



SILESIAIAN UNIVERSITY OPAVA
SCHOOL OF BUSINESS ADMINISTRATION KARVINÁ

FUTURE OF BANKING

AFTER THE YEAR 2000
IN THE WORLD AND IN THE CZECH REPUBLIC

IX

***ROLE OF BANKS IN CORPORATE
GOVERNANCE AND FINANCING***

PROCEEDINGS FROM THE INTERNATIONAL CONFERENCE

KARVINÁ 2004
THE CZECH REPUBLIC

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INTRODUCTION

In September 2004, it was the ninth time that the International Conference, *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 topic of the banking and financial sector development, and this year, the topic was *Role of Banks in Corporate Governance and Financing*.

The conference was introduced, like in the past years, by papers of our keynote speakers, Hana Chlebná, the Deputy CEO for Strategic Development of Czechinvest, Burkhard Dallosch, the general manager of Commerzbank, branch Prague, and Patrik Choleva, the Member of the Board of Directors and Financial Director of Jihomoravská plynárenská, a.s. Their presentations perfectly fit in and covered very nicely general macroeconomic environment for investments and financing, as well as conditions for financing from the point of view of banks and large companies.

Hana Chlebná focused on Strategy of business and investment in the Czech Republic from general as well as local point of view. She described basic features of the National Development Plan supporting sustainable development based on competitiveness. Just in competitiveness the Czech Republic is falling behind earlier EU member countries. The ability of countries to compete depends on the capacity to adopt available technologies, capacity to develop innovative activity, favourable business infrastructure promoting competitiveness on local markets, sufficiently qualified labour force and available financial and service resources. She also explained four key priorities of the CzechInvest Strategy: improving the business environment, supporting growing businesses, developing and sustaining clusters and creating global connections. Hana Chlebná paid a great attention to the situation in the North Moravian region, too. In the Czech Republic this region attracts the lowest inflow of foreign investments and there is the lowest number of newly established businesses there. The objectives of the CzechInvest for North-Moravian region is to attract a major investor, work with clusters (engineering, wood, IT), improve companies' ability to compete and innovate, provide quality sites and buildings, work with government on "special projects" aimed at supporting job creation and support the university to realise its innovative potential. Mainly this last goal was welcomed very warmly on the academic floor.

Burkhard Dallosch paid attention to wide range of very important topics. He underlined that for an efficient management of companies more areas than just financial performance have to be addressed. The increasing integration and interdependence of the markets worldwide also require a broader basis of internationally applicable rules and principles, despite the fact that besides international treaties also national legislation plays an important role. He paid a special attention on how the new regulatory requirements of the Basel II Accord require and/or enable banks to be part of the Corporate Governance of corporate clients. Even though banks require a deep insight into a company they are not managing the companies. The banks intention is basically directed at the financial performance and standing of a company. They also require the companies to be more and more transparent and to be more and more compliant with international standards. He considers Basel II Accord as the most important regulatory requirement for the international banking industry. Among many parts of Basel II he focused on the required “independence” of loan departments in the decision process for loans, evaluation of the risk of individual loans and loans portfolios as well as on ratings as a basis for loan decisions of banks. Burkhard Dallosch also explained why covenants are an instrument which gained a lot of importance, how mezzanine financing works and he paid a special attention to the CEE market and its current development.

Patrik Choleva, the graduate of the School of Business Administration in Karviná, focused on mutual needs of banks and companies and underlined that the way of cooperation reflects development of society, technologies, new needs, new bank products etc. He mentioned some products used by big companies and explained in details cash pooling. This is a modern banking product that enables utilization the positive and negative balances on the accounts in corporations with more daughter companies and many accounts, respectively among companies within one group. Cash pooling is a tool to centralize treasury in an automated way and to minimize interest expenses and maximize interest income. Patrik Choleva explained also rules that must be followed for utilization of cash pooling within one group, different types of cash pooling (virtual and real cash pooling, one or two level real cash pooling), legal and tax aspects of cash pooling.

In the afternoon and the following day, the meeting of registered participants was divided into three sections. The first one was called *Economics and Insurance*, the second one *Banks, Capital Market, and Corporate Financing*, and the third focused on *Corporate finance*. More than 50 participants, including foreign guests from Turkey, Italy, Slovakia and Poland, presented their papers. After every paper very interesting and rich ideas surfaced in the discussion. There was a supportive working and friendly environment in all sections.

A vast majority of the papers presented at the Conference is included in the Proceedings on CD, which you are looking at. They are also published on the University website and you can find them in www.opf.slu.cz/pb2000/sbornik2004. The proceedings show various viewpoints of the relations between banks and corporations. Different views of the participants are reflected in various topics they focused on. Arguments of ideas and views were the main contribution of the conference, which not only influenced the practical scope of activities of the banks' managing staff but also directed scientific activities of the university workplaces both in the Czech Republic and abroad. That is why the conference has been understood as a regular meeting of banking experts as well as academic and scientific specialists from universities.

For the seventh year in a row, some 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 nowadays, nearly 2000 students study here. Most of the graduates who majored in Finance, or Banking, or Corporate Finance work mainly in the finance sector now. Some of them are already practicing in well-known banking, leasing, insurance, audit, and other financial firms and institutions. It was a great pleasure to have the opportunity to welcome further of our graduates Patrik Choleva as our guest speaker this year. We believe that we will have a chance to meet more graduates at the International Conference in 2005.

We expect next year's Conference to take place on October 19-20, 2005. All this year participants, as well as participants of previous eight conferences, are very warmly welcomed next year. In 2005 we celebrate the 10th anniversary of financial conferences. The Program Committee now has a difficult decision on which topics to choose to discuss arrangements and topic of the anniversary 10th conference in 2005. Let us wish its members good luck and let us hope next year's conference will again bring fruitful papers and rich discussions.

Stanislav Poloucek
School of Business Administration

MAIN PAPERS

BANKS, REGULATORY REQUIREMENTS AND CORPORATE GOVERNANCE

Burkhard Dallosch

The presentation held at the conference gives a brief overview from a commercial bank's point of view and practical experience on how the new regulatory requirements of the Basle II Accord require and/or enable banks to be part of the Corporate Governance of corporate clients and thus probably even leading to "Banks managing Companies". Special attention is given to the CEE market and its current development.

To ensure the stability of the financial sector banks have been supervised since a long time by national authorities all over the world. With the integration of the former national financial markets it was necessary to coordinate and to harmonize the national regulatory requirements so that the global financial market has an accepted common basis for the business that also insures its stability. With the **Basle II Accord** and its principles being transformed into national laws this common basis has reached a new level and **defines the most important regulatory requirements** for the international banking industry. This relates especially to the required "independence" of loan departments in the decision process for loans as well as to the fact that in future the risk of individual loans and of portfolios will have a strongly increased influence on the capital required to support the loan business. That basically means that the better the risk system of a bank is the more adequate its pricing will be - leading to more success of the bank. Besides these international rules banks are of course additionally governed by national laws which can have a positive or negative influence on the market chances of the respective banks.

The increasing integration and interdependence of the markets worldwide also require a broader basis of internationally applicable rules and principles the market participants (buyers, suppliers, investors, creditors etc.) can expect thus providing more efficiency and trust for national and international business. Besides national laws and international treaties also Corporate Governance provides parts of this basis.

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Given the above mentioned definition of Corporate Governance it is obvious that for an efficient management of companies more areas than just financial performance have to be addressed. This applies especially but not only to external costs like environmental pollution. The history and the current situation of the Kyoto Protocoll show that the implementation of mutually accepted international rules is a long process. An assumption is that today's focus of corporate governance on financial performance is basically due to the fact that with the Financial Sector a "global" institution already exists to enforce this aspect of Corporate Governance.

A good example for the importance of international frameworks and general principles for business is the current development in CEE. The national markets in this area are currently developing into a multinational integrated market with a regional character. But a regional market with regional companies and regional banks on one hand and on the other hand with different national rules is not stable. Therefore as well as to ensure fair chances for every participant and even more important for the development of the region the compatability/integration of that regional market with the global market the a.m. common basis is required.

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We are now experiencing the process of harmonizing the already existing international rules and standards and the regional circumstances in terms of needs and possibilities. In that process the possibility for compromises is different in each area. On one hand there is almost no room in terms of Basle II and international accounting standards for example. For Corporate Governance on the other hand the harmonization still has a long way to go. The hurdle for foreign investment resulting out of that fact has been lowered remarkably with the EU accession as we experience in our daily business.

Given the a.m. development in Regulatory Requirements as well as in the CEE market the basic question for banks is how they can ensure compliance with Regulatory Requirements and applicable laws and make profitable business. And what impact does that have on Corporate Governance respectively does it lead to managing their corporate

customers? To better understand the implications for banks and corporates it is helpful to have a look on the different interest groups involved and their main focus.

As shown in the graph below there are three basic focus of main interests: Return, Servicing the Customer and Ethics. **Return** or basically money is the key focus for the majority of investors as for example retirement funds. It is their task to make sure they receive an adequate return from their investments. These investors and their requirements are influencing and also limiting the strategy, behaviour and possibilities of corporations as well as of banks (which in this respect are also corporations). The focus of corporations is “**Servicing the Customer**” so that they can achieve adequate results to ensure sufficient funding for the future. The public's main focus is “**Ethics**”, which as a term basically summarizes all other interest groups/areas like customers, the state (law, tax, employment), environment and the press, to name a few of them. Their interests are effected by the behaviour of banks and corporations and consequently their consent or dissent is also limiting the strategy, behaviour and possibilities of corporations. Thus the public is also influencing Managers and Owners of companies who with their decisions have to balance the interests of the public and the investors whereby their own financial interests in the company should not be underestimated as well as their interest in the future of the company (e.g. family businesses).

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A good example for these conflicting interests is the current discussion in Germany whether General Motors should respectively can close its main car factory in Rüsselsheim for cost reasons and transfer the production to another country.

Banking Authorities seem to be less influenced by the public and their main focus is to ensure the functionality of the banking sector (servicing the client) but also to ensure ethics (e.g. money laundering). The general conclusion from this chart is that none of the interest groups is able to manage a company solely on its own neglecting the interests of the other groups. That leads to consequences for banks and corporates in terms of what do banks do to match these interests as much as possible and what is the result from that for corporates.

The basis for loan decisions of banks are **Ratings** that will be mandatory with Basle II implementation. Usually there are separate ratings for the company (Financial Rating) and for a special loan of a company (Credit Rating). Based on the financial rating the latter incorporates also the structure and collateral of a specified loan. These ratings which are based on preagreed methods and standards make it possible to evaluate and compare risks of different clients in different markets. This is the basis for a better integration and harmonization of the financial markets. A good example therefore are the rating agencies like Moody's and S & P which have pushed that development for quite a while.

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These rating procedures require that companies provide more information than before and thus leading to more transparency and that companies obey certain key criterias for the rating if they want to secure sufficient funding for the future. But since the ratings are influenced by a variety of factors and ratios it is up to the company's management to decide how they combine these factors.

A further consequence results from the fact that loan decisions of banks very often have a longer term character and banks have to ensure that the basis for their actual decision is also sufficiently available in the future. Therefore **Covenants** are an instrument which gained a lot of importance. There are basically three kinds of covenants:

Information Cov.: requires the company to disclose actual financial data on a regular basis

Negative Cov.: the company undertakes not to e.g. raise new loans, grant additional collateral to other banks, invest without consent of the bank etc.

Financial Cov.: the company promises to maintain preagreed financial ratios (e.g. equity, cash flow etc.) or not to pay out profits to shareholders

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The collaterals can on one side partly substitute collaterals and stabilize the financial rating respectively enhance the credit rating for a company. On the other hand they limit the companies in their decisions how to run the business. In setting the covenants banks have to be prudent to ensure that the necessary level for the bank is set but that it does not

unnecessarily limit the company in its possibilities. Usually a mutual discussion with the client based on mid- or long-term plans leads to an adequate agreement.

If collaterals and covenants are not sufficient enough to justify a positive loan decision but the prospects are good other forms of financing are required. Usually start-ups and fast growing companies that have a good business model are lacking equity to enhance their balance sheet structure and stability. In these cases banks are increasingly offering **Mezzanine Financing**. This is an equity-like mid- to long-term subordinated financing which besides the pure funding function enables the company also to get more financing from other sources through a better financial rating.

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Mezzanine financing transfers some of the entrepreneurial risk to the banks which are in turn compensated for this by some entrepreneurial rights like a higher and risk-appropriate margin as well as increased information rights. Usually the bank also has to agree to certain fundamental decisions of the company like major investments or divestments.

There are cases where mezzanine is not enough because it is meant for repayment after a certain period of time (5 – 7 years usually). This is the case when otherwise not enough equity from stable investors is available. In that case banks have been a preferred partner for Participations especially from faster growing companies and family held companies as well as large companies.

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Nowadays this sort of financing has a reduced importance. Banks have seen that being a financial investor is not their core competence. Consequently they are more and more divesting as the example of Germany shows where the former “Deutschland AG” (major German companies and banks holding participations in each other) has been dissolved. Banks have established or participated Private Equity firms where they transferred this type of business to. These companies, that are doing business apart from banks, are also very active in Central-/Eastern Europe.

This short overview of the Regulatory Requirements that bank have to obey and what that means for banks and the financing of corporations leads to two conclusions:

1) Even though **banks** require a deep insight into a company **they are not managing the companies**. The banks intention is basically directed at the financial performance and standing of a company. Regarding that banks are clearly influencing corporate decisions and behaviour because they are a provider of the companies and also have to satisfy the need of their investors as well as of the public. Companies and banks are partners with sometimes different priorities in their interests.


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2) With their focus on financial performance banks **banks are an important partner in corporate governance systems** because they require the companies to be more and more transparent and to be more and more compliant with international standards. Otherwise banks would not be able to incorporate their business in the global market. But financial performance is not the only aspect of corporate governance. The intended or discussed harmonization of some tax issues in the EU as well as environmental issues also have an important impact on how to run and manage a company.

**/ Banks, Regulatory Requirements and
Corporate Governance /**

Karviná, 20th October 2004

Burkhard Dallosch
General Manager
Commerzbank AG
-Pobocka Praha-

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No 2

Definitions

- The most important Regulatory Requirements are set by Basle II

„Corporate Governance is a field in economics that investigates how to secure/motivate efficient management of corporations by the use of incentive mechanisms, such as contracts, organizational designs and legislation. This is often limited to the question of improving financial performance ...“
(www.encycogov.com)

2 Karviná, 20.10.2004

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No 3


A look on the market

The current national markets in CEE will develop into a multinational integrated market with a regional character

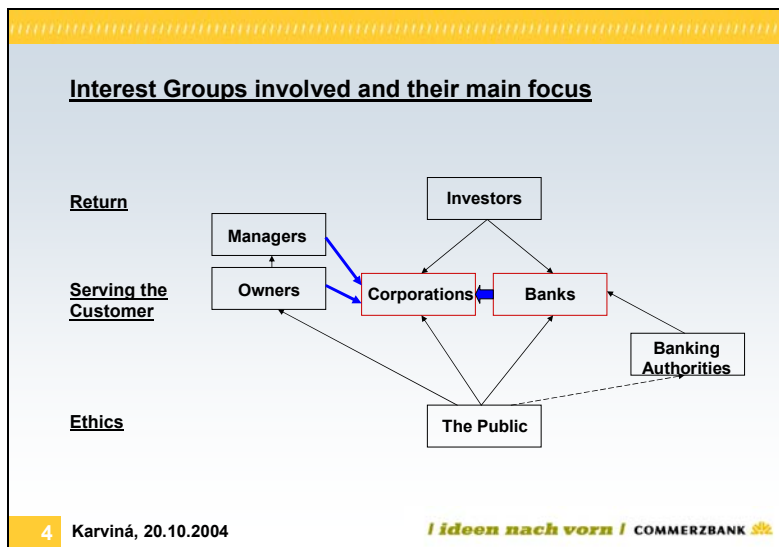
- The core of that market will be CZ, HU, SK (and southern part of PL)
- Importance of "domestic" market will increase
- Market share of SMEs and regional corporates will increase
- The number of FDI projects will increase (SMEs -second wave-)
- Increased development of groups with regional background and activities
- Substantial growth potential for banking services for SMEs
- Increased banking competition

 **Integrated markets need a mutual framework/basis of general principles to ensure fair chances for every participant (e.g. Basle II)**

3 Karviná, 20.10.2004


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No 4



No 5

Consequences for Banks and Corporates



Ratings


- Needed to evaluate, compare and decide on the risk of a company/loan for various purposes (pricing, portfolio-fit/-development, Basle II)
- Requiring companies to obey certain requirements of lenders/investors to secure sufficient funding (amount, time) and lowest possible pricing
- Required by regulators to increase the stability of the market and its participants

(1/4)

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No 6

Consequences for Banks and Corporates



Covenants

- Secures the necessary financial standing/rating of a company needed to further support current risk-/return profil of a loan
- Can (partly) substitute collaterals
- Limits companies in their decisions how to run the business

(2/4)

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No 7

Consequences for Banks and Corporates



Mezzanine

- Banks provide debt and equity-like subordinated debt (conflict of interest ?)
- Increased information rights and active involvement in supervising the company (strategy, organization, investments)
- Better access to debt financing through improved balance sheet structure

(3/4)

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No 8

Consequences for Banks and Corporates



Participations

- Banks provide equity which otherwise is not sufficiently available from stable investors
- Increased information rights and active involvement in supervising the company as well as share of profit and increased business potential
- Better access to debt financing through improved balance sheet structure and better standing

(4/4)

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Conclusion

Banks have to obey Regulatory Requirements that are ment to ensure a healthy market and investment environment as well as fair chances for all participants.

Banks are not managing companies but are clearly influencing corporate decisions and behaviour.

In Corporate Governance Systems Banks have their competence in aspects regarding financial sustainability and performance.

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/ Thank you for your attention /



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COMPANY VS. BANK: EFFICIENT COOPERATION

Patrik Choleva

Company and Bank need each other for “ages”. The way of cooperation changes based on development of society, technologies, new needs, new bank products etc.

Noncash payment system is usual now. Company has to make a choice of suitable bank/banks. The selection is influenced by Company needs and, in the case of company with high quantity of individual customers paying by bank transfers, on customers needs as well.

Usual ways of communication between Company and Bank are electronic banking, phone, email, Internet.

Bank offers to Company various products, Besides execution of payment, Bank offers products that represent certain way how to make mutual transactions among Company and counterparts more safety, for example using guarantees, documentary credits etc.

Bank provides Company with loans, bank may cooperate with company in the case of issuance bonds. On the other hand bank accepts from Company term deposits and offers Asset Management.

Company often has several or even more accounts to distinguish incoming payments. Cash Pooling is a tool that enables to utilize positive and negative balances on the accounts on the automated way, to minimize interest expense and maximize interest income. Cash Pooling can function among companies within one Group.

Certain rules have to be followed for utilization of Cash Pooling within one Group:

- one currency, one Bank for all bank accounts
- active accounts of each Member company must be incorporated in the system
- daily transfers of balances from all Operating Accounts to the Master Account and to the Pool Account

- the agreement among all Members (companies) of Cash Pooling and Bank
- the agreement between the Pool Leader and Members
- approval of Shareholders – General Assembly.

Cash Pooling may be virtual (no real transfers are executed) or real.

Jihomoravská plynárenská, a.s. has experience with One-Level Cash Pooling in the Group (balances of all operating accounts of all Members were transferred directly to the Pool Account, it means directly to Pool Leader) and with Two-Level Cash Pooling.

Two-Level Zero Balancing Cash Pooling:

- 1) All credit balances on the Operating Accounts are transferred to the Master Account of the Company and the balance is transferred to the Pool Accounts. There is an agreed amount of possible debit limit on the Master Account. The amount of debit balance on Master Account is settled by transfer of necessary amount from Pool Account. This means that the balances of all accounts of the Company are equal to zero.
- 2) The functioning of the system can be seen in the schemes in the presentation.
- 3) Bank calculates interest for the companies.

Pool Leader may function as a bank and to lend or borrow money to/from the other companies based on pre-defined conditions:

- all members are tax residents in the Czech Republic
- Cash Pooling implies real money transfers
- transfers of money are considered to be loans between Pool Leader and Members and are based on agreements signed by Pool Leader and each participating company
- transfer pricing – transaction between relating parties must be charged at usual market price
- interest is subject to standard tax treatment
- legal rules must be in accordance with Commercial Code.

Companies in RWE Group sell and deliver gas to customers in the Czech Republic. Companies have to receive advance payments, because in the case of households the period of invoicing is approximately one year. Companies used various ways of deposits and Asset Management in the past

RWE Group proposed and executed intercompany Cash Pooling in the Czech Republic based on rules shortly mentioned above. Based on a tender, two banks were chosen to test the system in the Group.


After certain change in one of the banks, Two-Level Zero Balancing Cash Pooling is used in both banks now.

The necessary condition for successful functioning of Cash Pooling is proper planning of cash flow for each bank in all Member companies, the unified way of communication with Pool Leader (forms of plans weekly up-dated) and direct communication in the case of deviations.

After one year of functioning we can say that no significant problem, that could influence daily operation of the company, appeared. It is reason why I decided to present our experiences with Cash Pooling.




According to my opinion the future relationship between banks and companies will be based on more widened scale of electronic services, however, the physical contact between bankers and company representative always will be necessary.

Appendix: Presentation




Company vs. Bank: Efficient Cooperation

Ing. Patrik Choleva
Member of the Board and CFO
Jihomoravská plynárenská, a.s.




Agenda

- Mutual needs of Company and Bank
- Transactions
- Cash pooling
- Further cooperation
- Future of relation Company and Bank




2

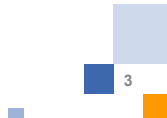


Agenda

- **Mutual needs of Company and Bank**
- Transactions
- Cash pooling
- Further cooperation
- Future of relation Company and Bank



3



Mutual needs of Company and Bank



- Noncash payment system
- Selection of Bank
 - Company needs
 - Customer needs
- Communication tools
 - Internet, phone, email, electronic banking
- Assurance between companies
 - Credit notes, guarantees
- Bank realizes profit from transactions and services



4

Agenda



- Mutual needs of Company and Bank
- **Transactions**
- Cash pooling
- Further cooperation
- Future of relation Company and Bank



5

Transactions



- Financing Company
 - Loans
 - Bonds
 - ...
- Assessing free sources
 - Asset management
 - Term deposits
 - ...



6

Agenda



- Mutual needs of Company and Bank
- Transactions
- **Cash pooling**
- Further cooperation
- Future of relation Company and Bank



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Cash pooling



- Definition
- Necessary conditions
- Types of cash pooling
- One-Way Cash Pooling, Two-Level
- RWE Group
- Main advantages



8

Cash pooling



- Definition
- Necessary conditions
- Types of cash pooling
- One-Way Cash Pooling, Two-Level
- RWE Group
- Main advantages



9

Definition



- modern banking product fully compliant with Czech legislation
- product that enables utilization the positive and negative balances on the accounts
- tool to centralize treasury in an automated way, to minimize interest expense and maximize interest income
- can function among companies within one Group



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Cash pooling



- Definition
- **Necessary conditions**
- Types of cash pooling
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- RWE Group
- Main advantages



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Necessary conditions



- One currency, one **Bank** for all bank accounts
- Several legal units (companies) within one Group
- Active accounts of each member company must be incorporated in the system
- Daily transfers of balances from all Operating Accounts (credit and debit balances) to the Master Account and to the Pool Account
- The agreement among all **Members (companies)** of Cash Pooling and **Bank**
- The agreement between the **Pool Leader** and **Members**
- Approval of Shareholders - General Assembly



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Cash pooling



- Definition
- Necessary conditions
- **Types of cash pooling**
- One-Way Cash Pooling, Two-Level
- RWE Group
- Main advantages



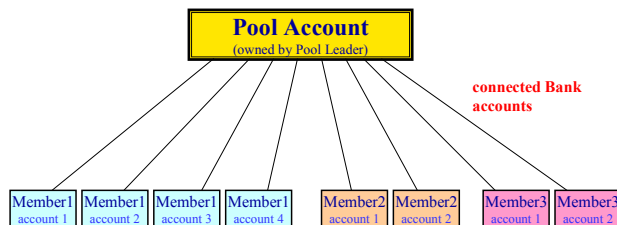
Types of cash pooling

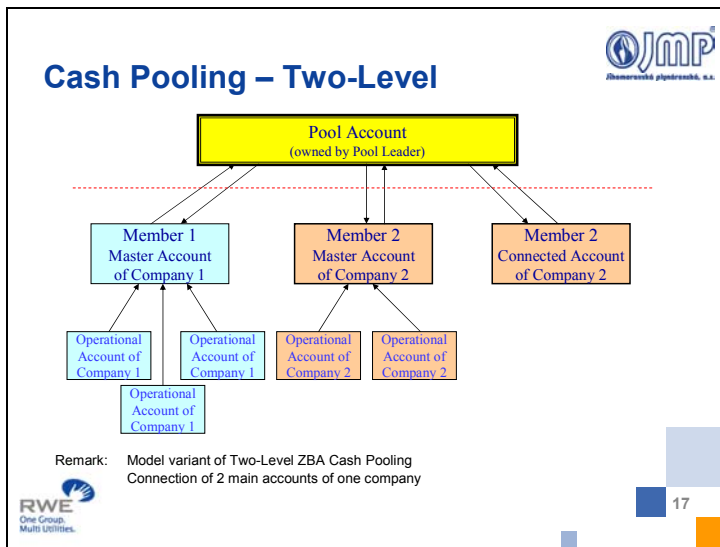
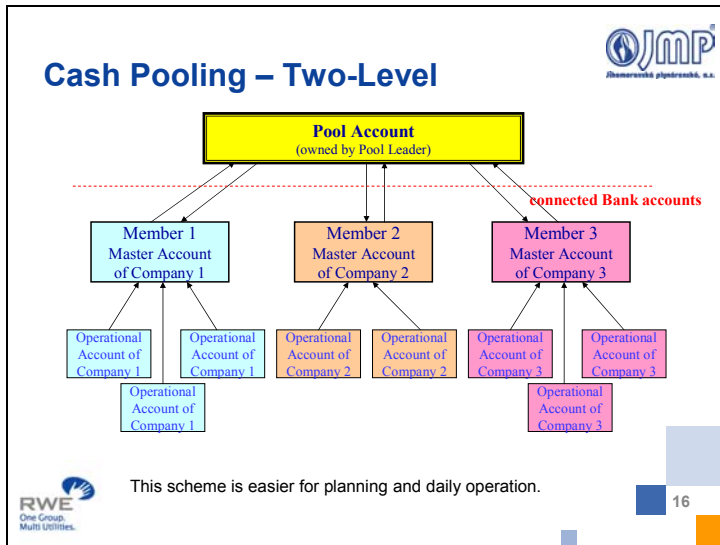


- Virtual cash pooling
- Real cash pooling
 - One level
 - Two level



Cash Pooling – One-Level





- ## Cash pooling
- Definition
 - Necessary conditions
 - Types of cash pooling
 - **One-Way Cash Pooling, Two-Level**
 - RWE Group
 - Main advantages
- 18

Intra-group interest



- **Bank** calculates intra-group interest in connection with transfers between the Connected Accounts and Pool Account („Net Position“ principle). Intra-group interest is booked by the bank on the individual Connected Accounts after being confirmed by Pool Leader.
- Net Position = sum of the transfers between the Connected Accounts and Pool Account from the commencement of Cash Pooling operations
- **Pool Leader** acts as a bank which lends or borrows money to/from the other companies based on pre-defined conditions
- Comprehensive report is generated and distributed on monthly basis
- Booking of the intra-group interests on monthly basis by the bank



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Legal and tax rules



- All members are **tax residents** in the Czech Republic
- ZBA implies **real** money transfers between the Connected Accounts and Pool Account
- Transfers are considered to be loans between Pool Leader and Members of the Group and are based on **agreements** signed by Pool Leader and each participating entity
- Transfer pricing – transactions between relating parties must be charged at usual **market price**
- Accrued interest on Pool Account is subject to standard **tax** treatment in accordance with applicable tax laws
- Legal rules – Commercial Code



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Legal Documents



Real One-Way Zero-Balancing Cash Pooling Agreement

- Counterparts: Bank, Pool Leader, Members
- Main rules: daily CP transfers, interest calculation for all members settlement, limit for the group and intra-day limits for all accounts

Roll-over Loan Agreement

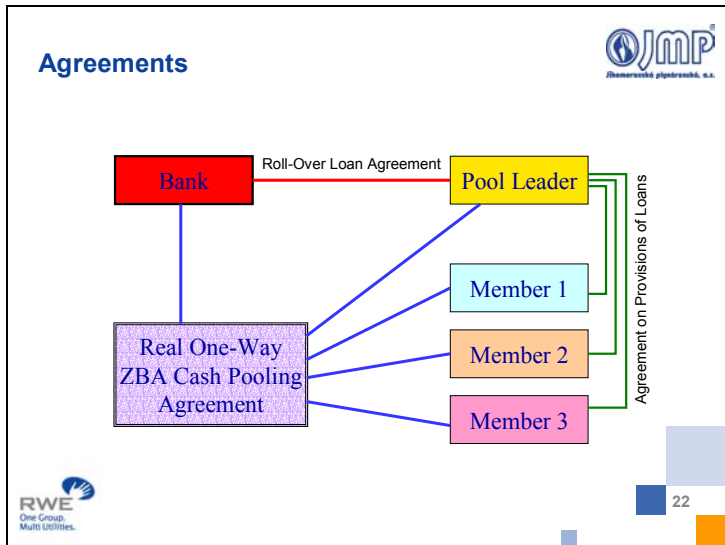
- Counterparts: Bank and Pool Leader
- Roll-over loan enables the Pool Leader to finance working capital of the Pool Account and to refinance the intercompany loans in the Group

Agreement on Provision of Loans

- Counterparts: Pool Leader and Members
- Agreement about providing loans

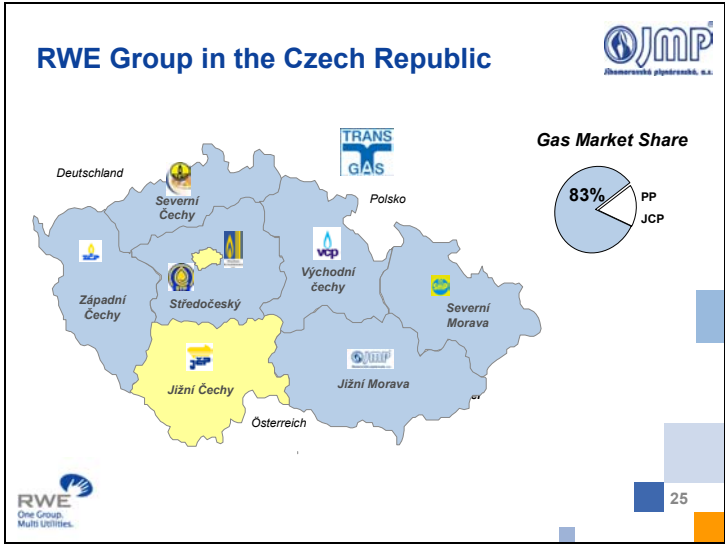


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- ## Intercompany loans
- Pool Leader, Members
 - Terms and conditions concerning interest calculation are submitted to the Bank
 - **Term Loans** and interest calculation are just a matter of agreement between Pool Leader and the Member of the Group, participating on Cash Pooling (Bank is not involved in these loans and interests).
- 23

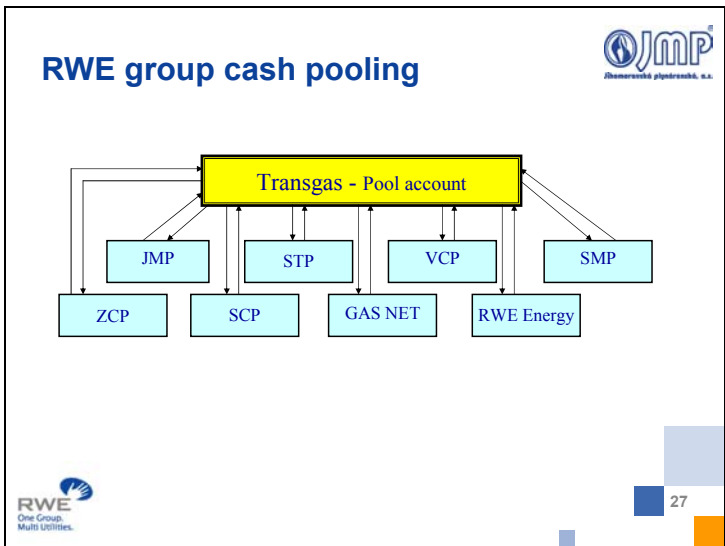
- ## Cash pooling
- Definition
 - Necessary conditions
 - Types of cash pooling
 - One-Way Cash Pooling, Two-Level
 - **RWE Group**
 - Main advantages
- 24



RWE – key numbers 2003

■ Turnover	107 bilion CZK	(JMP – 13 bilion CZK)
■ Employees	6 182	(JMP – 1 179)
■ Net profit	10 bilion CZK	(JMP – 532 milion CZK)
■ Interests expense	614 milion CZK	(JMP – 19 milion CZK)

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Cash pooling



- Definition
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- **Main advantages**



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Main advantages



- Liquidity of the Group is concentrated on **one account**, which enables the optimum utilization of total liquidity position of the Group.
- Due to maximum possible balancing of the different (credit and debit) balances on accounts the paid interest of the Group are **lowered**. Final interest for the Group are calculated based on the balance of the Group.



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Agenda



- Mutual needs of Company and Bank
- Transactions
- Cash pooling
- **Further cooperation**
- Future of relation Company and Bank



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Further cooperation



- Pension scheme for employees
- Leasing
- Guarantees, Documentary Letters of Credit
- Trading on financial market (Forward Transactions, Options, SWAP etc.)



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Agenda



- Mutual needs of Company and Bank
- Transactions
- Cash pooling
- Further cooperation
- **Future of relation Company and Bank**



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Future of relation Company and Bank



- Electronical contact – widening scale of services
- Major customers – retail + small companies
- Regular contact between banker and company



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STRATEGY OF BUSINESS & INVESTMENT IN THE CR

Hana Chlebná



The slide features a background image of a globe with the text 'CZECH INVEST' overlaid. The main title is 'Strategy of business & investment in the CR' in red, followed by the subtitle 'Role of Banks in Corporate Governance and Financing' and the date 'Karviná 20 October 2004'. The presenter's name 'Hana Chlebná' is also in red. Logos for MPO (Ministry of Industry and Trade) and CZECH INVEST (Investment and Business Development Agency) are at the bottom, along with the website 'www.czechinvest.org'.

CZECH INVEST

Strategy of business & investment in the CR
Role of Banks in Corporate Governance and Financing
Karviná 20 October 2004
Hana Chlebná

MPO
Ministry of Industry and Trade

CZECH INVEST
Investment and Business Development Agency
www.czechinvest.org



The slide features a background image of a globe with the text 'CZECH INVEST' overlaid. The title is 'Policy Framework for Business Support'. The content consists of two bullet points: 'Lisbon Agreement' and 'Czech National Development Plan'.

CZECH INVEST

**Policy Framework
for Business Support**

- **Lisbon Agreement**
- **Czech National Development Plan**



Lisbon Agreement

- Information and Communication
- Research and Innovation
- Innovative SME Environment
- Investing in People
- Sustainable development
- Benchmarking Performance



National Development Plan

Sustainable development based on competitiveness

- Strengthening competitiveness of businesses and business environment
- Improving skills, competitiveness and labour mobility
- Development of transport infrastructure
- Sustainable development , improvement of environment
- Balanced development of regions

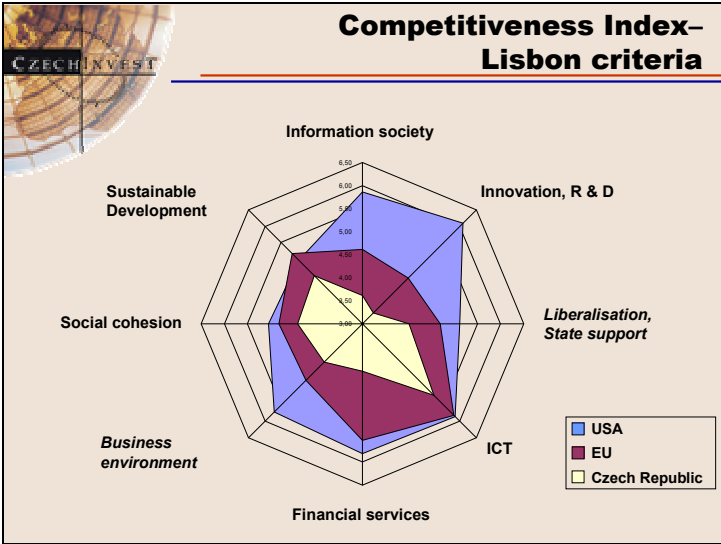


Defining national competitiveness

The ability of countries to compete depends on:

- Capacity to adopt available technologies
- Capacity to develop innovative activity
- Favourable business infrastructure promoting competitiveness on local markets
- Sufficiently qualified labour force
- Available financial and service resources

Source: United Nations



- ### Key factors affecting competitiveness
- Business Environment**
- Macro-economic stability
 - Clear economic development policy
 - Business infrastructure and professional service to business
 - HR/ labour market development (management and marketing skills)
 - Legal framework governing business environment
 - Protection of intellectual property associated with innovation and R&D
 - Business property market development
- Business Development**
- Access to technologies & financial resources to acquire them
 - Cooperation between companies on national and international level

Competitiveness Index

Basic factors

Macroeconomic environment indicator (1/3)
macroeconomic stability (1/2), country's credit rating (1/4), government expenditure (1/4)

Technological advancement (1/3)
development of information and communication technology (1/2), transfer of technologies and knowledge (3/8), innovation (1/8).

Institutional efficiency (1/3)
legal environment (1/2), corruption level (1/2)

Result:

1. USA
2. Finland
3. Taiwan

→

40. Czech Republic

→

51. Poland

Source: WORLD COMPETITIVENESS INDEX 2002 / 2003



Key factors enhancing competitiveness

Foreign Direct Investment

- Access to capital and technologies
- Development of human resources and managerial skills
- Increases attractiveness of the national market enhances productivity
- Through supplier chains integrates indigenous business into international production and marketing networks

Export growth

- Export promotion strategy focused on industrial sectors producing high added value goods or services which are increasingly oriented towards science and technological progress



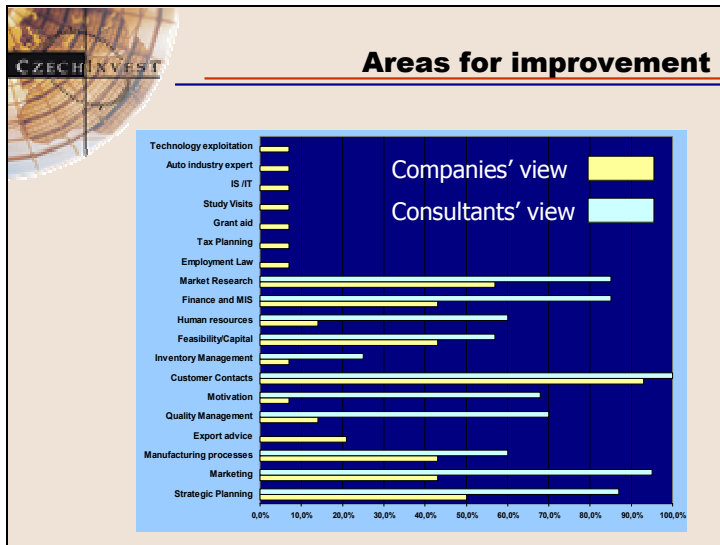
Competitiveness Indicators

<u>Country or Region</u>	<u>Company</u>
<ul style="list-style-type: none"> • FDI attraction • Export growth • Employment • New Firm formation • Skills & Knowledge • Patents • Business Environment • Infrastructure • GDP 	<ul style="list-style-type: none"> • Profits • Exports • New Products % of sales • Productivity • Value Added • Growth rate

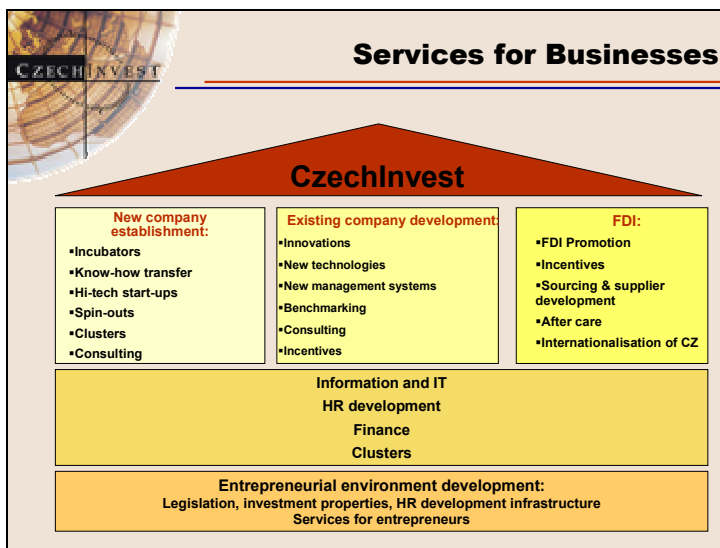


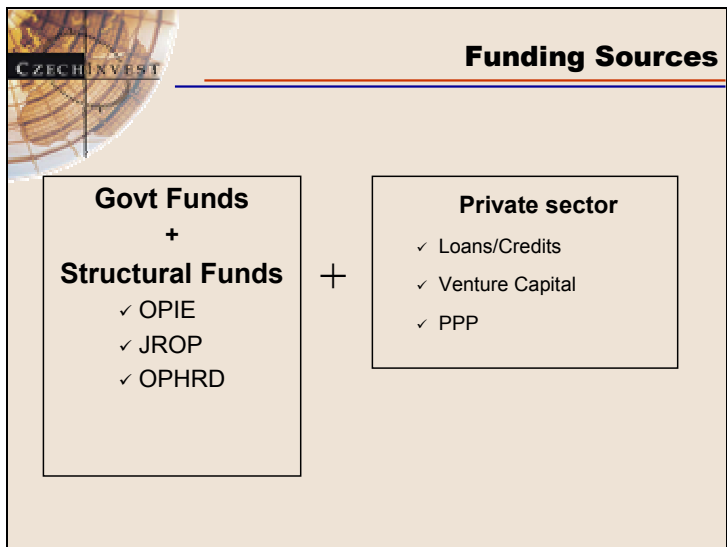
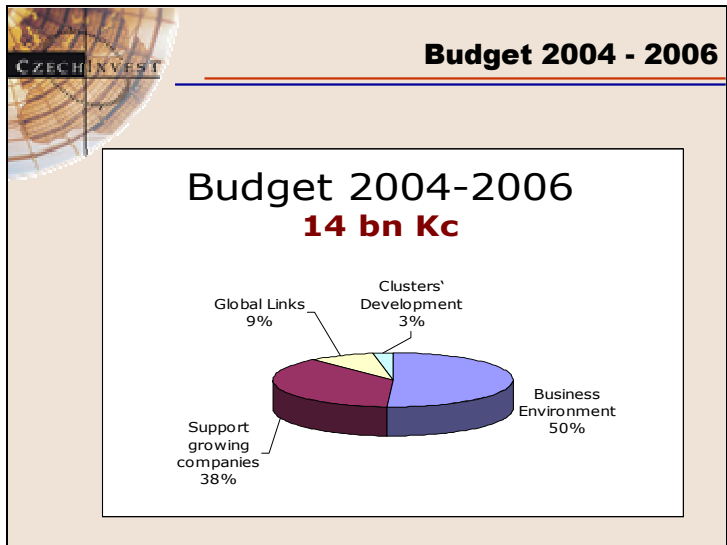
Business needs

- Access to finance
- Business & legal environment
- New technology
- New products & services
- Business strategy and marketing
- Market Intelligence
- Management and technical skills



- ### CzechInvest Strategy
- 4 key priorities**
- Improving the business environment
 - Supporting growing businesses
 - Developing and sustaining clusters
 - Creating global connections






- Strategic Partners**
- CZMRB
 - Czech Trade
 - Chamber of Commerce
 - Centre for Regional Development
 - Ministry of Labour and Social Affairs
 - Municipal & Regional authorities
 - Private developers
 - Venture Capital Funds
 - Business Angels



Delivery Partners

- Universities
- RPIC's
- BIC
- Private Consultants
- Other economic development organisations
(RRA, business associations, etc.)



