidence presented above constitutes the level of corporate governance in the Turkish banking sector. In addition to casting serious doubts on some conventional notions on the background of Turkish banks and confirming some of my suspicions in various performance ratios, this paper also proposes extra evidence about the need for corporate governance that sector has and the importance of corporate governance overall for banking.

Of the four ratios tested, the sector performed better than the foreign banks in Turkey. This means Turkish banking sector showed considerable change and upgrading the level of corporate governance. Although policies are designed to strengthen the corporate governance of Turkish banks, the rest of the performance test results compared with the foreign banks operating in Turkey, point to the need in enhancing the efforts to progress stronger corporate governance level in the banking sector. Moreover, there is a need for the management of banks to be granted autonomy and be gradually introduced further corporate governance practices. Banking sector in Turkey is required to publish comprehensive financial and risk-related disclosures.

Corporate governance for Turkey, is the major transition issue as of EU, especially for the banking sector in the long-run.

In short, governance of banks is crucial for growth and development of a country's economy. At the same time, banks are subject to financial risks, highly leveraged as failure can lead to large output costs. Corporate governance affects banks' performance, valuation, and cost of capital, risk taking and the risks of financial crises.

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# SOLUTION OF NON-VALUATION BANK ASSETS IN THE SLOVAK AND CZECH REPUBLIC<sup>1</sup>

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## **Abstract**

*Transformation of the banking sector to a stable and efficient banking system which should be able to support the economic growth has been one of the most important problems by the transition to a market economy. In foreground was the question of inaccessible loans and the settlement of this question was the main assumption for the transformation and for the economic growth. The burden of inaccessible loans have namely blocked the restructuralisation not only with its existence, but above all with it's volume. Beside the need to build of new institutions for the move of inaccessible bank claims apeared the question of their valuation. This contribution is intended to theoretical aspectes of solving the problem of inaccessible assets in banks and also to concrete solution of the situation in this area in the banks in Slovakia and in the Czech Republic.*

**Key words:** *banking sector, reclassification of banks, inaccessible claims, non- standing financial assets, risk loans, transformation institutions, valuation of claims, methods of valuation of claims, non-valuation assets*

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## **1. Banking Sector in the Slovak and Czech Republic**

Demonopolization of banks in Czech-Slovak Federal Republic was accompanied through their strong undercapitalization, the capital appropriation has moved on the level 1,72 %. The disadvantage was also a very small number of qualified employees, lack of experience with managing of commercial banks, surroundings, absence of laws and other criterions in the area the central bank and the commercial banks. Banks were not equipped with modern technologies; branch -office net and know-how were absent. Despite that relatively a lot of banks came into being with home and foreign participation whereupon a lot of small banks have been founded mainly in the Czech Republic. New founded commercial banks have taken over a part of inaccessible loans from the Czech-Slovak National Bank, loans granted enterprises, loans for cooperative flat construction, how also loans for some big projects, for example power stations, water power stations and similar. Low experiences and political influences and insufficient legislature have contributed to the development of a other big parcel of not sufficient guaranteed loans and before long a lot of them was graded to the risk- or problem level.

The solution of the problem loans is dated from the Federal Czech-Slovak Republic when there were accepted measures for solving of the payment inability. The federal government placed at disposal 11 billion Czechoslovak crowns reclassification of potential viable enterprises and 4 billions Czechoslovak crowns for the capital strengthening of banks. Absence of experience with such projects has showed by us in a non system admission to solving of the payment inability. After dividing of the CSFR, the governments of the Czech and Slovak Republic have taken different steps to solve the situation in the banking sector. Both governments solved the state through consolidating institutions - moving of none financial standing assets to this institutions and at the same time through increasing of ground capital in this again healthy banks. The intention of both governments was also to sell the healthy banks to foreign investors.

**Table 1: Owners Structure of Banks in SR and CR to the 31.12.1993**

<i>Owner structure of Banks</i>	<i>Number of banks in Czech republic</i>	<i>Number of banks in Slovak republic</i>
<i>State Banks</i>	1	3
<i>Banks with major state participation</i>	3	4
<i>Banks with major private participation</i>	18	3
<i>Banks with foreign participation</i>	20	8
<i>Branches of foreign banks</i>	7	10
<i>Total</i>	49	28

Source: National Bank of Slovakia, Czech National Bank

### ***1.1 Solution of problems in the Slovak banking sector after 1993***

After dividing of the federation there have been the following main problems in the Slovak banking sector:

- prevailing state ownership in banks
- low capital adequacy
- quality of the credit portfolio- high stake of inaccessible credits
- lack of long term funds.

This state has had a negative impact not only on the liquidity of the banking sector, price policy and savings, but also on the whole economy of Slovakia, therefore in 1999 decline also in Slovakia to solution of unfavorable situation in the banking sector.

Resolution of the Government of SR No. 90/1999 and connecting resolution No. 908/1999 led to work out the procedure of restoring to health of banks under the name „Proposal of the program of reclassification of banks and reclassification of the private enterprise sector“. The objective was to displace a part of risky claims in such a way, that each bank will reach a part of max. 35 % of inaccessible claims and at the same time to increase the capital of banks and to reach a capital adequacy of 8 % according to the Basel criterions. On the basis of this documents, the reclassification was divided in two stages. The first stage of reclassification started in December 1999 and the second in June 2000.

**Table 2: Classified credits in Slovak banks in 2000**

<i>Year</i>	VUB, Ltd.	IRB, Ltd.	SlSp, Ltd.
2000	9707,3	174,7	1858,4

*Source: Consolidating Bank, Ltd.*

In the first stage of the recovery process have been joined the three biggest Slovak banks: General Credit Bank (VUB), Slovak Saving Bank (SlSp), and Investment and development bank (IRB). Entirely there have been displaced in the first stage credits in value about 82.2 billion Slovak crowns and in the second stage 34.2 billion Slovak crowns.

### ***1.2 Solution of problems in the Czech banking sector after 1993***

The Czech banking system at its beginning had to occupy itself with a lot of financial liabilities, which occurred in none economic surroundings of central planed economy. To that have been added problems with temporary founding of new small banks, which have been strong undercapitalized, they didn't have an experienced management and operated in an unstable microeconomic environment. That all was the consequence for a strong increase of bad assets, especially credits, which was not ordinary paid back. The situation, which came into being, the government of the CR solved through a declaration of the consolidation program I., on which basis the credits for long terminated reserves, have been transformed to the consolidating bank. Because there began to appear problems of small, new founded banks, the government declared to their solution the consolidation program II and in the frame of it have been applied the following measures: there was initiated a forced management, finished the activity or the banks have been soled and at the same time increased the ground capital. From the entire 18 small banks have been in the frame of this program solved 15 and the amount of the raised funds was 33 billion Czech crowns. In 1997 began the stabilizing program which basis was the purchase of non-financial standing claims. To this program entered 6 banks from which 3 have been later excluded, 3 of them have changed the ownership and the program was prematurely finished.

By the end of the 90th the state began to solve the problems in the big banks, they received a lot financial help and this banks have been consequently sold to strategic investors.

**Table 3: Classified assets in the banks of CR in 2000**

<b>Classification</b>	<b>Banks, total</b>	<b>KB</b>	<b>ČS</b>
<i>Standard</i>	618 190	99 660	67 602
<i>Followed</i>	88 600	34 885	17 941
<i>substandard</i>	32 600	10 441	7 490
<i>doubtful</i>	31 500	4 263	1 920
<i>lossing</i>	91 800	9 032	19 550
<i>classified credits, total</i>	244 500	58 621	46 901
<i>classified credits total, in %</i>	28,3	37,0	41,0

Source: Czech National Bank

## 2. Admittances to the settlement of inaccessible credits

Searching of possibilities to settle the inaccessible credits have brought three admittances:

**Decentralized admittance**, when the state enter into the banks with capital and cover the loses from non-financial standing assets. The following step can be the privatization of such acquired stake. After it the banks are solving their non-financial standing assets in their own direction. This procedure has been used by the privatization of the banks in Poland. Certain modification is granting of state guarantee for non-financial standing assets. In the CR was the state guarantee partially used by privatization of the Czech saving bank and the Commercial bank, there have been issued guarantees to the new owners for risky assets.

**Centralized admittance**, by which non-financial standing assets purchase central institutions (AMC-Asset Management Company) and after it they manage this assets with the objective to reach a maximal yield or to reclassification them. The owner of these institutions can be the state, or a private person. We distinguish two types of these central institutions (AMC)

- restructuring institutions (Corporate Restructuring Vehicles), the objective of which is the restructuralization of banks and key enterprises
- rapid asset disposition vehicles , which objective is quickly sale of non-financial standing assets. This type of institutions doesn't pursue any reclassification of debtors.

The third way is the **combination** of the two a.m. admittances. Reclassified problematic credits, granted to big important enterprises will be moved to central institution and the rest of such credits remain to stay in commercial banks.

### **3. Reclassification instruments of non-financial standing bank assets**

Transformation institutions structure the received non-financial standing assets according to determined criterions ( for example according the debtors, the branches, regions, the financial situation of the debtor or according to the expected development of enterprising) in the portfolio and as follows they start the reclassification. The transformation institution has to decide which instrument it will use for the reclassification by consideration of the law- and tax aspects.

Emphasised is also the transparency of the reclassification process. By reclassification of non-financial standing assets in different countries will be used some of possible instruments, which are:

- capitalization of debts
- balancing, except the court balancing
- sells of portfolio assets, which can be realized:
  - . through individual sell
  - . through sell of fortune stakes
  - . auction through internet
- competitions
- securitization
- selling of guarantees

## **4. Transformation institutions in the Czech and Slovak Republic**

### ***4.1 Transformation institutions in the Slovak Republic***

The need to solve the problematic credits has activated the founding of the Consolidating bank a state institution in 1990. This bank took over form the big commercial banks credits on value about 110 billion Czechoslovak crowns. As counter-value the banks received from the state 50 billion Czechoslovak crowns in government loans 12 billion Czechoslovak crowns for increasing of the own capital stock and 38 billion Czechoslovak crowns for the remission of credits for long term reserves. The consolidating bank has one-sided and formal changed the one year character of credits to a

long term credit with the assumption of repayment of this credits until 2000. The enterprises confirmed the regime of repayment decided through the Consolidating bank. The enterprises stopped to distinguish the separate types of credits with which of the one side has been solved the problem of credits from the view of banks, on the other side for the enterprises it was a load and for the state it meant a loading of the state debt and the public finance.