CzechInvest Targets 2004 - 2006

Priority No. I – Business Environment Development	
• Area of newly built and reconstructed spaces for manufacture and services (in square meters)	85,000
• Area of regenerated land - brownfields (in hectares)	330
• Area of newly prepared land for investment development - greenfields (in hectares)	800
Priority No. II – Support of Setting Up New Companies and Developing the Existing Ones	
• Number of newly established companies	390
• Number of companies to be granted support	2,130
• Number of supported jobs in companies that will be provided with the support	80,000
Priority No. III – Global Links	
• Amount of investment mediated by CzechInvest (in million CZK)	72,000
• Number of investment projects mediated by CzechInvest (the first stage or the second one)	140
Priority No. IV – Clusters' Development	
• Clusters development identification and support (a minimum number of supported clusters in the period 2004-2006)	4
Specific Indicators for Priorities I to IV in Total	
• Number of newly created direct jobs	24,000
• Ratio between public and private funds used in business development	1:5

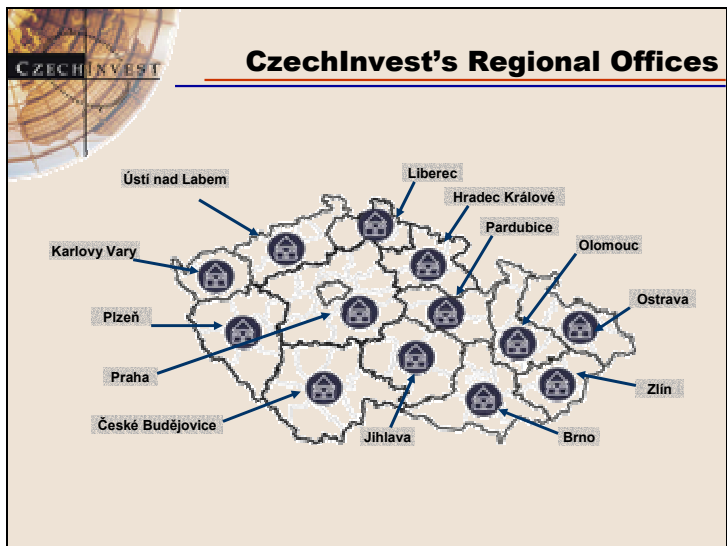


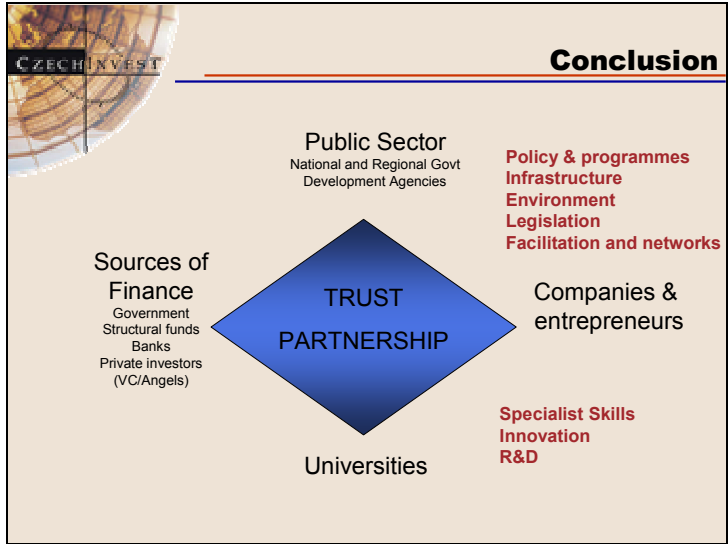
Our Objectives for Moravia-Silesia

- Attract major investments
- Work with clusters (engineering, wood, IT)
- Improve companies' ability to compete and innovate
- Support the university to realise its innovative potential
- Provide quality sites and buildings
- Work with government on "special projects" aimed at supporting job creation

CZECH INVEST **Guiding Principals**

- Clear regional vision
- Coordination and concentration of resources
- Work with regional partners
- Regional marketing strategy – *Business Friendly Region*
- Focus budgets where they can make a difference
- Measure need, quality and impact to ensure we maximize effectiveness of money spent - deliver value for money
- Create productive partnerships





CZECH INVEST

THANK YOU

MPO
Ministry of Industry and Trade

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Investment and Business Development Agency
www.czechinvest.org

ECONOMICS

THEORY OF MONEY AND THE ROLE OF CENTRAL BANK IN THE THEORY OF MODERN AUSTRIAN ECONOMIC SCHOOL

Ján Lisý

Key words

money, money market, monetary base, central bank, commercial banks, business cycle

1. The views of Hayek on money in the 1930s and 1940s

Hayek is the author who most comprehensively explained the monetary theory of the economic cycle. He proved on the basis of scientific analysis, that money, specifically bank loans, causes economic imbalances. According to Hayek, if the central bank increases the amount of money in circulation, the commercial banks increase the availability of credit, which means lower interest rates on loans. Cheaper loans enable increased investment activity by businessmen. Voluntary or enforced savings can be a resource for the growth of investment activity by businesses. Voluntary savings mean that part of the money intended for consumption is diverted to investment. In this case economic imbalance does not arise, since the demand for investment and its supply increases in proportion to the decline in demand for consumer goods and their supply. In conditions of so-called forced saving, when the central bank rapidly increases the amount of money in circulation, the supply of loans increases, the production of capital goods grows, but not enough consumer goods are produced. The growth of investment accelerates the growth of incomes, which raises the demand for consumer goods, but the supply is not increased. The imbalance between the supply of consumer goods and the demand for them leads to rises in their price. Further growth in production requires further investment. However, in reality, it was only a matter of a one-time and time limited expansion of money. Businessmen learn that the supply of credit resources is exhausted, that the banks are charging higher interest rates for loans. Interest in loans declines, because the interest rate reaches a level at which businessmen cannot effectively gain credit, which slows down investment activity. The structure of capital also changes as a result of the general availability of cheap loans. Businessmen also invest in capital

demanding production. In reality it is a matter of bad investment caused by forced savings with an advantageous interest rate. Therefore a recession occurs, in the course of which the structure of capital can be improved. The bad structure of capital is improved during a recession, but, at the same time, much productive capacity disappears and many people lose their jobs.

Hayek later supplemented his monetary theory of the economic cycle with real factors. In his view interest in credit declines when modern facilities are unavailable to the majority of businessmen as a result of high prices, which result from high demand. At the same time, real wages fall because the prices of consumer goods rise. Therefore, businessmen prefer to pay for more labour rather than for modern production equipment, so investment gradually declines. A recession is manifested in inadequate investment and insufficient use of existing productive capacities. Hayek proposed to solve these problems with the help of so-called neutral money. This is money which does not influence relative prices or interest rates. It does not influence breakdowns in production or the level of profit. Neutral money should eliminate the disproportionate development of prices, and this should lead to the balanced development of the economic activities of businessmen. According to Hayek, this requires an unchanged quantity of money in circulation. Later Hayek corrected his view and admitted that it is possible to change the quantity of money in circulation, depending on the number of transactions, the speed of circulation of money and other factors. Hayek later came to the conclusion that it is actually very difficult to influence the course of the economic cycle with the help of neutral money. However, he still claimed that the less monetary circulation is controlled and influenced by the central bank, the better it will be for the economy.

F.A. Hayek explained the monetary theory of the economic cycle in the works: “Prices and Production”, “Monetary Theory and the Trade Cycle”, “Profits, Interest and Investment” and “The Pure Theory of Capital”. The most important contribution of these works is Hayek’s conclusion that a change in the quantity of money in circulation and changes in the volume of loans available in the economy cause a whole series of situations, which direct financial resources into areas they would not go in normal conditions. He considered that changes in the quantity of money in circulation was also harmful if the aim was to stabilize the price level. In these works from the 1930s, he does not mention the free market and competition in the issuing of money.

Even in “The Road to Serfdom” published in 1944, he regards the issuing of money and banking as unavoidable exceptions in the functioning of free markets. At that time, he openly expressed the view that no reasonable person had ever denied the fact that a monetary system must be centrally directed. Thus, Hayek definitely rejected freely competing banking.

Do we need a central bank?

Hayek’s views on this problem developed and finally radically changed in the course of the 1970s. He became a great supporter of laissez faire in the issuing of money and claimed that this was the only way to secure a stable price level. Analysis of the causes of the high inflation in the 1970s motivated Hayek to a more detailed study of this problem. He came to the conclusion that abolition of the monopoly position of the state as the only issuer of money would help to reduce inflation and secure monetary stability. Hayek explained the essence and principles of free issuing of money by private banks in his work “The Denationalisation of Money”, published in 1976.

In the introduction to this book, Hayek says that the basic problem of the market system, to which he most frequently points, is the tendency to the occurrence of regularly repeated periods of depression and unemployment. In his view, this is caused by the traditional state monopoly of the issuing of money. Hayek believed that private money would help to remove these problems. The basic idea of this book by Hayek is the statement that money is not different from other goods, and so supply of it can be secured best by private issuers, since private interest represents the most effective motivation to achieve the best results. Hayek thought that governments had failed in the supply of money, were still failing and would always fail. This inadequacy could be removed by competing private currencies and abolition of the government monopoly of issuing money.

He also supposed that the name and denomination of a bank’s currency would be protected against unauthorized use like the protected trade mark or name of a company, and protected against falsification in the same way as other documents. Currencies issued by different banks would have different denominations and their value against other currencies could vary

freely. If various competing currencies existed, people would be able to see whether their value was maintained on a stable level. They would naturally choose the currency which was most stable and least subject to inflation. Apart from the fact that the relative values of individual currencies could change, the currencies of different banks could distinguish themselves by their degree of acceptability to different groups of people, liquidity and so on. Thus, the desire of the public to have the currency of a certain bank would be an important factor on which its value would depend. The issuing bank would also have an interest in securing a stable price level in units of its currency in relation to a certain basket of commodities. To secure a stable value for its currency, the issuing bank should issue only the amount of money the public is willing to hold and accept. It cannot increase the quantity of a given currency, since this would cause growth in the price level of commodities in units of its currency. The bank would also avoid a decline in the quantity of its currency below the level the public wants to hold, so that it would not have to reduce issues, which would cause a decline in prices of commodities in the given currency. The exchange rate of the currency of the given bank against other currencies would be important information for the issuing bank. Banks would react to the need to reduce or raise the quantity of its money in circulation either by means of granting loans or selling its own currency. Rapid and immediate operations with direct effects would be carried out by purchase or sale of currencies in an exchange. Operations with long term effects would be performed by changes in credit policy. Hayek observed that a stable value of money can be secured only by appropriate regulation of the amount of money in circulation. The quantity of money in circulation would depend on the desire of the public to hold the money of a particular bank and not on demand for credit. Irresponsible raising of the amount of money in circulation would result in the return of money to the bank becoming more rapid than the demand of the public to hold the money. Banks should issue money covered by assets defending its stability, and competition would prevent it being issued in excessive quantities. In his analysis of the problem of how the public would choose a currency, Hayek started from the assumption that people choosing from several currencies issued by private banks would always choose a better currency than the state provides today.

Hayek's position on the quantitative theory of money

Some authors identify the understandings of money of Hayek and Friedman. However, Hayek rejected this, saying that he differed from M. Friedman in the view that, even when there is only one currency in a country, he regards the quantitative theory of money as nothing more than a useful rough approximation to an adequate explanation. However, it is absolutely unusable if several competing currencies are used in the territory of a given country. Hayek regarded the unambiguous emphasis on the mutual relationship between the quantity of money in circulation and the overall price level as the main inadequacy of the monetarist theory of money. It does not respect the much more important and more dangerous results of changes in the quantity of money in circulation for the structure of relative prices and the resulting ineffective allocation of resources, especially the disadvantageous and ineffective allocation of investment.

Hayek also doubted the validity of the quantitative theory of money in conditions of the existence of one currency in a given country. He claimed that there is really no such thing as the quantity of money in circulation and that every attempt, which considers a certain group of means of exchange expressed in one denomination to be homogeneous and perfectly substitutable, is erroneous and misleading. A stable price level and high stable level of employment does not require or admit that the total quantity of money in circulation be constant or that it changes at a constant rate. According to Hayek, the aim of monetary regulation is not to determine the quantity of money in circulation either in the conditions of a monopoly or in conditions of competing issuers. Monetary policy has to secure by market principles a quantity of money adequate to maintain stable price levels in the long-term.

The main advantage of abolishing the government monopoly of the issuing of money lies in the fact that in conditions of competing issuers, responsibility for the quantity of money, its value and stability is given to entities, which have a direct economic interest in influencing the quantity of money in the most advantageous way for the users.

Hayek was aware that proposals for the free issuing of private competing currencies would encounter strong opposition from politicians, governments and the banking establishment,

but also from many economists, both theoretical and practical. Implementation of such a radically new monetary system would require far-reaching political and institutional changes. The reforms proposed by Hayek in this context are complementary. The monetary system he proposes – private competing currencies – could be implemented only in conditions of reduction of government intervention in the economy. At the same time, government intervention in the economy can be reduced by the abolition of the state monopoly of the issuing of money. Strong opposition to the abolition of the state monopoly of the issuing of money can also be expected from bankers, who are used to the routine mechanism of the functioning of banking, from central banks and from many important personalities in banking, who cannot imagine how a monetary system of competing private currencies could function, and so consider these ideas impossible and impractical. In spite of such strong opposition to private currencies, Hayek did not give up. He enthusiastically argued in favour of abolition of the state monopoly of the issuing of money and in favour of competing private currencies. He also proposed abolition of the state monopoly in this area because throughout history governments had misused their position and so seriously disturbed the automatic functioning of the market mechanism.

The introduction of competing currencies would give people an alternative, but would not mean change in their familiar use of money. Experience would show them how they could improve their position by changing to a different kind of money. According to Hayek, the introduction of competing currencies and abolition of the state monopoly needs to be done suddenly and not gradually. Successful implementation of this proposal requires the creation of free competition between the issuing banks and complete freedom of movement for all currencies and for capital, also across frontiers. People will trust the new currencies only if they are convinced that they are not subject to any state control. It is possible to assume that the private banks will maintain the stability of the value of their currencies only if the private banks are under strict control by competition. Only if people can choose which currency they use for a purpose will there be a general spread of good and stable money. Banks will be cautious and able to adopt the necessary measures only if the exchanges function flexibly and well. Certainty that cartel agreements and collusion between local banks with the aim of misusing a particular currency will not occur is possible only if there is free movement of money and capital across

frontiers. The process of adaptation of supply and demand will function only if there are free commodity markets, leading to stable average prices of commodities.

Hayek believed that competition would create new, previously unknown possibilities in the area of currency. If a new monetary system is created, competition will exclude unsuccessful companies, with only a few widely used currencies remaining in a free system. One or two currencies will have a dominant position in large areas of the world, although the frontiers of their use will not be precisely determined. Naturally, if the money issued by a state is recognized and stable, people will probably still give priority to it, but pressure from competing private currencies would contribute to stabilization of price levels and controlling inflationary pressures.

Hayek realized that his proposal to deprive the state of its ages old monopoly position in the area of issuing currency was so unusual and radical for many people, that there was no hope of implementing the proposal in the near future. However, Hayek believed that the public and the people responsible for the effective functioning of society could gradually change their view on this.

It is interesting that Hayek was against the creation of a single currency for the European Union. He thought that a single currency would not be better than the individual national currencies. He proposed that the individual national currencies could be used freely without any limitation in all the countries of the EU, and that banking should be deregulated in all the member states of the EU. This would create a level of discipline and responsibility in the existing currency and financial structures, which would ensure that only reliable and stable money was issued. Each country would issue only the amount of money for which it could ensure a stable value. Governments would not be allowed to misuse the issuing of money to cover deficits and “solve” other problems.

2. Mises' theory of money as the starting point for the theory of the economic cycle

In 1912, Mises published the „Theory of Money and Circulation“, the aim of which was to create a scientific theory of money in harmony with the theoretical starting points of the Austrian School. Mises' predecessors – Menger and Böhm-Bawerk – had not succeeded in explaining a clear and comprehensive theory of money. Mises supplemented and developed the theoretical system of the Austrian School in precisely this area. Menger explained the historical and logical process of the origin of money as the result of the spontaneous behaviour of people, who sought the most rational method of producing and exchanging goods. He understood money as a universal medium of exchange, a universal valuable, which all people accept, and which can be used always and everywhere. Therefore, economic entities do not have to keep large stocks of heterogeneous goods, it is enough to have a supply of money and exchange it for the necessary goods according to need. However, Menger did not explain the value of money in accordance with the theory of limit utility. Therefore, Mises' aim was to explain the value of money in the same way that the value of anything else is determined. In this way, Mises attempted to unite the macro-economic conception of money with the micro-economic theory of utility. Mises explained that money as a medium of exchange, held with the aim of use in future exchange, could not arise other than in the form of product money. Mises understood money very broadly. He regarded as money, everything, which helps to mediate exchange, including goods, precious metals, later coins, banknotes, but also bills of exchange, cheques, obligations, shares and so on.

According to Mises, the basis for the theory of money is the claim that the value of a monetary unit is determined by the subjective value of the goods, the individual can buy with the given monetary unit. That is, the value of a given monetary unit depends on the purchasing power of the money, that is, on the quantity of goods, which can be bought with the given monetary unit. Mises proved that, if the quantity of produced consumer goods and investment goods increases, this represents an increase in overall social wealth, but this does not apply to money. He proved that if the quantity of money in circulation increases, it brings no social benefit, but only causes a decrease in the purchasing power of money, that is, a decline in the value of money. It was clear to Mises that the purchasing power of money depends on demand for money, but

demand for money depends on the purchasing power of money, since if prices are lower, people will wish to hold a smaller quantity of money. Mises attempted to solve this charmed circle with the claim that the present demand for money is determined by the purchasing power of money in the past period. The present purchasing power of money is, therefore, determined by the relations between the present demand for money and the present supply of money.

Mises also devoted attention to the inflationary consequences of increasing the amount of money in circulation. He explained that increasing the amount of money does not cause a simultaneous and proportionate increase in the prices of all types of goods, but causes a change in the whole system of relative prices and incomes. Mises thought that inflation represents a form of hidden taxation and redistribution of income in favour of the state and in favour of individuals and companies advantaged by the state. He explained why governments and central banks prefer tendencies to act and decide in an inflationary way. He started from the knowledge that increasing the quantity of money in circulation is not equally advantageous for everybody. The government and the central bank decide about the increased quantity of money. On the basis of their decision, the prices of an ever larger quantity of goods progressively rise. During this process, there is a systematic redistribution of income in favour of the original owners of the money and to the disadvantage of those, who acquired the money later or did not acquire it at all. According to Mises, inflationary development can be avoided only if the state or central bank loses the monopoly on the issuing of money and the position of the central bank is replaced by the gold standard based on free and competitive banking.

For Mises, the theory of money was the basis and starting point for his monetary theory of the economic cycle. Although J.M. Keynes and K. Wicksell were concerned with these questions in the same period as Mises, the difference between the approaches of these economists and Mises lies in their views on the roles and responsibilities of the government and the central bank. Knut Wicksell, a representative of the Swedish School (1851-1926) thought that the central bank can correctly tune monetary policy to moderate the fluctuations of the economic cycle. Mises had the opposite view, he even claimed that the monetary policies of governments and central banks help to create and deepen the economic cycle. Mises regarded changes in the quantity of money as the main cause of the cyclical development. When a central bank increases the quantity of

money in circulation, it leads to expansion of credit from the commercial banks, which leads to a fall in interest rates and increased investment activity by businessmen. However, credit expansion and investment expansion do not have corresponding coverage in real savings. The result of the investment activity is an increase in the production of investment goods. This activity is characteristic of the phase of expansion. After a time, it is found that the tendencies to consume and to save have not changed, and that the tendency to invest is too high and does not correspond to the real possibilities of the economy. With a certain time delay, many investments turn out to be bad and ineffective, which leads to a phase of recession, when the bad investments are weeded out, there is a period of disinvestment, increased unemployment, decline of demand and decreased production. All this results from forced savings and bad investments, caused, according to Mises, by the incorrect monetary policy of the central bank. Mises finally proposed that it is necessary to prohibit the issuing of banknotes backed by gold, in the interest of excluding the possibility of cyclical development. On the basis of his theoretical research, Mises came to the firm conviction that every intervention by governments and central banks is counter productive and really only deepens the problems they originally wanted to solve and remove.

3. The causes of the cyclical development of economies (Rothbard)

Rothbard describes and justifies the influence of inflation on the course of the economic cycle. On the initiative of the government, the banking system creates new money and puts it into circulation in the form of loans granted to businesses, for which these resources represent a form of real investment. Such raising of the supply of loans causes a decline of interest rates. This situation influences the activity and decision making of all actors in the credit market. Businessmen and investors take their decisions as if the interest rates were reduced as a result of increased savings. An impression arises that the amount of capital, which can be invested in the production of new products, has increased. The decline of interest rates leads to consumers reducing their savings, but entrepreneurs increase their demand for credit and continue to invest as a result of the low interest rates. From their inflationary credits, the companies finance higher wages for their employees and pay higher prices for investment goods. Production of investment goods increases and previously unused productive resources begin to be used. This leads to a situation in which the market does not have enough capital in relation to the growing production.

The consumers do not increase their savings, because they increase their consumption, which increases demand for consumer goods. An economy existing in conditions of scarcity with a limited quantity of productive resources cannot produce a greater quantity of consumer goods and a greater quantity of investment goods at the same time. Rothbard shows that when new inflationary money gets into circulation, the wealth of the economy does not change, only its structure changes in conditions in which market principles are not applied. The granted credits are not the product of voluntary savings, as in the case of investment generated by a freely functioning market. Businessmen invest this new money obtained in the form of credits in various products, and pay for the purchased productive factors in the form of higher wages and prices. This new money gives the impression that savings increased, although this is not true in reality and so the investments turn out to be ineffective, uneconomic and unpromising.

As a result of the issuing of inflationary money, the economy gets into a situation, in which many productive resources are placed in branches, where they cannot be completed and used. Businessmen begin to perceive a shortage of money, interest rates rise, and pressure to limit business activity appears. Thus the artificially evoked expansion of the economy by issuing inflationary money and a policy of cheap money leads to a phase of recession, which begins the gradual process of removing the bad investments and returning to the effective allocation of productive resources. The process of allocating productive resources so that they will be placed in accordance with market principles and will be effective and promising, requires significant costs, since part of the expended resources cannot be recovered.

Analysis of the essence of money and the banking system enabled Rothbard to explain the causes of the origin of inflation as well as its influence on the cyclic development of the economy. According to Rothbard, inflation is always dangerous for an economy, since it causes economic imbalance, which leads to the enrichment of some actors in the market at the expense of others.

Rothbard was convinced that the market and the market mechanism can decide most effectively about the size of the money supply. Freedom can function effectively in the area of monetary circulation, just as in other spheres of the market economy. According to Rothbard, even monetary circulation does not require state intervention, since the government is an

essentially inflationary institution. Rothbard thinks that the structure of the banking system, headed by the central bank and the operating commercial banks, is responsible for the origin of the economic cycle. In his view, central banking in a free market economy is an artificial and heterogeneous element, which causes all the serious economic problems.

Rothbard thinks that paper money, appearing in various forms, is also a means of unjustified enrichment in the international sphere. He showed that all the systems of paper money are products of the state, and the formation and effort to perfect the international monetary system is a continuation of the redistribution of wealth in the international framework. Therefore, Rothbard takes a critical view of the future development of international monetary problems. He states that “world paper money and a world central bank are the ultimate aim of world leaders inspired by Keynesianism, and the more immediate aim is a return to a form of the Bretton Woods system. Various central banks are already endeavouring to coordinate monetary and economic policy, harmonise inflation rates and set exchange rates. The militant pressure for the creation of a European paper currency issued by the European central bank is apparently bringing very early success. This aim is interpreted for the gullible public on the false pretext that the European economic community based on free trade requires an overall European bureaucracy, unified taxation in the whole territory and especially the creation of a European central bank and paper currency. When this aim is achieved, co-ordination with the Federal Reserve System will follow. Is the establishment of a world central bank unforeseeable? Thus, according to Rothbard, the future of the dollar and the whole international monetary system is very uncertain.

Rothbard supposes that if we do not return to the classical gold standard with realistic prices of gold, the international monetary system is condemned to constant shifts from floating exchange rates to fixed exchange rates and back again. Both these systems bring insoluble problems, function badly and finally collapse. This prediction can be changed only by a fundamental change in the American and world monetary system, consisting of a return to commodity money in a free market, for example gold, and complete exclusion of the state from the monetary scene.

4. Conclusion

Representatives of modern Austrian School strongly criticized and refused the state intervention in the economy. They suggested an abolition of the state monopoly of the issuing of money. In their view it could prevent a economy from a rise of inflation and the cycle repeated crises. According to their opinion the decision on the level of monetary base should be made by a market and market mechanism. Central banking is considered as the artificial unit that give a rise to all serious economic problems.

Abstract

Príspevok analyzuje a charakterizuje teórie peňazí najvýznamnejších predstaviteľov modernej rakúskej ekonomickej školy, význam a postavenie centrálnej banky a komerčných bánk. F. A. Hayek tvrdí, že čím menej bude peňažný obeh riadiť a ovplyvňovať centrálna banka, tým lepšie pre ekonomiku. L. E. Mises bol presvedčený, že každý zásah vlády a centrálnej banky v oblasti regulovania peňažnej masy je kontraproduktívny a v skutočnosti len prehĺbi tie problémy, ktoré chceli pôvodne riešiť a odstrániť. Podľa M. N. Rothbarda najefektívnejšie môže o výške ponuky peňazí rozhodnúť trh a trhový mechanizmus. Domnieva sa, že štruktúra bankového systému, na čele ktorého je centrálna banka a pôsobiace komerčné banky, je zodpovedná za cyklický vývoj ekonomiky. Centrálna banka je podľa neho v slobodnej trhovej ekonomike umelým a cudzorodým článkom, ktorý vyvoláva všetky vážne hospodárske problémy.

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THE IMPLICATIONS OF INFORMATION ASSYMETRY WITH REGARD TO MONETARY THEORY OF JOSEPH STIGLITZ

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Key words:

information asymmetry in the market, criticism of IMF, analysis of financial crisis in Argentina, financing of economic growth and global means of payment

1. Introduction

Joseph Stiglitz, professor at Columbia University and convinced Neo-Keynesian, received the Nobel Prize jointly with G. A. Akerlof and A. M. Spencer in 2001 for research into „information asymmetry in the market“ and analysis of „moral hazard“ in economics. The aim of the paper is to point out how the information assymetry influences the markets, especially the financial markets, whereas I would like to present opinions of J. Stiglitz on transformation process in postcomunism countries as well as his critical view of work conducted by IMF.

2. Information asymmetry in the market

Stiglitz's scientific work on uncertainty in economics led him to knowledge about information asymmetry and the general imperfect informedness in the market, which was only a short step from the generalization, that the market is not ideal. Stiglitz and his colleagues G.A. Akerlof and A.M. Spencer are convinced that even small deviations from rationality in the relations between individual actors in an economy cause macro-economic break downs. In classical or neoclassical economic models, a key element is the assumption that the market is perfect. Buyers and sellers have equal power and opportunity to achieve a satisfactory price. They have perfect information, they know who sells cheaper and who buys at a higher price. However, the

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real market is not perfect, on one side are privileged actors, on the other disadvantaged participants. Some companies can wait before selling because they have reserves, while others must sell at any price. Some know much about the goods and conditions in the market, others know nothing.

According to Stiglitz and the neo-Keynesians in general, unequal access to information and the unequal position of actors are typical of real markets.

If we take this assumption into account, it is entirely clear that the market does not contribute to the optimal redistribution of the resources available to society. In other words, the theory of economics needs to be supplemented. The balance of supply and demand as the basic thesis of every standard economics textbook is only a theoretical hypothesis. Well managed companies employing highly qualified workers should clearly prosper in the market, but the reality is much more complicated. The company wins by illegally destroying the ethics of trade, because by doing so it eliminates the competition.

Stiglitz's views on the inadequacy of the standard model were fully expressed in the discussion of the process of transformation of the former socialist economies into market economies. In this process, he emphasized the importance of competition, the central government, finance and more widely also the institutional including the legal infrastructure. However, he did not place much emphasis on privatization. He belonged to the group of experts sometimes called "gradualists" in contrast to the supporters of the theory of shock therapy, who concentrated on rapid changes with rapid privatization. The transformation strategy supported by Stiglitz was clearly different to that promoted by the IMF and its supporters. The failure of many countries in the attempt to successfully change to a market economy provided a new view of what influences the functioning of market economies.

Stiglitz had the possibility to research one of these views during the period he worked as chief economist of the World Bank. However, wide agreement was gradually reached on the importance of the institutional infrastructure and the danger of rapid privatization in the process of transformation to a market economy. Stiglitz was deeply convinced that government has to

play an important role in the economy. In his work on the economy of the public sector, he attempted to clarify how the government can perform this role as effectively as possible. One of the important questions he was concerned with in this context, was the problem of how to achieve the redistribution of income in a way, which minimizes loss of effectiveness, which cannot be prevented and are connected with tax breakdowns.

3. Evaluation of the IMF activity in dealing with financial crisis in respect to information asymmetry

Stiglitz criticizes the IMF for mechanically promoting the liberalization of capital flows and applying its views as if they were Pareto dominant, that is, the policies, which should raise the living standards of all, so there should be no compromises.

Short-term capital is especially harmful. It prefers countries, which guarantee high profits. The result is that the domestic currency strengthens unhealthily, but capital immediately leaves the country, because it does not want to pay for a financial crisis. Stiglitz points out that foreign capital most prefers the areas where it is least needed. Economic booms especially attract investors. When recessions begin, capital leaves, the crisis deepens and capital strengthens the economic cycle.

The IMF mainly analyses macro-economic indicators: inflation, budget deficits and balance of payments deficits. If crisis threatens a country, the fund recommends introduction of a restrictive anti-inflation policy of reduced expenditure and reform of the financial system. Stiglitz considers this recipe harmful. According to him, the protective activities of the fund are the most harmful. Assistance to threatened countries enables them to maintain a high exchange rate until rich investors have removed their money and deposited it in safer places. The crisis in the East Asian economies further sharpened Stiglitz's disagreement with the policies of the IMF. The approach of the IMF to solving this crisis was not in harmony with his findings from the areas of information asymmetry and bankruptcies, central government and finance.

4. Innovative approaches of Joseph Stiglitz with regard to financing the economic growth

J. Stiglitz analysed the causes of the origin of the financial crisis in Argentina and also criticized the recommendations of the IMF in this case. He criticized the introduction of the "currency board" system for the following reasons:

- Fixation to a currency such as the dollar is a very risky policy. Argentina already had to abandon this method of currency fixation years ago,
- A one-sided emphasis on inflation, without regard for unemployment or economic growth is risky,
- Argentina was praised for enabling foreign entities to own banks. A more stable banking system was created in the short term, but it did not lend to small and middle-sized companies. Growth does not happen without financial institutions, which lend to domestic companies,
- The IMF bears a large part of the blame for the Argentinian crisis by insisting on a restrictive policy.

Stiglitz also predicts the reaction of the IMF - accusations of corruption and failure to implement the necessary measures.

A further idea, which J. Stiglitz brought into the discussion of the search for new innovative approaches to financing economic development, is a new form of global currency, similar to special drawing rights (SDR). SDR is global money issued by the IMF. The member countries receive it and exchange it for the dollar and other hard currencies. According to Stiglitz the essence of the system would be simple: The countries of the world deposit financial reserves every year for unforeseeable events. These resources cannot be used to finance the investment the poor countries need. If a new "global currency" was introduced, countries could hold their reserves in this currency instead of in dollars. According to Stiglitz, this money could be transferred to developing countries to finance development programmes. The IMF, which also issues SDR, or a new institution should issue this "global money". A group of administrative funds for the areas of education and health would be created at the same time. Countries would compete for projects.

This scheme would not be inflationary. Global money would compensate for inflationary prejudices, which are a result of the fact that the part of state revenue deposited as a reserve is never reflected in overall global demand.

5. Conclusion

A conclusion could state that the scientific research of J. Stiglitz was strongly influenced by his experience of life. The dominant theme of his scientific works is the implications of economic information for the macro-economics and especially for monetary theory. Another important area of his research is his still continuing analysis of the appropriate role of the state in the economy, especially the combination of measures of the government in the areas of economic effectiveness, social justice, individual responsibility and other liberal values.

He does not consider himself to be an enemy of the free market. He also defends his spiritual father John Maynard Keynes against such accusations. He writes: Keynes was above all a radical conservative. He fundamentally believed in the market, although with the reservation that the market will be effective only when the government can correct its mistakes.

Abstract

Príspevok vo svojej prvej časti vysvetľuje teoretický prínos Josepha Stiglitzu k vysvetleniu informačnej asymetrie na trhu. Podľa Stiglitzu je nerovnaký prístup k informáciám a nerovnaká pozícia subjektov pre reálny trh príznačná. V ďalšej časti sa príspevok zameriava na kritické zhodnotenie prístupov MMF k riešeniu finančných kríz vo svete. Stiglitz zazlieva MMF, že mechanicky presadzuje liberalizáciu kapitálových tokov, pričom upozorňuje, že zahraničný kapitál priteká najradšej tam, kde ho najmenej potrebujú. Zároveň kritizuje reštriktívnu antiinflačnú politiku a reformu finančného systému podľa odporúčaní MMF. Joseph Stiglitz navrhuje nové prístupy k financovaniu ekonomického rozvoja a novú podobu globálneho platidla podobného zvláštnym právam čerpania (SDR). Globálne peniaze by podľa neho kompenzovali inflačné predsudky.

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MONETARY POLICY AND CENTRAL BANKING IN VIEW OF ALAN GREENSPAN

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Key words

Central bank, FED, monetary policy, asset market, inflation targeting, deflation, financial market

1. Introduction

Three years ago Alan Greenspan was described as the most powerful man in the world and the majority of commentators expressed a highly positive view of his work in directing the financial system of the USA. In the course of performing the function of chairman of the FED, Greenspan had to deal with a period of strong growth, low inflation and unemployment, with a crisis, stock market crash and terrorist attack. Greenspan became the embodiment of the „new economy“. The result of his prudence was prosperity, from which millions of Americans profited in the form of a boom in business, higher wages and development of the stock market. However, more recently, doubts have been expressed about this “icon” of central banking, and he has even become the target of variously formulated accusations. His hesitant decision making during the stock market boom of the nineties, when company shares climbed to dizzy heights, is described as his greatest mistake. According to the critics, he should have solved the situation differently by raising interest rates, so that the bubble would have burst without irreparable losses. They are even beginning to speak of the “Greenspan bubble”, which brought the loss of 7 billion USD in the stock markets and 3 billion USD outside the stock markets, when it burst. The arguments of those, who would like to change the strategy of the central bank after Greenspan’s departure, are still strengthening. In 2002, for the first time in four years, two of his staff openly disagreed with his view that the strategy of the central bank on the setting of interest rates should not change. Support for the flexible type of monetary policy oriented towards the new economy, of which Alan Greenspan was the main representative, is weakening.

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2. On Central Banking

Money, with its functions as a store of value and a medium of exchange, is something, which enables society to function with the aim of achieving economic progress. The ability to store the results of our labour for future consumption is essential to the accumulation of capital, the extension of technological progress and raising of the standard of living. In this context, the general price level, that is, the average exchange rate between money and all goods and services, plays an important role in every society, since it influences the nature and extent of economic and social relations, without regard for time.

In a democratic society, the central bank is a filter and magnet for various tensions and confrontations, which exist in society. Every institution, which has the ability to influence the purchasing power of money, is regarded as an institution, which can influence the level and distribution of wealth between the members of society. The most important task of the central bank is monetary policy. As Greenspan observes, he would like to say that he has on his desk a thick volume of instructions on how to effectively implement policy to achieve the maximum level of employment, sustainable economic growth and price stability. Instead of this, however, the central bank must confront a dynamic, constantly changing economy, the structure of which changes during every business cycle. Since monetary policy must work with a delay, the central bank needs to look forward, to adopt measures to deal with future imbalances, which are, however, often not visible. There is no alternative to the central bank acting on the basis of prognoses. However, this means that the central bank must often tighten or relax monetary policy, although these steps may not appear necessary to the public. At the same time, it must be as transparent as any other government institution. According to Greenspan, it is unacceptable in a democratic society, for a group of unelected individuals with important legal powers not to be sufficiently open to public scrutiny and responsibility. There is no simple model of the American economy, which can effectively explain the levels of output, employment and inflation. Therefore, it appears to be unavoidable for the central bank to use specially produced partial models and intensive information analyses, which facilitate the evaluation of economic development and implementation of the relevant measures.

All the recent initiatives, which strengthened the payments system and supervision, are very important for the main aim of the central bank. This aim is the maintenance of financial stability and reduction of risks to the system. This mission is a widening of the original understanding of monetary policy. A country will not experience a maximum level of employment and stable prices in the long-term, if its financial system is unstable. In this context, Greenspan considers that success means not so much solving visible problems, as avoiding potential crises.

3. The Monetary Policy of the Central Bank

Alan Greenspan took over the office of chairman of the Board of Governors on 20th June 2000 for the fourth time and his four year term of office will end in 2004. He is also chairman of the Federal Open Market Committee, which is a key body for carrying out monetary policy. He was repeatedly appointed to the committee for a period of 14 years, starting from 1st February 1992. He was appointed chairman of the FED by presidents Reagan, Bush and Clinton.

Greenspan's approach to monetary policy means great progress for central banking. Up to now, this area was directed by fixed rules and strategies, based on personal opinion and the claim that the development of the economy is always a reaction to particular changes, for example, in technology. As a result the guidelines for monetary policy, which function and are successful in a certain period, need to be changed in a different period. Greenspan is convinced that the central bank has learnt to quickly identify changes in the functioning of the economy. The central bank continually monitors a wide range of data and information in real time and on the basis of these observations consistently adjusts its prognostic models. The result of this approach is a monetary policy, which changes in harmony with changes in the structure of the economy. This means progress in comparison with the traditional methods of economic forecasting, which were often applied without noticing important changes in the economy.

In the course of performing the function of chairman of the FED, Greenspan had to deal with a period of strong growth, low inflation and unemployment, with a crisis, stock market crash and terrorist attack. Greenspan became the embodiment of the „new economy“. The result of his prudence was prosperity, from which millions of Americans profited in the form of a boom in

business, higher wages and development of the stock market. Greenspan assumed that information technology would increase productivity, which would lead to rapid economic growth without inflationary tendencies. It is necessary to say that vigorous growth in productivity is continuing in the present period of slower economic growth. On the other hand, he is blamed for the fall in the technology and telecommunications sector, the threat of deflation and the still continuing stagnation in the labour market. The expert public fear that he is not flexible enough and is not finding a strategic solution to the present problems of the economy.

4. Views on the Asset Market and Inflation Targeting

According to influential economists of the type of Cecchetti and Henry Kaufman, the central bank needs new rules for monetary policy, not only because of inflation, but also to moderate the excesses of the financial markets. They accuse Greenspan of allowing the stock market bubble to deform the economy in the nineties. Lawrence B. Lindsey was one of the first to point to the danger the bubble brought. In autumn 1996, as a member of the board of the FED, Lindsey privately demanded higher interest rates, which would guarantee control of “irrational volatility”, to which Greenspan pointed only two months after this event. Lindsey finally gave in to Greenspan and voted to keep interest rates at the same level. Other “anti-bubble” economists include A. Crockett, director of the Bank for International Settlements in Basel, who considers that financial bubbles can be a cause of economic instability with deflationary consequences, which will be difficult to control. Precisely these critics would like to see someone in Greenspan’s position, who would intervene against excesses in all markets, that is, against dangerous growth in the price of shares, property price bubbles and an overvalued currency. Bankers are increasingly discussing the need to set a public inflation target. The FED carefully monitors the development of price levels, but Greenspan resists the setting of explicit inflation targets. He is convinced that an inflation target cannot be precisely determined, because of the constantly changing character of the economy. In his view, an inflation target could tie the hands of the FED, when taking decisions in the event of unexpected deviations.

He thinks that setting a target for inflation makes little sense. He fears that any formalization of the monetary-policy strategy will limit its flexibility and squeeze interest rate

policy into a tight corset. According to Greenspan's supporters, the success of the FED lies especially in the fact that the American central bank can react to rapidly changing conditions in the economy. At a central bank conference in August 2002 at Jackson Hole in Wyoming, Greenspan declared that "it is not at all clear that bubbles can be prevented, even if they are discovered in time, except by the central bank limiting economic activity, which is something we should certainly want to avoid." According to analysts, Greenspan has not forgotten the lessons of history, which point to the fact that when a central bank attempted to extend its mandate to the stock market, this always brought complications. At the end of the 1920s, governor Adolph Miller started his campaign to gain control over the uncontrollable share prices. In 1928-1929, the FED consistently tightened its interest rate policy in spite of zero inflation. This step was one of the factors, which contributed to the stock market crash of October 1929. After the crash, the bank could not radically reduce interest rates, by which it actually facilitated the coming of the great economic crisis of the thirties.

Greenspan chose a different strategy in a similar situation. He was convinced that from the long-term point of view, it was better to take the blame for the rising cost of shares, than to burst the bubble prematurely by raising interest rates. As soon as the bubble burst, Greenspan immediately attempted to limit the impact on the real economy. He reduced interest rates 11 times in 2001, the most rapid campaign of interest rate reduction in the history of the central bank. In spite of being convinced of the over-valuation of shares, Robert J. Shiller from Yale University agrees with Greenspan's policy in the critical period, since raising of interest rates in the nineties, which would have burst the bubble, could have had catastrophic effects on the economy. However, together with Alice M. Rivlin, an economist from the Brookings Institute, who held from 1996 to 1999 the position of deputy chairperson of the Board of Directors of the FED, he blames Greenspan for the FED failing to struggle with the stock market bubble without raising interest rates. They think that tightening demands on the margin trading would have helped. This would have increased the cost of buying shares on credit, although this would have affected only some investors. It would have emphasized the fact that investors should behave more cautiously. According to the former governor of the central bank Janet L. Yellen, Greenspan could have used his influence to apply this idea. However, he was criticized in 1996 for warning of the danger of irrational volatility and from then he completely avoided this theme.