Reclassification of the Slovak banking sector was solved in August 1999 when the government of Slovak Republic issued the reclassification program for the chosen banks and of business sector which connected to the resolution of government No. 90/1999. To secure the transparence of the privatization process the government cooperated with foreign counseling firms. Project was prepared in cooperation with the European commission, the World Bank through the program PHARE. The objective of the project was, to create a mechanism which could secure to dismantle the whole loss from the whole process on the owners of debt enterprises (loss of fortune), creditors (partial satisfaction of claims) including banks (using of reserves and correcting items) and state (through the cover of the rest of uncovered loss). As an important step is to consider the legislative measures as the law about bankruptcy and settlement, laws about banks, tax laws and the actualization of the commercial and the civil code.

Partition of the federation meant also division of the Consolidating bank on two subjects. Consolidating bank as a state institution, founded in 01.01.1993 through the Ministry of Finance, took over nearly 2000 clients with credits about 30,4 billion Slovak crowns. The main objective was the liquidation or arrangement of claims and obligations connected with credits for long terminated reserves.

Admittance to the founding of the Consolidating bank in Slovakia was considerable different to the CR where the Consolidating bank received from the FNP (Fund of National Property) CR 15 billion Czech crowns. Separate solved the FNP the liquidation of the debts by state properties through what it helped to speed up the process of reclassification in CR. The Slovak Consolidating bank has fulfilled an important task in reclassification of banks and enterprises.

The Slovak Consolidating bank was practical founded without a basic capital stock. In the course of the first two years of existing the bank has been entrusted a capital stock about 2,357 billion Slovak crowns. But that was not sufficient in view of the volume of credits which the bank took over. The capital adequacy of the bank was by end of 1994 deep under 8 %. <sup>2</sup> Volume of funds used for consolidation of the three biggest banks has been estimated

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<sup>2</sup> Kovalčík, J.:Konsolidačná banka – pokus o centralizovaný prístup. In: TREND, 8. 11. 1995, s. 5A

on 105 billion Slovak crowns that is approximately 12 % of GDP.

**Table 4: Moved claims from Slovak banks**

	VUB	SLSP	IRB
<b>Number of demands</b>	3 035	2 646	104
<b>Number of debtors</b>	1 832	2 070	52
<b>Nominal value in Slovak c</b>	58 641 201 709	33 895 547 962	4 969 241 330

*Source: Consolidating Bank, Ltd.*

The Consolidating bank was managed through the bank law and therefore it was not possible to make activities aside the frame of law ( for example selling of claims) and also the bank was not able to maintain the conditions of cautious undertaking of banks. With the resolution No. 908 of the Slovak government from 21.10.1999 therefore was founded a specialized finance institution the Slovak consolidated stock company (SKO) with stock capital about 1 billion Slovak crowns. It was a bank institution without bank license. The bank have arisen as stock company with following stakes: Ministry of finance-24 % , VUB, SSB, IDB and Consolidating bank each 19 %. The objective of the founding of the SKO was in a possible short time and effective realize the reclassification program of the government. The activities of the SKO are stated in the project of the agency for work with moved claims. For the SKO has been stated the conception of non banking institution. The mission of the SKO was to clear the classified claims, moved from the reclassified banks. An important task of the SKO was to create a secondary market with problematic claims and help to build a standard and transparent market in cooperation with IMF, World Bank, EU, foreign consolidated and consulting organizations.

The main objective of the company was a fast settlement of classified claims which has been moved to it's portfolio in the frame of the before privatizing reclassification in the past from the state owned banks, General Credit Bank VUB, Slovak Saving Bank SLSP and the Investment and Development Bank IRB.

After this stage, the SKO began its concrete activity with collecting of claims on the basis of mandate agreements with the banks in the first stage and after this stage the claims have been managed internal by SKO. By securing of return ability of claims the SKO used in the valued period non-court and also court forms of collecting. The company SKO has in the process of collecting of claims used the standard internal management and also part of claims has been collected through mandate agreements with reclassified banks, mandators, lawyer- or commercial offices. The intention of the administration of claims on the strength of mandate agreements and agreements about collecting of moved claims was to avoid

formation of damages and at the same time to save the continuity of the collecting process. Claims against subjects in CR and Russia have been transferred to chosen mandators. Collecting of most complicated juridical cases of claims the SKO has solved through lawyer- and commercial agencies. In area of court collecting of claims the SKO used all viable legal instruments, mainly proposals to issue of payment orders, to declare of crashes and to execute bailiftings. On the base of agreement between the SKO and the Fond of national property the company received assets from the Consolidating bank in value of 33,13 billion Slovak crowns The SKO registered to 31.12.2004 in it's portfolio claims from reclassified banks about 49,23 Bi Slovak crowns In comparison with the state at 31.12.2003 the nominal value of the portfolio dropped over 57,23 billion Slovak crowns First and for most the drop was initiated through the progress of claims in the frame of the VVK project about the value 42 billion Slovak crowns and realization of the project VVK 2004 on the nominal value 12,6 Billion Slovak crowns On decreasing of the portfolio in 2004 have participated except the named projects also individual moves of claims (0,156 billion Slovak crowns) and also reclassification of some debtors (0,842 billion Slovak crowns). In harmony with the accepted strategy of solving the claims of farm- and food firms have been realized the cession of claims from enterprises to the Slovak guaranty and development bank SZRB).

Reverse the increasing of the nominal value of the claims in portfolio of the SKO at the end of 2004 have activated a take over of claims from tax authorities in entire value about 24,6 Billion Slovak crowns SKO maintained to the 31.12.2004 in management claims in an entire sum about 73,93 Billion The value of the property represented to the 31.12.2004 a value about 22,949 Billion Slovak crowns Creating of correcting items to the entire amount, which have been created from costs have influenced a negative result in 2004. On the other side, there has been created space for reaching of positive economics in the society in the following years. In the past the society reached negative results in economy as consequence of undervalued loss contained in managed claims. Insufficient volume of created correcting items was the consequence, the bigger volume of claims was moved to third subjects, and the bigger was the loss. In 2005 the SKO await a positive result. Individual attention the SKO granted the solution of opened questions with Slovak saving bank and General credit bank in connection with transfer of classified claims in frame of the reclassification of the banking sector. The result was the closing of conclusion protocols with both named banks. The company SKO finished the solution of the guaranty question of the Fond of national property in connection to the part of managed portfolio with the closing of an agreement about extinction of the guarantee. An important reality was in 2004 the implementation of a new management information

system which makes it possible to follow in details the process of bankruptcy proceedings, distains, voluntary auctions, court disputes or liquidations in real time.<sup>3</sup>

In legislature area on the basis of negative experiences in connection with the interpretation and application problems of the current valid law about bankruptcy proceeding by management and by collecting of claims prepared the SKO a proposal for the parliament to change the law about bankruptcy and settlement No. 328/1991. This proposal has been accepted by the Slovak parliament and is valid since 01.01.2005.

**Table 5: Moving of classified credits to consolidating institutions in the SR**

<i>Bank</i>	<i>Transfer of credits (thousand Sk)</i>		
	<i>Consolidating Bank, a.s.</i>	<i>Slovak consolidated stock company</i>	<i>Together</i>
<i>VUB, a.s.</i>	7 602,8	58 641,3	66244,1
<i>I. Stage</i>	7 602,8	37 642,2	44 945,0
<i>II. Stage</i>	0	21 299,1	21 299,1
<i>Slovenská sporiteľňa, a.s.</i>	2398,1	29 998,1	32 396,2
<i>I. Stage</i>	2398,1	20 398,8	22 796,6
<i>II. Stage</i>	0	9 599,3	9 599,3
<i>IRB, a.s.</i>	9 507,5	4 969,2	14 476,7
<i>I. Stage</i>	1 394,4	4 969,2	6 363,6
<i>Displacement of credits into DBV</i>	8 113,1	0	8 113,1
<i>II. Stage</i>	0	0	0
<i>Displacement of credits together in the 1<sup>st</sup> stage</i>	19 508,4	62 710,2	82 218,6
<i>Displacement of credits together in the 2<sup>nd</sup> stage</i>	0	30 898,4	30 898,4

*Source: Ministry of Finance of Slovakia*

In the period of its existence, the Slovak consolidated bank has solely managed and collected claims. At the present the institution is with its new professional management and personal equipment full prepared to manage further problematic claims from public finance sector.

<sup>3</sup> *Consolidating Bank, a.s.*

#### ***4.2. Transformation institutions in the Czech Republic***

Measures for relieving of the unfavorable situation in the banking sector solved the Czech government and the Central bank with measures which can be divided in three arrears:

- legislature and regulating measures (strengthening of competencies of the bank supervision and Commission for Securities, insolvency legislature and new bank laws)
- help the depositors, stricken through bankruptcy of banks
- direct help to banks or it's new owners.

By renovation of the banking sector in the CR there has been chosen a decentralized model, on which basis the Czech saving bank and Commercial bank received state guarantees for covering of risky assets.

By reclassification of the whole banking sector and also state enterprises has been chosen a centralized admittation by which the central state institution has bought non credible assets and was real reclassification institution. The task of these institutions was to remove the credits from the bank balances as result of the economy policy of the last regime and enable the banks and firms to do their business without burden from the past. Their next task was the taking over of non credible assets from the Czech banks and consequently to realize them. The reclassification institutions in CR fulfilled also an another task, they helped small banks which came to existence troubles and have been stabilized through the stabilizing programs I and II.