Greenspan still doubts that the public can be successfully convinced without increased interest rates. He also doubts whether the central bank has a mandate to intervene in this situation, since he is afraid that raising interest rates could provoke a strong political reaction. However, the objection immediately appears here that the mandate of the FED developed at a time when the Carter administration emphasized the struggle against inflation and conditions of rising prices and a weakening dollar forced Carter to appoint Paul A. Volcker as chairman. A comparable situation exists today – Greenspan should give more attention to the financial markets.

According to Greenspan, the stock market bubble is a side-effect of a successful monetary policy. In a period when the central bank has successfully reduced inflation and minimized the risk of recession, investors are inclined to take risks with their money. This can lead to waves of rapid growth in the investment markets and then to deep falls, but it also supports investment spending, innovation and rising productivity. This means that financial instability can be an accompanying phenomenon of good policy and sustained long-term growth.

5. The Problem of Deflation and the Central Bank

In many ways, the future of the FED depends on the development of the American economy. If the economy does not revive and fear of deflation grows, the central bank will be under pressure to secure short-term growth by any means. If, however, prices and incomes begin to fall, this could lead to complications in the financial system. It would be more difficult for debtors to repay their debts and banks would not be inclined to lend money at interest rates close to zero. The FED would not be able to use traditional instruments, since the central bank usually struggles against recession and attempts to create so-called negative interest rates. However, if the economy is accompanied by recession, this strategy is not usable and it will continue to fall behind.

Greenspan believes that many of the problems, which Japan has with deflation, are a result of her culture and structure. He is convinced that the United States of America cannot suffer the fate of Japan, which is caught in a deflationary trap. Japanese society is based on the

principle of consensus, and so offices are not able to apply the unpopular measures, which are an essential pre-condition for changing the banking system. Greenspan is willing to adopt unconventional strategic measures if the USA experiences deflation and short-term interest rates fall to a level close to zero. In his speech to the Council for Foreign Relations on 19th September 2002, he stated that the general view that the FED is out of the game, if the rate for inter-bank loans from federal funds falls to zero, is mistaken. In his view, the potential strategies, which could be used in this situation, include purchase of bonds, with the aim of reducing long-term interest rates, or purchase of foreign currencies, which would reduce the value of the dollar and so strengthen exports. These measures should stimulate growth. However, in practice, the FED has much less control over long-term interest rates than over short-term interest rates.

6. Conclusion

Alan Greenspan is described as the most influential man in the American economy. Decline of unemployment to the lowest level and achieving price stability in the economy are regarded as Greenspan's main successes. In the mid nineties, he observed the faster growth of productivity and came to the correct conclusion that more rapid growth was safe for the economy. Monetary policy under his leadership dealt with the results of negative shocks, brought by the stock market crash of 1987, the Asian financial crisis of 1997, non-payment of Russian debts in 1998 and the terrorist attacks of 2001.

His critics point to a second aspect of his rule in the FED. He is accused of enabling the origin of the market bubble at the end of the nineties, which led to the collapse of the market. He is also accused of an excessively flexible monetary policy, which it will difficult for his successors to continue. A further area of criticism appeared in 2002, when he supported a strategy of tax cuts over several years, which brings the risk of relatively large budget deficits.

However the journalist Bob Woodward has called Greenspan the "Maestro", which expresses admiration, not only for his musical abilities – as a young man, Greenspan passionately loved playing the clarinette and saxophone, but also for his financial mastery – he is not described

as a financial guru for nothing, and his knowledge of every instrument in both the political and economic orchestras.

Abstract

Príspevok analyzuje teoretické náhľady a praktické kroky Alana Greenspana, ktorý sa považuje za jednu z najväčších osobností centrálného bankovníctva. V prvej časti sa uvádzajú Greenspanove názory na centrálné bankovníctvo a jeho úlohu v demokratickej spoločnosti. Ako inštitúcia, ktorá má schopnosť ovplyvniť kúpnu silu meny sa považuje za subject, ktorý dokáže ovplyvniť úroveň a rozdeľovanie bohatstva medzi členmi spoločnosti. V druhej časti sa rozoberá monetárna politika centrálnej banky, ktorá sa mení v súlade so zmenami v štruktúre ekonomiky. Tretia časť je venovaná trhu s aktívami a inflačnému cieleniu. Uvádzajú sa Greenspanove argumenty proti explicitnému stanovovaniu inflačného cieľa a postup FEDu pri riešení akciovej bubliny. Podľa neho je bublina na akciových trhoch vedľajším účinkom úspešnej monetárnej politiky. Posledná časť sa zaoberá problémom deflácie z pohľadu centrálnej banky.

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THE EVOLUTION OF OFFSHORING SERVICES IN CENTRAL EUROPE

Janusz Nesterak
Dorota Hobora

Key words

offshoring, offshoring services, foreign investment.

1. Introduction

One of the symptoms of the expanding world globalisation process in the economy is so-called “offshoring”. This phenomenon means transferring some kind of services that support the fundamental company’s activity, to other countries. Still altering economic reality requires from the companies searching of the newest strategies that would lead to the costs’ reduction, growth of efficiency in management of resources, growth of competitiveness and better utilization of possessed resources.

In the report the authors took the plunge to asses the present condition and perspectives offshoring services evolution in Central Europe.

2. Essence and evolution of offshoring services

The idea of transferring some kinds of activities to places remote even thousands of kilometres away seems to correspond to the opinion of one of the famous strategic advisor in the world G. Hamel, who maintains [1]:

“ Strategy has to be subversive. If it doesn’t resist the internal principles that are in force in an enterprise or the rules that manage in a trade, is not a strategy”.

The conception of transferring such departments as accounting, telephone customer service, human resources management, or settlement of accounts of bank transactions to countries with quite different culture, different law regulations has been recently a very radical conception. Nowadays, in relation to intensive market economy development, only thorough and radical changes of the enterprises are the guarantee of success [2].

The example of the new strategy use is the complete reconstruction of organizational structures through reduction of vertical links' chain. It has been observed that in big organizations with organizational structures related one to another there exist double sections like accountancy, provision, staff management and distribution. Too internally developed organizational structures contribute to costs' increase and workmanship's decline. The particular units, for instance accountancy, make use of different accountant, budget and expense procedures while operating simultaneously and independently. That result in having many difficulties with estimation of actual enterprise's costs, proper management and with carrying out a control. Creating periodical reports for a management is preceded by the process of data aggregation from particular units. It's an action that takes a lot of time and requires big employers' engagement.

In competition conditions, the enterprises implement solutions which aim is to reduce organizational services' costs and rationalization of performing processes. Activity areas in which one obtains significant cost reduction are [3]:

- provision and the costs of goods and services that are being bought,
- introducing common accountant and procedures and reports,
- precise cost calculation in time approximate to a real one,
- flexibility of planning processes,
- reduction of production and sale costs,
- reduction of human resources costs.

The example of a conception that realizes the above mentioned assumptions are Shared Services Centre.

The idea developed among the companies that are leaders in the world, as they were looking for the new ways to reduce business costs, correct a control through processes standardization and shortening the time needed to get essential information for the managers. Shared Service Centre is usually a centralized unit that realizes the processes both for internal and external clients who are sometimes hundreds or thousands kilometres away from each other. The common service centre in many cases realizes tasks for its own company or the whole capital group. The conception of Shared Service Centre joins two positive features of two management models: centralized and decentralized one. The effect of the first one is introducing uniform standards and quality control of different activities that lead to make the process better. Decentralized management rely on the fact that a service centre is an independent and flexible company that is focused on satisfying the needs of individual customers.

Creating such specialized unit can become a reality thanks to the development of teleinformative technologies, because they create new expansion fields and new organizational forms for the companies. New informative technologies, which origins date back to eighties and nineties of the previous century, brought about an information revolution. The violent development of the use of personal computers, network, and then Internet contributed to radical changes in many spheres of life, among others in economy. New needs has come into being and developed (for instance: homework via Internet, sell of goods services via Internet). The development in use of Internet makes possible to create better enterprise nets – the flexible nets that cooperate efficiently and operate as a real enterprise. Internet also shapes new enterprise globalisation conditions and new international conditions. Besides, it makes easier to manage the international corporations. Internet also gives unlimited possibilities to analyse and engage world resources and to choose an optimal location that is a deciding factor for the development of services centre conception. Thanks to modern informative science technologies there is possibility to relocate the human resources to places with low labour costs and high quality of services. Searching for countries with cheap manpower in production activity is not a new phenomenon and took place during first wave of costs rescheduling of the western concerns. Currently the companies plan to reduce the costs through transferring the services activity to other countries.

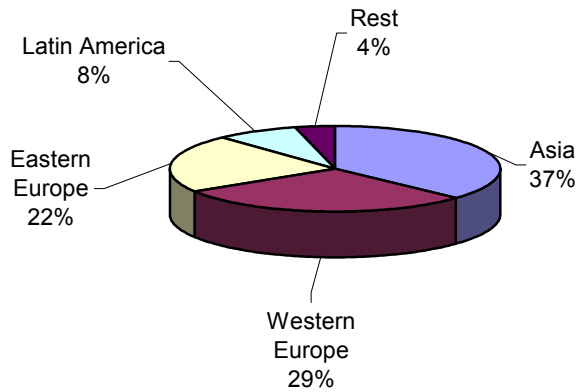
3. Directions of offshoring services development in Central Europe

From the first, complex research on offshoring in European companies, we can find out that almost half of the best European companies plan to develop this kind of activity during next several years. The leading companies are those ones which have centrals in Great Britain, Benelux countries and Germany. 90% of transferred workplaces until now belong to the enterprise from these countries, but 60% to British companies only. Four tenth European enterprises have started to transfer some of their activities to other countries. 80% of them consider the action taken as a success while only 5% as a failure. The costs reduction as a result of the offshoring process oscillates from 20 to 40% and is often bigger than the previous expectations of the companies. An improvement of services quality was also unexpected for one third of the enterprises that have decided for offshoring.

The range of services which can be made outside the company's seat is diverse: finances, accountancy, informative science support, telephone customer service, human resources management, settlement of accounts centres, bank transactions services. Basically all kinds of services are the potential candidates for offshoring process.

The research showed that the choice of destination country depends not only on costs, high qualified staff or time zone but also on such factors as: competition, promotion of destination country or internal support for foreign investments. Europe is a destination place for more than half of the planned offshoring projects. To those countries belong Western Europe: Great Britain, Ireland, Spain, Portugal, but also Poland, Hungary and Romania in Eastern Europe. Almost four tenth of the projects are directed to Asia, especially to India (graph 1).

Graph 1. Directions of foreign capital location



Source: ONZ Conference on Trade and Development (UNCTAD), Roland Berger

A country to which the services centres are transferred has the chance to get new workplaces, infrastructure improvement and export development. Whereas the companies that make use of offshoring convince that their countries of origin also profit from offshoring, because they are more attractive than American rivals thanks to lower costs [4].

The world tendency of building the services centres and transferring some kind of activities to other countries cause the rise of competition between some countries from Central - Eastern Europe and Asia. Work markets in Asia, especially in China are so attractive that begin to attract investments which have contributed to rebuilding of economy in Central- and Eastern European countries after the fall of communism. In November 2002, IBM moved its plant from Hungary to China where the salaries are lower by 75%. Royal Philips Electronics, the manufacturer of electronic equipment, also liquidated that plant in Hungary and opened a new one in China. Electronics, that employs 1000 persons, closed the plant in Czech Republic. There exists an opinion that making a proper use of the possibilities to manage the knowledge is a future for this part of Europe. Although India, Philippines and Russia become a power in the field of computer science and customer services centres. Central – and Eastern European countries have some advantages. Union regulation forbid for instance to keep bank data outside European Union countries. The membership in union structures enables the new members to

participate in the market of services that are destined for financial institutions. Besides, it creates a secure atmosphere for foreign investors [5]. Another advantage of Central and Eastern Europe as a place of service centres location in geographical and cultural closeness and a uniform law system [6]. The above mentioned factors have already attracted some investors (Table 1).

Lufthansa and Philips opened in Poland accountant centres for their European departments. IBM, Axa and Honeywell are going to open similar ones in Czech Republic. ING Group, General Electric and the British producer of alcohol Diageo want to open administrative centres in Hungary. According to AT Agency Kearney, German, Austrian and Swiss banks will create about 100 thousands workplaces in administrative service centres till 2008. The centres will be transferred to places with lower labour costs. But low salaries are not the deciding factor while choosing the location for an investment. In case of attracting investments another factors of high importance are also [7]:

- office buildings with telecommunication infrastructure and access to Internet,
- access to high qualified staff,
- low taxes,
- stability of regulations,
- limited bureaucracy.

Table 1 Special service market in Central Europe

COMPANY	REGULAR POSTS	ACTIVITY	COUNTRY	YEAR
GE	500	computer science service	Hungary	2002
DIAGEO	300	administrative service	Hungary	2002
EDS	140	customer service centre	Hungary	2002
PHILIPS	500	administrative service	Poland	2003
IBM	200	customer help centre	Czech Republic	2001
Logica CMG	200	computer science service	Czech Republic	2003

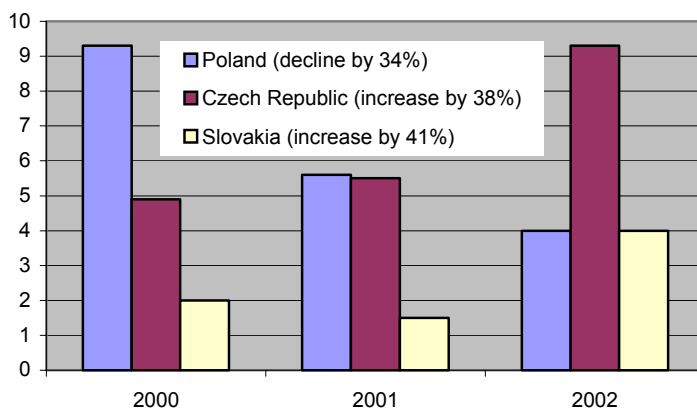
Source: Ch. Condon, R. Butler, Cool breath from East, "Business Week", 2003, n. 9(138), p. 20-21

The above mentioned factors are on the similar level in Poland, Czech Republic, Hungary and Slovakia. In next 5 years one of these countries will become a leader in the offshoring market in Central Europe.

According to the report of an advisory company called Mc Kinsey & Company, Poland have chance to become “ a service centre for Europe” if it attracts foreign investments worth 10 multimillion euros. That would be connected with creating about half million new workplaces [9].

The foreign investment index evaluates investments conditions in a given country. It’s not good for Poland in comparison to Czech Republic and Slovakia (graph 2).

Graph 2 Largeness of foreign investment in years 2000 – 2002 in multimillion Euros



Source: ONZ Conference on Trade and Development (UNCTAD).

The analysis of other factors that shapes economic environment indicates that Poland seems not to be good in comparison with other countries of our region. Czech Republic is the main rival of Poland. This country obtained a better mark in the following sectors: key qualifications, financial stability of the state, time and cost of administrative and judicial service, infrastructure quality and economy innovation – that is shown in table 2.

Table 2. Investments conditions in the countries of Central Europe

	POLAND	Czech Republic	Slovakia	Hungary
Fiscal burden	5	4	2	3
Competitive costs	4	3	5	2
Key qualifications	4	5	2	4
Financial stability of the state	4	5	3	2
Time and cost of administrative service	2	4	3	5
Time and cost of judicial service	2	5	3	4
Infrastructure quality	2	5	4	3
Economy innovation	2	5	3	5

5 – the best price 2- the worst price

Source: Own analysis on basis of P. Maciejewicz, *Better than badly*, "Gazeta Wyborcza", 29.06.2004, p. 18

The superiority of Czech Republic over Poland as for foreign investments is a result of attracting investments called "greenfield" which means investments built from the beginning. In case of this strategy one need to find building site and arm them, then arrange ownership, equip with communication and telecommunication infrastructure. Human potential for concrete offer is also of high importance. The next step is en effective promotion in the world which means offering prepared places for investments to investors through foreign representation.

In Poland the system of attracting investments was based on privatisative offer. When the process of privatisation comes to an end, the investments become to descend. Privatisation means consolidation of production structure, one takes over the property from the previous epoch. Poland encourages the foreign investors, with the lowest tax burdens in the region or with the lowest labour costs burdens and profitable work rate. The number of academic centres in which economists, computer scientists, lawyers are being educated, are the great advantage of Poland. That should impel the potential investors to open service centres in Poland. Łódź and Krakow are among the cities that have attracted most of the investments (table 3).

Table 3. Research and develop centres in Poland

Company	Service centre	Company	Service centre
ABB	Kraków	Intel	Gdańsk
Cap Gemini	Kraków	Accenture	Łódź
Delphi	Kraków	General Electric	Łódź
Exult	Kraków	HP	Łódź
IBM	Kraków - Warszawa	Philips	Łódź
KPMG	Kraków -Poznań	Citibank	Olsztyn
Lufthansa	Kraków	Oracle	Warszawa
Motorola	Kraków	Thomson	Warszawa
Fiat	Bielsko_Biała	Siemens	Wrocław
Lucent Technologies	Bydgoszcz		

Source: Own analysis on basic of Mc Kinsey's report.

Among services centre half of them are accountant centres (Lufthansa, Philips, Thomson, Accenture, General Electric, Cap Gemini, IBM). The next ones deal with personal services (KPMG, Exult) and IT services (Accenture, HP, IBM). The bank transaction centre for CitiBank is in Olsztyn and the back for Fiat is in Bielsko-Biała.

4. Conclusion

Attracting investments in the sphere of services is much easier than in the sphere of production. There's no need to build motorways and access roads. An office building with telecommunication infrastructure, access to Internet and a database of post-graduated students is enough. If Poland wants to make use of the world trends in the field of service export and become "a service centre for Europe" one needs to make changes in the nearest years. In 5 years Bulgaria, Romania, Russia or Ukraine will be more attractive for investors than Poland. According to McKinsey" report one has to change the course of action of the Civil Agency of Information and Foreign Investments. The Agency should operate as a sell office and employ more people from the world of business.

Abstract

Jedním z rysů expandujícího procesu globalizace ve světové ekonomice je „offshoring“. Tento jev znamená transfer některých druhů služeb podporujících klíčové aktivity společnosti do jiných zemí. Stále se měnící ekonomická realita vyžaduje od společností hledání nových strategií, které by vedly ke snížení nákladů, růstu efektivnosti v řízení zdrojů, růstu konkurenceschopnosti a lepšímu využívání ovládaných zdrojů. Autoři příspěvku se pokusili posoudit současný stav a perspektivy offshoring služeb ve střední Evropě. Ukazují, že přilákat investory z oblasti služeb je mnohem jednodušší, než investory z oblasti výroby. Není třeba budovat dálnice ani přístupové cesty. Administrativní budova s telekomunikační infrastrukturou, přístup k internetu a databáze studentů-absolventů často postačuje. Pokud ale chce Polsko uspět a stát se „servisním centrem“ Evropy, musí k tomu vytvořit podmínky v nejbližších letech. Za pět let budou Bulharsko, Rumunsko, Rusko nebo Ukrajina pro investory mnohem atraktivnější než Polsko.

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THEORETICAL CONTRIBUTION OF W. F. SHARPE IN THE AREA OF INVESTMENT ON THE FINANCIAL MARKETS AS THE GROUND FOR THE INVESTMENT POLICY OF PENSION INSTITUTIONS

Veronika Piovarčiová¹

Key word

reform of the pension system, pension governance institutions, pension funds, allocation of finance, The Capital Asset Pricing Model – CAPM, optimal market portfolio, risk, profitability

1. Introduction

Starting on the January 1st 2005 the pension system will be changed. Instead of pure redistribution from current economically active people towards current pensioners so called capitalization principle is going to be launched. New pension system will be build up on three pillars: 1. obligatory, in which the funds will be governed by Socialna poisťovňa in the principle as until now; 2. capital – the funds will be governed by pension governance institutions (dôchodkové správcovské spoločnosti - DSS) on the private pension accounts of individuals and 3. supplementary – by way of which people will be enabled to save for their pension in private pension funds (doplnkové dôchodkové spoločnosti - DDS).

Concentration of relatively immense long-term funds on individual accounts administrated by pension governance institutions as well as private pension funds will put high requirements on them, especially in terms of funds revaluation capability, so that they will be able to fulfill duties related to payments of pension benefits to savers.

Pension governance institutions must create three kinds of funds – conservative, balanced and growth fund with different investment strategies – from conservative strategy towards more risky one. From this perspective we consider as necessary to point out the contribution of

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William F. Sharpe in the area of optimal portfolio selection on the base of The Capital Asset Pricing Model (CAPM), who was awarded together with Harry M. Markowitz and M. Miller The Nobel Prize for economy in 1990.

2. The Contribution of W. Sharpe to the Science of Economics

The contribution W. Sharpe made towards the economic science is very weighty and can be classified as falling under the micro-economic theory of the capital market. According to his own words, he has always stayed within the confines of positive economics, which enabled him to develop a descriptive model of capital asset pricing.

Markowitz's theory of portfolio choice presupposes that the prices of securities are given and, assuming this, it defines a procedure followed by a optimizing investor in his behavior. Therefore the next necessary analytical step was to explain how prices of various assets are determined. The answer – although very simple at first glance, that is by means of demand for and supply of securities – however requires the definition of factors determining this demand and supply. That is why Sharpe concentrated on the determination of economic equilibrium through the price mechanism operating in the capital market. Drawing upon elementary microeconomic theory it holds true that current market prices for any security must always stand at such a level, where the number of each particular security demanded equals the number of this security offered. For this reason, a decisive role in his model is played by the examination of the market portfolio. In Sharpe's view, from among a vast number of factors determining the capital market demand and supply, it is especially an equilibrium relationship between the risk and return that is decisive. He arrived at this conclusion based on a model known as:

The Capital Asset Pricing Model – CAPM

Like any other model, the CAPM relies on certain simplifying assumptions:

- investors appraise their portfolios according to expected return and standard deviation over a certain period of time;
- they have an aversion to risk;

- there is a risk-free rate, at which an investor may lend or borrow money, which is identical for all investors;
- taxes and transaction costs are negligible;
- information is freely and immediately available to all investors;
- investors have homogenous expectations, which means, they have the same attitudes with respect to the expected returns, standard deviation and covariance of securities.

It is evident from the said assumptions that securities are assumed to be perfectly competitive under this model. These assumptions made it possible for Sharpe to examine what happens to the prices of securities if everybody invests in a similar manner, and thus to derive the essence of the resulting equilibrium relationship between the risk and return of any security.

A very important feature of the CAPM is the so-called separation theorem, which reads as follows: an optimum combination of risky securities can be determined without any knowledge about the investor's attitude towards risk and return. The separation theorem relies on the attribute of a linear efficient set, due to which all the portfolios located within the linear effective set consist of a combination of one portfolio solely formed of risky assets, involving either a risk-free investment or risk-free lending. From this it follows that the risky portion of any investor's portfolio is independent of the investor's attitude towards return and risk.

Another important attribute of the CAPM relying on the separation theorem is that at the equilibrium point, any security must have a non-zero share in the portfolio mix. That is to say, if no investments were made into securities with a share in the portfolio of zero, the prices of securities with a zero share would have to drop, thus leading to an increase in the expected return – up to the point at which they acquire a nonzero proportion.

When the leveling of prices is stopped, the market reaches an equilibrium state, where it holds true that:

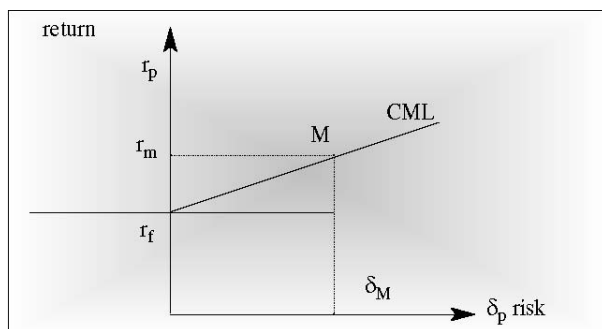
- every investor will want to hold a certain amount of each risky security;

- the current market prices of any security will stand at the level, where the number of shares of each demanded security equals the number of shares offered;
- a risk-free rate is at the level where the total amount of money borrowed equals the amount lent.

This will result in a portfolio mix known as a market portfolio. The market portfolio (M) plays a key role in the CAPM and is defined by Sharpe as follows: it is a portfolio formed of investments in all securities in such proportions that a portion invested in an individual security corresponds to its relative market value. The relative market value of a security equals aggregate market value of the security divided by the sum of aggregate market values of all securities. An efficient set is formed of an investment in the market portfolio associated with a required number of risk-free loans or borrowings. With the use of the CAPM it is possible to determine a relationship between the risk and return of efficient portfolios.

The efficient portfolios diagram is defined by a line comprising different combinations of risk and return obtained through the combination of market portfolio with risk-free loans or borrowings. This CAPM linear efficient set is known as a capital market line (CML):

Graf - Capital market line (CML):



The M point represents a market portfolio, r_f represents a risk-free interest rate and r_p and δ_p stand for expected value and standard deviation of an efficient portfolio. Efficient portfolios chart is a line which starts at r_f and passes through M. Any portfolios employing a portfolio other

than the market portfolio, and risk-free loans and borrowings would lie below the CML. The CML angular coefficient equals the difference between an expected return of the market portfolio and the expected return of a risk-free security $r_m - r_f$ divided by the difference between their risks. That is why a line characterizing the CML has the following shape:

$$r_p = r_f + \delta_p [(r_m - r_f)/\delta_m]. \quad (1)$$

The capital market equilibrium can be characterized by two key values. The first one equals a section on the vertical axis of the CML (i.e. the risk-free rate) and is frequently referred to as the compensation for waiting. The second value is defined by the CML angular coefficient and is frequently referred to as the compensation for a unit of risk. That is why the capital market is basically a place where trading is done at prices determined by supply and demand relative to time and risk. Since the CML represents an equilibrium relationship between the expected return and standard deviation of efficient portfolios, individual securities will always be represented below this line, since an individual security held separately does not constitute an efficient portfolio.

When using the CAPM, every investor would want to know the standard deviation of his market portfolio, since it is going to influence the amount of his investments. The contribution of any security towards the market portfolio standard deviation depends on the magnitude of its covariance with the market portfolio. The covariance between a security and the market portfolio $-\delta_{im}$ is therefore an essential rate of risk for the security, which means that securities having higher values of δ_{im} will be considered, from the point of view of investors, to be securities contributing towards the market portfolio overall risk to a greater extent, but should not be considered as more risky than securities with lower standard deviations. This is due to the fact that securities with greater values of δ_{im} will have to yield proportionally greater return in order for investors to become interested in their purchase. In the opposite case these securities would be eliminated from the portfolio, which would however lead to an increase in the market portfolio expected return relative to the standard deviation. The prices of securities would then not be at equilibrium.

That is why the equilibrium relationship between the risk and return had the precisely the following shape:

$$r_i = r_f + [(r_m - r_f) / \delta_m^2] \delta_{im} \quad (2)$$

This relationship between the covariance and expected return is known as a securities market line (SML), which can also be expressed as:

$$r_i = r_f + (r_m - r_f) \beta_i, \quad (3)$$

where the β_i coefficient is defined as

$$\beta_i = \delta_{im} / \delta_m^2 \quad (4)$$

The Beta factor – β_i of a security is an alternative way of expressing the security's covariance risk. One of the properties of Beta is that the Beta portfolio is a weighted average of Betas of individual securities forming this portfolio, where the respective weights are represented by proportions at which investments are made in individual securities. This is why the Beta factor constitutes the essential rate of risk for a security. This means that the Beta portfolio is calculated according to the relationship:

$$\beta_p = \sum_{i=1}^N X_i \beta_i. \quad (5)$$

3. Conclusion

The equilibrium relationship expressed by SML is based on the impact of investors' adjustments to securities holdings on prices. If a set of securities prices is given, investors will calculate expected returns and covariances, and then determine their optimum portfolios. If the number of securities demanded in the aggregate differs from the number of securities offered, a pressure to increase or decrease their prices arises. Investors will reevaluate their securities holdings until consistency between the number demanded and offered is reached. Individual securities are valued according to their contribution towards the market portfolio standard

deviation, where this contribution can be measured with the use of the Beta factor. This is how the securities are priced under the CAPM.

Abstract

Teória finančných trhov je relatívne mladou teóriou. Poznanie jej základných teoretických východísk by malo byť základom aj pri vytváraní investičnej politiky dôchodkových správcovských spoločností. Vytvorenie optimálneho trhového portfólia pomocou modelu Capital Asset Pricing Model (CAPM) predstavuje modelovanie istej situácie pri alokácii finančných prostriedkov medzi hlavne skupiny aktív. Najmä investície doplnkových správcovských spoločností v rámci vyváženého ale i rastového fondu si budú vyžadovať dokonale profesionálny prístup, keďže sa predpokladá, že finančné prostriedky týchto fondov budú doplnkové správcovské spoločnosti investovať nielen v rámci Slovenskej republiky (zákon zatiaľ ukladá investovať 30 % prostriedkov na Slovensku), ale aj alebo predovšetkým na svetových trhoch aktív.

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HISTORY OF MONETARY THEORY – THE INSPIRATION FOR CONTEMPORARY DECISIONS OF SUBJECTS OF THE BANKING SECTOR

Daria Rozborilová¹

Key words

money – an exogenous asset, money – an endogenous asset, real balance effect, the neutrality of money, the monetarist controversy, the monetary transmission mechanism, Modigliani – Miller theorem, market value of a company.

1. Introduction

History of monetary theory was and is an object of an interest of many economists to which it's possible undoubtedly to count such personalities of economic science as I. Fisher, K. Wicksell, J. M. Keynes, M. Friedman, D. Patinkin, L. A. Meltzer, F. Modigliani, J. Tobin, T. J. Sargent, N. Wallace and many others. Their contribution to economic science doesn't consist only in the grasp of the history of the monetary theory but also in the creative development of the monetary theory. The different approaches reflect different conclusions in the area of alternatives and forms of the activities of the subjects of the banking sector.

The article concentrates on the long-time discussions about the nature of money, on the discussions about the neutrality of money, non-neutrality money or super neutrality of money, on the discussions about the monetary transmission mechanism or about the designation of the market value of a company and on the concrete contribution to the solution of these problems from the perspective of two very significant economists: Don Israel Patinkin² and Franco Modigliani.³

2. Money – an exogenous or endogenous asset?

The history of monetary theory can be presented through the discussion on the endogenous or exogenous character of money. Don Israel Patinkin understood money as an exogenous asset, as net money. The exogenous character of money is a key pre-condition for the real balance effect, which can influence expenditure through money.

The real balance effect represented a new element from which economic subjects derive utility. It is a specific case of the effect of wealth, which reflects influences on real variables caused by a change of wealth. Real money balances are the amounts of money, which individual economic entities leave in their possession. Their size is relatively stable. Economic entities use them to secure current transactions and to cover possible unforeseeable events. If real money balances are higher than desired and relatively stable in the long-term, economic entities will increase consumption. On the other hand, if they are lower than desired, consumption is reduced. It is necessary to realize that in this case, he did not consider the nominal sum of money possessed by the economic entity to be decisive, but whether this sum was sufficient to secure stable purchasing power. If the balance is disturbed, economic entities will make an effort to regain a balanced situation. Thus, the real balance effect becomes an important transmission mechanism, which joins individual markets. If the influence of real money balances on consumption is recognized, then they can be understood as an important factor influencing the development of aggregate expenditures, and as a factor, which works automatically. This statement is very important, since it enables us to draw the conclusion that the market mechanism has self-regulating strengths capable of automatically renewing balance.

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² Don Israel Patinkin was undoubtedly one of the important world economists, mainly an important representative of the post-war monetary theory. His life's work certainly made a significant contribution to the development of economic theory. In particular, it is necessary to emphasize his contribution to discussion of the classic dichotomy and solution of the controversy between Keynes and the classics (Patinkin's controversy), tracing the historical development of monetary theory from 1870 to 1940 and its further development, integration of the theory of value and the monetary theory by means of the real balances effect, analyses of the role of financial instruments and the conditions of neutrality of money in static or dynamic conditions.

³ Franco Modigliani, the American economist of Italian origin, became the twenty third economist to win the prestigious Nobel Prize for Economics (1985). The award reflected the positive evaluation of the works of F. Modigliani, which contained original findings enriching economic theory and creating space for a new solution to many practical problems. Further findings led to an enrichment of the theory of money, interest and interest rates, the theory of national and international financial markets, the theory of consumption, the theory of investment or the theory of inflation.

When the issuing of money is limited, the empirical importance of the real balance effect is conditioned by the understanding of government bonds. Patinkin understood bonds as a component of wealth, as an exogenous asset. If bonds are an exogenous asset, that is, they are issued by the government in the interest of refinancing government expenditures, it is possible to explain money supply and explain the meaning of the theory of choice of portfolio, that is to understand the determinants of demand for money. Knowledge of the supply and demand for money, under *ceteris paribus* assumptions about other markets, enables the securing of balance in all the markets. To eliminate the instability, which could be caused by endogenous private loans, he proposed the creation of 100% reserves.

Patinkin's conception of money as a fundamentally exogenous asset is entirely understandable in the historical context, and contrasts with the endogenous understanding of money, for example, in the conception of J. Gurley and E. Shaw. Their work [1960] contained reasoned exchange of the exogenous view for the endogenous view of money. Their agreement lay in understanding economy as essentially monetary, unstable and to some extent positively influenceable with the help of the correct monetary policy. They also understood monetary policy as a macro-economic discipline. A further important agreement lay in the fact that they accepted the approach of the theory of general economic equilibrium as a framework for the presentation of ideas. On the other hand, they disagreed on the role of private credit and the role of commercial banks, which are the main private mediators of loans. Patinkin understood the private loans as a key source of economic instability, while Gurley and Shaw understood it as a positive element of economic growth and they regarded commercial banks as entities, which could encourage economic growth. They could be considered compatible, if Patinkin's view applies to the short-term, while Gurley and Shaw's view is long-term.

The exogenous character of money was also important for reconstituting the quantity theory of money. D. Patinkin's quantity theory of money is based on the automatic action of market forces, which work, by means of the real balance effect, in the direction of the renewal of market equilibrium. D. Patinkin rejects the conception of money as some sort of insubstantial monetary veil over probably important real phenomena. He claimed that an economy is more a monetary economy, in which we cannot divide the real sector from the monetary sector. He attempted to integrate the real and monetary sectors by means of the real balance effect. He claimed that quantity theory of money is macro-economic in character, and

by means of an equation of exchange, it expresses the conditioning of absolute prices by the quantity of money. The quantity theory of money is directly connected with unbalanced situations around a probably unstable point of reference. In the view of D. Patinkin there is no justification for the assumption that the system has a tendency to constantly move from an unbalanced to a balanced situation, because stability is not guaranteed in any way. He stated that although the claim that money influences only the price level can be accepted in the case of equilibrium, the significance of this claim is minimal if the economy is always unbalanced. He also admits that it is possible to postulate questions of stability and discuss them, just as it is possible to discuss questions of a stabilization policy. Patinkin did not suppose that causality deriving from the quantitative equation of exchange always leads from exogenous money to prices. He was aware that money supply also rises endogenously within the credit system. The Israeli state financed its expenditure both by direct issuing of money and indirectly by means of credit financing. It confronted the danger of uncontrolled inflation by controlling prices, which led to distortion of relative prices. Don Patinkin saw the solution in freeing prices, which would lead to a rise in prices and a decline in real money balances, resulting in reduced demand. However, pressure for the maintenance of real incomes together with continuing government spending led to further re-financing of rising expenditure. In this situation, money supply underwent endogenous variable and the economy lost its nominal anchor.

Don Patinkin was critical of Friedman's conception of the quantity theory of money, which was published in the article: *The Quantity Theory of Money: A Restatement* [Friedman, 1956] and in further works. He held the view that Friedman's theory had nothing in common with the quantity theory of money in the formal sense, but was actually a more elegant and sophisticated version of the modern Keynesian monetary theory. M. Friedman opposed this view with the claim that the quantity theory cannot be interpreted as a synonym of the long-term neutrality of money [1970].

3. The neutrality of money and short non-neutrality of money

The neutrality of money reflects the assumption of the quantity theory of money, that the quantity of money influences only the price level. In the framework of the general theory of economic equilibrium, the neutrality of money can be explained by the fact that the growth of demand for money is accompanied by a symmetrical decline of demand for all other goods,

so that a new equilibrium is achieved with a decline of nominal prices in equal proportion, if interest rates and output remain unchanged.

Short-term non-neutrality of money is a specific feature of the monetary theory of J.M. Keynes. If there is unemployment, prices do not rise in proportion to the growth in the quantity of money, but the increased quantity of money leads to decline in the level of interest rates and so to increased investment, employment and production. M. Friedman also states that in the short term, monetary changes lead primarily to changes of output, but in the long-term an increased quantity of money is primarily manifested in changes in the price level.

D. Patinkin claimed that the thesis of the neutrality of money relates to the equilibrium situation, but in the course of solution of situations of lack of equilibrium, money influences the real variables. This also relates to a situation, in which bonds are not understood as net wealth, since in this case individual subjects fully anticipate future tax increases and so do not increase their consumer expenditure.

4. The monetarist controversy

The relationship between money supply and nominal income, known as the monetary transmission mechanism, can be described as the basic relationship of monetary analysis. Views on its activity differ, and so we encounter the problem in economic theory known as the monetarist controversy. Franco Modigliani dealt with this problem in the articles: The Monetarist Controversy: Presentation [1977], The Monetarist Controversy: Discussion (with M. Friedman) [1977], The Monetarist Controversy or Should We Forsake Stabilization Policies? [1977] or The Monetarist Controversy Revisited, Contemporary Economic Policy [1988]. It may be said that F. Modigliani had a leading place in the controversy, which dominated between the Keynesians and the monetarists for decades.

F. Modigliani, like other Keynesians, did not identify with the views of M. Friedman on the monetary transmission mechanism and is one of his critics. M. Friedman [1956] integrated decisions about the size of savings and about their allocation between assets in the portfolio into one decision. Allocation decisions were conditioned by the size of income, expected levels of profit from individual types of asset and expectations about the rate of inflation. Raising of the expected rate of inflation led to people changing money into other

assets, specifically into goods of long-term consumption. In this case, changes in the structure of the portfolio directly influenced output. Expansion of the money supply did not cause an inevitable excess of demand for obligations, but an imbalance in the financial market could be balanced by excessive demand for goods. Growing demand for goods led to growth of demand for money and so to renewal of equilibrium. In this way, M. Friedman proved that money supply can influence the economy, not only through direct influence on interest rates for investment, but also through the purchase of goods of long-term consumption as assets. However, he understood the purchase of goods of long term consumption only as one possibility. Another possibility was the purchase of bonds. The monetary transmission mechanism has the result that if the quantity of money grows while the speed of circulation of money is relatively stable, nominal income has a tendency to grow, as the quantity of money grows. F. Modigliani denies the claim that the money supply directly influences nominal income. In F. Modigliani's opinion, under the assumption that money is a quantity, which can be simply defined, measured and effectively controlled by the monetary authority, the key question is how changes in the exogenously defined money supply influence nominal income. He pointed out basic changes and innovations in the financial markets, which lead to new dimensions of the relationship between money supply and nominal income. The new dimensions are conditioned by the existence of a large number of different financial mediators, a wide range of financial assets and so the identification of money, the mechanism of money creation and the need for control of the money supply by the central bank are becoming ever more important. F. Modigliani poses the question of whether the conventional approaches are enough for the monetary authorities, or whether it will be necessary to seek new approaches, for example, to secure control of the stocks of all financial assets or to be concerned with the determination of interest rates. He states that the application of new approaches leads to endogenous determination of the money supply.

In view of F. Modigliani, theoretical analyses contribute to determination of the basic conditions and factors, which condition the relative effectiveness of alternative forms of monetary control and empirical analyses again confirm the need to implement a flexible monetary policy. F. Modigliani published an article with the title: Inflation, Rational Valuation and the Market [1979]. In it, he poses the questions connected with the determination of the alternative costs of the holding of money and analyses various views. His analyses show that on the one hand, there are views, which suppose that in the case of developed capital markets it is possible to determine the alternative costs of holding money on

the basis of interest rates reflecting inflationary expectations, and in the case of regulated capital markets (regulation of interest rates, setting of ceilings) on the basis of the rate of inflation. Franco Modigliani presents his own view that the appropriate measure of the alternative costs of the holding of money is the highest of the available figures.

5. *Modigliani – Miller theorems*

The original contribution of F. Modigliani, as stated by the commission for awarding the Nobel Prize for Economics, concerns determination of the market value of corporations and the theory of financing of corporations. Several years of cooperation between F. Modigliani and M. H. Miller, who won the Nobel Prize in 1990, led to formulation of several theorems, which are known as the Modigliani-Miller theorems and are contained in an article published under the title: *The Cost of Capital, Corporation Finance and the Theory of Investment* [1958].

The first theorem demonstrates that with certain pre-conditions (an ideal world of perfect capital markets, which are in equilibrium, complete and symmetrical information between all participants in the market, zero taxation of companies), the market value of a corporation will not depend on the method a corporation chooses to finance its investment. A corporation has three basic ways to gain finance: issue of new shares, loans and undistributed profits. In other words, the market value of a corporation, which is characterized as the total market value of its capital and debts, is independent of the relationship of debts to the corporation's own capital. The theorem can be briefly presented as the cost of capital, that is, the costs - debt instruments in relation to own capital, or the theorem of the irrelevance of capital structure. The market value of a company is conditioned by the assets of the corporation, not by how the assets are financed. In the ideal world of a perfect capital market, the financial strategy of a corporation has no influence on the market value of the corporation or on the wealth of the shareholders. The shareholders can create investment portfolios according to their own judgement without any costs. Their evaluations of risk and the limits of indebtedness are factors, which influence the choice of their portfolios. The choice of a corporation with regard to financial strategy has no substantial influence on equilibrium.

The second theorem demonstrates that the market value of a corporation is not dependent on its dividend policy. The theorems were worked out with the aim of providing

basic norms for comparison, but they are valid under the above mentioned simplified pre-conditions. The authors themselves considered more realistic pre-conditions and opened discussions, for example, about the effects of tax on the validity of the theorems. The scientific value of the Modigliani - Miller theorems does not lie only in their formulation, but especially in the fact that they create space for seeking and applying new analytical methods.

The original contributions of F. Modigliani are mutually connected, because they help the formation of the wealth of households and they can be understood as part of Modigliani's research of financial markets.

6. Conclusion

F. Modigliani can be described as a many-sided and erudite economist, who was able to launch many passionate discussions among economists from various theoretical schools, as well as among his closest colleagues. Similarly, Don Patinkin analysed the development of economic thinking and formulated his own hypothesis, which sometimes differed from the generally held views. As a result, he engaged in controversies with many economists. At an international conference in Lausanne, under the title Don Patinkin and the Origins of Post-war Monetary Orthodoxy [Mehrling, 2001], somebody stated that an effort to integrate all parts into one consistent whole is a very demanding task, but the understanding and identification of inconsistencies and introduction of possible solutions is a very worthwhile activity, which is unforgettably associated with Don Patinkin.

Their works presenting many stimulating questions from various areas, as it is proved by the fact that they later attracted the interest of many economists.

Our discussion affirms the fact that old ideas introduce a source of new models [see Ireland, 2003]. For example, the development of new models to incorporate real balance effect. In new models the real balance effect eliminates the liquidity trap allowing the central bank to control the price level even when the nominal interest rate hits its lower bounds of zero. The same mechanism that gives rise to the real balance effect also implies that monetary policies have distributional consequences that make some persons much worse off under the zero nominal interest rates than they are when the nominal interest rate is positive.