The Czech consolidating agency (CKA) is the legal successor of the Consolidating bank, Prague. Till 2000 this bank has made financing in development projects in the areas infrastructure and ecology. In 2001 the bank vanished and was replaced through the Czech consolidating agency (CKA). CKA was founded on the basis of a special law No. 239/2001. This agency is a non banking finance institution which doesn't receive deposits and doesn't offer credits. The main task of the agency is to solve the problematic assets active, transparently and quickly with the objective to make a maximal yield for the state. Through the law the agency will vanish on 31.12.2011 without liquidation. The main influence in the agency has the supervision council, named through the parliament. Management of the agency is named by the government. Main activity of the agency is the management and realization of assets, reclassification of enterprises chosen by the government and solving of the managed assets through the court. If the clients properly made their payments, there are no difficulties by the liquidation of the assets. Not repaid credits will be solved by transfer of claims to third subjects, realization of the pawned law or sale by auction. In

the frame of solving the debts through the court there will be used the possibility of bankruptcy, liquidations and submitting of suits. In subsidiaries will be realized the block sale of credit claims. In companies, which are able to survive and to fulfill their obligations the CKA applies the strategy of reclassification eventually the strategy of installment-repayment. In case of enterprises, appointed through the government with the interest to sell them to a strategic investor, the CKA looks up a partner. The agency bought gradually non credible assets about 400 billion Czech crowns except the selling of the claims from the commercial banks, the CKA took over also claims from health insurances about 4 billion Czech crowns. The big increase of the balance sum has been compensated with an active solution of claims.

The main objective of CKA is to reach a max return ability of claims in shortest time with min. of costs. The processes have to be transparent and standard according to the actual segmentation in the surroundings of the new information system and each debtor have to be solved in harmony with in advance agreed strategy. KONOPO a limited company has been founded through the Commercial bank and all classified credits have the bank transferred to this company. Today the only owner of this company is the CKA. Subject of enterprising is purchase and sell of credit claims, management of claims, collecting of claims and real estate activity. In 2002 were purchased from the Commercial bank incredible claims for 60 Billion Czech crowns for reclassification takes KONOPO individual sale of claims and block sale. Entire have been sold claims for 4,12 billion Czech crowns. PRISKO stock company was founded in 1992 on the basis of the project SKODA with the objective to separate some claims out of the new privatized company. The CKA is here the only property owner. Revitalizing agency was founded in 1999 as special division for solving of some big and complex cases. From 2001 the company is inactive and in liquidation. Sanakon was founded by the Consolidated bank in 2000. The company offers administrative-technical services which support the business activities of banks.

Czech financial (C F) was founded by Czech central bank from 2000 a 100 % subsidiary of the KOB. CF is active in management of assets which took over in frame of programs for increasing of stability of the banking sector and consolidation of smaller banks, management of property stakes with effective using of property and shareholder rights. The main activity is especially the management of assets (credit claims, CPO, property stakes) which the company took over as contribution to strengthening the banking sector. The stabilizing program will be financed through the CKA and the Fund of national property on the basis of the resolution of the government No. 539/1996 and the agreement closed between the KOB and FNP on 04.02.1997.

**Table 6: Block sale of incredible assets**

Year	ČKA		SK	
	Total in billion CZK	Proceeds in%	Total in billion SVK	Proceeds in%
2001	19,10	7,10	13,30	3,30
2002	37,80	9,00	54,00	non realized solde
2003	62,00	non available	54,00	0,07
2004			15,06	

Source: Annual reports of ČKA a SK

Transformation institutions realize the reclassification through using of a lot of instruments from which the most used are the individual sales, blocked sales of incredible assets, capitalization of debts, sale of property stakes, bankruptcy and liquidation, realization of reinsurance. The condition for the correct using of the a.m. instruments is the right valuation of credit claims.

## 5. Valuation of credit claims

Value determination of credit claims has an impact to the economy, banks and state and at the same time important information from the view of the investor. For each of the named subjects has the credit claim an another economic value. Behind the claim we have to see a concrete enterprise, therefore the price is stated on the basis of ideas of the contract partners about the value and the price at the same time implicated the ideas about the structure of credit claims. The price of the credit claim is always created under assumption, that there exist an offer and demand. These markets are different from the markets on which people sell usual commodities. Each offered credit claim has it's own individuality and specifications. The individuality of each credit claim is leading to the assertion, that for claims markets not exist and each sale of portfolio is an individual case, which is not possible to compare with an another case. Therefore it can not exist an objective value and it is the task of the expert by creating the value of the claim to consider the specifications of the concrete seller and buyer. Each so created value is rather a subjective value in that sense that there is expressed a certain value in connection between the buyer and seller. Concrete claim has for different investors often different values. The optimum case would be, if there could be stated a real price which would correspond to estimates of the buyer and seller.

The valuation of credit claims have to assume from the principle of maximal use. By valuation of claims states the seller and potential new investors their objective of valuation and on that ground their state their own

strategy.

The valuation of the credit portfolio has to fulfill the following criteria:<sup>4</sup>

- creating the value of the claim in that way, that the assumed yield will be reached
- analyse the impact of risks in connection with the credit claim to the value of credit claim portfolio
- find the proper strategy for the solution of the credit claims.

The choice of the proper method of valuation the credit claim require a correct classification of claims and consider the real expectations regarding the behavior of the debtor. On this ground is possible to choose the following strategies:

- capitalization of claims and the following sale of claims or reclassification of the company and the transfer of the claim to the standard claims and it's gradual repayment. This strategy is possible to choose, if the debtor is cooperating and there is the assumption that the claim will be repaid.
- Strategy of involuntary auction or distraint of the property or bankruptcy in case that the debtor has property viable for sale,
- Sale of the claim on the basis of collected property of the debtor to a third subject.

The credit claims will be valued with the objective to drop the volume of loss and endangered assets and to reach a maximal yield with minimal costs of their management. The valuation of the claim follows before the decision about sale or keep the claim in the own portfolio. The importance of the evaluation of the credit claim is given through specific factors of their solving in the conditions of the economy in Slovak and Czech republic and mainly out of following reasons:

- Credit claims are mainly from risky debtors, who over long periods don't pay back the credits, not submit documents and information to the bank according to the credit agreement and don't communicate with the bank.
- The claims are not enough secured through possible instruments
- the market of credit claims is not enough developed
- In Slovak and Czech Republic not exist a uniform method for valuation of credit claims, which would respect the

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<sup>4</sup> Zmeškal, Z.: Finanční modely. Ostrava: VŠB-TU, Ekonomická fakulta, 2002. ISBN 80-284-0182-5

characteristics of big volumes of not repaid credits.

- The possibility that the credit claim will be repaid through the real debtor by means of a third person and legalized the obligation against the bank.

The valuation of the credit claims will be realized as follows:

- A. Establishing the nominal value of the claim incl. interest, costs and so on. In the same time is necessary on the basis of documents to state the credibility of the debtor and to judge if the value of the claim is zero.
- B. Judge the reinsurance of the credit claims and their sorting according to the manner of settlement
- C. Establishing a discount interest rate as addition of non risk yield and the risky surcharge.

By valuation of incredible assets there will be used a lot of methods in dependence from judging the situation on the basis of many points of view. There will be used four proceeds as follows:

- yield methods, by which the value of the claim will be stated as current value of future finance flows
- comparative methods, where for the statement of the value is to compare the given asset with the assets with similar qualities
- substantiating methods- the value of the given asset is stated on the basis of market valuation of the assets and the whole property
- optional method, if some consider the valuation of conditional claims, which can be asserted in some special cases.

Valuation of the portfolio of credit claims will be worked out on the basis of debtor analysis on the basis of bookkeeping statements - balance, statement profits and losses, cash flow and of public accessible information (business Journal, Annual reports of given firms and so on)

Objective of the valuation of claims is the determination of the value to a certain day. The value of the claims will be therefore stated from the valuable components which can be presented and quantified to the given day. The subject of valuation is always the unpaid value of the incredible asset to the given time where upon there will be considered also the expected development after the term of valuation. On the basis of given information and chosen strategy there will be judged the convenience of separate valuation methods, the most suitable will be chosen and on its basis will be stated the real value of the incredible asset.

System of valuation of incredible assets consists of following independent methods:<sup>5</sup>

- creation of value on the basis of payment ability of the debtor
- creation of value of the incredible asset through bankruptcy simulation
- creation of the claim value on the basis of value determination of pledging instruments
- credibility method
- comparison method
- combination of the named methods

### **Creation of value on the basis of payment ability of the debtor**

By using of this method there can be expected, that the debtor is willing to cooperate with the bank, the bank will get all information about his entrepreneur activity and the debtor will continue in his activity. This procedure takes into consideration the cash flow which will be used for the settlement of the given claim. The base for the analysis are historical dates for the last two years and the finance calendar for the period of repayment of expected installments. The quality of valuation will depend from the quality of submitted documents from debtor. The claims are valued on the basis of current value for future installments.

### **Creation of the claim value through bankruptcy simulation**

Statement of value of the claim on the basis of this method use the expected amount of received funds from the bankruptcy process which will be simulated. If a bankruptcy is not real, there have to be the valued the parts of property of the debtor separately for their sale and for their valuation have to be used the valuations in the case of bankruptcy. Starting point for the determination of bankruptcy value is the balance for the last period in the whole extension. The height of finance flows is stated through the asset volume. First there will be settled the claims from the bankruptcy virtue which occurred after declaration of the bankruptcy. All creditors have to be satisfied according to the statute of the bankruptcy.

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<sup>5</sup> Křístek,L.:Metody oceňování pohledávek. In: Bankovníctví č. 10, 2001, s. 12

## **Creation of the claim value on the basis of value determination of pledging instruments**

On the basis of differentiation if there is material or immaterial property there will be used the cost (material) method or the yield and the comparison method. The cost method belongs to the oldest methods for creation of the market value of the enterprise. The objective of this method is how many funds are necessary for the renovation of the enterprise. Important is mainly the advantage value of separate parts of the property. This method will be used for example in the case of creating of the price of real estate property, for the valuation of the stake in finance companies and as complement statement by valuation of yields. The yield method is created on the time value of funds and relative risk of investments. The bases for the calculation are the annual earnings before taxation and will be used in business with real estates.

### **Credibility method**

By this method the claims will be valued with a point valuation from 1 to 5. The coefficients of valuation have to be converted with weights of importance of each criterion. By creation for the value of credit claims have to be used all information from the debtor. More information from the debtor makes the method better. It's so a subjective method.

### **Comparison method**

This method compares the buildings and ground with similar real estates on the market in the same period. The comparison will be executed on the place of real estates with the following valuation of offer and demand on the real estate market and with consideration of all criterions of real estates. This method can be used only limited and that mainly by valuation of plots and production halls.

### **Valuation of claims in case if there are not to disposal economical statements and the claims are not secured**

In case that it is not possible to use any of the named methods then will be used an independent valuation of the claim. The main factor of the quality of the valuation is the volume of accessible information. In the case that the debtor doesn't communicate with the bank there will be used all reachable information about the property of the debtor with the objective at least to reach a partly settlement of the claim.

## Conclusion

The solution of the problematic of inaccessible credits is a interdisciplinary problem. On the one side there are economic questions as valuation of inaccessible claims and determination of the settlement with inaccessible claims. On the other side there are legal questions- institutional covering of the credit moving, creation of laws and regulations. At the present is that also a political problem mainly from the view of creating of consolidating institutions and also of accepting of unpopular measures with the consequence of finance burdens for the state and the population.

The commercial banks have to eliminate the increase of new inaccessible credits what means the banks have to improve the system of risk management and consequent follow the problematic claims. The central banks have to increase the regulation and supervision in this area.

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# THE WARRANTS – AN EVERYDAY PRODUCT

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## **Abstract**

*Warrants are considered structured investments; in their classic form, they are also known as plain vanilla warrants. The function of warrants can be derived from their name: Warrants securitize the right, but not the obligation, to buy or sell a predefined amount of a good at a predefined date. The good upon which the warrant is based is called the underlying. Shares and share indices serve as underlyings; so do branches and regions, interest rates, currencies or raw materials. The right to buy the underlying is called a call or a buy option; the right to sell is called a put or a sell option.*

**Keywords:** *underlying assets, theta, omega, vega, rho, delta, index, sector baskets, leverage*

## **1. Introduction**

Over the last few years, there is hardly a single financial instrument that has whetted investor appetites as much as the warrant. Warrants can be used to make substantial gains, yet they can also lead to considerable losses. Anyone wishing to invest in warrants needs to know exactly how they work and what risks they typically entail. Losses have all too often been the result of a lack of experience in dealing with these products. Only those who know what factors can influence the price of warrants and, above all, how these factors influence them, can trade successfully in these instruments in the long run.

## **2. The warrant**

### ***2.1 Option contract at a petrol station***

The best way of explaining the origins and workings of warrants is to take an example from everyday life. Let us assume that you have just bought your dream set of wheels – a top-of-the range sports car with a powerful engine. Your initial enthusiasm is decidedly short-lived, however, when you arrive at the petrol station to fill-up your new car only to discover that a litre of premium petrol is going to set you back a whole euro. Suddenly remembering what has been written in the press over the past few weeks about rising crude oil prices in Rotterdam as well as the petrol tax, you are forced to reckon with the price for a litre of premium petrol hitting €1.50 or perhaps even €2 within the next two years. Your heart well and truly sinks as you realise that your dream car, depending on how fast it is driven, consumes between 15 and 20 litres per 100 kilometres.

You then have a flash of inspiration and enter into the following agreement with the owner of the petrol station. You acquire the right to buy 5,000 litres of premium petrol at €1 per litre over the next two years. This means you have purchased 5,000 petrol options, each entitling you to buy a litre of petrol under the agreed conditions. The rest of the deal with the owner of the petrol station works as follows. You pay an immediate €0.10 per litre for the agreed volume. The right to buy 5,000 litres of premium petrol at €1 per litre at any time within the next 24 months therefore costs you €500. You also agree with the other party to this agreement that you may sell your options, in part or in whole, to another car-owner at any time. At the end of the day, the petrol station owner is not really concerned who he sells the 5,000 litres to.

## ***2.2 Limited risk – no further obligations***

If the price of petrol were to rise to unexpectedly high levels over the agreed two years, you would be in a position to make a huge profit by buying 5,000 litres of premium petrol at well below the market price. If the price rose to €2 per litre, you could also consider selling your options, which, initially bought for €500, would then be worth €5,000. This would be a great deal all-round, and what is more, if the price of petrol were to fall, your risk would be limited to the sum needed to purchase the options. If the price per litre dropped to €0.80, for example, you would not be obliged to buy the 5,000 litres for €1. In this instance, the options would be worth nothing and expire worthless if the price of a litre of petrol remained below €1 for the term of the option contract. Let us now assume that during the agreed period of two years, the price of premium petrol for your dream car were to fall dramatically to rest at €0.70. In this instance, you would not make use of your right to buy 5,000 litres of petrol at €1 and would let the options expire. You would then have to assume the total loss of the sum paid for the options, i.e., €500. This loss would have been limited had you sold the options after a few months. If the petrol price were to shoot up to €2, you would have the following choice. Either you could continue to fill your sports car with petrol costing a mere €1 per litre or you could sell your options and make a large profit. Do not forget that as the buyer, you simply have rights, whereas the pump attendant, as the seller, has rights and obligations.

## ***2.3 Market value of the options***

Three months later, during a routine trip to your local petrol station, you notice that a litre of petrol now costs €1.20. The value of your options has therefore risen and, contrary to the other car drivers you meet at the pumps, you are happy at how things have turned out. Of course, all attention turns to you when they realise that you only have to pay €1 per litre. You tell them about the deal with the petrol station and a number of the higher-price payers then offer to buy some of your options. Something along the lines of a market then materialises. As most people fear that petrol prices are going to increase further, you could sell your options immediately for €0.30 per litre. The prevailing market value of each option, which you purchased for €0.10, is therefore €0.30.

## ***2.4 Maturity of the options***

The higher the petrol price per litre rises above €1.10 – i.e., above your profit threshold – the more your options are worth and the more profit you will make. Given that you may exercise your options at any time and actually receive delivery of the petrol, and that there are parties interested in

buying your options from you, you are free to choose between purchasing the 5,000 litres of petrol over the two years at a significant discount to the prevailing market price or selling your options at the prevailing market price. The price the other car drivers are willing to pay will, of course, be higher the more expensive a tank of petrol becomes. If the price of petrol were to rise to €1.20, you would save €0.20 by exercising your options. However, the “market value”, i.e., what others would be prepared to pay for these options, is €0.30. There is a good reason for this, namely that three months ago you entered into an agreement with a two-year term, i.e., the options are still valid for another 21 months. During this period of time, the price of petrol could rise to unexpectedly high levels. It therefore follows that the right to buy petrol at €1 per litre for another 21 months is worth more than the right to do this only for another two days, for example.

Another feature of your petrol options is that you and the pump attendant have agreed to physical delivery. This means that upon exercising the options, you actually receive physical delivery of the underlying, in this instance, the premium petrol.

## ***2.5 Future expectations***

Enjoying your role as a warrant owner, you take your pride and joy for a spin one morning and need to refuel again. On the display board at the petrol station you notice that the price of premium petrol has gone up overnight from €1.10 to €1.30. This price rise is due to the Organisation of Petrol Exporting Countries (OPEC) making a surprise decision to reduce crude oil production, thereby sending prices on the crude oil market in Rotterdam through the roof and causing oil companies to react as they always do in these circumstances, i.e., by hiking petrol prices. Groups of drivers can be seen standing around the pumps embroiled in heated discussions. An air of panic abounds as everyone fears that petrol prices will continue to rise even higher.

Now well known among local car drivers, you step onto the forecourt and become immediately surrounded by a group of them wanting to buy your options for 60, even 70, cents per litre. A particularly worried driver offers to buy 2,000 options for as much as €0.80. A few days later and the situation is different. Premium petrol has indeed risen to €1.35 a litre, yet no one expects prices to rise any further. The government has announced that, if necessary, it will lower petrol tax in order to keep prices stable. When you ask car drivers what they would be willing to pay for your options, the highest bid you receive is €0.50. It therefore goes without saying that expectations of future price trends for the underlying affect the value of an option. Hopefully, at the height of the panic, you will have accepted the highest bid and sold some of

your options, leaving your angst-ridden buyers to curse the planned petrol tax cuts and bemoan their unlucky investment decision.

## ***2.6 Playing the stock exchange***

Since acquiring your petrol options, you have developed a keener interest in petrol price trends and their influences. One day, you read an interesting newspaper article about Deutsche Automobil AG. The carmaker is about to bring out an attractive, high-performance car that only consumes 2 litres per 100 kilometres. The model looks set to be a roaring success – especially given the further rise in petrol prices over the past weeks.

In view of your positive experience of petrol options, you decide to try your luck with warrants traded on the stock exchange. The problem here is that there are a whole host of warrants available on Deutsche Automobil AG shares. All you have to do now is choose the right one. With the carmakers' shares currently trading at €43, you follow a hunch that they will significantly appreciate in value and therefore opt for a call warrant. However, before you part with your cash, you want to know which warrants are lucrative. This involves looking at various key data on the risk/return profile of these financial instruments. These indicators can give you an idea of not only how much more expensive a warrant on Deutsche Automobil AG shares is than buying the shares directly but also how much the price of your warrant can fluctuate over time. These decisive details are outlined in the following sections. Departing from our petrol station scenario, we would now like to introduce you to the intriguing world of warrant trading on the stock exchange.

## **3. The basics**

### ***3.1 The right warrant for the right investor. The choice is wide and the indicators varied.***

It is a well-known fact that investors can make a lot of money with warrants, yet can also suffer considerable losses. Before you venture into this market, you should familiarise yourself with the basics. Warrants are categorised as derivative financial instruments. This means that every warrant is linked to an underlying financial asset. The underlying asset performance is reflected in the price of the warrant according to a given ratio. It is generally only worth buying a warrant if you think the price of the underlying asset is going to move considerably. On the German exchanges, warrants are issued on a variety of underlying assets, such as German and international equities, German and international equity baskets, German and international bonds, bond and share indices, as well as commodities, such as oil or

precious metals. Index warrants, followed by equity warrants, comprise the largest segments with the highest trading volumes. Warrants on European and US equities, in particular, can be found in large supply. Those who want to speculate on the price movements of blue chips listed on say the DAX, the Dow Jones EuroSTOXX 50SM or the Dow Jones Industrial AverageSM, will not be disappointed with a lack of choice. In fact, the maturities as well as strike prices of these instruments are so varied that investors are likely to find exactly what they are looking for.

The direction in which investors expect the price to move will determine whether they buy a call or a put warrant. This is because the owner of a warrant has the right to either buy or sell the underlying (also referred to as the underlying asset) at a certain price (strike price) from or to the issuer within a specified period of time (maturity) according to a certain ratio (exercise ratio) on the capital market, or else receive an equivalent monetary amount (further explanations below). Investors therefore have to decide whether to purchase call warrants (calls) or put warrants (puts). Calls are bought when the price of the underlying is expected to rise, while puts are opted for when the price is expected to fall. The right to sell this underlying at a specified price therefore becomes more valuable the lower its price.