Real balance effect allows the central bank to influence the economy even after nominal interest rate reaches its lower bound. Real balance effect operates in exactly this way so long as the population grows at a positive rate. In the specific case, when the growth of population is equal zero and money is not net wealth, does the liquidity trap survive. When the population grows monetary policies have different consequences. On the one hand, monetary policies have distributional consequences and on the other hand, they intensify the level of output and employment.

The implications of the real balance effect for the neutrality of money is possible to characterize very briefly: unanticipated monetary expansion is neutral in both runs, whilst an anticipated monetary expansion has real short run effects. The non-neutrality associated with an anticipated monetary expansion manifests itself in a fall in output and employment during the transition to the new steady – state.

Abstract

Mnohí nositelia Nobelovej ceny, ale aj iní významní ekonómovia, si kladli a kladú otázky dotýkajúce sa miesta monetárnej politiky pri ovplyvňovaní reálnych procesov v ekonomike. Dôkazom je aj udelenie Nobelovej ceny v roku 2004 americkému ekonómovi E. C. Prescottovi a nórskeho ekonómovi E. Kyndlandovi za ich príspevok k makroekonomickej analýze a aplikácii menovej a rozpočtovej politiky v mnohých krajinách. Predmetom nášho záujmu v rámci príspevku bol prínos nositeľa Nobelovej ceny amerického ekonóma talianskeho pôvodu F. Modiglianiho a izraelského ekonóma D. Patinkina k pochopeniu väzieb medzi peňažnými a reálnymi procesmi. Identifikácia väzieb umožňuje subjektom monetárnej politiky hľadať nové, účinnejšie nástroje monetárnej politiky, nové alternatívne formy monetárnej kontroly a v konečnom dôsledku tak umožňuje prispieť k rastu výkonnosti jednotlivých ekonomík a rastu blahobytu.

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THE ECONOMIC RISK OF MAJOR CATASTROPHES

Jaroslav Slepecký

Key words

Catastrophes, security risk, economics of catastrophes

1. Introduction

In 2003 approximately 20 000 people died as a result of catastrophes of various degree and type, from the natural to those that were "man-made". The direct and indirect cost is estimated to be USD 65 billion, with insurance companies paying compensation amounting to more than USD 17 billion. 2004 has not brought any improvement. The cost of the damage caused by two hurricanes this year, Charles and Frances, to orange crops in Florida alone amounted to more than USD 9 billion, and the following hurricanes Ivan and Jeanne caused insured and uninsured damage exceeding USD 45 billion. The material damage caused by terrorist attacks is extremely difficult to calculate and its consequences are often enormous and set a dangerous precedent for the future.

The history of the world is a history of catastrophes of various degrees from global conflicts to natural catastrophes, terrorist attacks and accidents of local significance. The phenomena of the modern age should not be ignored, by which I mean stock exchange crashes, corporate fraud, computer viruses, the breaking of security on the information systems of state institutions and large corporations and so on. The human casualties and direct material damage are minimal in these cases, but they have more serious consequences for the economies of states and their secondary effects can often be felt on other continents.

2. The economic effects of catastrophes

It is difficult to define the term "catastrophe" as there are multiple definitions and theories among the expert community and concerned institutions. For example, the reinsurance company, Swiss Re, defines a catastrophe as an event in which at least 20 people

die or the total cost exceeds USD 72 million or USD 36 million in property. It is true, however, that for smaller states or other institutions this level is too high and much smaller levels of damage are considered catastrophic.

The greatest damage and the greatest number of victims are caused by natural catastrophes and local conflicts in developing countries. On the other hand, these events have only a minimal effect on world financial markets. Almost their only, limited, effect is on the spot and future prices of selected commodities.

The greatest catastrophe of the 20th century can be said to be the stock exchange crash of 1929 on the American Stock Market, which began the so-called Great Depression. The Dow Jones Industrial Average (DJIA) index lost 25% of its value in two days, and the result was a fall in industrial production in the USA in the next two years amounting to 50%. In the USA and Europe more than 1100 banks and 85 000 firms went bankrupt, with all the effects associated with reduced production and consumption.

The beginning of the 21st century has not seen any improvement in the situation. The worst year was probably 2001, in which many catastrophes took place, with broad economic consequences (Table 1).

Table 1 - The greatest catastrophes of 2001

Event	Territory	No. victims	Insurance claims
Road accident	USA	13	USD 70 million
<i>Sinking of gas platform P-36</i>	Brazil	11	USD 500 million
Rebel attacks on airport	Columbia	18	USD 300 million
Terrorist attack on WTC	USA	3 021	< USD 36 billion
Explosion in petrochemical factory	France	29	USD 1.8 billion
Tunnel fire	Switzerland	11	USD 6 million
Plane crash in New York	USA	260	USD 700 million
Computer viruses	N	n	n

Source: www.etrend.sk

The best known is the terrorist attack on the World Trade Centre in New York, and the Pentagon, on 11 September 2001, which cost the lives of 2749 people and caused material damage (insurance claims) estimated at more than USD 36 billion. The financial markets, however, did not react to the number of victims or the damage and the loss of 55 000 jobs, but to the fall in confidence in the global economy. The accounting scandals that came to light in March 2002 definitively removed the blind confidence that investors had in the transparency of the American capital market.

An example of investors' fears of potential losses could be seen in the consequences of the Airbus A-300 American Airlines plane crashing into the borough of Queens on 19.11.2001, in which 260 passengers died and material damage amounted to approximately USD 700 million. The share index fell on fears of continuing terrorist attacks after 11 September 2001. Consumption fell dramatically as further terrorist attacks were expected. Only when federal officials ruled out a terrorist cause of the tragedy did the markets regain their confidence and begin the slow rise back to their original value. Human casualties and direct material damage have only a very small and short-term influence on macroeconomic indicators.

Throughout 2002, the main factor in the economic situation of the developed countries of Europe, the USA and Japan was an attempt to resist extreme shocks caused by accounting scandals and the threat of war with Iraq. According to the head of the American central bank, Alan Greenspan, the world economy proved to be capable of resisting the snares of 2002 and despite significant losses, the economy managed to grow.

Even 2002 was not able to avoid catastrophes with large numbers of victims and major insurance claims (Tables 2 and 3^{*}).

* Záborský, J.: Zaisťovne obmedzia výplaty škôd. Trend, 2.10.2003

Table 2 - The greatest catastrophes of 2002 by victims

Event	Territory	No. victims
<i>Disturbances after train arson</i>	India	2 000
<i>Earthquake – Richter magnitude 6</i>	Afghanistan, Pakistan	2 000
Sinking of the ferry Le Joola	Gambia	1 863
Cold weather	India, Bangladesh, Nepal	1 500
Explosion of ammunition store	Nigeria	1 460
Heat wave	India	1 037
Floods and landslides	China	771
Floods	India, Bangladesh	503
Floods and landslides	Nepal	422
Fire in passenger train	Egypt	361
Flood, dam burst	Bangladesh	325
Earthquake – Richter magnitude 6	Iran	305
Collision of passenger train and goods train	Tanzania	281
China Airlines plane crash	Taiwan, South China Sea	225
Disturbances during the Miss World contest	Nigeria	215
Collision of passenger train and goods train	Mozambique	205
Explosion of bombs in front of nightclub	Indonesia	190
Typhoon Rusa	South Korea	184
Floods after monsoon rains	India	169
Hostage incident in theatre	Russia	169

Source: Swiss Re

2003 was not an exception, even though the structure of catastrophes and their consequences were different. The greatest damage was caused by changes in the global climate, which are becoming the reality that causes the greatest suffering to people and economic damage. According to the estimates of the German reinsurer Munich Re, the amount of economic damage caused by tornados, fires, drought, floods and earthquakes exceeded USD 60 billion in 2003. One quarter of this was covered by insurance i.e. USD 15 billion. Drought alone caused more than USD 13 billion to the European economy.

Catastrophes caused by people were responsible for around 10% of all damage and terrorist attacks represent a small part of them. The anti-terrorism measures adopted after 2001 made a significant reduction in the operational capacity of global terrorist organisations. The largest insurance claims resulting from natural catastrophes are given in Table 4.

Table 3 - The greatest catastrophes of 2002 by insurance claims

Event	Insurance claims (USD bn.)	No. victims	Territory, continent
<i>Floods in Europe</i>	2,50	38	Europe
<i>Storms and tornadoes</i>	1,68	6	USA
Storm Jeanett	0,85	37	Europe
Floods and storms	0,70	71	Europe
Hurricane Lili	0,65	9	USA, Caribbean, Cuba
Tropical Storm Isidore	0,47	163	USA, Caribbean, Cuba
Tornadoes, storms, hail	0,46	36	USA
Floods	0,40	23	France
Winter storms	0,36	30	USA
Winter storms	0,30	22	USA
Winter Storm Anna	0,30	3	Germany, Great Britain
Unsuccessful launch of satellite Astra 1K	0,29	0	Kazakhstan
Tornadoes, storms, hail	0,27	0	USA
Tornadoes, storms, hail	0,21	0	USA
Tornadoes	0,18	0	USA
Tornadoes, storms, hail	0,17	0	USA
Tornadoes, storms, hail	0,16	0	USA

Source: Swiss Re

Table 4 - The greatest catastrophes of 2003

Event	Insurance claims (USD bn.)	Territory
Tornadoes, storms	3.2 (21.5.)	USA
Hurricane Isabel	1.7 (18.9.)	USA, Canada
Storms	1.6 (4.4.)	USA
Forest fire	1.1 (21.10.)	USA, Canada
Forest fire	1.0 (25.10.)	USA, Canada

Source: Swiss Re

2004 did not see a calmer situation. The trauma caused by the large number of hurricanes in the Gulf of Mexico influenced the USA and the world, insurance companies and secondary reinsurance companies when making contracts for areas that are at risk. The most serious catastrophes of 2004 are given in Table 4.

Table 5 - The greatest catastrophes of 2004

Event	Damage (USD bn.)	No. victims	Territory, continent
<i>Typhoon Rananim</i>	2	115	China
<i>Hurricane Charley</i>	13	21	USA
Tropical storm Megi	0	10	Japan
Terrorist attack on the school in Beslan	0	350	Russia
Terrorist attack on two civil aircraft	0	89	Russia
Terrorist attack on the employees of a petrochemical firm (Khobar)	0	22	Saudi Arabia
Hurricane Frances	10	2	USA
Typhoon Songda	0	34	Japan
Hurricane Ivan	12	70	Caribbean, USA
hurricane Jeanne	25	1700	Caribbean, USA

Source: author's archive

3. Conclusion

"The economics of catastrophes" has become ever more important in recent years because the economic damage caused by various degrees and types of catastrophe is constantly increasing and has a strong influence on and overloads the financial budget of individual states that, for obvious reasons, do not create reserves for uncertainty in the future. In many cases the results of unexpected events are greater than the affected state is able to cope with. Previously unknown reinsurance companies based in so-called tax havens have taken advantage of stricter conditions for addressing the risk of potential losses from natural catastrophes and successfully offered their services to American insurance companies. Many of them invest large amounts in the development and operation of complex systems to provide advance warning of hurricanes that threaten the coast of the USA.

After the events of 2001 and 2002, the American government reacted very quickly to make major changes in legislations, increase the budget and strengthen the powers of regulatory bodies. Europe pretended that these problems did not affect it. The financial scandal around one of the companies in the food industry (Parmalat) at the beginning of 2004 was an important indicator that the global economy makes no distinction for borders or continents and it is better to analyze causes than deal with the consequences.

Abstract

Dějiny světa jsou dějinami katastrof různého rozsahu, od globálních válek až po zemětřesení, povodně, teroristické útoky a nehody lokálního významu. Důsledky katastrof se většinou vnímají prostřednictvím lidských obětí a „viditelných“ materiálních škod. Netřeba zapomínat i na fenomény současné doby, jako počítačové virusy, burzové krachy, finanční krize, účetní podvody velkého rozsahu ap. Lidské oběti a přímé materiální škody v těchto případech jsou minimální, ale o to více ovlivňují ekonomiky států a často jejich sekundární katastrofické důsledky překračují hranice kontinentů.

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BANKING

STATE OF SMALL AND MEDIUM ENTERPRISES IN SLOVAKIA AND POSITION OF BANKS IN THEIR DEVELOPMENT SUPPORT

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Zuzana Bričová

Key words

small and medium enterprises, supporting the development of small and medium enterprises, bank, employment

1. Introduction

The dynamic development of SMEs belongs to the basic priorities of the development of the regions, and poses one of the priorities of the economic development of the Slovak Republic. The reason of this situation is also the fact that the Slovak Republic as a member state of the EU follows the strategic goal of the European Union which was established at the Lisbon Summit in spring 2000, to become the most competitive and most dynamic economy in the world which would be capable of sustainable growth. Besides, on 23rd April 2002 at the Conference CC BEST in Maribor, the Slovak Republic officially joined the European Charter for Small Businesses which calls upon the member states to support the development of small businesses. In accordance with the above mentioned Charter and other documents and recommendations of the EU, a functioning institutional framework for supporting the development of SMEs is built in Slovakia. The guarantor and coordinator of all activities in this field is the Ministry of Economy of SR whose main task is to create a strategy of the development of small and medium enterprising through state assistance programs which are realized through the National Agency for Development of Small and Medium Enterprises, the Slovak Guarantee and Development Bank, a.s., the Slovak Energetics Agency, Slovak Agency for Development of Trade Investment. It is within the scope of the Ministry to provide assistance for establishing industrial parks. The Slovak Ministry of Economy is also the directing body for the Sector Operation Program Industry and Services, through which it is possible to obtain finances from the European Fund of Regional Development.

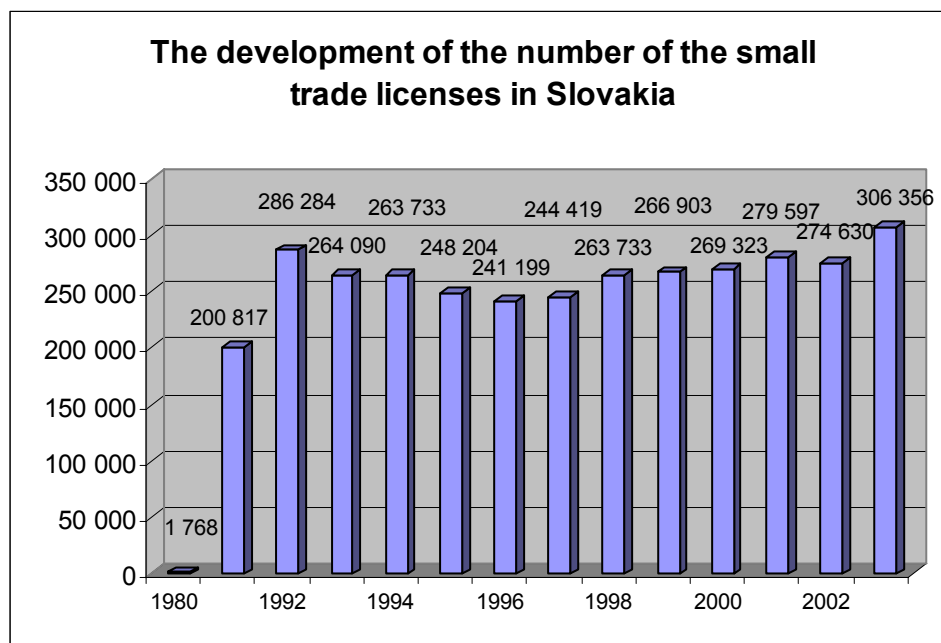
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The aim of this contribution is to refer to the development and state of small and medium enterprises in Slovakia, and the position of the banks supporting their development.

2. State of Small and Medium Enterprises in Slovakia

At the end of December 2003 there were 329 720 natural persons – entrepreneurs registered in the Register of Organizations in the Statistical Office of SR. Out of this number there were 306 356 self-employed persons, 13 044 freelancers and 10 320 independent farmers. The development of the number of the small trade licenses in Slovakia is shown in Graph 1.

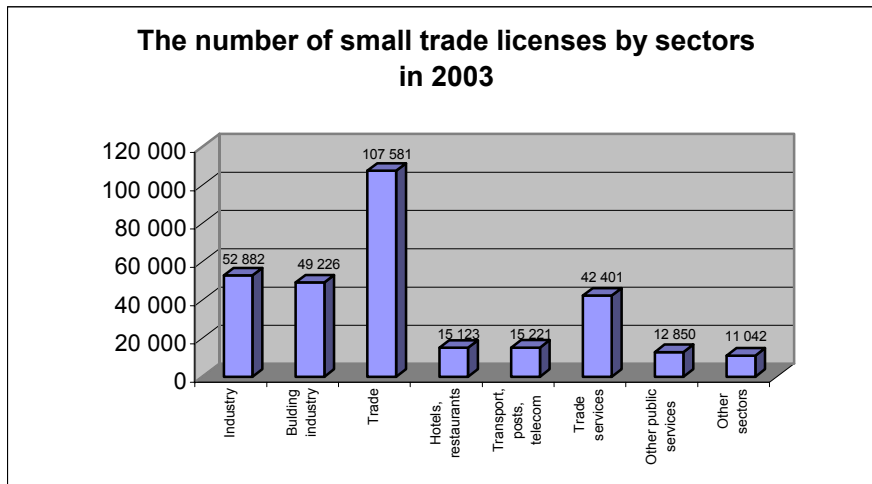
Graph 1: The development of the number of the small trade licenses



Source: National Agency for Development of Small and Medium Enterprises

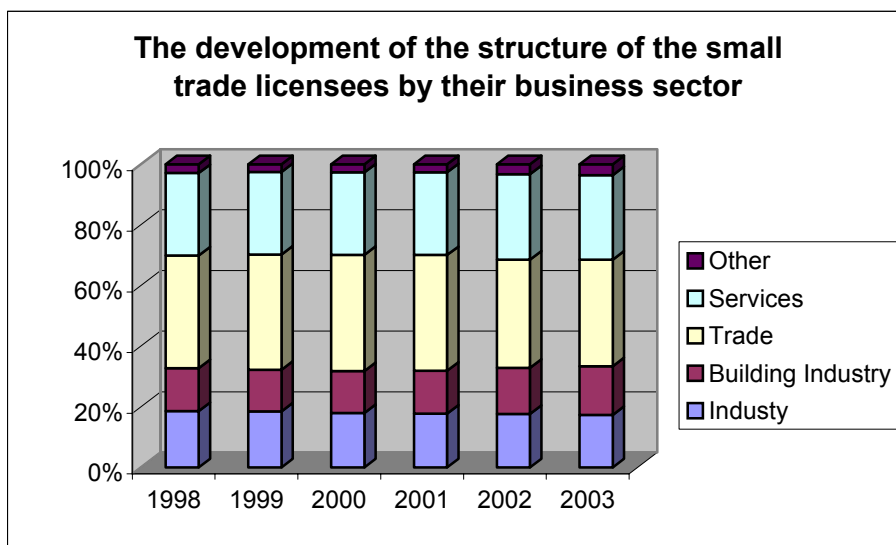
From Graph 2 it follows that most small trade licensees were registered in trade, industry, construction and trade services. The development of the structure of small trade licensees according to the sector of their business can be seen in Graph 3.

Graph 2: The number of small trade licenses by sectors in 2003



Source: National Agency for Development of Small and Medium Enterprises

Graph 3: The development of the structure of small trade licensees according to the sector of their business



Source: National Agency for Development of Small and Medium Enterprises

In December 2003 in the Register of Organizations of the Statistical Office of SR 101 412 business entities were registered, out of which: 64 420 companies and 36 992 non-profit institutions.

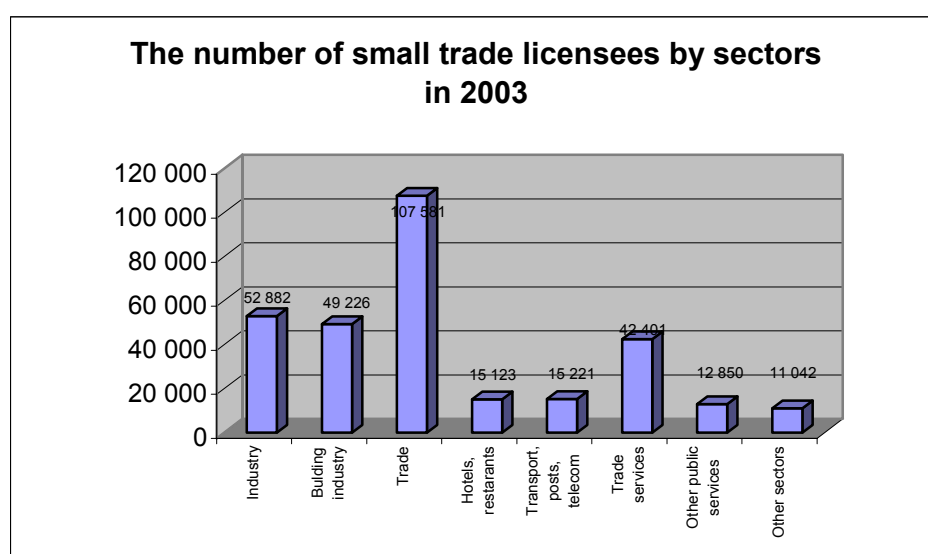
The development of the number of small and medium enterprises - business entities is shown in Table 1.

Table 1: The development of the number of small and medium enterprises

Enterprises	Year	1998	1999	2000	2001	2002	2003
Small (0 – 49)		56 202	54 349	57 247	59 452	56 162	61 102
Medium (50–249)		3 343	3 294	3 063	2 825	2 768	2 735

Source: National Agency for Development of Small and Medium Enterprises

Graph 4: Small and medium Enterprise by sectors in 2003



Source: National Agency for Development of Small and Medium Enterprises

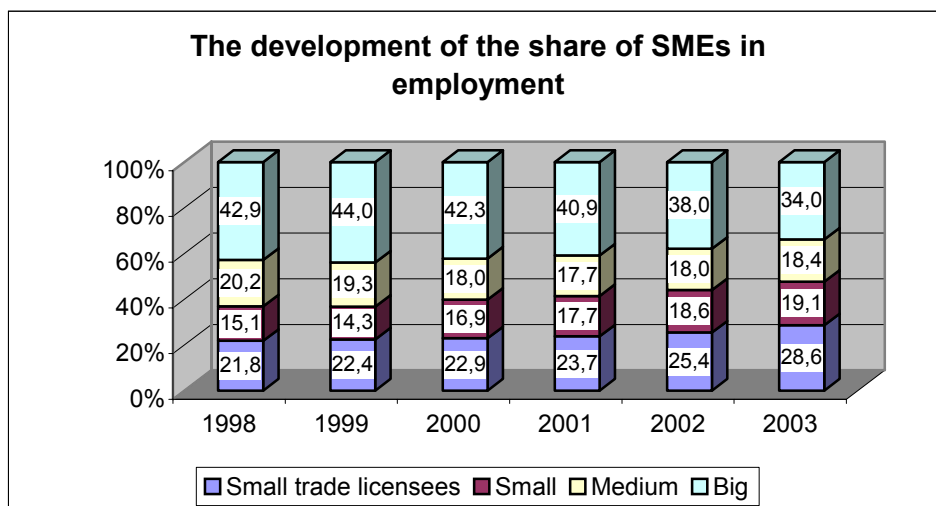
It follows from Graph 4 that most small and medium enterprises operated in the sector of trade, trade services and industry.

The development of the share of small and medium enterprises in the total employment shown in Graph 5 gives evidence of the role played by small and medium enterprises in the field of employment. The share of small and medium enterprises in employment has constantly been increasing in the last five years.

From regional point of view, that is, according to the share of regions in the overall number of employees, in 2003 Bratislava Region accounted for 18.0%, Košice 13.2%,

Žilina 12.0%, Prešov 11.9%, Nitra 11.8%, Trenčín 11.6%, Banská Bystrica 11.4%, Trnava 10.1%.

Graph 5: The development of the share of small and medium enterprises in employment



Source: National Agency for Development of Small and Medium Enterprises

The share of small and medium enterprises in cash sales of selected sectors is characterized in the following table 2.

Small and medium enterprises participate in a considerable measure in foreign trade. The development of the share of SMEs in export of the SR is shown in Table 3, and the development of the share of SMEs in the import of the SR is shown in Table 4.

Table 2: The share of SMEs in cash sales of selected sectors in 2003 (v %)

Sector	Enterprises				
	Small licensees	trade	Small	Medium	Big
Industry	9,9		7,8	14,3	68,1
Building industry	31,3		26,8	22,4	19,5
Trade	28,3		42,1	14,1	15,5
Transport	30,7		17,8	23,9	27,5
Market services	20,7		45,1	20,9	13,4

Source: National Agency for Development of Small and Medium Enterprises

Table 3: The development of the share of SMEs in export of the Slovakia (in %)

Enterprises /Year	1998	1999	2000	2001	2002	2003
Small trade licensees	0,2	0,2	0,2	0,2	0,2	0,2
Small	29,9	13,7	12,0	11,7	12,5	11,5
Medium	15,1	16,6	15,7	15,0	14,2	12,4
Big	54,7	69,5	72,2	73,1	73,2	75,9

Source: National Agency for Development of Small and Medium Enterprises

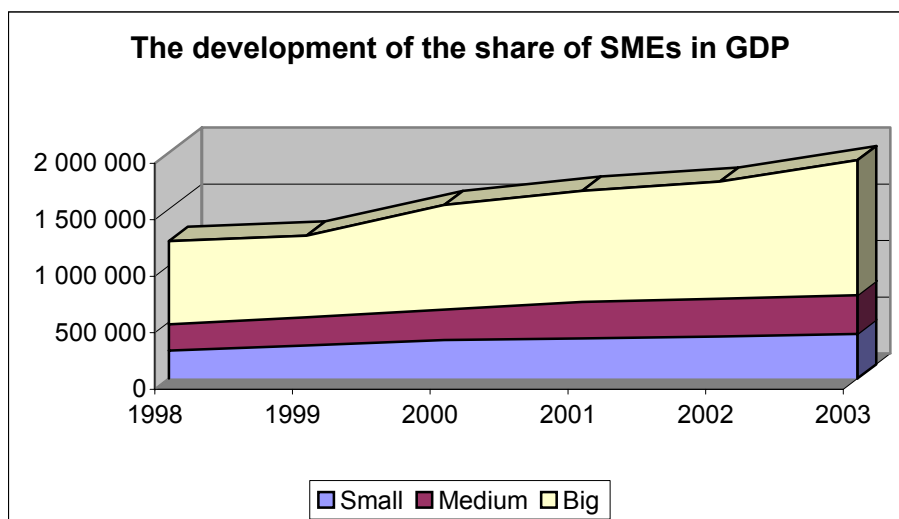
Table 4: The development of the share of SMEs in import of Slovakia (%)

Enterprises / Year	1998	1999	2000	2001	2002	2003
Small trade licensees	0,4	0,4	0,4	0,4	0,3	0,3
Small	31,0	25,6	23,0	25,5	26,9	25,4
Medium	22,5	18,7	16,9	17,7	17,8	17,2
Big	46,1	55,3	59,8	56,4	54,9	57,2

Source: National Agency for Development of Small and Medium Enterprises

Small and medium enterprises also participate in the created gross domestic product. The development of the share of SMEs in gross production in Graph 6 gives evidence of the fact that the volume of gross production has constantly been increasing. But, as it follows from Table 5, the share of SMEs in overall gross product gives an account of a decreasing trend in spite of the fact that employment in these companies shows an increasing trend.

Graph 6: The development of the share of SMEs in GDP



Source: National Agency for Development of Small and Medium Enterprises

Table 5: The development of the share of SMEs in GDP (v %)

Enterprises / Year	1998	1999	2000	2001	2002	2003
Small	20,38	23,00	22,18	21,38	21,33	20,47
Medium	19,12	19,76	17,57	19,39	19,18	17,72
SMEs	39,51	42,77	39,75	40,77	40,51	38,19
Big	60,49	57,23	60,25	59,23	59,49	61,81
Total	100,00	100,00	100,00	100,00	100,00	100,00

Source: National Agency for Development of Small and Medium Enterprises

In comparison with the EU countries, the share of SMEs in total number of companies in Slovakia is corresponding with that of the EU and is 99.8%. The share of SMEs in the total employment in the SR makes up 65.5%, while in the EU 69.7%, which means that this share is lower by 3.9%.

Table 6: The size structure of enterprises and employment in them

2003		Enterprises					Total
		micro (0-9)	small (10-49)	mediu m (50- 249)	SMEs (0-249)	large (250-)	
EÚ	Numbers of enterprises	17 820	1 260	180	19 260	40	19 300
	Share on total numbers of enterprises	92,3 %	6,5 %	0,9 %	99,8 %	0,2 %	100,0 %
	Numbers of employees	55 040	24 280	18 100	97 420	42 300	139 720
	Share on employment	39,4 %	17,4 %	13,0 %	69,7 %	30,3 %	100,0 %
SR	Numbers of enterprises	353 597	13 722	2 871	370 190	586	370 776
	Share on total numbers of enterprises	95,4 %	3,7 %	0,8 %	99,8 %	0,2 %	100,0 %
	Number of employees	628 125	323 833	383 059	1 335 017	689 975	2 024 992
	Share on employment	31,0 %	16,0 %	18,9 %	65,9 %	34,1 %	100,0 %

Source: National Agency for Development of Small and Medium Enterprises

3. The position of banks supporting the development of SMEs

In most EU countries assistance to small and medium enterprises is provided from the finances of the state budget through funds administered by organizations with state participation. Besides, assistance is provided also from structural funds of the European Union. In European countries assistance is provided, for instance in the form of guarantees for loans, guarantees to investors of venture capital, contributions for payment of interests, or loans with lowered interest rate. The European Investment Bank supports SMEs through global loans to loan institutions, including private banks, and this way it makes loans accessible for them.

In Slovakia a system is built which is presented by loan lines together with guarantee and support schemes, and with original capital and venture capital. This system helps to eliminate the shortcomings of the economic environment in the field of access to capital.

As a rule the banks are not ready to provide loans to small businesses, especially to starting businesses. The reason of this state is their short, or no entrepreneurial history. However, if banks grant them a loan, they have tough requirements concerning guarantees, which are mostly unacceptable for the realization of the business plan.

Despite this behaviour of the banks, in Slovakia an institutional system of assistance to SMEs is built, which incorporates assistance programs. Their division according to the forms of assistance is shown in table 7.

Except these programs, companies had the possibility to use pre-accession sources from the EU. Their purpose was not a direct support of the economy but preparation for membership. ISPA, SAPARD and PHARE were the three pre-accession tools of assistance.

Another foreign source of assistance is the bilateral assistance of the EU member states.

At present – in the period of 2004-2006 the Slovak Republic offers state assistance to SMEs through schemes of state assistance with regard to respective branches.

A very trendy way of supporting the development of SMEs are the structural funds. The financial flows of structural funds, and national co-financing from the state budget are shown in the charts 1 and 2.

Chart 3 shows the procedure followed by a small and medium enterprise when applying for assistance from EU funds. The position of the bank financing the development of SMEs is also obvious from this chart.

Table 7: Assistance Programs for Supporting the development of SMEs in Slovakia

Kind of assistance	Provider (realizer)
Guarantee programs	Slovak Guarantee and Development Bank
Loan programs	National Agency for Development of SMEs
	Slovak Guarantee and Development Bank
	Society of Original Capital
	Slovak-American Entrepreneurial Fund
	EXIMBANKA SR
Contribution programs	Slovak Ministry of Economy
	Slovak Ministry of Transport, Postal Services and Telecommunications
	Slovak Ministry of Environmental Issues
	National Agency for Development of SMEs
	Slovak Guarantee and Development Bank
Capital contribution	Society of Original Capital
	Slovak American Entrepreneurial Fund

Chart 1: Financial flows of national co-financing from the state budget

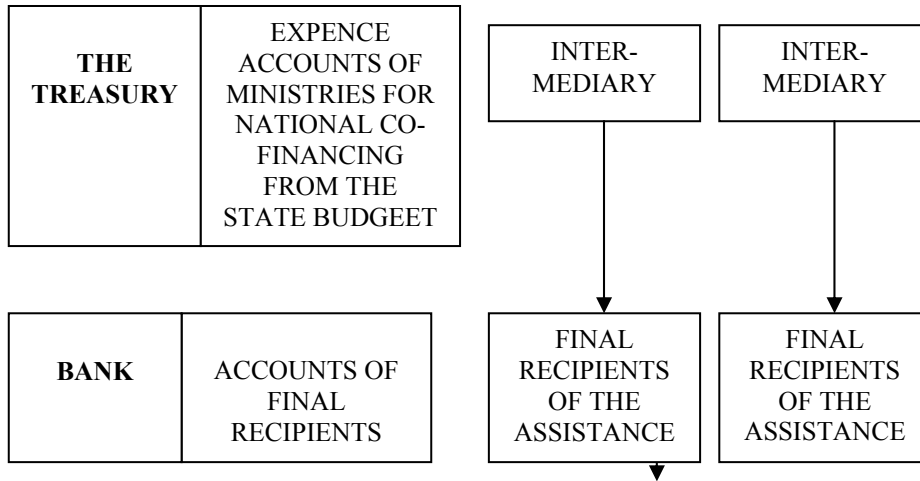


Chart 2: Flows of financies from structural funds

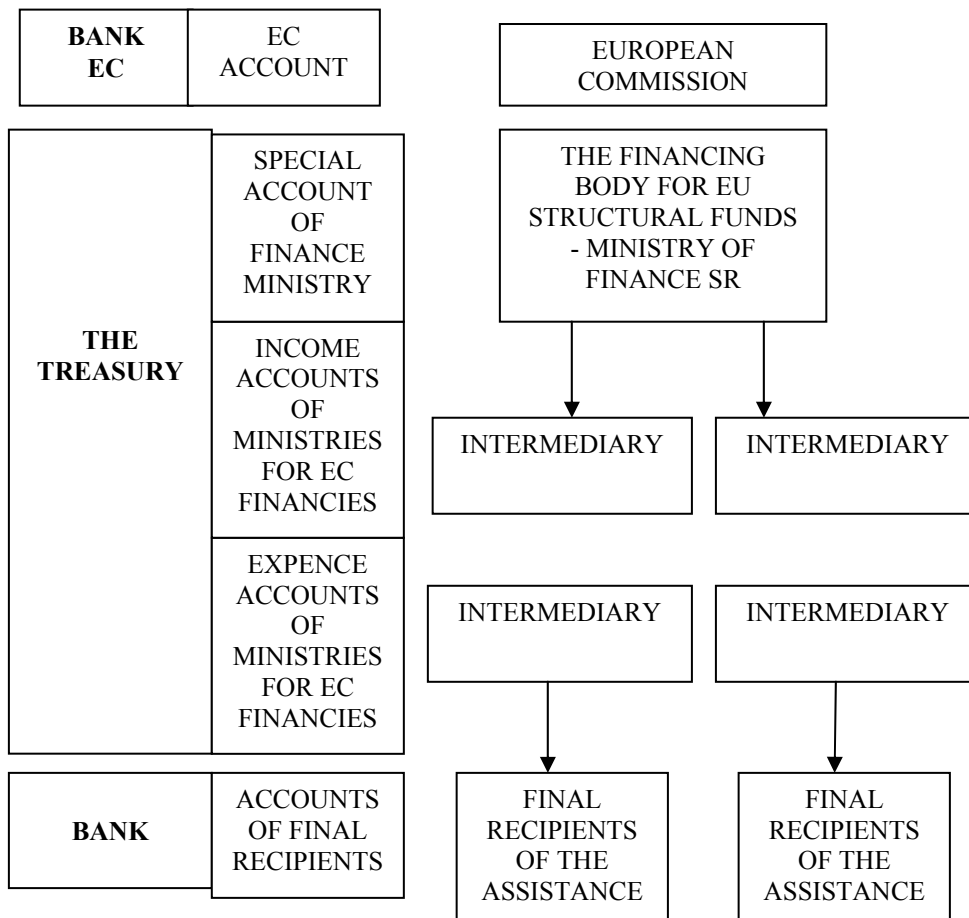
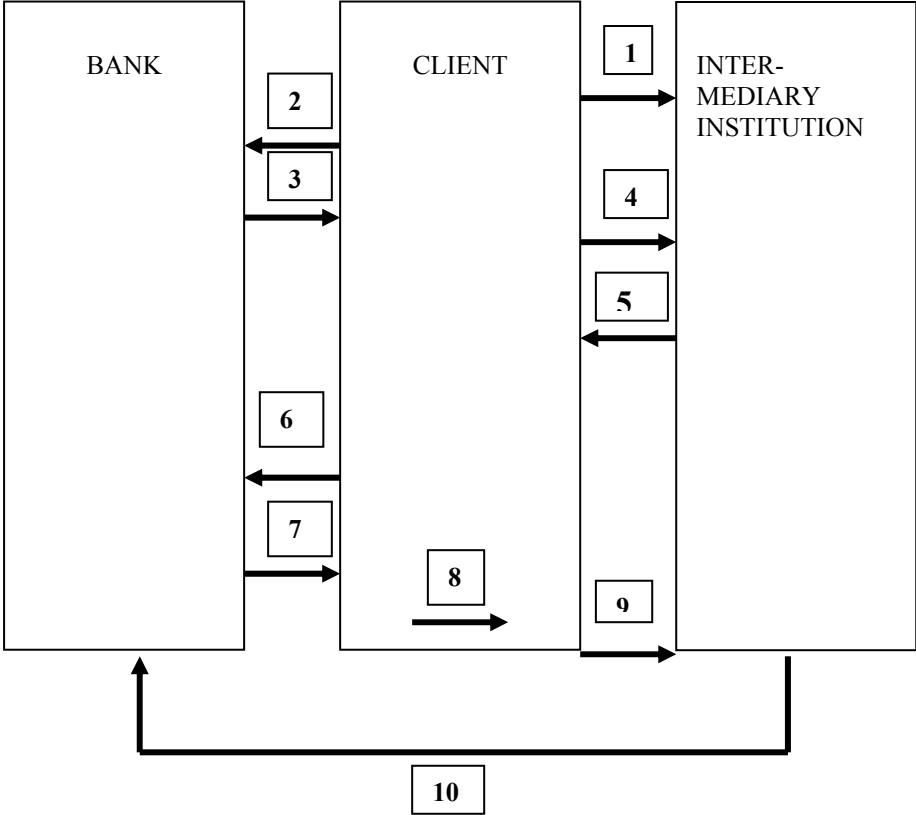


Chart 3: The procedure followed by a SME when applying for assistance from EU funds



- 1 – Consideration of financing a project from structural funds
- 2 – Submission of application for loan
- 3 – Bank guarantee
- 4 – Application – submission of the project
- 5 – Contract
- 6 – File copy of the application
- 7 – Loan
- 8 – Investment
- 9 – Application for financing
- 10 – Reimbursement (Refund)

4. Conclusion

The development of SMEs in Slovakia has had a positive trend in recent years. The number of small and medium enterprises is growing, the proportion of employment in SMEs in total employment is growing, the volume of gross production of SMEs is increasing, but the share of SMEs in total gross production has decreased. But in spite of this fact, the share of SMEs in total number of businesses in SR is comparable with the EU countries.

With the accession into the EU, the Slovak Republic encounters an increased competition pressure in the markets. In order to maintain the position of small and medium sized businesses in the competitive markets, the Slovak Republic continues in the policy supporting the development of small and medium enterprising, and in the effort to improve the entrepreneurial environment through supporting programs of Slovak Ministry of Economy, other Ministries, financial and assistance institutions, interest associations and societies. Important role in this process is played by banks, which participate in co-financing the support projects of SMEs development.

Abstract

Príspevok „Stav malých a stredných podnikov na Slovensku a postavenie bánk pri podpore ich rozvoja“ si v prvej časti kladie za cieľ poukázať na stav malého a stredného podnikania na Slovensku. Predkladá vývoj počtu živnostníkov a malých a stredných podnikov – právnických osôb na Slovensku, vývoj štruktúry živnostníkov a malých a stredných podnikov, vývoj podielu zamestnanosti v malých a stredných podnikoch, podiel MSP na exporte a importe SR ako aj vývoj podielu MSP na hrubej produkcii. Druhá časť príspevku je venovaná možnostiam financovania rozvoja MSP. Poukazuje na jednotlivé druhy a formy podpory a v závere poukazuje na postavenie bánk pri podpore rozvoja MSP zo štrukturálnych fondov EÚ.

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APPROACH OF IMPORTANT COMMERCIAL BANKS IN THE SLOVAK REPUBLIC TO THE FINANCING OF SMALL COMPANIES

Jaroslav Belás

Key words

Small and medium enterprises /SME/, bank sector in Slovak Republic for SME loans

1. Introduction

Medium and small enterprises plays an important role in the national economy and their dynamic growth represents one of the basic pre/conditions of a healthy economical development in every country. [1, p 1]

The support of medium and small enterprises (SME) is in the Slovak republic verbally very often declared from the heads of the state. But its importance grows, if we consider, that more then 99% from the registered legal persons in the Slovakia belongs to the SME category. In the Slovak republic there are also 330 tsd. private persons as self-employees, which can be also a part of the examined category. SME employs approximately 2/3 of all employees in the Slovakia.

The target of this contribution is it, to show the actual trends in the approach of important Slovak banks to the category SME.

2. Approach of important commercial banks in the Slovak republic to the financing of small companies

For the overall judgment of the problematic SME is it suitable to divide the field in two basic spheres. The first is the state support and the second is the private support of SME.

The most important part in the state support of SME is the National agency for development of SME, which tries to replace the actually not existing loan market for the SME. But its influence in this field is minimal, for example in the year 2003 were granted the

so called “micro loans” for 305 requests in the volume of 134 mil. SKK, what is circa 0,037% of the bank loans.

According to some authors is also the activity of Slovakian guaranty and development bank (SGDB) insufficient: „extraordinary status in the system of SME support has also the SGDB, which is, compared to the National agency for SME, working on the principal of market criteria’s. SGDB should find it’s place on the market maybe through the company „capital venture fund“, that means a fond, which influence the area of investitions in to the risk capital. The attendance of state financial resources in the bank programs will be necessary also in the future, because the SGDB will with it’s target grant resources also for sectors with risk over the average. State will have to guaranty the obligos of SGDB, what makes it possible for SGDB to draw loans from international institutions / Kfw, CEB, EIB, ... / in higher amounts and with better interest conditions as the domestic bank institutions or the investors. The cooperation with SGDB is declared by the majority of banks, but in reality are the resources for the SME financing used only in special cases. Reasons: unadvantageous conditions for the banks - they guaranty the SME obligos depending on the program type , interest rates are often no competition comparing to the marge of commercial banks.“ [4 p 119]

The interest of bank sector in the Slovak republic in the field SME can be optimistically called as perspective. In present time is the volume of loans for self-employees in Slovakia less than 1% of GDP.

We can present an opinion, that in Slovakia is missing a financial institution, which would priority support the SME. Practical realization can happen in two fields. Maybe also the other banks discover the „magic of small companies“ and a small group of probably small commercial banks will be established, which will undertake business in this market sub segment, or the state will offer a financial institution to the market, which will support the slovakian SME and manage the real financing of suitable business planes.