Those in possession of an option have the following three choices: they can either let it expire, sell it or exercise it. Should you decide in favour of exercising your option, you must not forget that there is an important difference between American and European options, namely that you may exercise the former at any time prior to expiration and the latter only on the expiration date. With otherwise identical indicators, European options often sell for less than their American counterparts as the right to exercise at any time presents an unquestionable advantage.

Many warrants are settled nowadays by means of cash settlement rather than physical delivery. Cash settlement was first introduced because physical delivery was not possible for certain warrants, e.g. index warrants – you cannot physically deliver the DAX. Now, however, with the streamlining of settlement procedures, even warrants where physical delivery is possible have a cash settlement feature.

### ***3.2 The value of a warrant***

Warrants can have various features in order to accommodate investors' expectations. Below are a number of terms used for these features. The price of a warrant is comprised of the intrinsic value and the time value. The latter is the difference between the warrant price and its intrinsic value. The time value is the consideration payable for the "lifetime" of the option. The longer the time to maturity of the option, the more valuable it is. This is

based on the belief that a change in price of the underlying will lead to an increase in the differential amount achieved up to the expiration date. As the time to maturity of an option decreases, its time value will thus decay at an accelerating rate, ultimately towards zero. The price of the warrant upon expiration will be no more than its intrinsic value. A warrant always has an intrinsic value – also known as parity – if it can be exercised at a profit. This is determined by whether the spot price of the underlying is above or below the strike price. In this instance, a difference is made between options that are in the money, at the money or out of the money.

In the case of out-of-the-money warrants, i.e., with no intrinsic value, the price simply equals the time value. If the option remains out of the money until maturity, the time value will shrink to zero and the option will expire worthless. Out-of-the-money warrants are ultimately a far riskier purchase than warrants with intrinsic value. Warrants that are extremely out of the money and soon due to expire are therefore highly speculative as they carry the highest risk of total loss. These warrants will only yield a profit if the price of the underlying makes a swift and sharp move in the desired direction. The probability of this happening has to be assessed in each individual case.

### ***3.3 The effects of price fluctuations***

Price fluctuations are one of the major factors influencing warrant pricing and should therefore be monitored constantly. One of the key premises of modern option pricing theory is that an option will be more valuable the greater the range of price fluctuations or volatility. The reason for this is that the probability of the warrant appreciating in intrinsic value increases the more intensely the price of the underlying fluctuates. As it is possible to make an exact calculation of historical volatility, this is an important indicator for assessing expected volatility and implied volatility, which are both priced into options. Past fluctuations can only ever serve as a guide, however, as the rate of volatility can change very rapidly. All traders have experienced this at some point or another. For example, a surprise profit warning that strips 30 percent off an otherwise conservative or even dull stock has a major impact on the price of calls and puts it underlies.

The nature of these events is that they come as a surprise. All warrant traders look at the historical volatility of options traded at a particular time on the market and draw their own conclusions as to their implied volatility. The latter has a considerable impact on option pricing. Conclusions on the interdependency between the price of a warrant and that of its underlying – expressed in dynamic indicators – can therefore only be applied as long as the market view of implied volatility stays the same.

Buying warrants just before a sharp rise in volatility can prove very lucrative. Let us assume, for example, that you acquire a put on an automotive stock just before the company releases a surprise profit warning. Previously classed as a relative non-mover, the stock then sheds 25 percent overnight. As the owner of that put, you stand to gain not only from the expected fall in the price of the underlying but also from a sharp rise in volatility.

### ***3.4 VDAX – the volatility index***

Following the same reasoning, you can also suffer significant losses by buying warrants on financial assets that are extraordinarily volatile. Let us now assume that the price of a share climbs from €100 to €200. You now decide to buy because you expect this strong rally to persist. Instead, the share price remains at the same level for weeks. Although the underlying has not fallen in price, calls on this stock will lose value due to the return to a lower level of volatility. In the worst case scenario, the share price could rise slightly while the calls continue to lose value because of the lower implied volatility. This scenario, of course, is also affected by the loss of time value.

As the level of volatility during bear markets tends to rise faster than in bull markets, the above also applies, and perhaps even to a greater extent, to markets following a crash. The reason for this is that downside trends are often faster and more furious than upside trends. The recognised volatility index VDAX measures the implicit volatility of options trading at the money and due to expire in 45 days. This index is predominantly influenced by the level of volatility expected by market participants.

The volatility of the underlying tends to vary greatly. The implied volatility of the DAX® is therefore always a lot lower than the implied volatility of its individual constituents; one share price goes up, one goes down, ultimately having a balancing effect on the overall volatility of the index.

## **4. Expensive or not?**

### ***4.1 From the wide range of warrants on offer, you now have to select the most suitable and least expensive***

What happens if ...? Indicators are important, especially given the fast pace of option trading. You not only have to know what they are, you also have to be able to interpret them. Static indicators facilitate a qualitative price assessment of similar warrants at a given point in time. These indicators should only be used to compare warrants with similar features.

One of the most important indicators when valuing options is the premium. The major advantage of this indicator is that it can be easily calculated, thus providing a quick overview of which warrants are worth investing in. When buying options, the aim is to invest a small amount and then make a proportionally larger gain from any price movements of the underlying. The premium shows (in the case of calls) how much more it would cost to acquire the underlying by exercising the option rather than buying it directly.

Ultimately, however, an option is more valuable the longer its time to maturity and so this indicator, which fails to take this time aspect into account, does not say much at all. A more sensible way of comparing warrants would therefore be to calculate the premium per time unit, usually per year of time to maturity.

But even this annual premium does not quite hit the mark, the reason being that it is not seen in relation to the warrant. It is obvious, for example, that a premium of €1 has to be treated completely differently according to whether the warrant costs €5, €10 or €100. The best way to compare warrants using this indicator is therefore to calculate the percentage premium. This premium shows how much more (in percent) it would cost to acquire the underlying by exercising the option rather than buying it directly, thereby serving as a useful criterion for comparing options.

Asserting that an option is cheaper the lower the premium would nevertheless be too simple. A comparison of warrants is only worthwhile if they have similar maturities and intrinsic values. Generally speaking, warrants with a high intrinsic value have low premiums and warrants with a low or no intrinsic value will only have a premium. A comparison based on the percentage premium serves two main functions. First, it provides investors with a quick and clear overview of which warrants are suitable. Secondly, if they have decided on a particular underlying, it enables them to compare the premiums of warrants with similar maturities and strike prices and then opt for the least expensive.

#### ***4.2 Leverage***

Arguably the most widely known options indicator is leverage, which shows the extent to which a warrant moves in line with its underlying. Current or simple leverage can be calculated by dividing the price of the underlying by the price of the option. If this ratio deviates from 1.0 or the underlying assets are denominated in a foreign currency (foreign equities), these factors are also priced into the warrants.

Simple leverage is based on the assumption that price movements in the currency units of both the underlying and the option will be equivalent. This assumption, however, does not hold any weight. Let us take the example of a warrant granting the right to buy a share that is trading at €100. The strike price is say €200, and the option is set to expire in two months. The warrant costs €1, producing a simple leverage ratio of  $100 \div 1 = 100$ . According to this ratio, a 10 percent rise in the price of the share to €110 would lead to a 1,000 percent rise in the price of the warrant to €11. In practice, however, this would never happen as the share price would still be a long way off the strike price of €200. If the share fails to move “into the money” within the space of two months, i.e., rises above €200, the option will expire worthless. This ratio is therefore only ever applicable to options with a high intrinsic value and not at all for those without any. It is for this reason that elasticity – also referred to as the omega – is mainly used nowadays.

Another key indicator is the break-even point, which shows the price level of the underlying at which the owner of the warrant will make a profit. Taking the example of a warrant costing €1, a strike price of €200 and an exercise ratio of 100:1, the share price would have to exceed €300 in order for the investor to make a profit.

## **5. Dynamic indicators**

### ***5.1 Alongside static indicators, dynamic indicators also provide key information on warrants.***

Dynamic indicators reflect changes in the price of an option relative to changes in the price, maturity or volatility of the underlying. As opposed to their static counterparts, they allow investors to make a forecast of the future price movements of warrants from a specific point in time and are generally determined using option valuation models. They are only valid for a short period of time and must be recalculated every time any key influential factor changes.

### ***5.2 Delta***

One of these indicators is the delta, which belongs to the family of modern valuation indicators otherwise known as the “Greeks” because they are named after letters of the Greek alphabet. In modern option pricing theory, this indicator represents the sensitivity of the price of a warrant to the price movements of the underlying. The delta is calculated exactly using option valuation models derived from financial theory. The delta of a call warrant may lie between 0 and 1, and for a put warrant between –1 and 0. A

delta of 0.70 means that, at an exercise ratio of 1:10, a €1 rise/fall in the price of the underlying would lead to a €0.07 rise/fall in the price of the warrant. It can also be used as a rough guide to whether the option will have intrinsic value upon maturity and therefore not expire worthless. The probability that the above warrant will not expire worthless is therefore 70 percent. In mathematical terms, the delta is the first derivative of the warrant price with respect to the price of the underlying.

### **5.3 Omega**

Elasticity, which shows the percentage change in the price of the warrant relative to the percentage change in the price of the underlying, has also been represented by a Greek letter, namely omega. It is obtained by multiplying the delta by the leverage ratio. The omega serves as a useful indicator yet, due to the fact that the delta changes with time, can only provide investors with a snapshot view.

Over the past decades, dynamic indicators have been used to develop a series of option price valuation models. Along with the binomial model, the fair value model, devised by the American mathematicians Fisher Black and Myron Scholes, has drawn particular attention. Using the Black-Scholes Model, which was named after its originators and later further developed, it is possible to calculate the “fair value” of an option. This value refers to the theoretically justified value at which there is an equal probability of making a profit or a loss. Unfortunately, valuation models such as these are founded upon basic assumptions that do not often hold true in real options markets. These assumptions include a constant interest rate, which is the same for credit and debit interest, and no constraints on short selling. Despite its flaws, however, the Black-Scholes Model has opened up a new perspective on the valuation of options. As a detailed discussion of this model is beyond the scope of this brochure, we have included a list of recommended literature in the appendix that addresses this subject in great detail.