This opinion is presented also by other authors: „Because practically all subjects of our whole banking sector are offering universal banking services, is it very probable, that especially small banks can not stand in the long term and set themselves up. Therefore is it reasonable to await fusions and acquisitions between some of the financial institutes. If the

banks aren't able to secure the future in other way, there is still a chance for them, to find a place on the market with the specialization of their activities. The specialization doesn't effect only our conditions, in present competition conditions is she a worldwide fundament for many financial institutes.“ [6,p 130]

We did a fictive tender to gain a commercial loan in three most important banks in the Slovakia during the 2. Quarter 2004, with the target to test the present state in the Slovak commercial banks.

Case study:

A businessman, working on the retail field requested a loan in the bank, to seasonally supply the store with goods. In connection with the choice of an appropriate bank, talks took place with branches of the tree biggest Slovakian banks.

Economical parameters of the company:

1. turnover in the last year: 6 mil. skk
2. turnover in this year: 700 tsd. SKK monthly
3. goods on stock nominal value: 3 mil. SKK
4. business account established in the bank C for 2 years
5. payment morale good

Legal form: self-employee, simple accounting, on the market over 3 years

Requested loan: 500.000,- SKK for 3 months with purpose seasonally stock the store

- A. Result: bank A grants the loan for this company under the conditions to be at least 2 years on the market, positive economical result in the last two years and positive equity.

Condition for a contocorrent loan is to guaranty with a real estate with value 150% of the loan. The clients rating and the loan conditions weren't presented by the bank. The businessman decided that the bank offer is for him not suitable, because of the guaranty condition.

B. Result: the Bank B grants loans for self-employees and small businessmen under following conditions: loan limit between 100 Tsd. SKK and 5 mil. SKK, maturity 6 to 24 months, interest rate from 10,9% to 13,9% p.a., agreement fee 1%, min. 5.000,- SKK, account administration fee 100,- SKK monthly. Guaranty: Blanco bill, maybe vinculation of finances or investment funds. The business evaluated this offer from the bank B as the best in the chosen group of biggest banks, but he considered the interest rate as too high.

C. Result: The bank C doesn't grant the loan, because it is a business activity and the biggest part of businessman's property consists of the goods on stock. The bank C does not grant this kind of loan. The businessman doesn't have an account in the bank for 3 years.

Recommendation: deposit the requested volume as a term deposit in the bank C for the usual interest rate /circa 3% p.a./, possibility of contocorrent loan with the interest rate 9,5%.

Conclusion of the case study:

- the loan conditions of the most important Slovak commercial banks aren't suitable for the category of SME
- between the chosen commercial banks, the best conditions were offered from a bank, which can, considering the balance sum, be characterized as middle big in the bank sector of Slovak republic /balance sum circa 28 billions SKK/. The offered loan conditions: business loan in the form of an contocorrent account, loan limit 10% of last years turnover, interest rate circa 6 %, guaranty Blanco bill.

3. Conclusion

Considering the verbal declared interest on SME of the government, but also some financial institutions, is the result on the field of financing the business needs of SME not flattering, because according to the actual accessible informations from some banks, we cannot await a different, activity of SGDB and some agencies are actually formal. The use of EU funds in the business field is quit problematic and some practical knowledge of small

businessmans talks about untransparent, political party oriented and incorrect practics in the given field.

Based on the actual situation, we can present an opinion, that the loan market for SME is still waiting for breakpoint, and it is clear, that the commercial banks are not enough engaged in this segment. The banks are probably still missing the courage to enter the market and offer attractive products. Their situation can be characterized with waiting. In this situation would the Slovak bank sector sure help the entrance of an important competitor, specialized on the SME segment, weather from the state or private environment, or with a combined ownership structure.

Abstract

Malé a střední firmy mají v ekonomice velice významnou úlohu a jejich dynamický růst je jednou ze základních podmínek zdravého ekonomického růstu. Slovní podpora malého a středního podnikání je velice častá jak vrcholovými představiteli vlády, tak některých finančních institucí. Ve stati je charakterizována státní a soukromá podpora malého a středního podnikání a je konstatováno, že především podpora ze strany státu je minimální. Také využití zdrojů z EU pro podnikání je problematické a z řad malých podnikatelů se ozývají hlasy o netransparentním, politickými stranami ovlivňovaném a nekorektním postupu. Trh úvěrů pro malé a střední podnikatele stále čeká na změnu. Je zřejmé, že komerční banky nejsou dostatečně angažovány na tomto podnikatelském segmentu. Bankám pravděpodobně stále chybí odvaha vstoupit na tento trh a nabídnout atraktivní produkty. Jejich postoje je možno charakterizovat jako očekávání. V této situaci by slovenskému bankovnímu sektoru zcela nepochybně pomohla významnější konkurence, specializovaná na segment malých a středních firem, ať už ze státního nebo soukromého prostředí, nebo s kombinovanou vlastnickou strukturou.

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FORMS OF FINANCING SMALL AND MEDIUM ENTERPRISES IN SLOVAKIA

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Key words

financing, loans, small and medium enterprises

1. Introduction

The aim of the article is to discuss forms of financing small and medium enterprises. Discussed are forms of financing at three stages - establishing an enterprise, in the present, and future plans. Slovak small and medium enterprises were analyzed before Slovakia accessed the European Union. The research sample consists of 72 small and medium enterprises.

2. The research sample

The research was conducted on a sample of 72 companies (out of which 31,25 % were manufacturing companies, 25,69 % were commerce companies and 43,06 % were service companies). One company did not submit the number of its employees. The size of the remaining companies is presented in Table 1.

Table 1. Size of the surveyed companies

Number of	Number of
less than 10	41
10-49	14
50-99	9
100-249	7

Yearly turnover (in thousands of Slovak crowns) of these companies is presented in Table 2.

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Table 2. Turnover of the surveyed companies (in thousands of SKK)

Yearly turnover	Number of
less than 500	18
500 - 1 000	7
1 000 - 10 000	19
10 000 - 100	19
100 000 - 500	6
500 000 - 1 000	2
more than 1 000	1

The length of existence of surveyed companies is presented in Table 3.

Table 3. The length of existence of the surveyed companies

Length of	Number of
less than a year	7
1-5 years	19
6-10 years	29
11-20 years	9
more then 20	8

3. Forms of financing small and medium enterprises

We analyzed what forms of financing had used small and medium enterprises when they were established, what they used recently and what they plan to use in the future. Forms of financing were divided into loans from relatives and friends, bank loans (without collateral), bank loans (with collateral), bank loans from abroad, other financial resources from abroad, leasing, venture capital, issue of shares (private offering), issue of shares (public offering), issue of bonds and other resources. The percentages are presented in the figure 1.

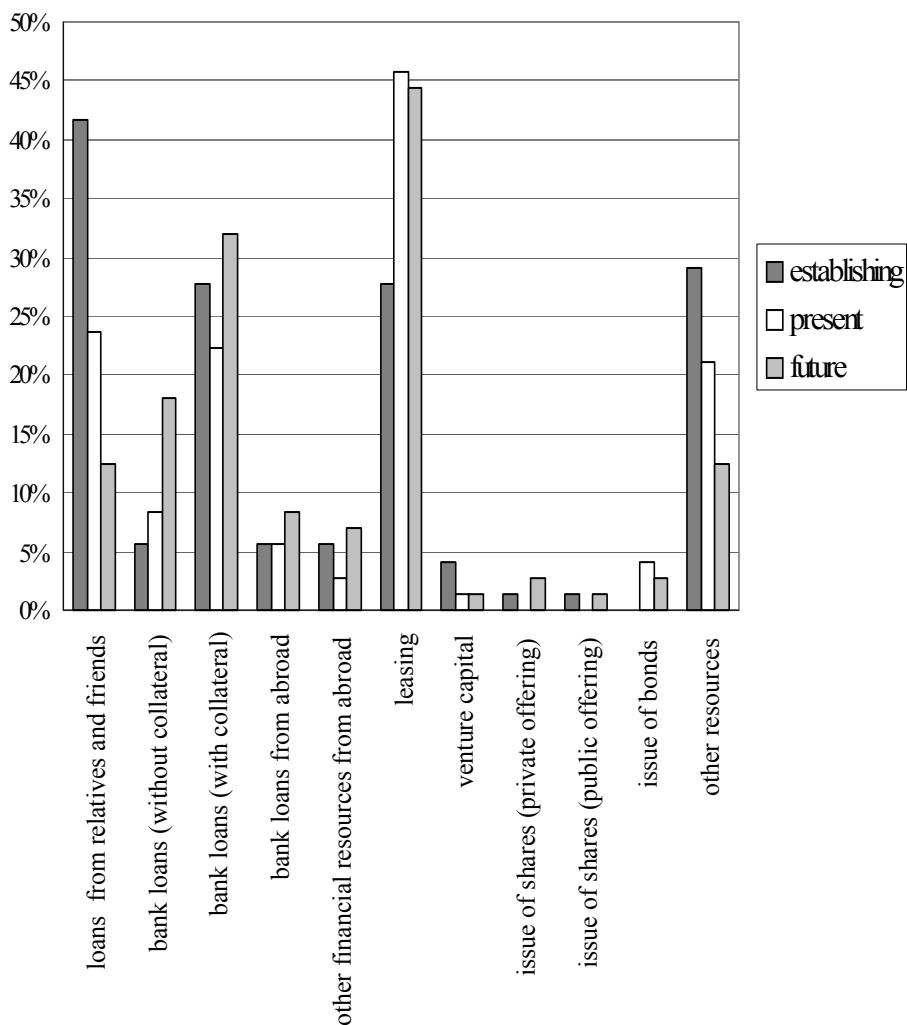


Figure 1. Forms of financing small and medium enterprises

We tested (using χ^2 test) if the percentages are equal in manufacturing companies, commerce companies and service companies. Relevant p-values are presented in the table 4. P-values smaller than 0,05 are typed bold. Loans from relatives and friends were used in different proportion when establishing manufacturing and commerce companies. It was used more frequently in commerce companies. Bank loans (with collateral) were used more frequently in establishing manufacturing companies than in commerce companies and service companies.

Table 4. P-values of χ^2 tests by sectors

	establishin	present	future
loans from relatives and friends	0,048 185	0,472 195	0,257 306
bank loans (without collateral)	0,446 609	0,107 917	0,148 901
bank loans (with collateral)	0,003 935	0,069 127	0,155 391
bank loans from abroad	0,950 671	0,342 157	0,287 726
other financial resources from	0,312 216	0,051 072	0,086 030
Leasing	0,511845	0,932 279	0,482 815
venture capital	0,483 192	0,230 775	0,230 775
issue of shares (private	0,327 754	1,000 000	0,676 028
issue of shares (public offering)	0,511 399	1,000 000	0,327 754
issue of bonds	1,000 000	0,544 976	0,676 028
other resources	0,998 027	0,606 037	0,076 911

We used χ^2 test to test if the percentages are equal in all company sizes. Relevant p-values are presented in the table 5. P-values smaller than 0,05 are typed bold.

Table 5. P-values of χ^2 tests by company size

	Establishin	present	future
loans from relatives and	0,001 329	0,024 957	0,329 491
bank loans (without collateral)	0,504 791	0,122 482	0,016 319
bank loans (with collateral)	0,015 424	0,000 098	0,000 843
bank loans from abroad	0,461 491	0,790 725	0,044 242
other financial resources from	0,005 202	0,123 370	0,024 286
leasing	0,090 673	0,150 759	0,512 464
venture capital	0,005 202	0,025 867	0,025 867
issue of shares (private	0,072 304	1,000 000	0,072 304
issue of shares (public offering)	1,000 000	1,000 000	0,072 304
issue of bonds	1,000 000	0,002 674	0,072 304
other resources	0,218 726	0,271 459	0,301 559

When establishing a company, loans from relatives and friends were used more frequently in companies with less than 10 employees than in companies with 50-99 and 100-249 employees. Bank loans (with collateral) were used less frequently by companies with less than 10 employees than by companies with 50-99 employees. Other financial resources from abroad and venture capital were used less frequently by companies with less than 10 employees than by companies with 100-249 employees.

In the present, loans from relatives and friends were used more frequently in companies with less than 10 employees than in companies with 50-99 employees. Bank loans

(with collateral) were used less frequently by companies with less than 10 employees and with 10-49 employees than by companies with 50-99 employees. The difference in venture capital was caused only by a company with 100-249 employees, which used it as the only one from the surveyed companies. Bonds were issued less frequently in companies with less than 10 employees than in companies with 50-99 employees.

In the future, companies with 10-49 and 50-99 employees plan to use bank loans without collateral less frequently than companies with 100-249 employees. Companies with 50-99 employees plan to use bank loans with collateral more frequently than all other companies. Companies with 100-249 employees plan to use bank loans from abroad, other financial resources from abroad and venture capital more frequently than companies with less than 10 employees.

Since there were only a few companies with the turnover of 100 mil. SKK - 500 mil. SKK, 500 mil. SKK - 1 bil. SKK and over 1 bil. SKK, we joined them into the category of companies with the turnover of over 100 mil. SKK. We used χ^2 test to test if the percentages by turnover are equal. Relevant p-values are presented in the table 6.

Table 6. P-values of χ^2 tests by turnover

	establishin	present	future
loans from relatives and friends	0,007 424	0,017 729	0,144 218
bank loans (without collateral)	0,765 338	0,343 156	0,429 045
bank loans (with collateral)	0,053 589	0,013 150	0,122 562
bank loans from abroad	0,575 066	0,575 066	0,886 531
other financial resources from	0,003 261	0,405 192	0,065 370
leasing	0,044 191	0,011 323	0,311 833
venture capital	0,053 623	0,130 769	0,130 769
issue of shares (private	0,130 769	1,000 000	0,006 122
issue of shares (public offering)	0,130 769	1,000 000	0,586 878
issue of bonds	1,000 000	0,000 209	0,006 122
other resources	0,322 635	0,391 715	0,260 398

When establishing a company, loans from relatives and friends were used more frequently in companies with a turnover smaller than 500 thousand SKK and with a turnover of 500 thousand - 1 million SKK than in companies with 10-100 million and over 100 million SKK. Other financial resources from abroad were used less frequently by companies with a turnover of 1-10 million SKK than by companies with a turnover of over 100 million SKK.

Leasing was used less frequently in companies with a turnover smaller than 500 thousand SKK than in companies with a turnover of 1-10 million, 10-100 million and over 100 million SKK.

In the present, loans from relatives and friends were used more frequently in companies with a turnover smaller than 500 thousand SKK than in companies with a turnover of 10-100 million and over 100 million SKK. Bank loans with collateral were used less frequently by companies with a turnover smaller than 500 thousand SKK, 1-10 million and 10-100 million SKK than by companies with a turnover of over 100 million SKK. Leasing was used less frequently in companies with a turnover smaller than 500 thousand SKK than in all other companies. Issuing of bonds was used less frequently in companies with a turnover smaller than 500 thousand SKK, 1-10 million and 10-100 million SKK than by companies with a turnover of over 100 million SKK.

In the future, only companies with a turnover of over 100 million SKK plan to issue shares (private offering) and bonds.

Because of relatively small number of companies, which existed for 11-20 years and for more than 20 years, we merged the two categories into the category of companies of at least 11 years. We used χ^2 test to test if the percentages by length of existence are equal. Relevant p-values are presented in the table 7.

When establishing a company, loans from relatives and friends were used more frequently in companies established before less than a year and between 1-5 years than in companies established before 6-10 years. Companies established before 1-5 years used loans from relatives and friends more frequently than in companies established before at least 11 years ago. Other financial resources from abroad were used less frequently in companies established 1-5 and 6-10 years than in companies established at least 11 years ago. Leasing was used more frequently in companies established 6-10 years ago than in companies established before less than a year and at least 11 years ago. Venture capital was used more frequently in companies established at least 11 years ago than in companies established before 6-10 years.

In the present, loans from relatives and friends were used more frequently in companies established before less than a year than in companies established at least 11 years ago. Companies established before 1-5 years used from relatives and friends were used more frequently than companies established before 6-10 years and at least 11 years ago. Companies established 6-10 years ago used bank loans with collateral and issue of bonds less frequently than companies established at least 11 years ago. Leasing was used less frequently in companies established before less than a years than in companies established before 6-10 years.

There was no statistically significant difference between future plans among companies established in the various time periods.

Table 7. P-values of χ^2 tests by length of existence

	establishin	present	future
loans from relatives and	0,000 882	0,004 049	0,493 219
bank loans (without collateral)	0,736 555	0,838 335	0,775 567
bank loans (with collateral)	0,372 766	0,025 857	0,411 970
bank loans from abroad	0,423 398	0,410 830	0,777 947
other financial resources from	0,003 340	0,706 037	0,380 894
leasing	0,028 150	0,010 612	0,442 853
venture capital	0,017 510	0,350315	0,350 315
issue of shares (private	0,350315	1,000 000	0,083 729
issue of shares (public offering)	0,350315	1,000 000	0,681 430
issue of bonds	1,000 000	0,017 510	0,083 729
other resources	0,204 930	0,264 455	0,376 798

4. Types of loans acquired by small and medium enterprises

We analyzed what types of loans acquired small and medium enterprises. Types of loans were divided into short-term, mid-term and long-term, investment, operation, exporting and other loans. We also analyzed the number of companies, which had not acquired any loans. The percentages are presented in the figure 2.

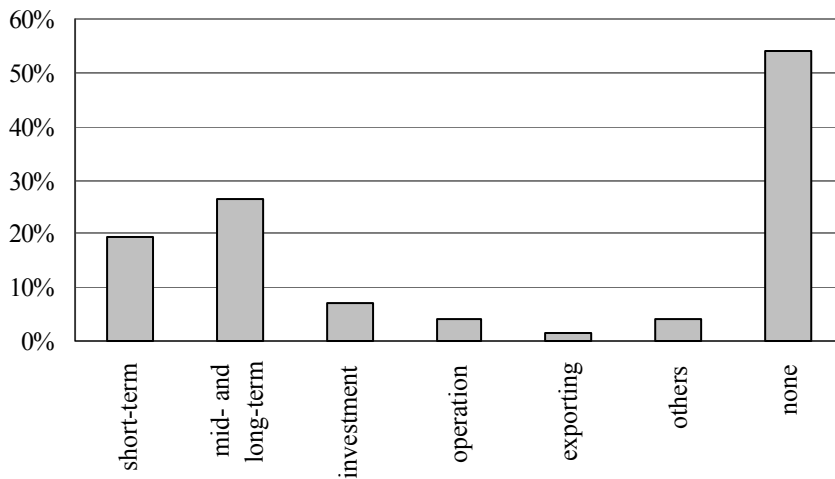


Figure 2. Types of loans

We tested if the percentages are equal in manufacturing companies, commerce companies and service companies. Relevant p-values are presented in the table 8. Other loans were used in different proportion in manufacturing companies and service companies. Service companies used them more frequently.

Table 8. P-values of χ^2 tests by sectors

Types of loans	P-value
short-term	0,056 709
mid-term and long-	0,107 395
investment	0,392 479
operation	0,344 798
exporting	0,327 754
others	0,031 953
none	0,010 780

We used χ^2 test to test if the percentages are equal in all company sizes. Relevant p-values are presented in the table 9. P-values smaller than 0,05 are typed bold. Mid-term and long-term loans were used less frequently in companies with less than 10 employees than in companies with 50-99 employees. Among all companies, there was only one (100-249 employees), which planned to use an exporting loan. Significantly higher proportion of companies with less than 10 employees received no loan compared to companies with 50-99 employees.

Table 9. P-values of χ^2 tests by company size

Types of loans	P-value
short-term	0,458 295
mid-term and long-	0,020 772
investment	0,781 370
operation	0,202 684
exporting	0,025 867
others	0,178 624
none	0,014 850

Since there were only a few companies with the turnover of 100 mil. SKK - 500 mil. SKK, 500 mil. SKK - 1 bil. SKK and over 1 bil. SKK, we joined them into a category of companies with the turnover of over 100 mil. SKK. We used χ^2 test to test if the percentages by turnover are equal. Relevant p-values are presented in the table 10. There were no significant differences.

Table 10. P-values of χ^2 tests by turnover

Types of loans	P-value
short-term	0,199 930
mid-term and long-	0,661983
investment	0,621 659
operation	0,295 134
exporting	0,130 769
others	0,295 134
none	0,073 031

Because of relatively small number of companies, which existed for 11-20 years and for more than 20 years, we merged the two categories into the category of companies of at least 11 years. We used χ^2 test to test if the percentages by length of existence are equal. Relevant p-values are presented in the table 11.

Table 11. P-values of χ^2 tests by length of existence

Types of loans	P-value
short-term	0,486 112
mid-term and long-	0,085 110
investment	0,818 331
operation	0,615 592
exporting	0,350 315
others	0,615 592
none	0,111 052

5. Conclusion

We analyzed what forms of financing had used small and medium enterprises when they were established, what they used recently and what they plan to use in the future. Forms of financing were divided into loans from relatives and friends, bank loans without collateral, bank loans with collateral, bank loans from abroad, other financial resources from abroad, leasing, venture capital, issue of shares (private offering), issue of shares (public offering), issue of bonds and other resources. There were significant differences by examined factors mainly among loans from relatives and friends, bank loans (with collateral), other financial resources from abroad, leasing, venture capital, issue of bonds.

As for types of loans, we analyzed short-term, mid-term and long-term, investment, operation, exporting and others loans. There were differences in number of companies, which used mid-term and long-term loans, exporting loans and received no loans by number of employees.

Abstract

Príspevek sa zaoberá formami financovania malých a stredných podniků. Jsou zkoumány formy financování ve třech fázích – při zakládání podniku, v současnosti a plány do budoucnosti. Formy financování byly rozděleny na půjčky od příbuzných a přátel, bankovní úvěry bez zajištění, bankovní úvěry se zajištěním, bankovní úvěry ze zahraničí, ostatní finanční zdroje ze zahraničí, leasing, venture kapitál, emise akcií (soukromá nabídka), veřejná emise akcií (IPO), emise obligací a jiné zdroje. Z hlediska doby splatnosti byly klasifikovány krátkodobé, střednědobé a dlouhodobé úvěry. Zkoumaný vzorek se skládá ze 72 malých a středních podniků. Výzkum se uskutečnil před vstupem Slovenska do Evropské unie. Výsledky výzkumu potvrdily poměrně velkou diferencovanost mezi jednotlivými malými a středními podniky.

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COMPETITIVENESS OF A BANK

Jan Černohorský

Key words

bank, competitiveness, financial indicators, cluster analysis

1. Introduction

The competitiveness is actual topic at this time because all economy sectors including banking notify necessary changes. They discuss their readiness relative to competitiveness with expand to European Union. The aim of this paper is to introduce hypothesis which differentiate competitive and non-competitive banks. It is necessary to select suitable indicators and add these indicators to cluster analysis for complete this aim.

2. The selection of suitable indicators

It is not possible to have an easy formula that says which bank is competitive or non-competitive. Instead of it is possible to identify critical indicators which differ successful and unsuccessful banks.

The measurability of these criterions is important. That is the reasons why we will use only financial indicators of business of a bank. We will suppose that this financial indicators include together non-financial aspects of bank. This is because non-financial characteristics prove in financial indicators.

We proceeded with selection of suitable indicators in following way. We considered of this indicators which is possible to calculate from public accessible sources. We use Czech bank's report. Primary point of view in selection of indicators was that value of indicators is positively indicated it is competitive or non-competitive bank. We wanted to consider complex activity of the bank so we chose indicators of all critical groups of indicators. We

chose following indicators on a research basis of professional literature and on consultation basis with specialist from banking.

Profitability and productivity indicators

Profitability indicators belong to basic indicators of bank's business because included the profit which is generally the main aim of business. We chose the indicators that positively show successful or unsuccessful bank. It is:

- Return on average equity – higher value predicates competitive bank in reverse long-term lower value (or even negative) predicate non-competitive bank.
- Return on average assets – the value of this indicator is moving logically in smaller interval than the value of previous indicator with impact of higher denominator. The relation to competitiveness is the same.
- Profit per employee indicator – the higher value of this indicator shows higher productivity of a bank – the bank is more competitive from this view.
- Operational profit/assets indicator – the higher value of this indicator shows positive relation to competitiveness, smaller value (or negative) means negative relation to competitiveness.

Liquidity indicators

We could not miss out in this analysis these indicators because the rules of liquidity belong to the one of the most important indicators in the banking. The violating of liquidity positively makes weak competitive position of the bank and usually it is important consequences for the bank. So we chose the following indicators:

- quick assets/total assets – quick assets are cash, receivables from central bank, treasury bills, receivables from banks payable on demand, receivables from clients payable on demand. The higher share of quick assets on total assets should indicate more competitive bank.
- receivables from clients/total assets – We can generally say the more loans was given, the less is liquidity of the bank. Offering of loans belong to basic activity of commercial bank

that it is not possible to apply a rule that the smaller share, the better for the bank. It is necessary to determine interval. We determined interval 45 -65 % on professional literature basis. If the real share is smaller than lower limit the bank demonstrate excessive liquidity. It could be negative influence no profitability. If the real share is higher the liquidity of the bank is inadequate and the bank takes increased risks on itself.

- basic deposits/total liabilities – (basic deposits are liabilities to banks, liabilities to clients, emitted securities) – the higher share of basic deposits on total liabilities the better for the bank. It means the bank has enough stable sources. It could mean that the banks attract clients on high interests and this interests excessive make financial situation of the bank worse.

Assets quality indicators

These indicators primarily include loan loss reserves. Banks create loan loss reserves in order to balance bad quality of its assets or in order to take precautions against risks. Public accessible sources testify only indirectly about quality of assets. It is better to use data about non performing loans as data of asset quality. But these data recently were not published. In next analysis we used following indicators:

- provisions charge/total assets – the value of this indicator should be smaller at competitive bank. In reverse bank with bad asset quality should be higher value of this indicator.
- provisions charge/receivables from client – this indicator is more sensitive than the first indicator because receivables from client comprise only one part of assets. This indicator is important because the main aim of activity of commercial bank is giving loans. The interpretation is the same like previous indicator.

Market share indicators

Market share is one the factors of competitiveness. It is possible to define it with the aid of various balance sheet and profit and loss account items. We chose these indicators for our analysis:

- market share from the point of view of balance sheet size – we can suppose that competitive bank will have higher market share from the this point of view and in reverse non-competitive bank will have smaller market share from this point of view.
- market share from the point of view of given loans – the numerator includes receivables from banks and receivables from client. The interpretation is similar to previous indicator.
- market share from the point of view of accepted deposits – the value of numerator includes liabilities to banks and liabilities to clients. The interpretation is similar to previous indicator again.

We cannot take these indicators like dogma. Bank can successfully exist with small market share. But this bank has to be different from other competitors. It can be price policy, offer of new specific products (only momentarily) and focus on some part of market. We can say that the small bank has more different position than bank with wide range of activities.

Income and expense indicators

These indicators undoubtedly characterize competitiveness in point of view of expense and income. Expenses are one of the most monitoring aspects by bank management in present. There are many income and expense indicators. In this paper we used these indicators which positively characterize in this point of view competitive bank. We chose these indicators:

- income/total assets indicator – competitive bank should have the value of this indicator higher than non-competitive bank.
- expense per employee indicator – it is possible to suppose that competitive bank should have the value of this indicator smaller than non-competitive bank. It is necessary to compare this indicator with return per employee indicator or profit per employee indicator because high costs per employee need not mean non-competitive bank if profit per employee is adequate. It means high productivity in reverse.

Activity indicators

These indicators reflect ability of bank to use its sources. More competitive bank is a bank which uses its sources better. In this paper we used turnover ratio of loans. This indicator is proportion between receivables from banks and clients and return divided 365 days. The value of this indicator is in days. Smaller value – it means faster recoverability of loans - should signal more competitive bank. We must not forget that bank can direct at providing of long-term loans.

Structure of assets and structure of liabilities indicators

Each balance sheet has its structure which characterizes focus of bank and its role on interbank market. It is necessary analysis of assets and analysis of liabilities. We know wide range of assets structure indicators and liabilities structure indicators. It usually monitors share of constituent items of balance sheet on total assets or liabilities, the biggest assets (liabilities). It usually monitors proportion between equity and liabilities too. In our analysis we use structure of liabilities indicator – proportion between liabilities to banks and liabilities. It is valid if bank lose credibility on interbank market (one of the factors of competitiveness) other banks will deposit smaller sum of temporarily free money in this bank. It means that this indicator should be smaller by non-competitive bank than by competitive bank.

Analysis of average values of selected indicators in a time

The first step was in selection of the banks. We will measure commercial banks because they substantial sight is to offer all types of commercial or investing products. The existence on a market of others types of the banks is quite different.

Next step was to initiate concrete hypothesis of a solution. The bank that is operate on the date of December 31st, 2003 we will consider as competitive in the first case. That bank which does not work to this date we will think about it like non-competitive. We appreciate that many banks had problems in their business during the 1990s.

The competitiveness is a long-term phenomenon, that is why we cannot involve just in one year, but we need medium-term at all.

Next step was to divide banks for existing and bankrupt in this analysis. We calculated frequency of their existence in the year of 1995 – 2002. It means number of years when the bank was existed. We have to say that last banks which went bankrupt were Union bank and Plzenska bank in year 2000.

When we calculate number of years when banks existed we can get the number of values of the indicators that characterized working banks, it is number 122. When we count number of years of the banks that became bankrupt we will have number 46, it means number of years when these banks had existed.

After that we count arithmetical average of the indicator when we count the values of concrete indicator through all the bank in the concrete group of the banks and through all the years and this count we divide with the number of values of the indicators (number 122 or 46). Than we have average value of the indicator that characterize existing banks in all the years or average value of the indicator that characterize all non existing banks (table n. 1). We counted differences among the averages for existing and non existing banks in the next step of our analysis. We divided these differences with total average of concrete indicator for all the banks for all the years because we did not influence the selection of indicators by the total difference of existing or non-existing banks. See following table.

Table n. 1 The selection of suitable indicators

	Profitability and productivity				Liquidity			Assets quality	
	ROAA	ROAE	Profit per employee (thousands CZK)	Operational profit/total assets	Quick assets/total assets	Receivables from clients/total assets	Basic deposits/total liabilities	Provisions charge/total assets	Provision charge/receivables from clients
Average (existing)	-0.0039	-0.0083	416	0.0173	0.1837	0.8053	0.3691	0.0254	0.1136
Average (bankrupt)	-0.0644	0.1959	-916	0.3954	0.1299	0.7571	0.4828	0.0781	0.1993
Average for all banks	-0.0192	0.0433	179	0.1129	0.1701	0.7931	0.3978	0.0387	0.1349
Difference existing - bankrupt	0.0605	-0.2043	1332	-0.3781	0.0538	0.0481	-0.1137	-0.0527	-0.0857
(difference/average all) x 100	315.6%	471.9%	743.7%	335.1%	31.6%	6.1%	28.6%	136.1%	63.5%

	Market share			Income and expense		Activity	Structure of liabilities	
	Market share – balance sheet size	Market share - loans	Market share - deposits	Incomes/ total assets	Expenses per employee	Turnover ratio of loans	Liabilities to banks/ total liabilities	Liabilities to clients/ total liabilities
Average (existing)	0.0416	0.0703	0.0666	0.1300	9430	3876	0.3230	0.4522
Average (bankrupt)	0.0189	0.0279	0.0321	0.6641	35064	20050	0.1780	0.5607
Average for all banks	0.0359	0.0596	0.0579	0.2650	13995	7594	0.2864	0.4796
Difference existing - bankrupt	0.0227	0.0424	0.0346	-0.5341	-25634	-16174	0.1451	-0.1085
(difference/average all) x 100	63.4%	71.1%	59.7%	201.6%	183.2%	213%	50.7%	22.6%

Source: own computing

We chose indicators where we will premise that we can distinguish between existing or bankrupt banks with help of this rate. These indicators are shown in next chapter.

Chosen indicators

The aim of shown analysis was to choose the indicators that characterize differences between bankrupt (non-competitive) and existing (competitive) banks. We wanted to choose one suitable indicator from the group of all indicators to preserve the widest view on the bank as is possible.

We chose two following indicators from the group of all indicators:

- return on average assets,
- profit per employee.

The indicator of return on average equity was not chose because its values are higher at the bankrupt bank then at the existing banks. It opposes that way that existing banks should be more competitive. We did not choose operational profit/total assets indicator from the same reason because this indicator is more influenced by wrong economy of existing banks in the first years of the analysis.

We chose two indicators from the group that shows liquidity:

- quick assets/total assets,
- receivables to clients/total assets.

We chose these indicators because they embody relative difference about 30 % in the analysis then we can use it like sufficient. Basic deposits/total liabilities indicator shows insufficient relative difference between existing and bankrupt banks. It is just 6.1 %. We did not use this indicator in our analysis.

We chose one indicator from the group of the indicators of assets quality:

- provisions charge/total assets.

Relative difference for this indicator is 136 % at the analysis. We did not choose provisions charge /receivables from clients indicator. The reason is that there is strong correlation between these two indicators at most of the years and at this group.

We chose one indicator from the group that indicates the situation of the bank on the market:

- market share from the point of view of given loans.

The higher relative difference between existing and non existing banks is shown in the analysis (71.1 %) and this is the reason why we chose the indicator like more apposite. We did not choose last two indicators because there is very tight correlation between these indicators, it does not fall under the value of 0.97.

We chose the indicator from the group of indicator of incomes and expenses:

- expenses per employee.

We can see relative difference 183.2 % for the existing banks. The indicator incomes/total assets difference between existing and bankrupt banks at opposite point of view than we can presume. We will not use this indicator for relevant to determine of difference of competitive of non-competitive banks.

We had principled just turnover ratio of loans of indicators of activity. This indicator differentiates well what is existing bank and what is bankrupt bank according to our analysis because the value of relative difference is 213 %. We have to know that the value of this indicator could be strong influenced by financial situation of the bank or by their strategy in the area of offering of credits.

We chose the indicator from the group of structure of liabilities:

- liabilities to banks/total liabilities.

This indicator show unique differences between existing and bankrupt banks. Relative difference according to total average is more than 50%. Additional indicator liability to clients/total liabilities represents the differences strong but it does not so well rate as chosen indicator. One indicator from this group is enough.

Differences between competitive bank and non-competitive bank

Chosen financial indicators should be markedly different by the group of non-competitive bank and by the group of competitive banks by following way:

1) Rentability of competitive bank is higher than rentability of non-competitive bank. We can see this on following indicators:

- a) The indicator return on average assets of competitive banks is higher than indicator of non-competitive banks.
- b) The indicator profit per employee is higher for competitive banks than for non-competitive.

2) Liquidity of competitive banks is higher than liquidity of non-competitive banks how we can see:

- a) The indicator quick assets/total assets is higher for competitive banks than for non-competitive.
- b) The indicator receivables from clients/assets is lower for competitive banks than for non-competitive.

- 3) Competitive banks have higher quality of assets than non-competitive banks how we can see by following indicators.
 - a) The indicator provisions charge to assets is lower for competitive bank than for non-competitive.

- 4) Competitive banks have higher relative position on the market than non-competitive banks.
 - a) The indicator market share from the point of view of given loans is higher for competitive banks than for non-competitive.

- 5) Expenses of bank business is lower for competitive banks than for non-competitive banks:
 - a) The expenses per employee indicator is lower for competitive banks than for non-competitive.

- 6) There is faster circulation of financial instrument for competitive banks as we can see.
 - a) The turnover ratio of loans is faster for competitive banks. We have to respect different strategies which are related to offering of credits.

- 7) Competitive bank is more authentic for others banks because
 - a) The indicator liabilities to banks/total liabilities is higher for competitive banks than for non-competitive banks.

Creation of methods of cluster analysis

We used multidimensional statistic method of cluster analysis for verify defined hypothesis. We could better divide sets of objects (group of banks in our case) to some inside homogeny groups. Output is that inside the groups are objects (banks) similar and on the contrary of objects of different clusters are different each other. We can create clusters of competitive banks and clusters of non-competitive banks.

Starting values for every bank are average values of every indicator in the years 1995-2002 or shorter time of existence of their dates. Following step was transformation of part of indicator by the way all indicators had same tendency. It means their higher value means

negative development and lower value means positive development. We used following formula for transformation.

$$y_i = \max\{x_1, x_2, \dots, x_n\} - x_i, \quad i = 1, \dots, n \quad (1)$$

We had to make transformation of indicators to compare modules. We used following formula to make standardized magnitude.

$$x_{ik}^* = \frac{x_{ik} - \bar{x}_k}{s_k} \quad (2)$$

We will use these values in next steps.

We can count distance between single objects at this moment. We calculate this by force of Euclidean distance; it could be count by this relation

$$d(X_i, X_j) = \sqrt{\sum_{k=1}^n (x_{ik} - x_{jk})^2}. \quad (3)$$

We can get matrix of distances in this manner. We will make clustering of objects by method of average distances, distance of objects will be counted by this relation:

$$d(S_h, S_k) = \frac{1}{n_h n_k} \sum_{x_i \in S_h} \sum_{x_j \in S_k} d(X_i, X_j) \quad (4)$$

The diagram of representation of progression of clustering is a graph that represents the clusters of the banks.

We divided banks into six groups (diagram n. 1) on the principle of selected indicators and choosen distance 2.5. At every group is existing bank or bankrupt but there is one exception in this case (IPB). We can explain this exception in this manner. We do not have so long-term data, there were some nonstandard accounting procedures that resulted problems of this bank did not show itself in data of the bank

We can say that selected indicators classified well differences between competitive and non-competitive bank if we know that competitive bank is the bank existing and non-competitive bank is bankrupt.

3. Conclusion

We get to some hypothesis during defining differences between competitive and non-competitive bank. These hypotheses proved true with support of cluster analysis. It can say with respect to some conditions which influence information capability of used method.

Number of banks is not too extensive (38 banks), time series of indicator's value are 1 – 8 year long (depending on period of data existence of concrete bank). Next reason is that banking went through complicated evolution during transformation of economic and also banks quantify as competitive had considerable problems in its activity. State even had to help big banks to hold its position on market. Next factor is buying banks by new owners and their financial recovering – it means before this operation bank had financial problems and was non-competitive and after this operation bank is competitive. Next aspect is credibility of accounting statements – we cannot suppose with 100 % probability that all of data published in balance sheets and profit and loss accounts are true and correspond to accounting principles.

Nevertheless let's hope that this paper get follow-up research in field of competitiveness of bank.

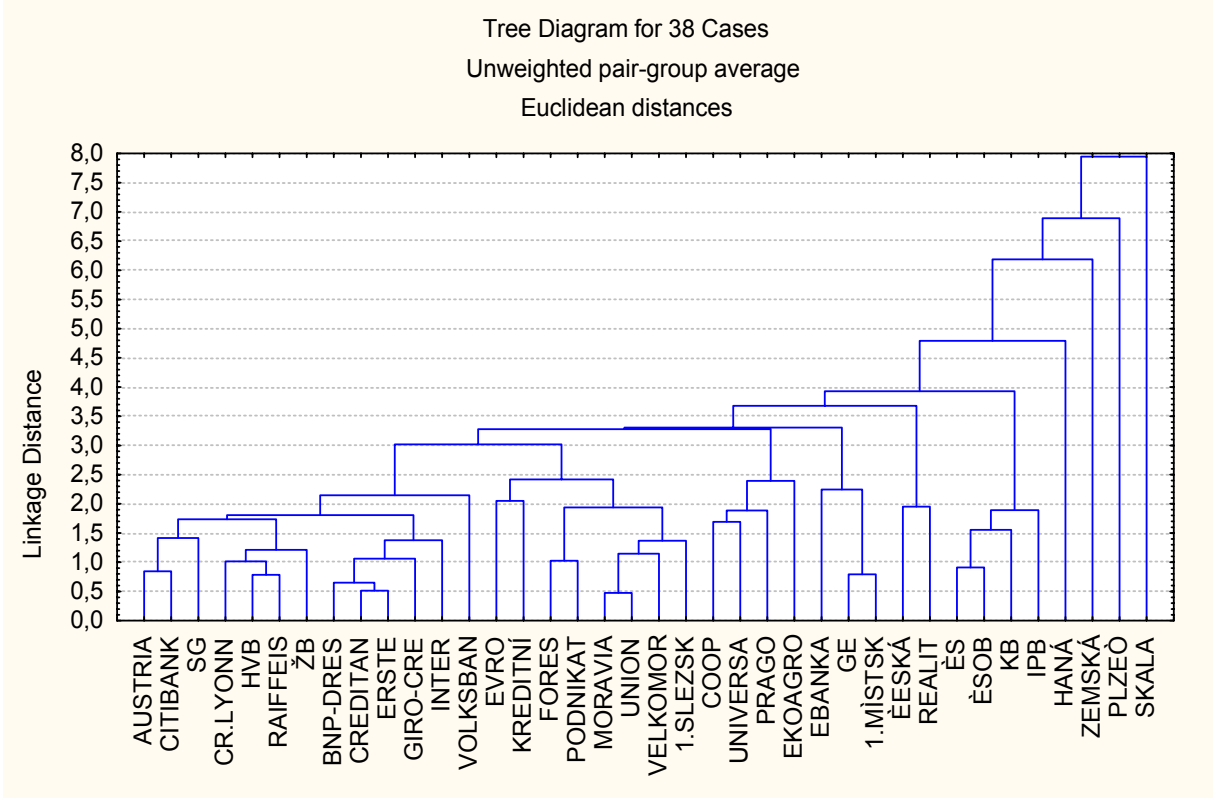


Diagram n. 1 Tree diagram for 38 banks

Abstract

Příspěvek si klade za cíl vymezit hlavní rozdíly mezi konkurenceschopnou a nekonkurenceschopnou bankou. Vychází z výběru možných ukazatelů, postihujících celé spektrum činnosti univerzální komerční banky. Na základě provedené analýzy jsou vybrány konkrétní ukazatele (ukazatele ziskovosti a produktivity, ukazatele likvidity, ukazatele kvality aktiv, ukazatele tržní síly, ukazatele příjmů a výdajů, ukazatele aktivity a ukazatele struktury aktiv a struktury pasiv) a na základě vypočtených hodnot z českého bankovního sektoru stanoveny hypotézy o rozdílech mezi konkurenceschopnou a nekonkurenceschopnou bankou. Hypotézy jsou ověřeny prostřednictvím metody shlukové analýzy. V závěru jsou pak analyzovány určité okolnosti, které mohou ovlivňovat vypovídací schopnost použitého postupu.

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THE USE OF FINANCIAL SERVICES AND THEIR ASSESSMENT BY THE SEGMENT OF SME IN MORAVIAN AND SILESIAN REGION

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Key words

Research population, quality assessment, common and tailored product, Customer relationship management – CRM), research findings

1. Introduction

Apart from other things the Czech financial institutions are in the last three years focusing to the greater extend on SME (contrary to Czech Saving bank and in the past also former IPB bank who had done so sooner). They generate and are launching the products, which are customized, i.e. tailored according to the needs (may be even requirements of small enterprises. Especially banks and insurance companies emphasize in their offer the possibility to provide specific low-amount credits, possibility to use electronic distribution channels and further customized products, or product packets. The CRM concept employed now by large number of financial institution enables above all the establishment of long-term, individualized relations with the customers, based primarily on seeking and finding relevant products offer, responding to particular customer and his current needs as well as in anticipating those needs, which could occur in the future.

Following those trends we have realized the survey on the use of offered selected financial services and their assessment by above-mentioned segment in the framework of the project researching the business environment in Moravian and Silesian region. This survey was realized in the period from 1.6. to 31.7. 2003 at 6 districts of the region. The interviewers were the students of Silesian University at Karviná. The population was choosed at random; nevertheless the number of respondent has in general corresponded with the size and economic weight of the district. We have also attached importance to the participation on the survey of respondents from various economic sectors.

2. Research hypothesis:

1. SME used mostly the services of three best known Czech banks.
2. The satisfaction of SME with financial services has increased.
3. The banks are more willing to offer credit products to SME.
4. The use of financial services by SME has deepened.

A) *Identification of the survey population*

Table 1. Number of respondents according to the districts of MS region

	Number	%
Bruntál	10	6,13
Opava	40	24,54
Ostrava	44	26,99
Nový Jičín	24	14,72
Karviná	22	13,50
Frýdek Místek	23	14,11
Total	163	100,00

The largest number of respondents is from Ostrava and Opava districts. For comparison we present the number of enterprises according to the statistics in 1999. We can see that most of them were situated in Ostrava, following by Opava. The fact that it was impossible to observe the percentage of respondents in each district corresponding with number of SMEs' quoted by statistics was determined by the possibility to recruit the respective number of interviewers from each district. In spite of this fact we suppose that the selected sample and its structure allows us to get general knowledge about the opinion of entrepreneurs concerning the bank services and their utilization.

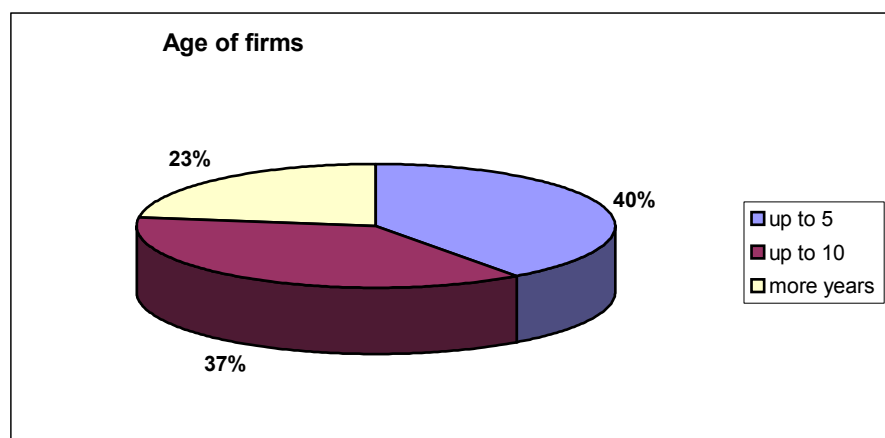
Table 2 Number of SMEs' by districts region

Districts	Enterprises with more than 20 employees				
	Number of enterprises ⁽¹⁾	Revenues (thousand. Kč)	Average employment		Average monthly wages (Kč)
			Total	By one firm	
a	1	2	3	4	5
Bruntál	106	12 328 409	11 347	107	10 111
Frýdek - Místek	135	36 962 236	24 915	185	13 284
Karviná	32	2 148 299	2 889	90	9 855
Nový Jičín	92	21 670 352	21 238	231	11 871
Opava	143	16 980 654	15 530	109	11 691
Ostrava - city	217	113 643 972	78 039	360	15 335

Source: ČSÚ, 1999

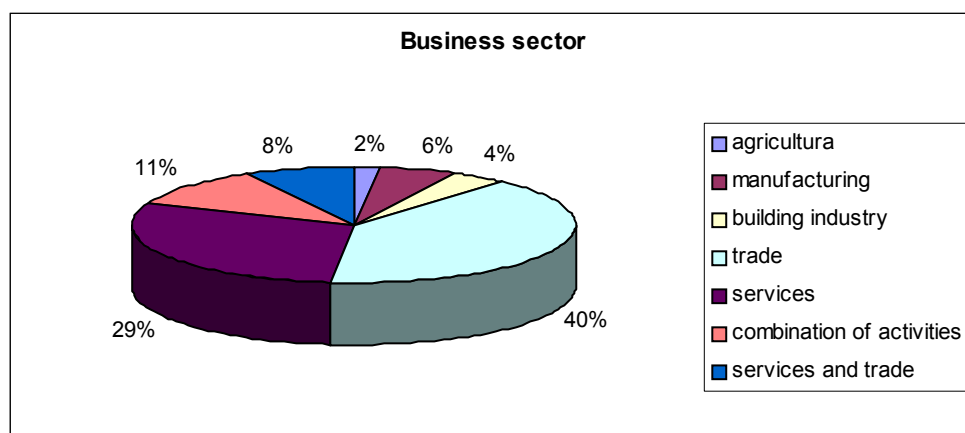
As we can see in following figure, almost the same number of enterprises operate on the market 5 as well as 10 years, only 23 % is older.

Graf 1. Age of firms



In correspondence with the trend in SME business the largest number of firms carry their activities in retail and service sector, as we can see in following figure.

Figure 2 Business sector



Tab. 3 Respondents sample by the business sector

	absolutly	%
Agriculture	3	1,84
Manufacturing	9	5,52
Building industry	7	4,29
Trade	65	39,88
Services	48	29,45
Combination of activities	18	11,04
Services and trade	13	7,98
Total	163	100,00

B) Use of financial services provided by banks

Tab. 4 Use of most common products as per well-known banks

	Czech saving bank (CS)	Commercial bank (KB)	CSOB Czech trade bank	GE Capital Bank	HVB CR	Živnostenská bank	Reiff eissen	Expandia	others
Credit	5	12	7	2	0	1	1	0	3
Deposits (current account)	46	82	36	7	1	1	1	2	3
Money transfer)	13	27	13	3	1	1	0	2	2
Financial consulting	6	11	4	3	0	1	0	1	1
Money exchange and foreign exchange transactions	5	13	4	0	1	0	0	0	00
Other services	1	3	0	1	0	0	0	0	1
Total	76	148	64	16	3	4	2	5	10

Tab. 5 Use of service products by enterprises in total

Product	Number	%
Credit	31	9,45
Deposits (current account)	179	54,57
Money transfer)	62	18,92
Financial consulting	27	8,23
Money exchange and foreign exchange transactions	23	7,01
Other services	6	1,82
Total	328	100,00

The most used product is current account (54,57), followed naturally by money transfer. In contrast to our hypothesis, the credit has been used only by few enterprises (less than 10 %), which may be caused by continual hesitance (or carefulness?) by banks to grant the credit to SME, in particular to those carrying retail or service business. Nevertheless, majority of bank institutions provide now product packages, ie. enterprises are enabled to use besides current account granted overdraft, which is usually covered (guaranted) by bill of exchange. This overdraft is guaranted up to given amount. However the financial consultancy is not used as much as it should be by SME, especially in this region.

Table 6 Review of most used bank institutions

	absolutly	%
Czech saving bank	76	23,17
Commercial bank	148	45,12
CSOB	64	19,51
GE capital	16	4,88
HVBCR	3	0,91
Živnostenská bank	4	1,22
Reifeissen	2	0,61
Expandia	5	1,52
Others	10	3,05
Total	328	100,00

The research confirmed the hypothesis that SME use mostly the services of three major and best known banks operating at our market. Majority (45,12 %) enterprises buy bank services provided by Commercial bank, which is followed by Czech Saving bank and ČSOB. Nevertheless, our opinion was, that the number of enterprises using the services of Czech Saving bank would be larger. Table 6 shows us also, that SMEs use simultaneously the services of several financial institutions. Concerning our research, the most often mentioned was GE Capital bank providing services to almost 5 % of enterprises.

Tab. 7 Quality assessment classified according to individual quality segments.

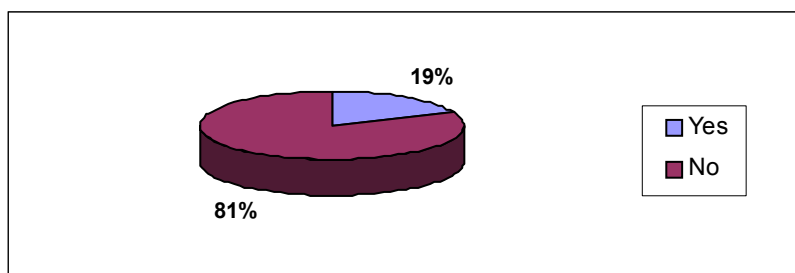
	ČS	KB	ČSOB	GE Cap
Goodwill (image)	1,82	1,71	1,94	1,29
Credibility	1,72	1,52	1,72	1,43
Reliability	1,67	1,67	1,78	1,29
Promptness of service realization	1,98	1,77	2,06	1,71
Flexibility	1,76	1,78	1,86	1,29
Width of offer	1,72	1,67	1,69	1,00
Provision of information to customers	1,63	1,62	1,86	1,14
Employees' behaviour	1,66	1,49	1,72	1,57
Total grade	1,75	1,65	1,82	1,34

Notion. Due to the small number of entrepreneurs evaluating the quality of other banks we did not taken their assessment into consideration because the statistic error could cause misinterpretation. The rating was realized on the scale amounting from grade 1 (best performance) to grade 5 (worse performance). The results are the weighted arithmetic mean including the number of respondents and given grade on above-mentioned scale.

It is obvious, that the best rating has been achieved by GE Capital Bank. Nevertheless only 7 respondents assessed this bank and therefore the results are to be discussed with reserve. On the other hand the sufficient number of respondents enable us to take into consideration the performance of three largest banks. The best results in all quality dimensions achieved Commercial bank. The best perceived quality of Commercial bank is behaviour of personal, worst performance applied to flexibility and promptness of service

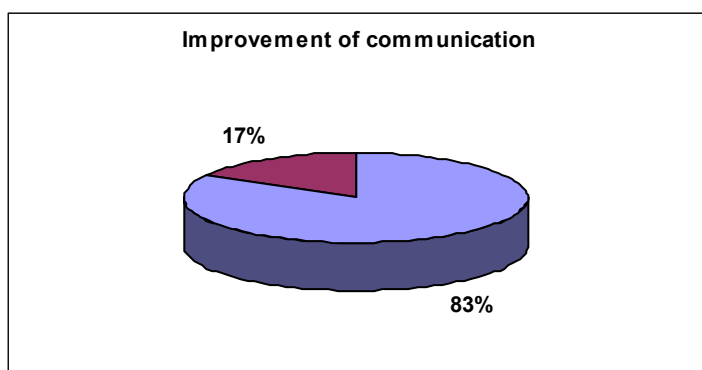
realization. The second rank was assigned to Česká spořitelna, where the respondents measured as best the provision of information to customers; the worst quality dimension was again the promptness of service realization and unfortunately also the image. With respect to this particular research relatively poor rating has been assigned to ČSOB. As problematic dimension we can again name the promptness of service realization and the image, as the best quality dimension is measured the service offer. Mutual critical point of offered services' quality is promptness of service realization

Figure 3. Use of firms' banker service



Although the services of firm's banker are highly recommended and offered to SMEs, their services have been used only by 19 %, i.e. 30 enterprises. Nevertheless, it is necessary to say that 83 % were satisfied by improvement of the communication between bank and the client. From the client's point of view it represents the enhancement of the interaction bank – client, which can be interpreted as accomplishment of one of CRM goals.

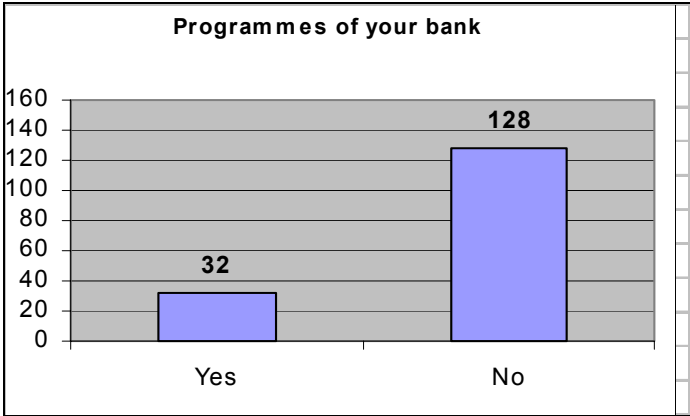
Figure 4 Improvement of communication



Legend: satisfied with improvement of communication – 83 % = yes, 17 % = no.

The use of the firm’s banker services had a positive impact on the information of clients about the specific programmes the bank are providing in the framework of aid to SMEs.

Figure 5 Information about specific programmes provided by banks



Only 32 respondents i.e. 20 % know those programmes. We can suppose that personal banker would most probably recommend specific products in the framework of financial consultancy and the firms could with such help reach the help provided either by financial institutions or by other agencies. When asked about the acquaintance with specific programmes, the firms answered that they know following programmes.

Tab. 8 Specific programmes of support to SME that are known to firms

Specific programmes

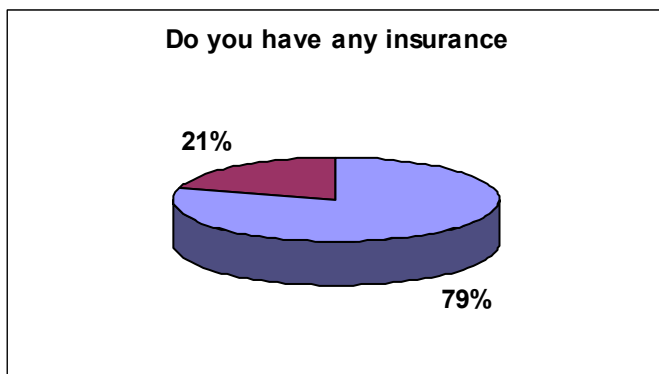
- Cooperation on development programmes
- Conditions governing c/a
- Personal banker
- Express line
- START – KB
- Prompt loan
- Global Trend
- Sporobond
- Sporoinvest
- My bank KB

Czech post- post voucher B
GSM Banking + internet
Credit
Financing of the machinery

It is evident that the entrepreneurs did not fully understand the question, that is the answers did not refer to the products representing the direct aid to SME, but common products focused on the SMEs' segment in the framework of integrated offer of various banks.

We asked the respondents also whether they have insured their business and where.

Figure 6 Insurance of SME



Large majority of firms (79%) had insured their business.

Following table 9 shows us which insurance company have been chosen by small and medium size firms.

Tab. 9 Insurance has been underwritten with:

	Number	%
Allianz	5	4,50
Č. pojišťovna	59	53,15
Č.spořitelna	4	3,60
ČSOB pojišťovna	4	3,60
Generalli	10	9,01
IPB pojišťovna	3	2,70
Kooperativa	22	19,82
Union pojišťovna	1	0,90
ŽP	3	2,70
Hypo	1	0,90
KB	2	1,80
Uniq	1	0,90
Das	1	0,90
SUMA	111	100,00

The largest share of the market has (as supposed) Česká pojišťovna, followed by Kooperativa, significant number of firms is insured by insurance company Generalli.

Tab. 10 Typs of insurance

	Number	%
Natural disaster	78	20,69
General (or property)	113	29,97
Burglary	26	6,90
Responsibility for damage	79	20,95
Old-age	35	9,28
Freight insurance	34	9,02
Bad debt and credit insurance	6	1,59
Financial loses	6	1,59
SUMA	377	100,00

As we can see, the firms have underwritten all types of insurance policies. Nevertheless dominates general or property insurance, responsibility for damage and natural disaster insurance. The answers are presented in the way they have been phrased, therefore some confusion could arise (the respondents could mistaken property and natural disaster insurance, which in some cases are the same.

2. Research findings

In general we can summarize our findings as follows:

1. We have found that only 54,5 % of respondents have opened the current account in their bank. Although we monitored the segment of SME, this finding is surprising. Nevertheless, this is in consistence with the fact that only 9,45 % of respondents could obtain a bank credit (banks namely does not know the firm's history and therefore they cannot asses its credibility). The next surprising finding has been the fact that only 19 % of respondents used the services of transfer payment. Again, we can see obvious relations with: a) low number of opened current accounts, b) undesirable habit to realize the cash payments. Linkage to tax liability can be only speculative.
2. Majority of respondents came from the sectors of trade and services, which has their own specifics and obviously does not feel the necessity to use financial services in such an extent as manufacturing firms with larger need for input capital.
3. Majority of respondents is using the services of several banks, at the same time preferring the Komerční bank. This bank also received the best rating when evaluating the quality of offered products. Differences in quality assessment of three largest Czech banks are nevertheless not too significant
4. The services of personal or firm's banker has used only one fifth of respondents. Even so it is obvious that the utilization of those services leads to better information and improvement of know-how concerning the specific bank products and therefore their services should be offered more intensively.
5. When speaking about the information of SME about business support programmes, we can conclude that the managers or owners of SME do not understand correctly the concept of the programme of business support (e.g. they mistake it for common overdraft). Besides, they do not know sufficiently the substantiality of such programmes. In the framework of offered firms' bankers' services we can expect improvement of current situation.

6. After the experiences with insufficient insurance during floods and improvement of offer we can state, that this area of financial services has considerable improved, when almost 80% of entrepreneurs have underwritten some type of insurance policy.

Nowadays, when the financial institution are applying CRM attitude to customers we are convinced that it would be useful to realize similar research in course of 2-3 years, in order to better asses the trend in use of financial services by SMEs.

Abstract

V roce 2003 realizoval výzkumný tým katedry marketingu OPF Slezské univerzity výzkum využití služeb finančních institucí malými a středními podniky v Moravskoslezském kraji. Ukázalo se, že potenciál služeb, nabízených především bankami není dostatečně využíván, a existují zde tedy značné možnosti růstu. Naopak, poměrně dobře jsou využity produkty poskytované pojišťovnami. Kvalita služeb nabízených bankami byla hodnocena vesměs pozitivně, přesto zde existují možnosti zlepšení, zejména v oblasti zlepšení pověsti bank a rychlosti realizovaných služeb.

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THE DEVELOPMENT LEVEL OF THE POLISH BANKING SYSTEM AND THE MANAGEMENT OF COMPANY LIQUIDITY

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Key words;

development , banking system, management, financial liquidity, company

1. Introduction

The role of the banking system in a national economy is determined by many political, economic and social factors, and by the existing technological solutions. Regardless of the variables that influence its operation, the banking system, as one of the country's basic economic components, influences the principles on which the market players operate in a specific way. The very essence of the banking system determines its role in the companies' management procedures, including their finances and liquidity.

The goal of this paper is to determine the correlation between the development level of the banking system in Poland and the companies' options in terms of managing their financial liquidity. In this respect, the paper refers to the period before the political transformation, looks at the political and economic changes, and describes the current state of affairs. The first section of this paper defines the banking system and describes its connection with the way companies operate. The following section focuses on the historical outline of the Polish banking system, with a special emphasis on its transformation. The final section describes the banks' role and significance, analyses the changes concerning the quality and availability of the products offered by Polish banks, and presents their current products as tools for the efficient management of companies' financial liquidity.

2. The nature of the banking system

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The banking system as a complex combination of banking institutions and norms that govern their connections and relations with the environment in which they operate² is an integral part of the market economy, which not only influences the financial and crediting policy of the State, but also, to a certain degree, determines the principles that govern business operations. The banking system and its functions, which include the establishment of mechanisms allowing accumulation of funds and their effective use, crediting business activity, and providing the parties with a tool for settling mutual liabilities resulting from various transactions, influence to a high degree the financial policy of various companies. Thus, the functioning of those companies is, in a sense, dependent on the development level of the banking system. Efficient settlement of accounts, effective and smooth crediting procedures, and the appropriate allocation of funds are some of the factors that not only allow companies to maintain optimum financial liquidity, but also impact their profitability. Consequently, it may be claimed that the liquidity and efficiency of companies partially depends on the efficiency of the banking system, as well as its flexibility and rate of adaptability to the customers' needs and expectations.

3. Historical outline of the development of the Polish banking system

The end of the 1980s and the beginning of the 1990s saw some fundamental changes in all aspects of the economic life in Poland. The result of the political transformation was a dramatic change in the way the economy functioned. The transformation that began in 1989 created a favourable climate for free enterprise prompting the development of the private sector. The market economy model did not only require a change in the property structure, but most of all, it called for changes in the principles governing the operation of the basic economic entities. Therefore, the beginning of the 1990s was not only characterised by some dramatic structural changes and a dynamic development of enterprises, but most of all, by a thorough transformation of the banking system.

Until 1989, the Polish banking system was part of the centrally planned economy. Such a system was based on the State's monopoly in banking services and focused on just a handful of banks, with the most prominent *Narodowy Bank Polski*, that combined the functions of a commercial bank and some functions of the central bank. Apart from the

² W.L.Jaworski, Zb.Krzyżkiwicz, B.Kosiński; *Banki, rynek, operacje, polityka, Poltext, Warszawa, 1997, p. 15.*

central bank, there were several other specialized, non-competitive banks that carried out the centrally specified tasks. The interest rates, as well as the direction and scope of their crediting services were determined through administrative procedures. The banks mainly focused on catering for State-owned companies, individual customers, and small family firms.

The banking principles that functioned at that time provided State-owned enterprises with complete services regarding settlement of their accounts, making deposits, and crediting their investments and operational activities. The funding scale for these enterprises was determined in the annual credit and cash schedule. Private enterprises, existing mainly as small family firms, faced many barriers in terms of financing their business activities, settling their accounts, and allocating their loose funds. The existing limits concerning crediting procedures, as well as the principle of bank exclusiveness, which did not allow any selection of a bank and tied a customer to a certain unit according to its material or location properties, caused the servicing of private enterprises to become a marginal part of the banks' activities. In the said period, there was practically no influence of the banking sector on the management of companies' financial liquidity, as it was characterised by two opposite trends: (1) the administratively determined principles of funding State-owned enterprises and (2) the limiting of funds available to the private sector.

The revival of the banking system in Poland started at the beginning of the 1980s when new regulations were adopted that became the foundation of the way banks functioned and were adjusted to the deep changes occurring in Poland, and to the principles of the free market economy. This was the result of the political and economic changes in Poland that created a demand for a completely different model of the banking system. The transformation of the banking system was carried out on four levels:

- building a new legal system to govern banking activities,
- transforming *Narodowy Bank Polski* into a modern central bank that would not deal with any commercial activities,
- allowing the establishment of private commercial banks, including foreign capital banks,
- privatising commercial banks.³

³ Zd.Fedorowicz; *Podstawy bankowości*, Wydawnictwo Naukowe PWN, Warszawa 2000, p.21

The general framework for the new banking system was created through the introduction, in 1989, of the banking law reform and the adoption of legal instruments that became the springboard for a two-level banking system characteristic of the market economy. The following steps were: (1) initiation of the process of removing monopolies from the banking sector, which allowed the establishment and development of a network of commercial banks with a mixed capital, (2) increase in the share of foreign investors' capital in the ownership development and transformation of this sector, and (3) privatisation and consolidation in this sector.

The liberal policy concerning the issuing of licences for new banks encouraged numerous initiatives and projects, especially those concerning the establishment of Polish banks, which promptly resulted in a rapid increase in the number of banks in Poland.

At the beginning of 1987, there were 5 national banks in Poland and 1663 associated co-operative banks. At the end of 1988, there were 7 national banks, and at the end of the following year, as many as 25 such banks, with the number of co-operative banks remaining unchanged. The years 1990 and 1991 were crucial in the establishment process of new banks. As many as 49 banks were launched in that period, including 4 co-operative banks, and 17 licences to establish new banks in Poland were issued. However, due to the difficulties emerging in different banks and the first symptoms of a banking crisis, the following years brought about more stringent regulations governing the issue of such licences.⁴ Towards the end of 2003, after a several-year period of developing the new banking system, there were 58 commercial banks in Poland and 600 co-operative banks. These banks had 12314 branches, including 9163 branches owned by commercial banks and 3151 by co-operative banks. At the end of 2003, the total balance of the newly created banking sector included 94.7% of commercial banks and 5.3% of co-operative banks. The property structure of the commercial banks included 70.3% of private capital banks, including 67.8% of banks controlled by foreign investors.⁵

The development of the Polish banking sector based on foreign capital led to the establishment of strong banks with suitable experience, staff, and technical infrastructure. The banks that aspired to reap maximum profits and to dominate on the market created strong

⁴ More on this subject in ; *System bankowy w Polsce w latach dziewięćdziesiątych*, NBP, December 2001

⁵ More on this subject in ; *Sytuacja finansowa banków w 2003*, Syneza, NBP, Warszawa – May 2004

competition, which resulted in a noticeable general improvement in professionalism and service quality in the banking sector. Taking advantage of the latest developments in technology, banks are now adapting their services to the needs and expectations of their customers offering more options, products and distribution channels.

4. The role of banks in managing company liquidity

The economic democracy principles created by the market economy that ensure freedom of establishing and running commercial enterprises triggered an expansive development of private enterprises in Poland. The number of companies in the transformation period increased over 2.5 times (from 1205 thousand in 1990 to 3468 thousand at the end of 2002)⁶. A natural effect of the private enterprise revolution in the context of the free market economy is the increased significance of all the factors concerning the financial side of management, including the proper management of a company's financial liquidity, usually defined as a company's ability to settle all of its running liabilities on time.⁷ The management of financial liquidity, including the control of the current state of cash assets, funds available in bank accounts, liabilities and obligations, as well as short-term funding and allocating of surplus funds, plays a crucial role in the proper functioning of companies. Also, from the point of view of maximizing the capital's market value, which becomes the basic goal of enterprises in a well developed market economy, the role the proper management of a company's financial liquidity plays is special, and not only due to the negative effects of the lack of financial liquidity, but also due to the need for implementing optimum liquidity strategies. Maintaining the proper financial liquidity influences the efficiency with which a company operates, determines its credibility, market position, and, consequently, has a great impact on its financial results.

Managing a company's financial liquidity is an extremely important aspect of managing its finances. Thus, efficient management of its liquidity is a great challenge for any company. One of the basic aspects of managing a company's financial liquidity is being able to effectively use the products and services offered by a particular banking system. The banking products and services that may be regarded as tools for managing the financial

⁶ GUS Statistical Yearbooks: 1991 - 2003

⁷ M.Sierpińska D.Wędzik; *Zarządzanie płynnością finansową w przedsiębiorstwie*, PWN, Warszawa 2002, p.7

liquidity of enterprises are: (1) services concerning settlement of accounts, (2) various deposits, (3) crediting services, and (4) parabanking services.

5. Settlement of accounts and financial broking and their role in determining a company's financial liquidity

The quality and form of the procedures performed by banks in connection with the settlement of accounts of various companies is of primary importance as far as the management of a company's financial liquidity is concerned. The efficiency of banks in this respect guarantees the parties a rapid and effective transfer of funds. This in turn determines the principles governing the management of the highest liquidity assets, and the decisions concerning the demand for funds, or allocating their surplus. The current banking law in Poland distinguishes between cash and non-cash settlements of accounts. The cash settlements include the traditional forms of the cash cheque and the cash payment, and the non-cash settlements include both the traditional forms, such as the money transfer or the cheque, and the latest achievements, such as the payment order or the bankcard.

The first step towards improvement in the settlement of accounts procedures in Poland through the creation and standardizing of an inter-bank settlement of accounts system was the establishment, in 1991, of the *Krajowa Izba Rozliczeniowa S.A* (KIR) [the National Settlement Chamber], which began its operation in 1993. In the initial period of KIR's operation, the inter-bank settlements of accounts in Poland, and the resulting settlements of accounts between companies, were realised on paper through document exchange within the SYBIR system. As it involved manual processing and transport of documents, this system was not only expensive and labour-consuming, but most of all, it involved long waiting periods for the effecting of payments. After far-reaching improvements, these procedures took three days to complete. Such long waiting periods, firstly, froze the transactors' funds and, consequently, generated extra costs for both parties, and, secondly, made it difficult to manage the financial liquidity of enterprises. The constant developments in computer technology and the increasing customers' demand for speed and efficiency of banking procedures have created a need for implementing an electronic transaction system. A great achievement concerning the inter-bank settlement of accounts in Poland was the introduction, in 1998, of the electronic information transfer system referred to as ELIXIR. Not only did this system limit the cost of a money transfer, but it also made the settlement of accounts more

efficient allowing the transfer to be made on the same day. Apart from the inter-bank settlements of accounts carried out by KIR, a further improvement in this area was the introduction of an additional system called SORBNET, which required all banks to direct to this system all large-sum transactions, i.e. transactions of more than PLN 1 million in value. The SORBNET system allowed the transaction to be made in real time directly by *Narodowy Bank Polski*.

The efficiency of money transfers was also significantly improved in the banks themselves, most of which now have their own internal, real-time, on-line systems, which allow funds to be transferred instantly between the branches of a particular bank.

Another achievement in the non-cash settlement of accounts transformation process (both in Poland and throughout the world) was the introduction of the bankcard and the payment order. Not only are these payment methods convenient and highly useful, but they also ensure a high level of liquidity. This is why their introduction to the Polish banking market was another breakthrough in the process of improving the quality and efficiency of settlement of accounts procedures.

The first bankcards in Poland appeared at the beginning of the 1990s, but their true expansion occurred in the initial years of the 21st century. The value of transactions made with bankcards in the first quarter of 2004 was PLN 145.2 million and showed an increase of 513% in comparison with the same period of 1999. Bankcards, as instruments allowing non-cash transactions, show the highest growth tendency and are gradually replacing other payment methods. The most commonly used card is the debit card, which is used to conduct 90% of transactions. Charge cards and credit cards, despite their increasing share in transactions, are still marginal payment instruments.

The payment order is one of the youngest methods of settling one's accounts, which in Poland was introduced in 1998. The procedural structure of this payment method maximally shortens the transaction sequence and minimizes the procedures that the transactors must complete. The payment order allows non-cash settlement of regular liabilities for individuals and corporations. This method makes it possible for companies to ensure punctual arrival of payments in their bank accounts, improve their payment control systems, and simplify their accounting methods, which in turn significantly improves their financial liquidity.

A definite breakthrough in the Polish banking system that has had a significant impact on the quality of services and products offered by banks is the recent popularisation of electronic banking. Its introduction is the result of progress in computer technologies, of the changing needs and awareness of the public, but most of all, of more intense competition in the banking sector. As they are determined to maintain their dominating or profit-ensuring market position, banks do not only adjust their services to their customers' needs, but they also introduce new products and make their customers aware of their necessity. The modern electronic banking system mainly operates through the Internet, surface and cell telephony, and bankcards. This achievement, combined with the legal provisions defining the notion of electronic money and the introduction of the so-called electronic signature, is a highly effective improvement for the banks and their customers.

Through the multidirectional economic, technological, legal, political and social development of Poland, including the development of players on the banking market, and the changes in the demand for banking services resulting from the abovementioned transformation processes, Polish banks, seeking to attract new customers and improve their market position, have been able to offer services that are fully adjusted to their customers' needs, and are often even a step ahead. The vast majority of Polish banks do not only offer efficient settlement of accounts systems, a wide and flexible range of high quality products and services that are adjusted to the market needs, but they also provide financial consulting services. As far as the management of financial liquidity is concerned, banks offer the following services:

- settlement of accounts in Poland through current and auxiliary accounts and a wide range of payment instruments,
- settlement of accounts abroad, including the following: instant currency exchange transactions, payment orders, cheques in foreign trading, export and import documentary collections, own and foreign documentary letters of credit,
- investment of surplus funds in the form of short or long-term deposits, automatic deposit accounts or treasury bonds,
- short-term funding, including crediting, factoring and leasing,

- funding of foreign trade through loans, forfaiting, letter of account discount, and factoring,
- guarantee of trade funding in the form of contractual guarantee, punctual payment guarantee, customs guarantee, customs and tax liability punctual payment guarantee, and a stand-by letter of credit,
- management of financial risk, including: foreign currency transactions with a fixed time limit, changes in interest rates, warranties, foreign currency options and interest rates,
- financial consulting.

The abovementioned banking services, combined with the latest achievements in computer technology and the relevant legal regulations, have undoubtedly become an efficient tool for managing a company's financial liquidity.

6. Conclusion

The previous decade was a time of dramatic and radical changes in the Polish banking sector, which underwent a thorough transformation process. During that period, the regulations governing banking services were modified and steps were taken towards the creation of a banking system firmly based on the free market economy. In the banking sector, those years saw many restructuring, privatisation and consolidation processes, increasing competition between banks, and many efforts to adjust banking operations to the demands of the free market economy. All the above aspects, combined with the general development of Poland, contributed to the creation of a banking sector that is adjusted to the needs and expectations of its customers, including corporate customers, in terms of managing their financial liquidity. Thus, it can be said that the modern Polish banking system has reached the level of development that meets market expectations, which makes it an efficient tool for managing company financial liquidity.

A separate issue is the availability of these banking services, which is conditioned by the legal standards and the banks' internal security regulations. This problem has deliberately been omitted in this paper due to its complex nature, which often reaches beyond the realm of the banking procedures themselves.

Abstract

V posledním desetiletí prošel polský bankovní sektor dramatickými a radikálními změnami, které odpovídaly hloubce celého transformačního procesu. V průběhu tohoto období byla upravena regulace bankovního sektoru a podniknuty kroky k vytvoření bankovního systému plně odpovídajícího tržní ekonomice. V bankovním sektoru došlo k restrukturalizaci, privatizaci a konsolidaci, růstu konkurence mezi bankami, a velké snaze bank přizpůsobit své aktivity potřebám tržní ekonomiky. Všechny výše uvedené skutečnosti, společně s celkovým společenským vývojem v Polsku, přispěly k vytvoření bankovního sektoru, který je přizpůsoben potřebám a očekáváním svých klientů, včetně firemních klientů, z hlediska řízení jejich finanční likvidity. Je možno konstatovat, že moderní polský bankovní systém dosáhl úrovně vývoje, který odpovídá očekáváním trhu, který používá efektivní nástroje řízení finanční likvidity společností.

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BANKS, INDUSTRIAL STRUCTURE AND MONETARY POLICY IN TRANSITION ECONOMIES

Marco Mazzoli

Key words

industrial organization and macroeconomics; macroeconomic industrial structure, money multipliers,

1. Introduction

When industrial firms enjoy a significant degree of market power on the goods market and collect financial capital on a relatively competitive banking sector there is no reason why they should not use their market power also on the credit market. This phenomenon is obviously amplified when one deals with entirely “bank-oriented” banking systems, where financial markets and stock markets are not fully developed and their macroeconomic size is small compared to the one of the banking system. This kind of institutional configuration of the financial system has also characterized for a long time many Continental European financial systems, at least until the 1990’s.¹ In transition economies the increasing openness in financial markets has, in many cases, created incentives for mergers and acquisitions. The reasons for this are twofold: multinational corporations may implement acquisition policies of local companies in order to enter local markets and local companies might have incentives to merge in order to discourage potential entry and face competition by large international corporations.

The purpose of this paper is to provide a very simple theoretical model describing a few stylized fact of the implications for the macroeconomy and for the transmission mechanism of monetary policy of an increase in the degree of concentration in the industrial sector.

¹ In this regard see, for instance, Allen and Gale (2000)

2. The model

Non surprisingly, the results in the literature on lending market structure mainly depend on the specific assumptions concerning the strategic interactions among the various agents. The macroeconomic implications of a concentrated banking sector may be studied within the Monti-Klein model. In its oligopolistic version (developed, for instance, in Freixas e Rochet, 1997) an increase in intensity of competition among banks yields a lower response to monetary policy for what concerns the interest rate on loans and a higher response to monetary policy for what concerns the interest rate on deposits. Some contributions by Vanhoose (1983, 1985) analyse the macroeconomic implications of credit market structure, but their emphasis is mainly on the stability of monetary and credit aggregates rather than the interaction between the real and the financial side of the economy. On the other hand there is hardly any literature on the macroeconomic impact of market power on the borrowing side of the credit market.

To study the impact of mergers on the macroeconomy and on the transmission mechanism of monetary policy we introduce here a short run partial equilibrium model dealing with the first impact of monetary policy. It is constituted by macroeconomic equations and “microeconomic” conditions describing in detail a single industry of relevant size, composed by large firms enjoying market power both on the goods market and in the bank credit market. The banks are assumed to be more numerous than the firms and compete between themselves under a perfectly competitive regime. The attention is focused on the investments (which are assumed to last for one period only) of the industrial firms. For this reason, it is assumed that the wages and the level of employment are fixed: this could be interpreted as a *ceteris paribus* assumption, or, alternatively, we can think of a short run description of the labour market, characterized by long run contracts.²

The industrial firms’ (henceforth “firms”) investments determine the output produced by the industry. In addition, we assume that the model describes an economy with a “banking.-oriented” financial system, as usual in developing countries. One of the main “ingredients” of the model must be a convenient framework allowing us, on the one hand to

² We might also justify this “*ceteris paribus*” assumption by postulating some form of contract which makes constant the level of employment in the industry in the short run, together with an efficiency wages mechanism which introduces wages rigidity in the short run, like in Greenwald and Stiglitz (1988)

formalise the macroeconomic effects of a change in firms' market power in the industrial sector, and, on the other hand, to include as extreme cases both perfect competition and monopoly. For this purpose we assume that there are n identical firms (each of them owing some of the given N production units, or factories) behaving as oligopsonists *à la Cournot* on the bank credit market. The individual factory's investment k (lasting for one period only) may be financed either with bank credit (at the interest rate r_L) or by issuing bonds (at the interest rate r_B). As mentioned before, it is assumed that the overall number N of production units is fixed. Each of the n firms therefore raises external finance in order to provide with capital k each of its N/n production units, and each production unit is a generic Cobb-Douglas. In this way - by keeping the number of production units in the economy constant - a change in the degree of concentration can be conceptually isolated from any other "entry and exit" effect that might affect the scale of the economy. In order to let N/n vary with continuity, we allow the possibility for the firms to own a portion of a production unit. In our simplified framework, a change in N/n corresponds to a merger, determining an exogenous change in the degree of concentration in the industrial sector.

In addition, as mentioned before, it is assumed that the firms are oligopolistic in the goods market and produce a final consumption good at the price p . The money base is assumed to be only constituted by the reserves held by the banks at the central bank: this implies that there is no currency and all payments are made with banks deposit. Each of the factories, or production units, owned by the firms may be represented by a Cobb-Douglas in the following way:

$$y_i = N A k_i^\alpha \Phi$$

where the subscript " i ", which identifies the i -th production unit (or factory), will be ignored in the rest of the paper. For what concerns labour, captured by Φ for simplicity, as we said, we have introduced here a "*ceteris paribus*" assumption. Introducing labour would not have qualitatively changed the result of the paper, but would have considerably complicated its algebra. The optimisation problem of the representative firm may be described as follows:

$$\max \pi = (N/n) [p y - w^* l^* - (1 + r_L) k] \quad (2)$$

s.t.

$$(N/n)k + K' = S(r_L, r_B, BM) \quad (3)$$

and

$$p = LY^{-\beta}, \quad \text{where } \beta > 0 \text{ and } Y = Ny = Nak^\alpha l^{*1-\alpha}. \quad (4)$$

where π are the firm's profits, y the output produced by each production unit, w^* the wages and l^* the labour employed (both fixed in the short run), k the investment for each production unit, $S(\cdot)$ is the bank credit supply function³ (assumed to be a constant elasticity function with respect to r_L , and r_B), BM the money base (which - having assumed in our case that there is no currency - is equal to the private banks' outstanding reserves, figuring - in the central bank balance constraint - as a counterpart for the bonds held by the central bank), K' the investments made by all the other production units owned by all the other firms; Equation (4) is the inverse demand function (assumed for simplicity to be a constant elasticity function) for the final consumption good produced by the industry under consideration, where L is a generic shift parameter and β a generic positive parameter. Equation (4) could be obtained very straightforwardly from a very standard and simplified setting with an utility-maximizing representative consumer with a Cobb-Douglas utility function. Since we are dealing here with a partial equilibrium model, we simply report the demand curve.

Constraint (3) represents the macroeconomic equality between credit supply and firms' investments. Having assumed that the firms behave as *Cournot* oligopolists on the goods market and *Cournot* oligopsonists on the credit market, and having assumed that the S.O.C. are satisfied, the F.O.C. are the following:

$$\pi(\partial\psi/\partial\kappa)[1 + 1/\varepsilon_{\Delta\pi}] = \rho_\Lambda [1 + (1/\varepsilon_{\Sigma\Lambda})] \quad (5)$$

where ε_{DP} is the demand price elasticity of the final good, ε_{SL} is the bank credit supply elasticity with respect to r_L . This means that we have two potential sources of rigidity in the

³ Equation (3) may be interpreted as a special case of the function $S(r_L, r_B, BM, E^*(\Delta BM))$, with

$$E^*(\Delta BM) = \int E(\Delta BM) dF[E(\Delta BM)] = 0$$

and $E^*(\Delta BM) = 0$ (i.e. *unanticipated monetary policy*). $E^*(\Delta BM)$ is the private sector expectation concerning the monetary policy intervention (defined as change in the money base), $F[E(\Delta BM)]$ is the probability distribution function of the expectations with respect to $E(\Delta BM)$, τ is a positive parameter describing the elasticity of the expectations with respect to the monetary intervention $E^*(\Delta BM)$. Therefore, equation (3) reflects a situation of unanticipated monetary policy.

model, one in the goods market and one in the credit market⁴. It is important to point out that credit market rigidity may act in an opposite direction with respect to the goods market rigidity.

In general, there is no reason to assume that only one of these sources of rigidity should be taken into account since there is no reason to assume that the firms only use their market power in real transactions, and not in the credit market. We can re-write equation (5) as an implicit function:

$$\pi(\partial\psi/\partial\kappa)[1 + 1/\nu\epsilon_{\Delta\Pi}] - \rho_A [1 + (1/\nu\epsilon_{\Sigma\Lambda})] = \phi_I(\pi, \kappa, \rho_A, \nu) = 0 \quad (6)$$

The rest of the model is composed of the equilibrium conditions in the various asset markets. Since the focus here is on the transmission mechanism of monetary policy, the functions describing demands or supplies for financial assets are indicated without assuming *a priori* a specific analytical form (which, in some cases, might even implicitly introduce a particular propagation patterns for monetary shocks). We believe that this is the most general assumption one can make, since the choice of some analytical form for a utility function of a representative firm or individual, would have entailed a loss of generality in terms of aggregation of potentially heterogeneous agents.

- Equilibrium on the market for bank credit to the firms:

$$Nk - S(r_L, r_B, BM) = f_2(r_L, r_B, k, BM) = 0 \quad (7)$$

- Equilibrium on the bonds market:

$$B^b(r_B, r_L) + B^H(r_B) + L^{b-H}(r_B, r_L) + BM - BT = f_3(r_L, r_B, BM) = 0. \quad (8)$$

We assume, for simplicity, that the interest rate on deposits is null and the households are also the owners of the banking system⁵. B^b and B^H represent the demand for bonds by

⁴ Obviously it is also assumed that the marginal revenue is positive, i.e. $(1 + 1/n\epsilon_{DP}) \geq 0$, with $n \geq 1$.

⁵ According to this consideration, there should also be a contribution of the industry output to the income of the public sector, through the interest rate on the state bonds. Since the interest rate on the bonds is endogenous, there should be a monetary feedback of the interest rates on the households disposable income and on the firms' profits. We assume here that this monetary feedback is negligible.

the banks and households respectively, BT the (given) amount of public debt⁶, L^{b-H} is an excess demand function of households' liabilities with banks. Given the nature of our short-run "first-impact" model, we assume that there is no feedback from the output produced by the industry to the demand of bonds by the households $B^H(\cdot)$, which amounts to saying that the feedback does exist, but simply does not take place in the short run⁷. L^{b-H} is defined according to the following assumptions: since we admit that banks lend money to the households, we assume that the sector of bank credit to the households be perfectly competitive and that its interest rate be defined as $r_H = r_B + h$, where h is a risk premium on lending to households, assumed to be constant in the short run⁸. This assumption consists of aggregating the bonds market and the market for bank credit to the households (both of them perfectly competitive) and considerably simplifies the algebra of the model and does not qualitatively change the conclusions.