### **5.4 Theta**

We have already mentioned that the price of an option is comprised of its intrinsic and its time value, and that the closer the expiration date, the faster the time value erodes. The theta measures the loss of time value per unit of time, e.g. per day or week, assuming that the price of the underlying, along with all other parameters, remain the same until expiration. This indicator is usually shown as a percentage. A weekly theta of 1.5 percent means that, providing the underlying price moves sideways, i.e., the intrinsic value remains constant, the option will lose 1.5 percent of its value every week. The theta is very much dependent on whether the option is in the

money, at the money or out of the money. A warrant with a high intrinsic value will have the lowest theta. At-the-money options will experience the fastest loss of time value as they move towards their expiration date. Generally speaking, the time value of a warrant will erode the most during the last three months until maturity.

Investors must be constantly aware of this loss of value, which is solely attributable to the decreasing time to maturity. The closer a warrant gets to its expiration date, the greater the price movement in the direction predicted by the investor must be in order both to offset the ever growing loss of value and ultimately generate a profit. In mathematical terms, the theta is the derivative of the warrant price with respect to time.

### ***5.5 Gamma***

Another key indicator is the gamma, which defines the sensitivity of the delta to changes in the price of the underlying. The higher the gamma, the greater the reaction of the delta to such price movements. A gamma of 0.02 means that if the price of the underlying rises or falls by €1, the delta will change by 0.02 units. Options trading at the money have the highest gammas. Furthermore, the gamma is higher the shorter the time to maturity of the option. Mathematically speaking, the gamma is the first derivative of the delta with respect to the price of the underlying and therefore the second derivative of the price trend of the option in relation to the price movements of the underlying.

### ***5.6 Vega***

The vega shows the influence of fluctuations in volatility of the underlying on the price of the warrant. You will remember that volatility is the range of fluctuations in the price of the underlying within a given period of time. Along with the price of the underlying, the vega is the most important factor that can influence the value of an option. This indicator measures the degree to which the price of the warrant moves when the implied volatility rises or falls by one percent. A vega of 0.25 means that if the volatility of the underlying changes by one percent, the value of the option will rise or fall by 0.25 currency units, adjusted for the exercise ratio. As is the case with the gamma, options trading at the money have the highest vegas. In contrast to the gamma, however, the vega is higher the longer the time to maturity of the option. From a mathematical perspective, the vega is the first derivative of the warrant price with respect to volatility.

## **5.7 Rho**

The rho is the indicator used to measure the influence of interest rate changes on the value of options. When pricing options, the forward rather than the spot price is used. The forward price is comprised of the spot price plus a factor known as the costs of carry. This factor can be defined as the total costs of financing the underlying until the agreed expiration date of the option. These costs are affected mainly by the interest rate level. A rho of 0.50 means that the option price – adjusted for the exercise ratio – will change by €0.50 if the domestic interest rate rises or falls by one percentage point. When trading in currency options, the foreign interest rate must also be factored in. Euro/US dollar warrants, for example, have two rho indicators – one for the euro interest rate and one for the dollar rate. As extreme short-term interest rate fluctuations are very rare, however, the rho can often be disregarded for most other options. In mathematical terms, the rho is the derivative of the warrant price with respect to the interest rate.

## **6. Types of warrants**

### ***6.1 Underlying assets come in all shapes and sizes***

Warrants can be acquired on various types of underlying and investors can use these derivatives to speculate on indices, equities, baskets, currencies, interest rates and commodities.

### ***6.2 Index warrants***

Index warrants are based on the performance of share or bond indices. In the case of bond indices, the German REX bond index plays a key role. The most popular underlying in this market segment, however, is the DAX, i.e., the German share index containing the top 30 German stocks. Warrants on the American S&P 500, the Nasdaq 100, the Euro STOXXSM as well as the Japanese Nikkei 225 indices also attract investor interest, as do a small number of warrants based on other major foreign indices, such as the Austrian ATX, the UK's FTSE 100, France's CAC-40 or the China/Hong Kongbased Hang Seng.

### ***6.3 Equity warrants***

The lion's share of these warrants is based on single stocks. Calls and puts can be acquired on national and international equities with various strike prices and maturities, although liquid stocks are always a favourite.

#### ***6.4 Basket warrants***

Warrants on sector indices, such as the sub-indices of the DAX or the Dow Jones Euro STOXXSM, also have their appeal. These warrants show parallels to index warrants in that they offer investors the opportunity to speculate on the performance of a sector as a whole. Their underlying consists of an equity basket. This basket is, of course, not put together at random; the stocks all have a common denominator in that they may all belong to the same sector or originate from the same country, or both. A suitable example would be a German automotive basket containing BMW, DaimlerChrysler, VW and perhaps even Porsche stocks. Basket warrants therefore give investors the chance to speculate on sector trends or the performance of a particular equity market rather than on single stocks. Investors who forecast a flourishing automotive industry and yet are unsure which stocks are going to fare best can buy a basket warrant and benefit from upside across the whole sector. The same applies to the downside, as basket warrants also come in the put variety.

#### ***6.5 Currency warrants***

A further market segment consists of currency warrants. These derivatives enable investors to speculate on the performance of the euro in relation to foreign currencies. The US dollar is by far the most important currency in this segment, although warrants do exist on the Swiss franc, the Swedish krona, the British pound, the Japanese yen and the Canadian and Australian dollars. In addition, warrants can be bought for exchange rate changes between two foreign currencies, such as the US dollar and the Japanese yen. It goes without saying that there are also a large number of puts on offer that can be used to speculate on the weakness of a particular currency or to hedge against currency losses. This can prove vital if you own foreign stocks or are owed a sum of money in a foreign currency. Note: you would buy a euro/US dollar call if you predicted that the euro was going to strengthen against the US-dollar and a euro/US dollar put for the reverse scenario.

#### ***6.6 Warrants for global markets***

The smallest segment of the options market consists of commodity warrants. The most popular and virtually exclusive underlying assets are gold and silver, measured in troy ounces (31.1035 grams). Investors who predict that the price of gold will shoot up quickly can achieve a far higher return on commodity warrants than gold coins or mine stocks. Warrants with bonds as their underlying are known as bond warrants. These derivatives can be used to speculate on the downside or upside potential of fixed-income securities

and thus also on a change in the general level of interest rates on the capital markets. The German term Zinsoptionsschein (interest warrant), however, is a little misleading as when you buy an equity call, you predict that the share prices are going to rise, whereas when you buy a bond call, you believe that the price of bonds is going to rise and are therefore speculating on a fall and not a rise in interest rates. As bonds are more sensitive to interest rate changes the longer their time to maturity, bond warrant buyers must not only consider the maturity of the warrant but also that of the underlying. This problem does not exist for equity warrants, whose underlying assets do not have a limited lifespan. The principal underlying assets of bond warrants traded in Germany are Bunds and US Treasury Bonds.

## **7. Conclusion**

Warrants are placed by issuers, i.e., banks, financial services providers, savings and loans and financial institutions. The purchase of an option creates a debt obligation between the investor and issuer, similar to the situation with bonds. Warrants have a limited, predetermined maturity, usually between six months and two years. The majority of warrants traded on the market forgo the delivery or acceptance of the underlying at the end of the maturity in lieu of a cash settlement. When the warrant can be exercised at any point during the entire maturity period, it is known as the American variation; if this is possible only at the end of the maturation period, then it is known as the European variation.

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# IMPACT OF EUROPEAN STRUCTURAL FUNDS FOR THE FUTURE DEVELOPMENT OF ROMANIA

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## **Abstract**

*European structural funds are important resources for the development within the countries of European Union. The EU funds are serving main goals that are oriented to the general economic develop at local, regional and national level. The major priority of the European Structural Funds and of the political cohesion promoted the UE is applying a balanced development and its purpose is decreasing the differences between various areas. The second priority has as purpose to revitalize all the areas with deficient structure (industrial, rural, urban). The activity of the European Structural Funds is based on 4 principals: focusing on the priorities; the implementation steps which is the result of several years lasting programs; the partnership which implies a close collaboration between Commission and the corresponding authorities at the national, regional and local level, in every member state from the preparing steep to the rules implementation; the subsidiary which means that it is up to the management authorities named by member States, to select the project which will get the finance and to supervise their implementation. Romania institutions are hardly working in order to prioritize the direction of strategic development. The process is very complex one and will assure the proper use of the funds after the well and long expected integration in EU.*

**Keywords:** *structural funds, strategic development, EU integration process*

## 1. Introduction

The Structural Funds are 4 financial instruments at countries disposal addressed to specific sectors that have been considered relevant for the social and economic development of European Union. They are: European Regional Development Fund(EDRF)- mainly finances infrastructure, job-creating investments, local development so measures, Small and Medium Enterprises development; European Social Fund(ESF) – is oriented to co-finance training and capacity building measures and systems fostering recruitment and employment; Financial Instrument for Fisheries Guidance(FIFG) – it includes measures financing the modernization of fishing industry especially in region where this sector is affected by recession; European Agricultural Guidance and Guarantee Fund(EAGGF) – the guidance section of this Fund finances rural development measures.

## 2. The European Social Fund and the Cohesion Fund

### 2.1. *The European Social Fund*

**The European Social Fund (ESF)** contributes to the economic and social cohesion objective set in article 158 of the EC Treaty, by supporting policies and priorities aimed to achieve progress towards full employment, improve quality and productivity at work, and promote social inclusion and cohesion, in line with the guidelines and recommendations under the European Employment Strategy (EES).

In order to achieve this objective, the ESF needs to address three major challenges: addressing the considerable employment disparities, social inequalities, skills gaps and labour shortages in an enlarged Union; an increasing pace of economic and social restructuring due to globalization and the development of the knowledge-based economy; and demographic changes, which have resulted in shrinking and ageing workforce.

#### *The mission on the European Social Found*

The ESF shall strengthen economic and social cohesion by supporting Member States' policies aiming to achieve full employment, improve quality and productivity at work and promote social inclusion and the reduction of regional employment disparities. In particular, the ESF shall support action in line with the guidelines and recommendations adopted under the European Employment Strategy.

In carrying out the tasks referred to in paragraph 1, the ESF shall support the priorities of the Community as regards the need to reinforce social cohesion, strengthen competitiveness and promote environmentally

sound economic growth. In particular, it shall take into account the objectives of the Community in the fields of social inclusion, education and training and equality between women and men.

*Scope of assistance*

1. Within the framework of the convergence and the regional competitiveness and employment objectives, the ESF shall support action under the following priorities:

- a) increasing adaptability of workers and enterprises, in particular by promoting:
  - increased investment in human resources by enterprises, especially SMEs, and workers, through the development and implementation of lifelong learning systems and strategies which ensure improved access to training of low skilled and older workers, transparency of qualifications and competences, dissemination of ICT and management skills and the promotion of entrepreneurship and innovation;
  - the anticipation and positive management of economic change, notably through the design and dissemination of innovative and more productive forms of work organization, including better health and safety, the identification of future occupational and skills requirements, and the development of specific employment, training and support services to workers in the context of company and sector restructuring.
- b) enhancing access to employment of job seekers and inactive people, preventing unemployment, prolonging working lives and increasing participation in the labour market of women and migrants, in particular by promoting:
  - the modernization and strengthening of labour market institutions, in particular employment services;
  - the implementation of active and preventive measures ensuring early identification of needs and personalised support, job search and mobility, self-employment and business creation;
  - specific action to increase sustainable participation and progress of women in employment, to reduce gender-based segregation in the labour market including by addressing the roots of the gender pay gaps, and to reconcile work and private life including by facilitating access to childcare and care for dependent persons;
  - specific action to strengthen the social integration of migrants and increase their participation in employment, including guidance and language training and validation of competences acquired abroad.
- c) reinforcing social inclusion of people at a disadvantage and combating discrimination, in particular by promoting:
  - pathways to integration in employment for disadvantaged people, people experiencing social exclusion, early school leavers, minorities and people

with disabilities, through employability measures, including in the field of the social economy, accompanying actions and relevant social support and care services;

- diversity in the workplace and the combat against discrimination in accessing the labour market through awareness-raising and the involvement of local communities and enterprises.

d) mobilizing for reforms in the fields of employment and inclusion, in particular by promoting the development of partnerships and pacts through networking of relevant stakeholders at national, regional and local level.

2. Within the framework of the convergence objective the ESF shall also support action under the following priorities:

a) Expanding and improving investment in human capital, in particular by promoting:

- the implementation of reforms in education and training systems, especially with a view to raising their responsiveness to the needs of a knowledge-based society, improving the labour market relevance of initial education and training and continually updating of skills of teaching and other personnel;
- increased participation in education and training throughout the lifecycle, including through action to achieve a significant decline in early school leaving and increased access to initial vocational and tertiary education;
- the development of human potential in research and innovation, notably through post-graduate studies and training of researchers and related networking activities between universities, research centres and enterprises.

b) Strengthening institutional capacity and the efficiency of public administrations and public services at national, regional and local level to embrace reforms and good governance especially in the economic, employment, social, environmental and judicial fields, in particular by promoting:

- good policy and program design, monitoring and evaluation, through studies, statistics and expertise, support to interdepartmental coordination and dialogue between relevant public and private bodies;
- capacity building in the delivery of policies and programs, including with regard to the enforcement of legislation, especially through managerial and staff training and specific support to key services, inspectorates and socio-economic actors including social partners and relevant non-governmental organizations.

3. In implementing the objectives and priorities, the ESF shall support the promotion and mainstreaming of innovative activities as well as transnational and inter-regional cooperation in particular through sharing of

information, experiences, results and good practices, and through developing complementary approaches and coordinated or joint action.

4. In implementing the social inclusion priority, the financing by the ESF of actions within the scope of the Regulation (EC) may amount to a maximum of 10% of the priority axis concerned.

The Member States and managing authorities shall ensure that the action supported by the ESF is consistent with and underpins the implementation of the European Employment Strategy. In particular, they shall ensure that the action set out in the strategic frame of reference and in the operational programs promote the objectives, priorities and targets of the Strategy in each Member State and concentrate support in particular on the implementation of the employment recommendations made under Article 128 of the Treaty as well as of the relevant objectives of the Community in the field of social inclusion.

Within operational programs, resources shall be directed towards the most important needs and focus on those policy areas to which ESF support can bring about a significant effect in view of the attainment of the objectives of the program. To maximize the efficiency of ESF support, operational programs shall take particular account of the regions and localities facing most serious problems, including deprived urban and declining rural and fisheries dependent areas.

The relevant elements of the Member States' annual report referred to in Article 19 of regulation (EC), shall be integrated respectively in the corresponding national action plans for employment and national action plans for social inclusion.

The quantified objectives and indicators selected to monitor the implementation of the national strategic frame of reference, shall be those used in the implementation of the European Employment Strategy and in the context of the agreed objectives of the Community in the fields of social inclusion and education and training. The monitoring indicators of operational programs should be coherent with these quantified objectives.

Evaluations undertaken in relation to the action of the ESF shall also assess the contribution of the action supported by the ESF to the implementation of the European Employment Strategy and to the objectives of the Community in the fields of social inclusion and education and training in the Member State concerned.

The ESF shall promote good governance and partnership. Its support shall be designed and implemented at the appropriate territorial level, with particular attention to the regional and local level, according to the institutional arrangements specific to each Member State.

The Member States and the managing authority of each operational program shall ensure the involvement of the social partners and adequate

consultation of nongovernmental stakeholders, at the appropriate territorial level, in the programming, implementation and monitoring of ESF support.

The managing authorities of each operational program shall encourage adequate participation and access of social partners to the activities funded under Article 2 of this Regulation. Under the "Convergence" Objective, at least 2% of the ESF resources shall be allocated to capacity-building and activities jointly undertaken by the social partners, in particular as regards adaptability of workers and enterprises.

The managing authority of each operational program shall encourage adequate participation and access of non-governmental organizations to the funded activities, notably in the domain of social inclusion and equality between women and men. When responsibility for implementation is delegated, support in the framework of a program may be provided through global grants.

The Member States and the managing authorities shall ensure that operational programs include a description on how gender equality is promoted in the programming, implementation and monitoring including any specific indicators, and in the evaluation.

In the framework of each operational program, Member States and managing authorities shall pay particular attention to the promotion and mainstreaming of innovative activities. After consulting the Monitoring, the managing authority shall choose the themes for the funding of innovation and shall define the appropriate modalities of implementation. The Member States and managing authorities shall ensure that programming of transnational and inter-regional co-operation activities takes the form of a specific priority axis within an operational program or a specific operational program. The Member States shall ensure coherence and complementarity between the action of the Fund and actions supported through other Community trans-national programs, in particular in the field of education and training, through appropriate co-ordination mechanisms, to optimise the use of Community resources in support of education and life-long learning.

The Commission shall promote in particular exchanges of experiences, awareness raising activities, seminars, networking and peer reviews to identify and disseminate good practices and encourage mutual learning with the aim of enhancing the policy dimension and contribution of the ESF to the objectives of the Community in relation to employment and social inclusion. The annual and final implementation reports shall contain a synthesis of the implementation of:

- gender mainstreaming as well as of any gender specific action;
- action to strengthen social integration and employment of migrants;
- action to strengthen social integration and employment of minorities;

- innovative activities, including a justification of the themes selected for innovation, a presentation of their results and of their dissemination and mainstreaming;
- trans-national and inter-regional co-operation activities.

The ESF shall provide support towards public expenditure which takes the form of non-reimbursable individual or global grants, reimbursable grants, loan interest rebates and micro-credits and the purchase of goods and services through public tenders.

The following expenditure shall not be eligible for ESF support:

- (a) Reimbursable VAT;
- (b) Interests on debt;
- (c) Purchase of infrastructure, depreciable movables, real estate and land.

Notwithstanding national eligibility rules, the expenditure declared under the operational programs co-financed by the ESF can include:

- the allowances or salaries disbursed by a third party to the benefit of them participants in an operation and certified to the beneficiary, on condition that such disbursements constitute the national public co-financing to the operation, in conformity with national rules in force.
- the indirect costs of an operation fixed on a flat-rate basis, up to 20 % of the direct costs declared for this operation, according to the type of operation, the context in which it is implemented and its location.

The links between the Community financial instrument and the Union's policy framework need to be reinforced in the future programming period to better contribute to the employment objectives and targets of the Lisbon strategy. To this end, the ESF should support the policies of Member States which are closely in line with the guidelines and recommendations made under the European Employment Strategy and the agreed objectives of the Union in relation to social inclusion and education and training.

The draft ESF Regulation for 2007-2013 provides a focussed framework for ESF interventions throughout the Union. Under both the 'Convergence' and the 'Regional Competitiveness and Employment' objectives, the ESF will provide support with a view to anticipating and managing economic and social change. Its intervention will focus on four key areas for action endorsed by the European Council: increasing adaptability of workers and enterprises; enhancing access to employment, preventing unemployment, prolonging working lives and increasing participation in the labour market; reinforcing social inclusion by promoting the integration in work of disadvantaged people and combating discrimination; and promoting partnership for reform in the fields of employment and inclusion.

In the least prosperous regions and Member States, the Funds will concentrate on promoting structural adjustment, growth and job creation. To this end, under the Convergence objective, in addition to the above-

mentioned priorities, the ESF will also support action to expand and improve investment in human capital, in particular by improving education and training systems, and action aimed at developing institutional capacity and the efficiency of public administrations, at national, regional and local level.

Furthermore, the proposal gives a greater emphasis to the Union's commitment towards the elimination of inequalities between women and men: specific actions addressed to women are combined with a robust gender mainstreaming approach, to increase participation and progress of women in employment.

Equally, the promotion of innovative activities and trans-national co-operation will be fully integrated in the scope of the ESF, and mainstreamed within the national and regional operational programs. Under both the 'Convergence' and the 'Regional Competitiveness and Employment' objectives, the ESF will give priority to funding trans-national cooperation, including exchanges of experiences and best practices across the Union and joint actions, ensuring where appropriate, coherence and complementarity with other trans-national Community programs.

Finally, the proposal attaches a particular importance to the promotion of good governance. The involvement of the social partners is of particular importance in the programming and implementation of the Fund priorities and operations. To this end, under the new Convergence objective, social partners will be encouraged to actively participate in capacity building actions and to undertake joint activities in the policy areas where they play a decisive role.