The balance sheet constraint of the banking sector is:

$$L^b + R + B^b = D$$

where L^b are the total bank loans supply (to firms and households), R the bank reserves, equal to the bonds held by the Central Bank. For the sake of simplicity, the money base BM is equal to the bonds held by the Central Bank, which means that monetary policy is carried out through open market operations.

Let us introduce now the equilibrium condition between money demand and supply (9) and the equilibrium condition on the market for the final consumption good (10).

⁶ Industry output in principle contributes to the Public Sector income through the interest rates on state bonds. In addition, since the interest rate on state bonds is endogenous, in principle there could be a monetary feedback of the interest rates on the households disposable income and on the firms' profits. For the sake of simplicity we assume that all these effects and feedbacks are negligible.

⁷ In particular, the following balance constraint holds:

$$B^H(\cdot) = W^* - D^H(r_B).$$

Where $D^H(r_B)$ are the deposits held by the households

⁸ For what concerns equation (8), on the basis of the definition of wealth (note that wealth is given in the model) $W^* = D(\cdot) + B^H(\cdot) - L^{b-H}(\cdot)$, the following conditions hold:

$\partial W^* / \partial r_B = 1$, which is trivial, since by assumption the two interest rates only differ by the constant h , and

$$|\partial D(\cdot) / \partial r_B| > |\partial L^{b-H} / \partial r_B|$$

$$\Delta^H(\rho_B) - BM/\theta(\rho_A, \rho_B) = 0 = \phi_5(\rho_A, \rho_B, BM). \quad (9)$$

$$L^1 \bar{p}^{1/\beta} - Nak^\alpha l^{1-\alpha} = 0 = f_4(p, k), \quad (10)$$

$D^H(\cdot)$ is the households' demand for deposits, $q(\cdot)$ the total reserves (i.e. the sum of reserve requirements and free reserves) of the banking system, (10) is obtained by a simple algebraic manipulation of (4) and $Y = Nak^\alpha l^{1-\alpha}$ is the output produced by all the existing production units (the quantity of labour l being fixed in the short run). Since the equilibrium conditions on the money and bond markets are linearly dependent, we only consider equation (8).

3. Comparative statics and main results

Let us assume, as is usual in financial sector models, that in the excess demand functions for financial assets the partial derivatives with respect to the own interest rates are larger (in absolute value) than the derivatives with respect to alternative interest rates. We get the following system, where F is the matrix at the left-hand side of the equality:

$$\begin{bmatrix} \frac{\partial f_1}{\partial p} & \frac{\partial f_1}{\partial k} & \frac{\partial f_1}{\partial r_L} & 0 \\ 0 & \frac{\partial f_2}{\partial k} & \frac{\partial f_2}{\partial r_L} & \frac{\partial f_2}{\partial r_B} \\ 0 & 0 & \frac{\partial f_3}{\partial r_L} & \frac{\partial f_3}{\partial r_B} \\ \frac{\partial f_4}{\partial p} & \frac{\partial f_4}{\partial k} & 0 & 0 \end{bmatrix} \begin{bmatrix} dp \\ dk \\ dr_L \\ dr_B \end{bmatrix} = \begin{bmatrix} 0 & -\frac{\partial f_1}{\partial n} \\ \frac{\partial S}{\partial BM} & 0 \\ -1 & 0 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} dBM \\ dn \end{bmatrix} \quad (11)$$

Since this is a short-run model, for what concerns monetary policy, we get, as expected:

$$dk/dBM > 0; \quad dr_L/dBM < 0; \quad dr_B/dBM < 0.$$

For what concerns the effects of an exogenous change in market structure, we get:

$$dk/dn > 0; \quad dr_L/dn > 0; \quad dr_B/dn > 0.$$

In other words, an increase in the degree of competition (reduction in the degree of concentration) in the industrial sector increases, *ceteris paribus*, the demand for capital and, as a consequence, the equilibrium level of investments and interest rates. This means that mergers negatively affect economic activity. This result (not particularly surprising) recalls some of the typical arguments in the debate on competition policies and antitrust regulation. However, it might be interesting to note that mergers impact on economic activity also for a fixed number of production units and without information asymmetries between banks and firms. In this regard, it would be rather straightforward to show that stochastic fluctuations in the economic activity could simply be generated by assuming that the number of owners “*n*” of the given production units be stochastic instead of being exogenous.

Of course the negative impact of merger on the economic activity, apart from being mainly a short-run and “first impact” effect on the money multiplier, may be compensated, in the longer run, by scale economies.

Let us focus our attention on the monetary policy multiplier

$$\begin{aligned}
 dk/dBM &= [(1/\det(F)) \cdot \{(\partial S(\cdot)/\partial BM) \cdot [(\partial f_1/\partial r_L) \cdot (\partial f_3/\partial r_B) \cdot (\partial f_4/\partial p)] + [(\partial f_1/\partial r_L) \cdot (\partial f_2/\partial r_B) \cdot (\partial f_4/\partial p)]\}] = \\
 &= [(1/\det(F)) \cdot D_1 \qquad \qquad \qquad (15)
 \end{aligned}$$

where

$$D_1 = \{(\partial S(\cdot)/\partial BM) \cdot [(\partial f_1/\partial r_L) \cdot (\partial f_3/\partial r_B) \cdot (\partial f_4/\partial p)] + [(\partial f_1/\partial r_L) \cdot (\partial f_2/\partial r_B) \cdot (\partial f_4/\partial p)]\}$$

The question is now whether and how exogenous changes in the market structure affect the transmission mechanism of monetary policy. To answer this, we can simply take the derivative of (15) with respect to “*n*”, which yields the following:

$$(16) \quad d(dk/dBM)/dn = [(1/\det(F)) \cdot [(dD_1/dn) - (d(\det(F))/dn) \cdot dk/dBM] = QD + Q\Delta .$$

where $QD = [(1/\det(F)) \cdot (dD_1/dn)]$; and $Q\Delta = [(1/\det(F)) [- (d(\det(F))/dn) \cdot dk/dBM]]$.

QD may be interpreted as the impact that an exogenous change in the market structure induces on the money multiplier, and is always negative. This means, for what concerns QD , that an increase in the degree of competition makes our (short run) model closer to the perfect competition case with money neutrality. $Q\Delta$ may be interpreted as the effect determined by an exogenous modification in n , “for a given value of the multiplier dk/dBM , and its sign is

ambiguous. However, its negative terms will be larger in absolute value the larger $|\varepsilon_{SL}|$ is compared to $|\varepsilon_{DP}|$, the higher the marginal productivity of physical capital is and the more concave is the firms' production function is.

4. Concluding remarks

The theoretical model introduced here shows that in a “bank oriented” financial system an exogenous increase in the degree of competition (reduction in the degree of concentration) in the industrial sector affects:

- positively the equilibrium level of investments in the “concentrated” industrial sector;
- the transmission mechanism of the monetary policy with composite effects which depend on the price elasticity of the demand for the good produced in the industry under consideration and on the credit supply elasticity with respect to the lending rate. In other words, since the rigidities on the goods market and on the credit market act in different directions, when the rigidity on the goods market prevails, an increase in the degree of competition approaches a situation of higher competition, which would yield less effective monetary policy within a general equilibrium context. Mergers and acquisitions tend to reduce the level of economic activity and are to be considered among the factors conditioning the transmission mechanism (in particular, the size of the first impact in the short run) of monetary policy in bank-oriented financial systems.

Abstract

V řadě tranzitivních ekonomik je možno pozorovat vazbu mezi rostoucí koncentrací odvětví a dominantním postavením bank ve finančním sektoru. V příspěvku je použit teoretický model popisující vztah mezi koncentrovaným odvětvím a finančním sektorem založeným na bankovním zprostředkování. Je ukázáno, že vnější faktory ovlivňující úroveň koncentrace v odvětví (pravděpodobně fúze) ovlivňují nejen rovnovážnou úroveň investic a úrokových

sazeb, ale také transmisní mechanismus měnové politiky s různorodými dopady. Ty se mění v závislosti na hladině výstupu a závisí na elasticitě cenové poptávky a na elasticitě nabídky úvěrů vzhledem k záůjční úrokové sazbě.

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Appendix

Algebraic details of the model

$$-\frac{\partial f_1}{\partial BM} = 0$$

$$-\frac{\partial f_1}{\partial n} = p \frac{\partial y}{\partial k} (-1) \frac{1}{n^2 \varepsilon_{DP}} - (-1) \frac{r_L}{n^2 \varepsilon_{SL}} < 0$$

since $\varepsilon_{DP} < 0$ and firms' marginal revenue is non negative.

$$\frac{\partial f_1}{\partial p} = \frac{\partial y}{\partial k} \left(1 + \frac{1}{n \varepsilon_{DP}} \right) > 0$$

$$\frac{\partial f_1}{\partial k} = p \frac{\partial^2 y}{\partial k^2} \left(1 + \frac{1}{n \varepsilon_{DP}} \right) < 0 \quad \text{since } y(\cdot) \text{ is a Cobb-Douglas}$$

$$\frac{\partial f_1}{\partial r_L} = - [1 + 1/(n \varepsilon_{SL})] < 0$$

$$\frac{\partial f_1}{\partial r_B} = 0$$

$$-\frac{\partial f_2}{\partial BM} = \frac{\partial S(\cdot)}{\partial BM} > 0$$

$$-\frac{\partial f_2}{\partial n} = 0$$

$$\frac{\partial f_2}{\partial p} = 0$$

$$\frac{\partial f_2}{\partial k} = N > 0$$

$$\frac{\partial f_2}{\partial r_L} = -\partial S(\cdot)/\partial r_L < 0$$

$$\frac{\partial f_2}{\partial r_B} = -\partial S(\cdot)/\partial r_B > 0$$

$$-\frac{\partial f_3}{\partial BM} = -1 < 0$$

$$-\frac{\partial f_3}{\partial n} = 0$$

$$\frac{\partial f_3}{\partial p} = 0$$

On the basis of the assumptions on $B^H(\cdot)$ contained in the text of the paper.

$$\frac{\partial f_3}{\partial k} = 0$$

$$\frac{\partial f_3}{\partial r_L} = \partial B^b/\partial r_L + \partial L^{b-H}/\partial r_L < 0$$

This happens because we have

$$L^{b-H}(\cdot) = L^b(\bar{r}_L, \bar{r}_B, r_H(r_B)) - L^{\bar{H}}(r_H(r_B), r_B)$$

Having assumed that the derivatives with respect to the own rates are larger in absolute value than the cross-derivatives and taking into account the explanations contained in footnote 14 of the text of the paper, we get:

$$L^{b-H}(\cdot) = L^b(\bar{r}_L, r_B) - L^{\bar{H}}(r_B)$$

Which, by the way, also means that

$$\partial L^{b-H}/\partial r_B > 0$$

$$\frac{\partial f_3}{\partial r_B} = \partial B^b/\partial r_B + \partial B^H/\partial r_B + \partial L^{b-H}/\partial r_B > 0$$

$$-\frac{\partial f_4}{\partial BM} = 0$$

$$\frac{\partial f_4}{\partial n} = 0$$

$$\frac{\partial f_4}{\partial p} = -\frac{1}{\beta} L^{-1} \cdot p^{-[(1/\beta)+1]} < 0$$

$$\frac{\partial f_4}{\partial k} = -\alpha N A k^{\alpha-1} \Phi < 0$$

$$\frac{\partial f_4}{\partial r_L} = 0$$

$$\frac{\partial f_4}{\partial r_B} = 0$$

$$\frac{\partial^2 f_1}{\partial r_B \partial n} = 0$$

$$\frac{\partial^2 f_1}{\partial r_L \partial n} = 1 / n^2 \varepsilon_{SL} > 0$$

$$\frac{\partial^2 f_1}{\partial k \partial n} = p \frac{\partial^2 y}{\partial k^2} (-1) \cdot \frac{1}{n^2 \varepsilon_{DP}} < 0$$

$$\frac{\partial^2 f_1}{\partial p \partial n} = \frac{\partial y}{\partial k} (-1) \cdot \frac{1}{n^2 \varepsilon_{DP}} > 0$$

$$\begin{aligned} \det(F) = & (+1)(\partial f_3 / \partial r_L)[(\partial f_1 / \partial k) \cdot (\partial f_2 / \partial r_B) \cdot (\partial f_4 / \partial p) - (\partial f_1 / \partial p) \cdot (\partial f_2 / \partial r_B) \cdot (\partial f_4 / \\ & \partial k)] + \\ & + (-1)(\partial f_3 / \partial r_B)[(\partial f_1 / \partial k) \cdot (\partial f_2 / \partial r_L) \cdot (\partial f_4 / \partial p) - (\partial f_1 / \partial r_L) \cdot (\partial f_2 / \partial k) \cdot (\partial f_4 / \partial p) - (\partial \\ & f_1 / \partial p) \cdot (\partial f_2 / \partial r_L) \cdot (\partial f_4 / \partial k)] > > 0 \end{aligned}$$

because we have

$$|(\partial f_3 / \partial r_L)| < |(\partial f_3 / \partial r_B)| \quad \text{and} \quad |(\partial f_2 / \partial r_B)| < |(\partial f_2 / \partial r_L)|$$

since it has been assumed that the derivatives with respect to the own interest rate are larger in absolute value than the cross-derivatives.

$$dD_1/dn = \{(\partial S(\cdot)/\partial BM) \cdot [(\partial^2 f_1 / \partial r_L \partial n) \cdot (\partial f_3 / \partial r_B) \cdot (\partial f_4 / \partial p)] + [(\partial^2 f_1 / \partial r_L \partial n) \cdot (\partial f_2 / \partial r_B) \cdot (\partial f_4 / \partial p)]\} < 0$$

$$d[\det(F)]/dn = (+1)(\partial f_3 / \partial r_L) [-(\partial^2 f_1 / \partial p \partial n) \cdot (\partial f_2 / \partial r_B) \cdot (\partial f_4 / \partial k)] + (-1) \cdot (\partial f_3 / \partial r_B) \cdot [-(\partial^2 f_1 / \partial r_L \partial n) \cdot (\partial f_2 / \partial k) \cdot (\partial f_4 / \partial p) - (\partial^2 f_1 / \partial p \partial n) \cdot (\partial f_2 / \partial r_L) \cdot (\partial f_4 / \partial k)]$$

The sign of $d[\det(F)]/dn$ is uncertain.

The term

$$(-1) \cdot (\partial f_3 / \partial r_B) [-(\partial^2 f_1 / \partial r_L \partial n) \cdot (\partial f_2 / \partial k) \cdot (\partial f_4 / \partial p)]$$

is negative, i.e. it contributes to make positive $d(k/dBM)/dn$; the algebraic sum of the terms containing $(\partial^2 f_1 / \partial p \partial n)$, i.e.

$$(+1)(\partial f_3 / \partial r_L) [-(\partial^2 f_1 / \partial p \partial n) \cdot (\partial f_2 / \partial r_B) \cdot (\partial f_4 / \partial k)] + (-1) \cdot (\partial f_3 / \partial r_B) \cdot [-(\partial^2 f_1 / \partial p \partial n) \cdot (\partial f_2 / \partial r_L) \cdot (\partial f_4 / \partial k)]$$

is positive because

$$|(\partial f_3 / \partial r_L)| < |(\partial f_3 / \partial r_B)| \quad \text{and} \quad |(\partial f_2 / \partial r_B)| < |(\partial f_2 / \partial r_L)|$$

since it has been assumed that the derivatives with respect to the own interest rate are larger in absolute value than the cross-derivatives.

This means that the term $Q\Delta$ in equation (16) is smaller and more likely to be negative the larger ε_{SL} with respect to ε_{DP} and the larger the marginal productivity of capital and the degree of concavity of the production function.

$$dk/dBM = [(1/\det(F)) \cdot \{(\partial S(\cdot)/\partial BM) \cdot [(\partial f_1 / \partial r_L) \cdot (\partial f_3 / \partial r_B) \cdot (\partial f_4 / \partial p)] + [(\partial f_1 / \partial r_L) \cdot (\partial f_2 / \partial r_B) \cdot (\partial f_4 / \partial p)]\}] > 0$$

$$\begin{aligned}
dr_L/dBM &= [(1/\det(F)) \cdot \{ (\partial f_1/\partial p) \cdot [(\partial S(\cdot)/\partial BM) \cdot (\partial f_3/\partial r_B) \cdot (\partial f_4/\partial k) - (\partial f_2/\partial r_B) \cdot \\
&\cdot (-1) \cdot (\partial f_4/\partial k)] + (-1) (\partial f_4/\partial p) [(\partial f_1/\partial k) \cdot (\partial S(\cdot)/\partial BM) \cdot (\partial f_3/\partial r_B) - (\partial f_1/\partial k) \cdot (\partial f_2/\partial r_B) \cdot \\
&\cdot (-1)] \} < 0
\end{aligned}$$

$$\begin{aligned}
dr_B/dBM &= [(1/\det(F)) \cdot \{ (\partial S(\cdot)/\partial BM) \cdot [(\partial f_1/\partial k) \cdot (\partial f_3/\partial r_L) \cdot (\partial f_4/\partial p) - (\partial f_1/\partial p) \cdot \\
&\cdot (\partial f_3/\partial r_L) \cdot (\partial f_4/\partial k)] + (-1) \cdot (-1) [(\partial f_1/\partial k) \cdot (\partial f_2/\partial r_L) \cdot (\partial f_4/\partial p) - (\partial f_1/\partial r_L) \cdot (\partial f_2/\partial k) \cdot \\
&\cdot (\partial f_4/\partial p) - (\partial f_1/\partial p) \cdot (\partial f_2/\partial r_L) \cdot (\partial f_4/\partial k)] \} < 0
\end{aligned}$$

$$\begin{aligned}
dk/dn &= [(1/\det(F)) \cdot \{ -\partial f_1/\partial n \cdot (-1) \cdot [(\partial f_2/\partial r_L) \cdot (\partial f_3/\partial r_B) \cdot (\partial f_4/\partial p) - (\partial f_2/\partial r_B) \cdot \\
&\cdot (\partial f_3/\partial r_L) \cdot \\
&\cdot (\partial f_4/\partial p)] \} > 0
\end{aligned}$$

because $|(\partial f_2/\partial r_B)| < |(\partial f_2/\partial r_L)|$

$$dr_L/dn = [(1/\det(F)) \cdot (-\partial f_1/\partial n) \cdot (+1) \cdot (\partial f_2/\partial k) \cdot (\partial f_3/\partial r_B) \cdot (\partial f_4/\partial p) > 0$$

$$dr_B/dn = [(1/\det(F)) \cdot (-\partial f_1/\partial n) \cdot (-1) \cdot (\partial f_2/\partial k) \cdot (\partial f_3/\partial r_L) \cdot (\partial f_4/\partial p) > 0$$

THE BASLE II AND ITS POSSIBLE IMPLICATIONS FOR BANKS OFFER FOR BUSINESSES

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Key words

The Basle II, bank, The New Capital Accord, capital adequacy, credit rating, businesses.

1. Introduction

Progressive globalization, consolidation, growing competition of financial institutions and development of the new financial instruments pose new challenges to supervision authorities. As equity and its adequacy in banking system play important role as a loss-absorber, it is a subject of special interest of national and international supervisory authorities. The Basel Committee of Banking Supervision (BCBS)², which main objective is international coordination of banking supervision, took steps to revise capital requirements and made them more adequate to new conditions. It was finally achieved in June 2004, after five years of consultations with supervisory authorities, central banks, commercial banks and other financial institutions, when *International Convergence of Capital Measurement and Capital Standards: A Revised Framework* (so-called The New Basel Capital Accord or the Basle II), was released.

The aim of this paper is to present the subject of Basle II and indicate possible implications of the new capital requirements on banks and their offer for businesses.

2. The Basle II – basic information

The Basle II (*International Convergence of Capital Measurement and Capital Standards: A Revised Framework*) was endorsed by 13 members of the BCBS but it is

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² The BCBS was established in 1974. Its members come from the most developed countries i.e.: Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, United Kingdom, United States. It is settled by the Bank for International Settlements in Basel (Switzerland). The BCBS formulates supervisory recommendations and standards which do not have legal force but are broadly recognized on the world and adopted to national law of many countries. The BCBS' recommendations have also great impact on the EU' legislation.

expected that non-BCBS countries will also implement these recommendations. The Basle II was designed to revise so-called the Basle Capital Accord of 1988 (*International Convergence of Capital Measurement and Capital Standards*³), in which definition of capital and methodology of the measurement of the capital ratio (Cooke ratio) was given. More than 100 countries implemented this Accord⁴.

The New Basle Capital Accord states that- “The fundamental objective of the Committee’s work to revise the 1988 Accord has been to develop a framework that would further strengthen the soundness and stability of the international banking system while maintaining sufficient consistency that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks”⁵. The aim of the Basle II is also to encourage improvement of the risk management⁶.

New regulations are very comprehensive, provide more risk-sensitive methodologies, lay stress on internal risk management and are primarily directed to banks that operate internationally. The Basle Committee expects that it will encourage better risk management, allow for a better adjustment of capital to specificity of particular bank activity and risk profile and thus improve bank efficiency.

The new capital adequacy rules should be implemented in ECBS-countries at the end of 2006 (The most advanced approaches of risk measurement may be implemented at the end of 2007 thus enabling to lead parallel calculations under existing and new requirements)⁷. The Basle Committee encourages non-ECBS countries to adopt the new regulations but at the same time stresses that timetable and range of adoption should be subject of particular country consideration with regard to the degree of development of the domestic banking system. The ECBS emphasizes also that the regulations formulated in the Basle II are minimum requirements and each country may establish more severe rules⁸.

³ International Convergence of Capital Measurement and Capital Standards, Basle Committee on Banking Supervision, Basle, July 1988.

⁴ Overview Paper for the Impact Study, Basle Committee on Banking Supervision, Bank for International Settlements, October 2002, p.1

⁵ International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basle Committee on Banking Supervision, Bank of International Settlements, June 2004, p.2.

⁶ Implementation of Basel II: Practical Considerations, Basle Committee on Banking Supervision, Bank for International Settlements, July 2004, p. 4.

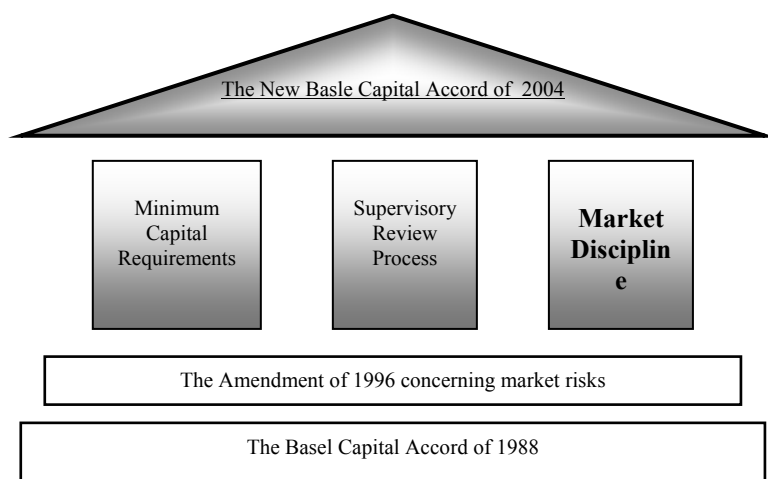
⁷ Basle II regulations are also to be adopted by European Commission to European Union’ s law

⁸ International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basle Committee on Banking Supervision, Bank of International Settlements, June 2004, pp.1-5

The New Basle Capital Accord is based on three pillars (Figure 1):

1. Minimum Capital Requirements
2. Supervisory Review Process
3. Market Discipline.

Figure 1 - Pillars of The New Basle Capital Accord



Source: prepared by author.

The First Pillar – (Minimum Capital Requirements) is focused on the calculation of minimum capital requirements.

The Second Pillar – (Supervisory Review Process) – emphasizes that each bank should have the capital assessment process adequate to risks and that supervisors should evaluate whether or not these processes are appropriate and should control if banks provide sufficient capital for their needs and minimal requirements. It also stresses the need of close cooperation between supervisors and banks and also between supervisors worldwide, especially regarding international banking groups.

The Third Pillar (Market Discipline) – is a complement to Minimum Capital Requirements and Supervisory Review Process. It is expected that market discipline will be enhanced by appropriate disclosure of information. Pillar II sets out the disclosure requirements and recommendations which should be followed by banks. It is designed to

provide relevant information for market participants and thus enable them to evaluate bank's risk exposures, risk management processes and adequacy of its capital.

As it is emphasized by the Basle Committee all these three elements are important as they are “mutually reinforcing pillars”⁹ and should be implemented all together.

3. Minimum Capital Requirements under The New Basle Capital Accord.

Minimum capital requirements refer to credit, market and operational risk. The Committee remains the definition of regulatory capital and the minimum level of capital ratio (i.e. 8%) unchanged¹⁰. However, construction of the ratio includes all three kinds of risk. The New Capital Accord provides, for banks, three different approaches for credit and operational risk measurement. The Committee remains also the methodologies of market risk calculations, which were introduced by the *Amendment to the capital accord to incorporate market risks* of 1996¹¹ completing it by some definitions. For the first time the definitions and treatment concerning securitization are provided.

For calculating capital requirement for credit risk, banks can choose one of two methodologies. One is based on external credit ratings provided by credit assessment institutions¹² (*The Standardised Approach*). The other is based on internal rating systems for credit risk (*The Internal Rating-Based Approaches: foundation approach and advanced approach*). The Standardised Approach is similar to the existing approach but risk-weights result from the rating, which is granted by external credit assessment institution or is determined directly by the New Accord. Supervisors must evaluate, which credit assessment institutions meet criteria set in the Basle II. Supervisors decide also, which rating categories correspond to certain risk weights (this is called *the mapping process*¹³).

Banks, which want to use internal rating systems, must meet specified requirements and obtain supervisory approval. Under Internal Rating-Based (IRB) Approaches: a

⁹ The New Basel Accord: an explanatory note, Secretariat of the Basel Committee on Banking Supervision, Bank for international Settlements, January 2001, p. 2

¹⁰ International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basel Committee on Banking Supervision, Bank of International Settlements, June 2004, p.12, (paragraph 40)

¹¹ Amendment to the capital accord to incorporate market risks, Basle Committee on Banking Supervision, January 1996.

¹² for example: Standard & Poor's, Moodys, Fitch

¹³ International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basel Committee on Banking Supervision, Bank of International Settlements, June 2004, p.24, (paragraph 92)

foundation IRB approach and an advanced IRB approach, banks must utilize formulas and risk-weight functions (which transform risk components (parameters) into risk-weighted assets) provided by the New Accord and thus assess capital requirements. The main difference between the foundation IRB-approach and the advanced IRB-approach (as a general rule) is that banks using the foundation IRB-approach provide their own estimation only of one risk parameter – the probability of default (PD) and other parameters [loss given default (LGD), the exposure at default (EAD), effective maturity (M)] are provided by supervisory, while banks, using an advanced IRB-approach provide their own estimations of all these parameters¹⁴. If bank chooses the IRB-approach it is not allowed to return to the simpler approach unless supervisory permission¹⁵. Banks adopting the IRB-approaches must lead parallel calculations during the first years of implementation.

According to the Basle II, operational risk is „the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events“¹⁶. Three methods of capital measurement are provided by the Basle II: The Basic Indicator Approach¹⁷, The Standardised Approach¹⁸, Advanced Measurement Approach¹⁹.

4. The main differences between the existing Accord and the New Accord

The New Capital Accord is much more comprehensive than the Accord of 1988. The Committee left unchanged the definition of capital as it was given in the Accord of 1988 (including amendments). Minimum value of capital ratio (8%) remained the same, as well as basic rules of market risk treatment (as it was set in the Amendment of 1996). Some issues are changed or complemented under the New Accord and a lot of new issues are added. The main differences between the Basle Capital Accord of 1988 and the New Basle Capital Accord of 2004 are shown in the Table 1.

¹⁴ Ibidem, p.55, (paragraph 245)

¹⁵ Ibidem, pp.57-58, (paragraph 261)

¹⁶ Ibidem, p. 137, (paragraph 644)

¹⁷ calculations are to be led on the base of the formula which is defined in the New Capital Accord (minimal capital requirements for operational risk is equal to average three years gross income multiplied by alpha –which was set by the Committee at 15%) Ibidem, p. 137-138 (paragrph 649)

¹⁸ bank must divide its activity into eight groups and, using beta parameters provided by Committee and gross incomes for each group, calculates minimal capital requirements in the similar way as in the previous approach, on the base of the formula provided by the Basle II

¹⁹ a bank may use internal operational risk measurement system but must meet requirements stated in the Basle II and obtain supervisory approval.

Table 1 - The main differences between the Basle Capital Accord of 1988 (including Amendment of 1996) and the New Basle Capital Accord of 2004

The Basle Capital Accord of 1988	The New Basle Accord of 2004
One pillar – minimal capital requirements	Three pillars: minimal capital requirements, supervisory review process and market discipline
Concerns credit risk (the Amendment of 1996 completes it by market risk)	Concerns credit risk, market risk and operational risk
„One-size-fit-all“ approach to calculation of capital requirements (the Amendment of 1996 allows also to use internal models approaches while calculating market risk)	More risk-sensitive approaches - option of approaches concerning credit, market and operational risk (beside standardized approaches, internal models approaches are available)
Risk-weights – based generally on the OECD’ affiliation criterion; maximum risk-weight 100%	Under standardised approach risk-weights based on external credit ratings; maximum risk-weight 150% ²⁰
Denominator of the capital ratio considers capital risk (and market risk)	Denominator of the capital ratio considers capital risk, market risk and operational risk
$\text{Capital Ratio} = \frac{\text{regulatory capital}}{\text{RWA}_{\text{CR}} + 12,5 \text{ C}_{\text{MR}}}$ x 100 [%] **added by the Amendment of 1996, C _{MR} – capital requirements for market risk	$\text{Capital Ratio} = \frac{\text{regulatory capital}}{\text{RWA}_{\text{CR}} + 12,5 (\text{C}_{\text{MR}} + \text{C}_{\text{OR}})}$ x 100 [%] RWA – risk weighted assets for credit risk C _{MR} – capital requirements for market risk C _{OR} - capital requirements for operational risk; TRWA – total risk weighted assets = RWA _{CR} + 12,5 (C _{MR} + C _{OR})
	More possibilities of risk mitigation

Source: prepared by author.

As this papers concerns on Basle II implications on offer for businesses, the main differences concerning this matter should be also considered.

Under the Basle Accord of 1988 claims on the private sector²¹ are weighted at 100%²². The Basle II provides, under the Standardised Approach, different risk-weights for claims on

²⁰ For example: past due loans, when provisions are less than 20% of the outstanding amount of the loan, claims on corporates rated below BB-

corporates (20%, 50%, 100%, 150%) which are based on credit rating criterion. Table 2 shows exemplary credit ratings and corresponding risk-weights.

Table 2 – Credit ratings²³ and risk-weights related to them (claims on corporates)

Credit assessment	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated
Risk weight	20%	50%	100%	150%	100%

Source: International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basel Committee on Banking Supervision, Bank of International Settlements, June 2004, p.19, (paragraph 66).

Claims on small businesses may be included in retail claims, and thus may be risk-weighted at 75%. But it must meet specified criteria (no aggregate exposure to one counterpart can exceed 0,2% of the overall retail portfolio and the amount of 1 million euro)²⁴.

Under the IRB-approaches there is „corporate exposures“ - class of assets but banks are permitted to classify (provided that total exposure to a small business borrower is less than 1 million euro²⁵) exposures to small businesses to „retail exposures“ - class of assets. Moreover banks are permitted (within class of corporated credits) to distinguish exposures to small- and medium-sized entities from those to large ones. (The condition is that sales is less than 50 million euro²⁶).

5. Possible implications of the Basle II on banks

The Committee states that the purpose of the New Accord is not to change dimension of capital but to improve bank risk management by providing more risk-sensitive

²¹ International Convergence on Capital Measurement and Capital Standards, Basle Committee on Banking Supervision, Basle, July 1988, Annex 2, pp. 21-22.

²² Loans fully secured by mortgage on residential property that is or will be occupied by the borrower or that is rented is weighted by 50%, loans guaranteed by central governments, central banks and banks obtain also lower weights

²³ Example is based on Standard & Poor's ratings but as it is stressed by Committee assessment of others credit ratings institutions could be used.

²⁴ International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basel Committee on Banking Supervision, Bank of International Settlements, June 2004, p.19-20, (paragraphs 69-70)

²⁵ Ibidem, p. 51, paragraph 231.

²⁶ Ibidem, p. 60, paragraph 273.

methodologies of calculating minimal capital requirements. However, adjustments to the new requirements set under the Basle II are connected with staff training or even employing new staff. The change of procedures, changes of informative systems and consultations are also required. It means the increase of costs for banks. The costs of adjustment of the biggest 30 000 banks are estimated at about 2250 billions of USD. It is also expected that preparation period and the appropriate costs will be higher than in the “case of year 2000”²⁷. The adjustment will especially affect smaller banks.

The improvement in bank risk management, thanks to more risk-sensitive approaches, and improvement in effectiveness of banking activity may be expected but in the long run. In the short run costs of adjustments, changes alone, needs of experience and data gathering, prudence of used assessments during the first years of adoption of the new approaches, may cause that expected improvement will be not achieved.

Under the New Accord banks should be motivated to use IRB-approaches rather than the Standardised Approach. However those are more expensive and may be not approachable for smaller banks. This fact and high costs of implementation of the new requirements alone may cause that bank consolidation will become more intensive because the Basle II puts bigger banks in a more favourable position.

The New Accord may cause higher capital requirements (connected, for example, with additional capital requirements referred to operational risk). The Basle Committee draws some studies on the impact of the New Accord on capital requirements (*Quantitative Impact Study 3 – QIS3*)²⁸. In the study, 365 banks from 43 (members of the BCBS, members of the EU including new members and others) countries participated and compared the current capital requirement with estimations of their capital requirements under the New Capital Accord. The results show that capital requirements should increase (from 1%-12% depending on country origin, size of bank and its activity profile) under Standardised Approach's calculations and decrease (-2% to -20%) or slightly increase (3%-4%) under the IRB-approaches' calculations²⁹.

²⁷ ZOMBIRT, J.: Ciężar regulacji, Bank, February 2002, p. 75 (adapted from The Banker, December 2001)

²⁸ Quantitative Impact Study 3 – Overview of Global Results, Basel Committee on Banking Supervision, Bank for International Settlements, 5 May 2003.

²⁹ Ibidem, p. 3.

Improvement of risk management, supported by Supervisory Review process and Market Discipline should enhance banks credibility. However, some are in doubt about the improvement of internal bank management – „The regulation of risk management has become so detailed and opens the way for too deep an involvement of regulators in internal bank management. This may reduce the incentives for prudent risk taking on bank managers...“³⁰.

The Basle II may put banks and businesses which are operating in less-developed countries in unfavourable position. It may be caused due to the fact that usually companies in these countries do not possess rating or possess low rating. It may mean for banks the higher capital requirements. Of course it is consistent with the rule that higher risk should be covered by higher capital but it may cause that these banks will be more interested in investments abroad in less risky countries than at home.

Claims on banks incorporated in the OECD or claims on banks incorporated outside the OECD with residual maturity of up to one year are weighted at 20% under the Capital Accord of 1988. Under the New Capital Accord banks incorporated in the OECD's countries may be weighted at higher weights: i.e. 50% or higher, if credit rating for sovereign³¹ is A+ to A- or lower (under option 1 of Standardised Approach) or if credit rating of bank is equal or less than A+ (under option 2 of Standardised Approach, excluding very short-term loans – up to three months' original maturity). Only banks incorporated in the country with credit assessment of sovereign AAA to AA- (under option 1) or banks with credit rating AAA to AA- or claims having maturity of three months or less of banks with credit ratings BBB- and higher are weighted at 20% (option 2)³². It may mean for banks which are incorporated in the OECD's country and do not have high ratings that credits gained on interbank market will be more expensive than under existing capital requirements.

³⁰ LANNON K.: Basel II and the Consequences for SME's, Note prepared for the EP Workshop of 10 July 2003 by Karel Lannoo, Centre for European Policy Studies (CEPS), Brussels, p.1

³¹ banks incorporated in a given country are to obtain risk weight one category less favourable than claims of sovereign of that country (option one under the Standardised Approach)

³² International Convergence of Capital Measurement and Capital Standards: A Revised Framework, Basel Committee on Banking Supervision, Bank of International Settlements, June 2004, pp.17-18, (paragraphs 60-63)

6. Possible implications of the Basle II on banks offer for businesses

The new requirements concerning bank risk management will possible have impact on banks offer for businesses and thus on businesses alone. Some potential implications for banks offer for businesses are indicated below.

Expenses connected with the new rules adjustments may cause in the short run that banks will throw enlarged costs on their clients through the increase of costs of credit and banking facilities. In the long run banks efficiency should be enhanced by better risk management and thus banks offer should be more favourable. First years under the Basle II (especially under IRB approaches), when banks will gather data, experience and will test and verify new methodologies and thus will be more prudential and precise while assessing risk may cause that decision making process will lengthen, the requirements by granting credit will be enhanced and access to credit will be more difficult (excluding companies with high credit ratings).

Implications on banks offer for business may be different due to the differentiation of risk-weights under the New Accord. Companies with high credit rating should have no problems with gaining capital from banks, on the contrary, banks should take more care of these companies as capital requirements concerning claims on them decreased under The Basle II (from 100% to 20% for companies with credit assessment of AAA to AA- and to 50% when rating is A+ to A-). Capital requirements for claims on companies with credit ratings BBB+ to BB- and claims on unrated companies do not change under standardised approach. Anyway, such companies may be less attractive for banks than companies with higher ratings and thus bank may increase price for credits for them. In the least favourable position will be companies with low credit assessment (below BB-) as capital requirements will be 50% higher than under existing rules. It may cause they will have more difficulties with access to credit and that they will have to pay more for credits than now.

QIS3' results indicate that changes of capital requirements for corporate portfolio should generally decrease (by 1%- 5%) [or slightly increase (1%)]³³. But results refer to the

³³ Quantitative ..., op. cit., pp. 5,7, 8

whole group, within changes of capital requirements may increase for some corporates and decrease for others.

Small businesses may pay less for credits due to reduction of capital requirements (from 100% to 75%) under the Standardised approach of the New Accord. Some indicates that the probability of default for a small companies is six times higher than for a large company³⁴. This may cause that under IRB-approaches claims on those companies may be higher weighted and thus may be more expensive. It is in opposition to the results of QIS3- which show that capital requirements (under all approaches) concerning small- and medium businesses should generally decrease (by 1%-5%)³⁵.

It seems that low-rated companies and medium companies may be put in the least favourable position. It may especially be unfavourable for less-developed countries, where most of companies do not have rating at all or has low credit ratings. Banks from these countries may prefer to grant credit companies from less-risky countries.

The New Basle Accord should enhance the role of collateral because it reduces the capital requirements under specified rules.

The Basle II implementation may cause incentives for businesses for making more efforts to obtain high rating (it is not profitable to obtain credit rating lower than BB-) and thus force them to improve finance management and improve its liquidity and efficiency. Businesses may be also forced to differentiate of resources of external financing. However gaining capital not through bank credit but for example on capital market may be also difficult for low-credit rated businesses and may be also expensive for them. New rules under the Basle II may also cause that businesses will consolidate.

7. Conclusion

At the moment it is too early to ascertain for sure how the New Basel Accord will affect banks and businesses. We may only suppose that it will affect banks and thus

³⁴ LANNOO K.: Basel II and the Consequences for SME's, Note prepared for the EP Workshop of 10 July 2003 by Karel Lanoo, Centre for European Policy Studies (CEPS), Brussels, p.2, adapted from Saurina J, Trucharte C., The small and medium-sized enterprises in the Spanish credit system and their treatment according to Basel II, the Bank of Spain

³⁵ Quantitative ..., op. cit, pp. 5, 7, 8

businesses. However the impact will vary depending on the size, country origin, activity profile of the bank and the approach which bank will choose. Also implications on businesses may not be the same but The New Capital Accord should implicate better corporate governance. It seems also that the high-rated companies will profit the most by the Basle II implementation.

Abstract

Růst globalizace, konsolidace, rostoucí konkurence mezi finančními institucemi a rozvoj nových finančních produktů a služeb staví nové výzvy před instituce dohledu. Příspěvek je věnován aktivitám Basilejského výboru (The Basel Committee of Banking Supervision – BCBS), který přehodnotil dosavadní pravidla kapitálové přiměřenosti a po pěti letech konzultací s národními orgány dohledu zveřejnil v červnu 2004 International Convergence of Capital Measurement and Capital Standards: A Revised Framework. Dokument nazývaný Basel II by měl být zaveden v členských zemích od začátku roku 2007. Založen je na třech pilířích: minimálních požadavcích na kapitál, průběhu dohledu nad bankami a tržní disciplíně. Ve stati jsou charakterizovány hlavní rozdíly mezi stávajícími pravidly Basel I a novými Basel II a také možné dopady nových požadavků na banky na jejich nabídku produktů a služeb podnikatelskému sektoru.

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CROSS-COUNTRY ANALYSIS OF BANKING INTER-MEDIATION EFFICIENCY: A PARAMETRIC APPROACH

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Key words

efficiency, bank, Stochastic Frontier Approach, Visegrad countries

1. Introduction

Efficiency of banks and other financial institutions is very frequently discussed topic in economic literature. Berger and Humphrey (1997) surveyed 130 studies that apply frontier efficiency analyses to financial institution in 21 countries. They report that the majority of these studies are confined to the U.S. banking sector, and call the need to examine the efficiency outside United States. This paper aims to fill in the gap.

Efficiency of banks acquires a specific sense in unique circumstances of transition economies. Central European countries are no exception. Establishing of a two-tier banking system based on market principles, implementation of new methods and practices of banking regulation and supervision, huge amount of non-performing loans, financial or economic crises, entry of foreign banks through privatisation process or establishment of new banks, mergers and acquisitions, massive expansion of modern banking products and technologies belong among these factors which affected efficiency of banks most significantly. Consequently, the aim of the paper is to evaluate efficiency of banks in the Visegrad countries using the Stochastic Frontier Approach and to detect which of the banking is the most efficient, what is the ranking of the others, and whether there is a gap between banking efficiency in V4 countries and former EU-member countries.

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2. Empirical Design for Efficiency Estimation and Database

In our analysis we employ the standard translog specification to obtain efficiency estimates for individual banks in the sample. Since the production technologies of banks are unknown a priori, we estimate the efficiency measure as the deviation from the efficient frontier where best-practice firms operate. In this approach, a frontier is established from the estimated cost or profit function of banks in the data while the inefficiencies or deviations from the frontier are represented by the error terms.

We evaluate the performance of CEE banks using two different optimization concepts—cost minimization and alternative profit maximization. In this respect x-efficiency refers to the degree of managerial success on using inputs and outputs in a manner that will minimize costs and maximize profits. Under cost minimization, the inefficiency arises from sub-optimal choices of input quantities given input prices and output quantity, whereas under profit maximization, the inefficiency originates from sub-optimal choice of output quantities given output prices or sub-optimal output prices given quantities. The following sub-section outlines the basic model, which is estimated under two different frontier specifications.