## **2.2. *The Cohesion Fund***

**The Cohesion Fund** is enshrined in article 161, paragraph 2, of the treaty, with the objective of contributing financially to interventions in the field of the environment and the trans-European networks. Regulation (EC) No 1164/94 established the Cohesion Fund, and, for the first time, provided a framework for its implementation. This regulation was subsequently complemented by Regulations (EC) No 1264/99 and (EC) No 1265/99. Following the Union's enlargement on May 1st 2004, the Cohesion Fund applies to the 10 new Member States until the end of 2006, as well as to the three Member States eligible at the end of the 2000-2006 period (Greece, Portugal and Spain).

Creation and purpose of the Cohesion Fund:

- A Cohesion Fund (hereinafter: the Fund) is hereby set up for the purpose of strengthening the economic, social and territorial cohesion of the Community in the interests of promoting sustainable development.

- The Fund shall contribute to the financing of programs, which support the objectives set out in the Treaty.
- The Fund is governed by the provisions of Regulation (EC) and by the provisions of this Regulation

Regulation (EC) lays down the general provisions for the functioning of the structural funds and the Cohesion Fund for the programming period 2007-2013. It envisages that the Cohesion Fund contributes to the convergence of less developed Member States and regions through financial participation in the operational programs of this convergence objective.

Under the reform of the implementation system of cohesion policy, Cohesion Fund interventions are integrated into the multi-annual programming of the structural funds, including major projects. The reform was announced in the third cohesion report, which was adopted by the Commission in February 2004. While maintaining the fundamental principles which underlie the value of the policy (multi-annual programming, partnership, evaluation, shared management), this reform provides a balance between an increased strategic component, and a simplification of the implementation system. Simplification notably occurs through the reduction in the number of funds, simplified programming, a clarification of the roles of the Commission and the Member States in terms of financial management and control, and by adapting the implementation modalities to reflect the intensity of the community contribution.

In the field of trans-European transport networks, actions financed by the Cohesion Fund must follow the guidelines for these networks, which were adopted by the Council in revised decision (EC) 1692/96. In the environmental field, the Cohesion Fund contributes to achieving the Union's policy objectives envisaged under article 174 of the treaty.

An extension of the domains of intervention is justified by the accession of new Member States on May 1 2004, all of which are eligible to the Cohesion Fund, and which face new and important financing needs. Thus the Cohesion Fund can also finance actions in support of sustainable development, where these have a clear environmental dimension, such as energy efficiency or renewable energy. Beyond the trans-European transport networks, this also allows for financing of rail, navigable maritime and river waterways, multi-modal transport actions and their inter-operability, road and air traffic management, clean urban transport, and communal transport. This extension of the domain of interventions is in accordance with the corresponding provisions in the treaty, and is in line with the priorities decided by the European Council in Lisbon (March 2000) and Gothenburg (June 2001).

The aim of this regulation is to specify the tasks of the Cohesion Fund, and its specific application, in particular regarding the conditionality of assistance and the fields of intervention of the Fund.

Member States benefiting from the Cohesion Fund must conform to the conditions set out in the treaty regarding convergence programs and those regarding excessive deficits for the Member States participating in economic and monetary union. Assistance under the Cohesion Fund is conditional upon the satisfaction of these conditions. If the Council decides, on the basis of a Commission proposal, that an excessive deficit exists and that the Member State concerned has not taken effective action, the payment will be suspended, effective from January 1 of the following year. The suspension ceases, when the Council decides, on the same basis, that the Member State concerned has taken the measures necessary to allow a return to a situation that is in accordance with the Treaty and with the Council decisions.

### **3. Impact of European Structural Funds for the future development of Romania**

For Romania the regulations for the implementation of structural funds are:

- The Regulation of the Commission (CE) No. 438/2001 from 2<sup>nd</sup> of March 2001 which establishes detailed rules for the implementation of the Regulation of the Council (CE) No. 1260/1999 concerning the administration and check systems within the framework of the Structural Funds [Official Journal L63 from 03.03.2001].
- The Regulation of the Commission (CE) No. 448/2001 from 2<sup>nd</sup> of March 2001 which establishes detailed rules for the implementation of the Regulation of the Council (CE) No. 1260/1999 concerning the procedure for the realization of the financial corrections for the assistance within the framework of the Structural Funds [Official Journal L64 from 03.06.2001].
- Regulation (CE) No. 1059/2003 of the European Parliament from 26th of May 2003 concerning the establishment of a common classification of the Territorial Units for Statistics (NUTS) [Official Journal L154 from 06.21.2003]

The Operational National Program (ONP) 2007-2013 in Romania based on:

- National Strategy for the Regional Development and Sectorial Strategies of PND 2007-2013 (at national level)
- Regional Documents for Programming and Implementation (DRPI, at regional level)

The structures of the ONP are:

- Analysis of the existing situation and strategy

- Priorities and Measures
- Coherence and concordance of the strategy
- Financial programming
- Implementation

For Romania as arias of stipulated interventions are:

- Development of the regional and local infrastructure: transport infrastructure, environment infrastructure, power infrastructure, social infrastructure, urban rehabilitation
- Business support: the support of the micro-enterprises and SMEs development (start-ups), business infrastructure development (industrial, technological, scientific parks, etc.), consulting and formation for SMEs
- Tourism support : tourism infrastructure, tourist services improvement, tourist marketing development
- Rural development support: diversification of the economic activities in rural environment, development of the rural infrastructure
- Support of the research, development, innovation and information society: support of the technological transfer to SMEs, development of the innovation capacity of the SMEs, development of the communication between the university environment and SMEs

Financial package proposal for Romania for 2007- 2013 is:

- Agriculture
  - Market measures – 732 millions euro
  - Direct payment – 881 millions euro
  - Rural development – 2 424 millions euro
- Structural and cohesion funds – 5 973
- Internal politics - 765,8 millions euro
- Administrative expenses - 242,2
- Total of engagements: about 11 millions euro
- Total of payments: about 6,3 millions euro

At European level for the cohesion found is allocated a sum of 344 billions euro, representing about 0,41% comunitary GIR. For Romania between 2007 and 2009 will be allocated about 6 billions euro, and for the same period 2010 and 2013 are anticipated maxim 4% from the Romanian GIP on a year.

Should be considered that the structural and cohesion founds:

- Are co-financed from the national budget
- The sums allocated in the year n should be sped gradually till n+2
- The sums afferent to the structural founds are financed from the EU budget until maxim 75% from the project's value
- The sums afferent to the cohesion founds are financed from the EU budget until 85% from the project's value

For 2007-2013 Romania proposes as eligibility on those two objectives as follows:

- ❑ Convergence objective: Romania will be eligible with the whole territory (eight development regions NUTS II) for the cohesion politics 2007-2013:
  - Regional GIP per capita under 75% from community GIP average;
  - FC (GIR under 90% from community GIR average);
- ❑ European Territorial Cooperation Objective:
  - Trans-frontier cooperation (regions NUTS III longway the external and internal frontier)
  - Trans-national cooperation
  - Inter-regional cooperation

#### **4. Conclusion**

Development Fund, the European Social Fund and the Cohesion Fund, establishes the framework for the action of the Structural Funds and the Cohesion Fund. It fixes, in particular, the objectives, the principles and the rules concerning partnership, programming, evaluation and management. It is therefore necessary to specify the mission of the Cohesion Fund in relation to this new framework and to the purpose assigned to it in the Treaty and to repeal, for the sake of clarity, Council Regulation (EC) No 1164/94 of 16 May 1994 establishing the Cohesion Fund.

Trans-European network projects financed from the Cohesion Fund must fit the guidelines for these networks adopted by the Council and the European Parliament. The Community may, through the Cohesion Fund, contribute to action in pursuit of the Community's environmental policy objectives specified in Article 174 of the Treaty. Under Article 175 of the Treaty and without prejudice to the principle that the polluter should pay, the Council can decide, in the case of measures on the basis of paragraph 1 of that Article which are deemed to involve disproportionate costs for the public authorities of a Member State, that the measure is to be aided from the Cohesion Fund.

Granting of assistance from the Cohesion Fund must take due account of the priorities of the enlarged Union, in particular those set by the Göteborg European Council on the environment in the interests of sustainable development. Regulation (EC) provides that eligibility of expenditure is to be established at national level, with certain exceptions, for which it is necessary to lay down specific provisions. The exceptions concerning the Cohesion Fund should therefore be laid down.

Conditionality provisions in the granting of financial assistance will continue to apply in conjunction with the fulfilment of the conditions of economic convergence as set out in article 104 of the Treaty and the need for

sound government finances. In this respect, Member States participating in the Economic and Monetary Union are to implement stability programs and non participating Member States convergence programs.

Romania institutions are hardly working in order to prioritize the direction of strategic development. The process is very complex one and will assure the proper use of the funds after the well and long expected integration in EU.

## References

- [1] Commission Regulation (CE) No. 438/2001 from 2<sup>nd</sup> of March 2001, Official Journal L63 from 03.03.2001
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- [3] Commission Regulation (CE) No. 1159/2000 from 30<sup>th</sup> of May 2000, Official Journal L130 from 05.31.2000
- [4] Commission Regulation (CE) No. 1685/2000 from 28<sup>th</sup> of July 2000 that establishes detailed rules for the implementation of the Commission Regulation No. 1260/1999 that concerns the eligibility for the Structural Funds co-financed operations [Official Journal L193 from 07.27.2000].
- [5] Statement C(2002) 1942 from the Commission concerning the application of the n+2 rule from the Article no. 31(2) from the Regulation (CE) No. 1260/1999 (Structural Funds).
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- [7] Commission's Decision C (2002) 1870 concerning the automatic disengage of the Structural Found for the programs with multi-financing from 2000 – 2006.
- [8] Statement from 09.20.1992 from the Commission for the European Council and Parliament: The evolution of the Structural Funds budget execution, especially the non-effectuated agreements (RAL) [COM(2002) 528 final
- [9] Regulation (CE) No. 1059/2003 of the European Parliament from 26<sup>th</sup> of May 2003 concerning the establishment of a commune classification of the Territorial Units for Statistics (NUTS) [Official Journal L154 from 06.21.2003]