The Cost and Profit Frontier

Cost efficiency scores measure the performance of a banking firm relative to the best-practice bank that produces the same output bundle under the same exogenous conditions. The cost frontier is derived by estimating the following cost function:

$$C=C(y,w,z,u,e) \tag{1}$$

where, C measures total costs for bank, including both operating and financial costs; y is a vector of outputs; w is a vector of input prices; z represents the quantities of fixed bank parameters (bank capital, fixed assets, off-balance sheet items, etc.); u is the inefficiency term that captures the difference between the efficient level of cost for given output levels and input prices and the actual level of cost; and e is the random error term. Assuming the inefficiency and random error term are multiplicatively separable from the rest of the parameters, the cost function can be expressed in logarithmic form as:

$$\ln C = \ln f(y, w, z) + \ln u + \ln e \quad (2)$$

where f denotes a functional form. After estimating a particular cost function, the cost efficiency for bank i is measured as the ratio between the minimum cost (C_{min}) necessary to produce that bank's output and the actual cost (C_i):

$$CF_i = \frac{C_{min}}{C_i} = \frac{\exp[f(y, w, z)] \cdot \exp(\ln u_{min})}{\exp[f(y, w, z)] \cdot \exp(\ln u_i)} \quad (3)$$

where u_{min} is the minimum u_i across all banks in the sample. Under this formulation, an efficiency score, say 0.90, implies that the bank would have incurred 90 percent of its actual costs had it operated in the cost frontier.

Profit efficiency measures how close a bank is to attaining the maximum possible profit as a best-practice firm on the frontier for given levels of input and output prices (quantities) and other exogenous market variables. Previous literature offers two different specifications for the profit maximization objective, namely "standard" and "alternative" (non-standard) profit functions. (Humphrey and Pulley, 1997; Berger and Mester, 1997). The standard profit function assumes that output markets are perfectly competitive so that banks are price-takers in both output and input markets while alternative profit specification assumes that banks can have some power in determining output prices. Thus, standard profit function is specified as a function of input and output prices, whereas alternative profit function is specified as a function of input prices and output quantities.

The alternative profit specification employs the same set of exogenous variables as the cost function in Equation (1) with the only difference that profit replaces total cost as the dependant variable in the frontier regression. Therefore, the alternative profit frontier is given by

$$P = P (y, w, z, u, e) \quad (4)$$

where P is the variable profits of the firm, which includes all the interest and fee income earned less total costs, C , used in the cost function. The profit function can be written in log terms:

$$\ln (P + \theta) = \ln f(y, w, z) + \ln e - \ln u \quad (5)$$

where θ is a constant added to every bank's profit to make it positive so that the natural log can be taken. Profit efficiency is measured by the ratio between the actual profit of a bank (P_i) and the maximum possible profit that is achievable by the most efficient bank (P_{max}).

$$PF_i = \frac{P_i}{P_{max}} = \frac{\exp[f(y, w, z)] \cdot \exp(\ln u_i) - \theta}{\exp[f(y, w, z)] \cdot \exp(\ln u_{max}) - \theta} \quad (6)$$

where u_{max} is the maximum u_i across all banks in the sample. For example, profit efficiency score of a bank, say, of 80 % means that the bank is losing about 20 % of its potential profits to managerial failure in choosing optimum input quantities and outputs prices.

Functional Form

We employ the multiproduct translog functional form to estimate the cost and alternative profit frontiers and derive the efficiency measures. The cost frontier function is represented by:

$$\begin{aligned} \ln(C/w_3Z)_i = & \alpha_0 + \sum_{l=1}^2 \alpha_l \ln(w_l/w_3) + 0,5 \sum_{l=1}^2 \sum_{h=1}^2 \omega_{lh} \ln(w_l/w_3) \ln(w_h/w_3) \\ & + \sum_{k=1}^2 \beta_k \ln(y_k/Z) + 0,5 \sum_{k=1}^2 \sum_{j=1}^2 \beta_{kj} \ln(y_k/Z) \ln(y_j/Z) \\ & + \sum_{k=1}^2 \sum_{l=1}^2 \delta_{lk} \ln(y_k/Z) \ln(w_l/w_3) + \varphi_1 \ln Z + 0,5 \varphi_2 (\ln Z)^2 \\ & + \sum_{k=1}^2 \tau_k \ln(y_k/z) \ln Z + \sum_{l=1}^2 \zeta_l \ln(w_l/w_3) \ln Z + \ln e_{it} + \ln u_{it} \end{aligned} \quad (7)$$

where w_i and y_i are input prices and output amounts and z is the equity capital. The dependent variable, total cost, is the sum of interest expenses, personnel expenses and other operating expenses.² We impose the regular restrictions of symmetry and linear homogeneity for input prices in estimating the parameters of Equation (7) as the following:

² Some authors assert that fitting a single translog function over a sample of banks that vary widely in size and product mix will create a specification bias. They propose the use of non-parametric techniques such as kernel regression, spline-augmented, or Fourier flexible approximations. (See McAllister and McManus 1993 or Mitchell and Onvural 1996) However, Berger and Mester (1997) find that choosing a Fourier flexible form over standard translog model does not have important effect on the measure of average industry efficiency or on the rankings of individual banks. They report that the average efficiency measures are only 1 percent lower when Fourier specification employed. The limited number of observations in the present data prevents us from employing Fourier approximations.

$$\beta_{kj} = \beta_{jk} , \omega_{lh} = \omega_{hl} ; \sum_{l=1}^2 \alpha_l = 1 , \sum_{h=1}^2 \omega_{lh} = 0 , \sum_{l=1}^2 \delta_{lk} = 0. \quad (8)$$

Cost and input prices are normalized by the price of capital before taking logarithms to impose linear input price homogeneity. Since we do not decompose the efficiency measure into technical and allocative components, the cost functions are not estimated using the input share equations.

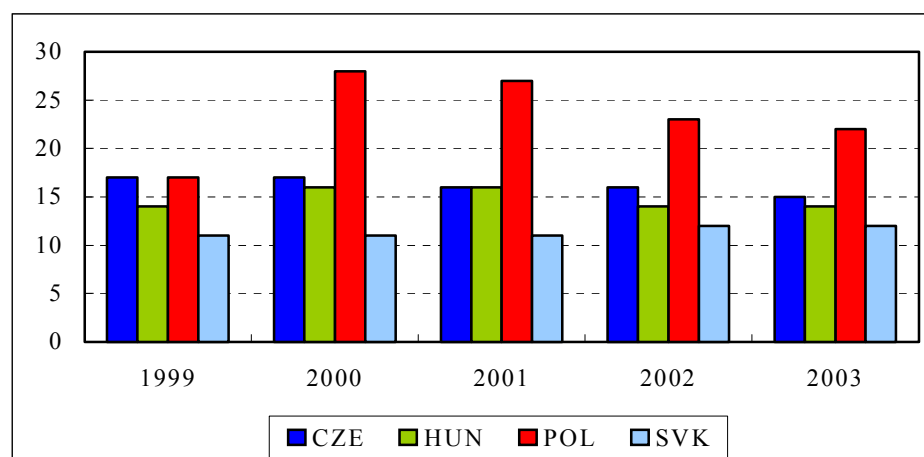
The alternative profit frontier estimation employs essentially the same specification in cost equation with some minor changes. For the profit frontier estimation the dependent variable $\ln(C/w_3Z)_{it}$ is replaced with $\ln(P/w_3Z)_{it}$ and the inefficiency term is $-u$. Cost, profit and output variables are normalized by equity capital (Z). This normalization controls for heteroscedasticity, scale biases, and other estimation biases in addition to providing a more economic meaning since the dependant variable in profit function essentially becomes ROE, a common measure of performance.³

Data and Selection of Variables

The analysis is based on data banks representing more than 90 percent of the total banking assets in all V4 countries. As we foresaw arguments concerning the reliability of some of the indicators in an environment where serious false reports and non-compliance could take place we selected the sample period for this study on the end stage of transformation process, particularly from 1999 to 2003, to minimize the extend of the problems. While describing the data, it is necessary to note that composition of the dataset changed slightly over the period analyzed because data from all banks are not available for every year (mainly in 1999) and also mergers reduced the total number of evaluated banks (2002 and 2003). Therefore the set under estimation contains 59 banks in 1999, 72 banks in 2000, 70 banks in 2001, 65 banks in 2002, and 63 banks in 2003. Geographical distribution by country is illustrated in Figure 1.

³ For detailed discussions of this normalization see Berger and Mester (1997) and Berger and DeYoung (2001).

Figure 1 Geographical distribution of banks by country



Source: Author's calculation

All data were extracted from the banks' official end-of-year unconsolidated balance sheets and financial statements based on international accounting standards. All data reported in local currencies were converted into EUR as a reference currency using official exchange rates.⁴ We analyzed only commercial banks (some of them originally performed as savings banks) that are operating as independent legal entities. All foreign branches, building societies, mortgage banks, specialized banks or credit unions were excluded from the estimation set.

In the banking literature, there is a considerable disagreement on the perception of the banking activities' principle and on the explicit definition and measurement of banks' inputs and outputs. A fundamental difficulty arises in the treatment of bank deposits. Long-lasting debate in the literature surrounds the input-output status of deposits. Traditionally, deposits are regarded as the main ingredients for loan production and the acquisition of other earning assets. On the other hand, high value-added deposit products, like integrated savings and checking accounts, investment trusts and foreign currency deposit accounts tend to highlight the output characteristics of deposits. Indeed, high value-added deposit services are an important source of commissions and fee revenue for specialized commercial banks such as trust and private banks. In the context of these specialized institutions, one cannot afford to ignore the output nature of deposits. Extending this argument further, one might contend that

⁴ To convert values from local currencies we may use either the official exchange rate or the purchasing power parity rate as computed by the OECD. According to Berg *et al.* (1993) the two approaches seem to yield very similar results.

the classification of deposits should therefore depend on the structure and characteristics of banks in the representative sample and viewed in the regulatory context of the country in question. For example, since the magnitude of high value-added deposits is relatively small compared to time and savings deposits in V4 countries, there may be more reason to regard deposits as inputs in these circumstances.

Three main approaches have been developed to define the input-output relationship in financial institution behavior in the literature. Firstly, the production approach (Sherman and Gold, 1985) views financial institutions as producers of deposit and loan accounts, defining output as the number of such accounts or transactions. This method usually defines inputs as the number of employees and capital expenditures on fixed assets. Second, the intermediation approach (Sealey and Lindley, 1977) stems directly from the traditional role of financial institutions as intermediaries that convert financial assets from surplus units into deficit units. Operating and interest costs are usually the major inputs, whereas interest income, total loans, total deposits and non-interest income form the principal outputs. Third, the asset approach recognizes the primary role of financial institutions as creators of loans. In essence, this stream of thought is a variant of the intermediation approach, but instead defines outputs as the stock of loan and investment assets (Favero and Papi, 1995).

Intermediation approach seems to have dominated empirical research in this area and also we adopt for the definition of inputs and outputs the original approach proposed by Sealey and Lindley (1977) with a small modification. It assumes that the bank collects deposits to transform them, using labor and capital, in loans. We determined the appropriate number of inputs and outputs and consequently employed three inputs (labor, capital, and deposits), and two outputs (loans and net interest income). We measure labor by the total personnel costs (PC) covering wages and all associated expenses, capital by the book value of fixed assets (FA), and deposits by the sum of demand and time deposits from customers and interbank deposits (TD). Loans are measured by the net value of loans to customers and other financial institutions (TL) and net interest income as the difference between interest incomes and interest expenses (NII). Descriptive statistics of the inputs and outputs used is given in Table 1.

The price of borrowed funds (w_1) is estimated as interest expenses divided by customer and short term funding plus other funding. The price of labor (w_2) is defined as the

ratio of personnel expenses to total assets.⁵ The price of physical capital (w_3) is measured as the ratio of other operating expense to fixed assets.

Table 1 Descriptive statistics of the inputs and outputs (EUR thousands)

	<i>TD</i>	<i>PC</i>	<i>FA</i>	<i>TL</i>	<i>NII</i>
	1999				
<i>average</i>	1701585.4	29406.83	64818.43	1280351.3	63656.50
<i>median</i>	698153.5	9687.00	16331.47	615675.6	23248.92
<i>stand. dev.</i>	2462575.5	47231.09	104810.51	1807430.5	93111.65
<i>min</i>	4039.8	536.63	754.43	10311.1	312.37
<i>max</i>	10982585.1	294512.91	500611.62	8594663.5	483335.82
	2000				
<i>average</i>	1964278.9	39602.85	69533.90	1452501.5	76976.01
<i>median</i>	808321.9	10499.72	17507.65	607729.9	24408.66
<i>stand. dev.</i>	3073735.3	73068.79	116863.90	2052782.1	125354.48
<i>min</i>	4244.0	712.01	502.67	12717.3	414.72
<i>max</i>	15652166.0	445763.94	541853.00	10284975.1	664128.21
	2001				
<i>average</i>	2455396.2	53016.88	81508.70	1840923.5	91438.82
<i>median</i>	725992.9	12677.32	20080.16	745789.0	22632.14
<i>stand. dev.</i>	3881615.8	111507.44	132275.37	2699373.2	174996.31
<i>min</i>	4576.0	611.60	461.20	9700.2	-221.70
<i>max</i>	19364630.1	774735.02	583393.18	11814856.9	1033164.34
	2002				
<i>average</i>	2620967.5	52302.78	83727.04	2041241.1	107528.58
<i>median</i>	809730.4	13241.59	20489.72	800504.4	27208.04
<i>stand. dev.</i>	4053533.2	113314.64	137073.97	2963321.4	183944.61
<i>min</i>	17845.9	645.57	453.23	27293.8	265.26
<i>max</i>	21855455.2	814522.01	602452.44	12455222.2	1053214.15
	2003				
<i>average</i>	2805243.5	55123.41	86125.24	2307914.5	120412.89
<i>median</i>	897611.3	14085.17	21098.78	837451.8	33108.91
<i>stand. dev.</i>	4102535.4	112856.54	140100.41	3075364.1	197166.47
<i>min</i>	15835.2	633.72	434.84	28756.6	319.74
<i>max</i>	23514788.1	845255.55	637982.75	13202545.4	1094125.54

Source: Author's calculation

⁵ Due to the unavailability of data on the number of employees we cannot employ the ratio of personnel expenses to number of workers as unit price for labor.

3. Empirical Results

For the purpose of carrying out the international analysis, the common data file was created from the data from all banks, by means of which along with cost estimations and profit functions defined by the equitation (1) and equitation (3) the efficiency limit was set for the years 1999-2003. This approach to the carrying out of the international analysis was applied jointly with the connection of SFA for instance by Yildirim and Philippatos (2002), Weill (2003), Bonin *et al.* (2003) or Fries and Taci (2004). All the set up models showed very positive statistical characteristics, which were presented both by a high value R^2 , and by plausible values of the estimated parameters.⁶

Efficiency Estimation for the Whole Dataset

The results illustrate unequivocally that the relative efficiency of the banks of the V4 countries was increasing markedly in the course of the observed period. The basic statistical characteristics of the final values are offered by Table 2 and Table 3.

Table 2 Descriptive statistics of X-efficiency values – cost efficiency

<i>year</i>	<i>no. of banks</i>	<i>no. of effic. banks</i>	<i>avrg.</i>	<i>median</i>	<i>stand. deviat.</i>	<i>min</i>	<i>max</i>
1999	59	2	0.5922	0.6032	0.22398	0.1557	1.0000
2000	72	3	0.6052	0.6252	0.21428	0.1909	1.0000
2001	70	5	0.6860	0.6813	0.18996	0.2958	1.0000
2002	65	2	0.6254	0.6003	0.19510	0.1869	1.0000
2003	63	4	0.7133	0.7370	0.16901	0.3058	1.0000

Source: Author's calculation

⁶ Indicator R^2 ranged in all models over the limit of 0,875. With the aim to conserve the space, the results of estimation of the individual models are not stated in the work. Similarly, other missing data or specific values of the input data can be provided by the author on demand.

Table 3 Descriptive statistics of X-efficiency values – profit efficiency

<i>year</i>	<i>no. of banks</i>	<i>no. of effic. banks</i>	<i>avrg.</i>	<i>median</i>	<i>stand. deviat.</i>	<i>min</i>	<i>max</i>
1999	59	4	0.5811	0.6032	0.25540	0.1104	1.0000
2000	72	2	0.6106	0.6439	0.23584	0.1547	1.0000
2001	70	5	0.7172	0.6930	0.17884	0.2207	1.0000
2002	65	3	0.6476	0.6251	0.19486	0.1709	1.0000
2003	63	4	0.7425	0.7278	0.16058	0.3912	1.0000

Source: Author's calculation

It is evident from the tables that the increase in efficiency was registered in both basic models, in that case in using the cost and profit function. Both models demonstrate very comparable developmental trends both in the entire data file and individual countries. In the years 2000 and 2001 the increase in efficiency can be observed, which was initially slight, however subsequently developed higher dynamics. Following the relative significant slump in the year 2002, the average efficiency values came back in the year 2003 and even slightly exceeded the values from the year 2001. Besides the year 1999, a higher average efficiency value can be marked with the profit function rather than the cost one. Bonin *et al.* (2003) came also to the identical finding, on the contrary Yildirim and Philippatos (2002) give evidence of different results, when in some countries (Baltic countries) profit efficiency exceeds cost efficiency, yet it is the other way round in the V4 countries.

The conclusion of the higher profit efficiency corresponds to the process of the banks' growing profitability in the V4 countries, which is empirically documented and analyzed for instance by Stavárek and Polouček (2004). The growth of profit, which in particular stems from the decreasing volume of the classified credits and the dynamic development of the non-interest incomes, is not accompanied by the intense reduction of costs, and for that reason efficiency, according to the cost function, slightly falls behind profit efficiency. However, it can be stated that at the end of the transformation process almost the third of the banks' sources is wasted in the V4 countries or in other words 30% of costs is dealt with inefficiently. Similarly, with the use of the estimation of the profit function, it can be observed that the banks in the V4 countries by the inefficient selection of the volumes of the input and output prices deprive themselves of about one quarter of their potential profit.

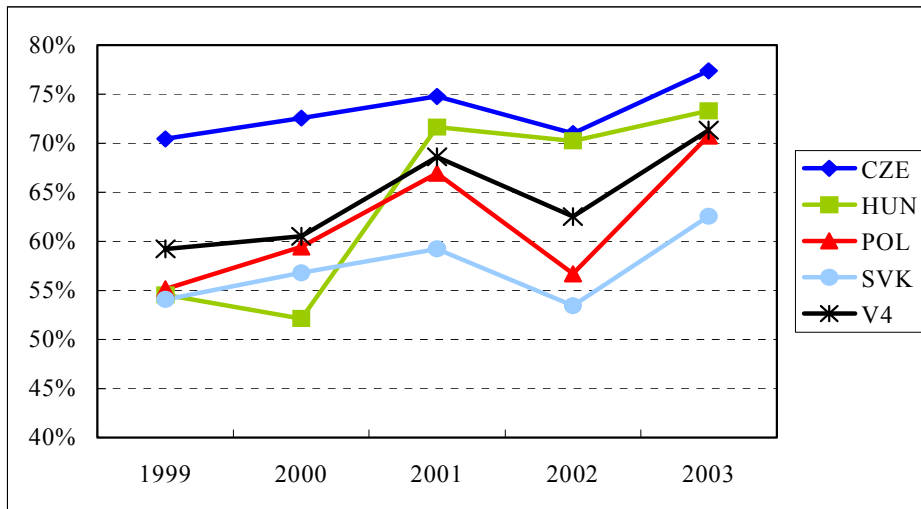
Most of the final values of efficiency for individual banks occur at the level of about 70%, what is consistent with the results of the previous studies, which examined the bank's efficiency by means of the method SFA. Correspondingly, in comparison with the conclusions made by Berger and Humphrey (1997), the results of the carried out analysis show the average features. Following the collection and evaluation of the results of 130 studies focused on the efficiency of the financial institutions in 21 countries, Berger and Humphrey noted that the mean value of the average rates of efficiency is 79 %, the standard deviation is 0,13 and the final values range in the interval from 31 % to 97 %. In the group of 60 works, which apply the parametric methods, the mean value of efficiency amounts to 84%, the standard deviation is 0,06 and the result range is in the interval from 61 % to 95 %. The standard deviation is slightly higher against the common values in this dissertation. Although its value shows a descending trend in the course of five years, it is still to be considered as a relatively high one and gives evidence of the heterogeneity of the banking sectors of the V4 countries and the unfinished process of their transformation and restructuring.

Efficiency Estimation for Individual Countries

When comparing the individual national banking sectors, one can note that the most efficient sector is the Czech sector, which from the perspective of the cost function was in the lead for over the entire analysed period, and from the viewpoint of the profit function it gained the lead in three out of five observed years. In spite of this positive fact, it is however necessary to mention that the Czech sector registered the least improvement from all V4 countries. From the year 1999 to the year 2003, it came to the increase in the average cost efficiency by nearly 7 percentage points (p.p.) from the initial level of 70,44% to the final level of 77,38%.⁷ Profit efficiency rose much swifter and its increase amounted to almost 15 p.p., when the average efficiency was 66,86% in the year 1999 and in the year 2003 81,78%. Figure 2 and Figure 3 demonstrate the above described development.

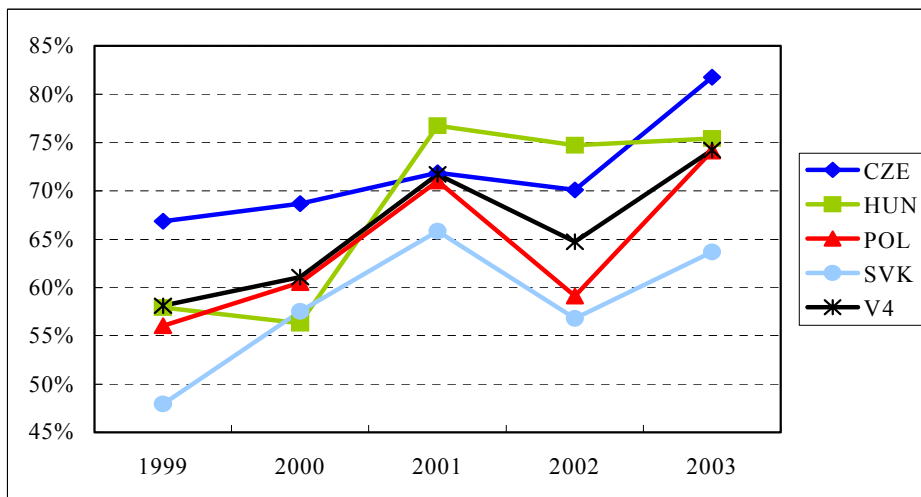
⁷ The average rate of the banking sector's efficiency was calculated as a simple arithmetic average of the values of the efficiency of all banks from the given country.

Figure 2 Average rate of efficiency in analyzed countries – cost function



Source: Author's calculation

Figure 3 Average rate of efficiency in analyzed countries – profit function



Source: Author's calculation

The similar developmental trends as the Czech banking sector, was showed by the sectors of Poland and Slovakia too, what moreover brought about the identical development of the average efficiency for the entire estimation file. At the average, Polish banks accomplished the improvement by 15,5 p.p. with cost efficiency (increase from 55,16 % to 70,74 %) and roughly by 18 p.p. with profit efficiency (increase from 56,06 % to 74,12 %). The Slovak banking sector improved from the standpoint of cost efficiency by 8,5 p.p. (increase from 54,07 % to 62,56 %) and in cost efficiency, the improvement by more 15,5 p.p. took place (increase from 47,96 % to 63,67 %). Neither has this increase in efficiency

prevented from the fact that the Slovak banking sector was, besides the year 2000, the least efficient sector of all V4 countries.

The only sector, which differentiated from the others, was the Hungarian one. This sector recorded a sharp increase in the average efficiency as early as in the year 2001, thereby the least efficient sector in the year 2000 according to the estimation of the profit function became the most efficient one, and in relation to the cost function it achieved the efficiency of the Czech banking sector. The Hungarian sector became also the sector with the highest improvement of the average rate of efficiency, when Hungarian banks increased their cost efficiency at the average by more than 19,5 p.p. (increase from 54,56 % to 73,31%) and profit efficiency by 17,5 p.p. (increase from 57,94 % to 75,44 %).

Besides the proper efficiency values, the structure of the efficiency frontier gives evidence of the performance of the individual banking sectors or the number of banks from the individual countries, which are above the frontier. Generally, it can be assumed that the more efficient banking sector, the more banks coming from it, will create the frontier of efficiency. Table 4 and Table 5 give more complete evidence of the national structure of the efficiency frontier.

Table 4 Structure of efficiency frontier (number of efficient banks) – cost function

	CZE		HUN		POL		SVK	
	no.	%	no.	%	no.	%	no.	%
<i>1999</i>	1	50.0	0	0.0	1	50.0	0	0.0
<i>2000</i>	1	33.3	0	0.0	2	66.7	0	0.0
<i>2001</i>	1	20.0	2	40.0	2	40.0	0	0.0
<i>2002</i>	0	0.0	1	50.0	1	50.0	0	0.0
<i>2003</i>	1	25.0	2	50.0	1	25.0	0	0.0

Source: Author's calculation

Table 5 Structure of efficiency frontier (number of efficient banks) – profit function

	CZE		HUN		POL		SVK	
	no.	%	no.	%	no.	%	no.	%
1999	2	50.0	2	50.0	0	0.0	0	0.0
2000	1	50.0	1	50.0	0	0.0	0	0.0
2001	1	20.0	2	40.0	2	40.0	0	0.0
2002	0	0.0	2	66.7	1	33.3	0	0.0
2003	1	25.0	2	50.0	1	25.0	0	0.0

Source: Author's calculation

From the presented data is apparent that the position of Slovakia, as the least efficient banking sector, was confirmed by the fact that none of the Slovak banks reached the absolute efficiency and was part of the efficiency frontier. In the group of efficient institutes, we can also observe the stable part of the Hungarian banks and an oscillating development of the part of the Czech and Polish banks. The hypothesis that the most efficient banking sector should be represented by the largest number of units at the efficiency frontier was not confirmed yet. The high efficiency of the Czech sector stems rather from the equilibrium of the individual banks and from a relative small deviation of their efficiency values.

Estimation of the Size-Adjusted Efficiency

Since we are aware of the fact that the averaging of the results regardless of any different size of the banks makes the loss of information, the size of the adjusted average efficiency rate (SAE) was incorporated into the analysis, which gives more plausible evidence of the factual efficiency of the banking sector as a whole. We believe that with the size of the bank, its importance grows for the entire banking and financial system of the given country, and then the efficiency of the large banks should be noted in the average value more than the efficiency of small and medium sized institutions. SAE can be defined and calculated in the following manner:

$$SAE = \sum_{i=1}^n w_i \Theta_i \quad (9)$$

where

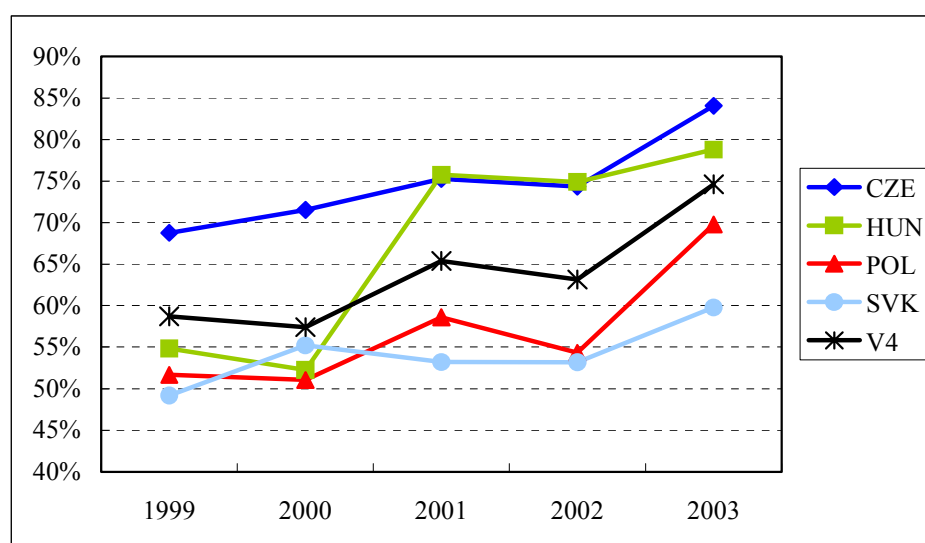
SAE ... size of the adjusted average efficiency rate

- w_i ... weight, which is calculated as part of the bank's i assets in the entire activities of all analysed banks
- Θ_i ... relative efficiency rate of the bank i
- i ... identifies DMU in the file of n banks

The indicators SAE, when comparing these with the values of the simple average efficiency values, can be used for the analysis of the optimal banks' size. The development of SAE for the cost and profit function in all analysed countries in the course of five years is illustrated by Figure 4 and Figure 5.

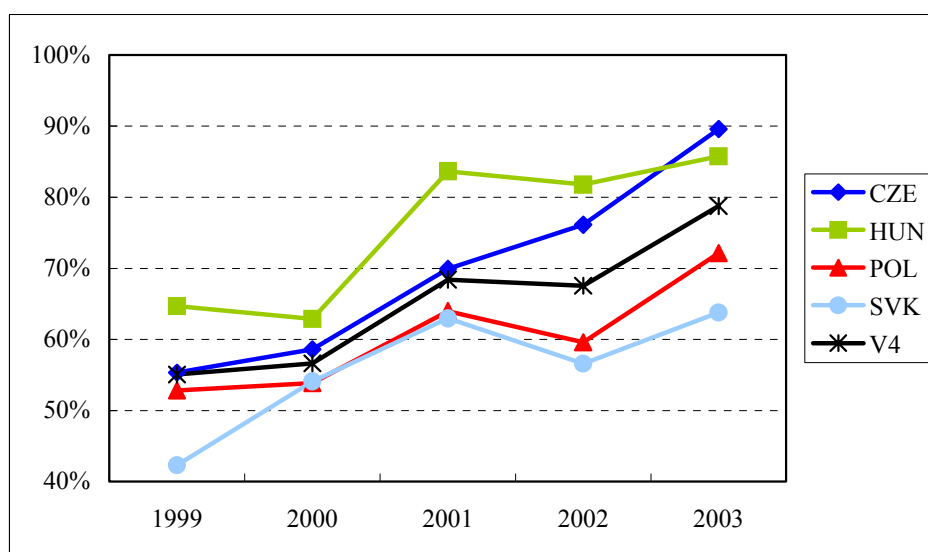
In the context of cost efficiency one can state that the Polish and Slovak banking sectors show a higher value of the simple average efficiency than SEA for the whole period. Big banks from these two countries reach the lower efficiency than small and medium sized banks. The completely contrary situation occurred in Hungary, when SEA always exceeded the simple average efficiency in the course of five years. However, it is necessary to emphasize that the difference was minimal (always at the most 5 p.p.), and the efficiency of the Hungarian banks can be considered as mutually balanced across size groups. The Czech banking sector went through two stages of its development. Although the first two analysed years characterized in the higher average efficiency than SEA as a consequence of serious problems of big banks, since the year 2001 the situation has changed and big banks have reached the higher efficiency than the smaller institutions.

Figure 4 Size-adjusted average rate of efficiency in analyzed countries – cost function



Source: Author's calculation

Figure 5 Size-adjusted average rate of efficiency in analyzed countries – profit function



Source: Author's calculation

From the point of view of profit efficiency, the comparison of the simple average efficiency and SEA in Hungary lead to absolutely similar conclusions as with cost profitability. With the three remaining banking sectors, one can identify reciprocally a very similar development. Whereas in the years 1999-2001 the simple efficiency exceeded SEA in all countries, in the years 2002-2003 the situation changed and bigger banks functioned more efficiently than the smaller sized banks.⁸ Further, one can observe that with profit efficiency there are much more distinct differences among the simple efficiency values and SEA than with cost efficiency. In particular, the differences occurred at the beginning of the period, which exceeded 10 p.p. The most balanced values with profit efficiency are showed by the Slovak sector.

4. Conclusion

Although in the estimation file none of the original 15 EU member countries appeared, it can be stated by applying the results of other relevant studies that there is still a gap in the average efficiency among banking sectors of the developed countries and V4 countries. In order to do well on the highly unified competitive European market with the financial services, the banks of the new member countries have to strive for increasing their efficiency. On the markets with the banking services in the V4 countries, on account of their sufficient

⁸ An exception is only Poland in the year 2003 and Slovakia in the year 2002.

coverage and saturation of the existing demand it is apparently impossible to expect a growth of competition by way of the direct entry of many new subjects from other EU member countries nor the V4 banks plan to strengthen their position by massive expansions to other EU countries. A much more competitive threat, yet a challenge and opportunity stem for the V4 countries from the possible migration of the existent clients to the more advantageous conditions abroad. The effort of the new member countries to accept the single European currency within the horizon of roughly five years requires the fulfilment of the convergence criteria and in addition to it interest rates, inflation and exchange rates, thereby the existing risks will be limited and principally financing by way of credit from abroad will become more accessible to a broader spectrum of clients. In the period of 1999-2003 the increase in efficiency was marked in most of the cases, however, from the general point of view we consider it, due to the convergence attempt, insufficient.

Abstract

Hlavním cílem příspěvku je pomocí parametrické metody Stochastic Frontier Approach odhadnout relativní efektivnost bank v zemích Visegrádské skupiny v letech 1999-2003. Příspěvek analyzuje efektivnost zprostředkovatelské činnosti bank a jejich schopnosti transformovat depozita na úvěry. Alternativně byla vypočtena efektivnost prostřednictvím odhadu nákladové a ziskové funkce, které reflektují záměr bank minimalizovat náklady a maximalizovat zisk. Jako nejefektivnější se v obou modelech po většinu analyzovaného období ukázal být český bankovní sektor následovaný sektorem maďarským. Jako zřetelně nejméně efektivní byl identifikován slovenský bankovní sektor. Obecně vyšších hodnot i znatelnějšího zlepšení dosáhly banky při odhadu ziskové efektivnosti. Absolutně největšího zlepšení dosáhl maďarský bankovní sektor. I tak ovšem nadále přetrvává mezera mezi relativní efektivností v zemích V4 a v původních členských zemích EU.

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EVALUATION OF CZECH BANKS STABILITY IN THE YEARS 1995-2002

Liběna Teplá¹

Key words

stability of banks, return on assets, return on equity, costs on deposits, interest spread, profit spread, transformation of Czech banking sector.

1. Introduction

The aim of this contribution is to introduce the development of selected financial and rentability indicators of selected banking institutions settled in the Czech republic in the period from 1995 – 2002. The banks were divided in two groups – group of properly running banks and the group of bankrupted banks. This dividing was done according to real development of Czech banking sector, especially using basic data overview from Czech National Bank and its banking supervision section. To the group of observed banks were put all common banks except housing saving banks, because their business is different from the business of commercial banks, and except subsidiaries of foreign banks, because their behaviour is mostly influenced by their foreign owners. Data for financial indicators calculating were taken from published accounting reports, this means the balance sheets and profit and loss account of each bank.

When selecting suitable methods and indicators, different availability of data was considered. At financial indicators the used approach is different due to individual authors (for ex. Babouček [[1]] or Ziegler [9]) and foreign literature (for ex. Golin [5]). According to data availability in the Czech banking sector, financial indicators were chosen so that they generally match the sector specifications, Czech accounting standards and legal information obligation of all bank institutions.

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2. Characteristics of financial figures

For rentability analysis following indicators were taken:

- netto rentability to average level of assets (ROAA);
- netto rentability to average level of equity (ROAE);
- interest spread;
- profit spread.

Due to proper collecting of the data, introduced financial indicators were evaluated on examples of stabile banks in the period from 1995 – 2002 and financial indicators of unstable banks from 1995 – 2000, because there aren't any banks in 2001 and 2002 that had to face compulsory governance or lost their banking licence. The amount of problem banks is mentioned in Chart nr. 1.

Chart nr. 1: Amounts of stabile and unstable banks from 1995 – 2002

Year	1995	1996	1997	1998	1999	2000	2001	2002
Amount of stabile banks	12	13	15	17	16	16	17	17
Amount of unstable banks	23	11	10	8	7	5	0	0
Total amount of banks	35	24	25	25	23	21	17	17

Source: www.cnb.cz

Individual financial indicators² were calculated for each bank in every mentioned year. Based on this calculations the median of each financial figure and year was selected different for stabile and for unstable banks (see Chart. nr. 2 and Chart. nr. 3). This statistical figure was chosen because of its common use by rating agencies (for ex. Moody's and Standard & Poor) when evaluating the financial indicators of banks (for ex. ROAA, volume of non-standard credits), when all values of these indicators are taken from last 3 years and they are compared with the median of classified group. Usually they are also presented in graphs [[1]].

² All calculations were done in MS Excel.

Chart. nr. 2: Values of selected financial indicators for stabile banks in the period 1995 – 2002 (median)

	1995	1996	1997	1998	1999	2000	2001	2002
ROAA	0,69%	0,79%	0,52%	0,33%	0,02%	0,30%	0,58%	0,66%
ROAE	3,88%	8,89%	3,53%	3,75%	0,36%	2,67%	12,00%	9,63%
Profit margin	6,13%	8,18%	4,80%	2,84%	0,23%	2,90%	6,71%	12,31%
Profitability of credits	9,15%	10,02%	12,04%	12,56%	10,20%	6,42%	7,21%	4,92%
Cost on deposits	4,92%	6,24%	7,89%	8,21%	5,88%	3,77%	4,44%	2,85%
Interest spread	3,48%	2,89%	2,00%	2,52%	3,47%	2,99%	2,34%	1,97%

Source: own calculation

Chart. nr. 3: Values of selected financial figures of unstable banks in the period 1995 – 2000 (median)

	1995	1996	1997	1998	1999	2000
ROAA	-2,02%	-1,30%	-0,91%	-0,35%	0,00%	0,13%
ROAE	-	-				
	15,60%	22,59%	0,48%	-0,66%	0,00%	0,79%
Profit spread	-					
	16,69%	-7,26%	-4,23%	-4,38%	0,00%	8,24%
Profitability of credits	12,62%	12,19%	14,66%	14,36%	11,23%	9,21%
Costs on deposits	7,16%	8,02%	9,69%	8,88%	6,13%	3,97%
Interest spread	4,69%	4,06%	4,84%	5,48%	3,79%	5,31%

Source: own calculation

ROAA Figure

The profit (rentability) on assets (return on assets, ROA) measures the rentability of total corporate assets or the average netto profitability of all used financial sources. It is presented in two forms – as proportion of netto income and assets (ROA) or as proportion of netto income and average level of assets (ROAA). Because the banks are using the average level of assets, I will mention ROAA figure.

$$\text{ROAA} = \frac{\text{Net Income}}{\text{Average Total Assets}}$$

ROAA figure shows how effective the bank is using its assets. The investor give more attention to the relation between net income and equity (ROE), but ROAA figure is also important. Because in a difference from ROE is ROAA commensurable between banks working in various economical conditions and is not influenced by the debts od the banks.. Babouček I. [[1]] mentions as a standard value of ROAA figure 1%.

ROAE Figure

The next figure is *profit (rentability) on equity* (return on equity, ROE). This figure has the main importance for company's shareholders. The banks must publish this figure as the average return on euity, this means ROAE.

$$\text{ROAE} = \frac{\text{Net Income}}{\text{Average Total Equity}}$$

It was already said this is properly watched by shareholders of the bank. Their main interest is that the bank reaches the highest income with using the lowest level of sources the shareholders have to put into the bank, if possible. The disadvantage is the ROAE is not commesurable for different economical conditions. It also doesn't consider possible speculations. In this way the bank could very easily reach higher ROAE by increasing total debts of the bank. For this reason is necessary to watch both indicators - ROAE in following relation with ROAA. The bank is stabile and able to develop itself when high and growing level of ROAE could accompanied with high level or also increasing ROAA. [[1]]

Profit spread figure

The figure is expressed by following relation:

$$\text{Profit spread} = \frac{\text{Net Income (Loss) in accounting period}}{\text{Total Operating Income}}$$

The value of this figure is strongly depending on the value of netto income/loss. For this reason the stabile banks usually reach higher values and unstable bank often reach lower values only.

Interest spread figure

Proper definition of interest margin could be complicated, because from public available data could not be separated this part of interests or fees that concerns clients deposits and loans only. Normally we have to consider not only deposits/loans of other banks, but also deposit certificates and bonds. When abstracting from only one of this items, total results of calculated figure are completely different. The difference between active and passive interests is one of the most important income source for each bank. The long term and global trend is decreasing of this kind of income with increase of fees and charges incomes on the other side.

$$\text{Interest Spread} = \text{Net Interest Revenue} - \text{Cost Deposits}$$

3. Selected financial indicators in graphs – time period 1995 – 2002

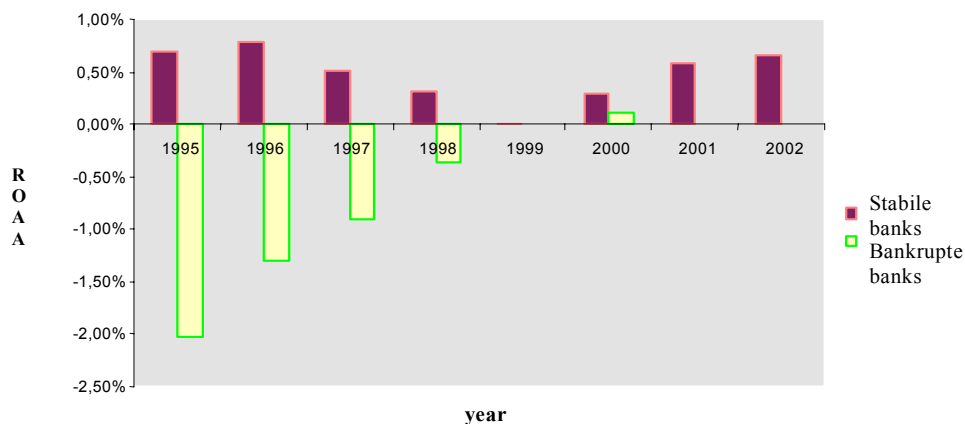
Development of ROAA from 1995 – 2002

The ROAA figure developed different for stabile and unstable bank institutions. This difference was caused especially by unstable banks, because most of small banks bankrupted which later strongly influenced the final value of ROAA figure. The exception was year 1999 when unstable banks disappeared and by this time stabile banks also announced problems with classified credits. Median value of ROAA for stabile banks reached its maximum value in 1996 (0,78%), the minimal value was reached in 1999 at 0,03%. The average value of

ROAA for stabile banks is 0,50% in described time period, which is according to the evaluation of J. Golin [[4]] the lowest value for awarding the status „middle“. Among unstable or problem banks the ROAA figure reached its minimal value in 1995 (- 2%) and its maximum value in 2000 (0,13%). The average value of ROAA for unstable banks was - 0,07%. At this group of banks the ROAA figure could be evaluated as very weak. In mentioned period we can all the time observe increasing of value of this figure, this was caused by continuous disappearing of unstable banks from the banking sector and this finally influenced the ROAA trend in a positive way.

The change in the trend of ROAA in 1999 was in case of stabil and unstable bank caused by Czech National Bank, which changed its methods for classification of receivables and creating of reserves and provisions. This caused increasing of incomes of most banks.

Graph nr. 1: Values of ROAA in the period 1995 – 2002



Source: own calculation

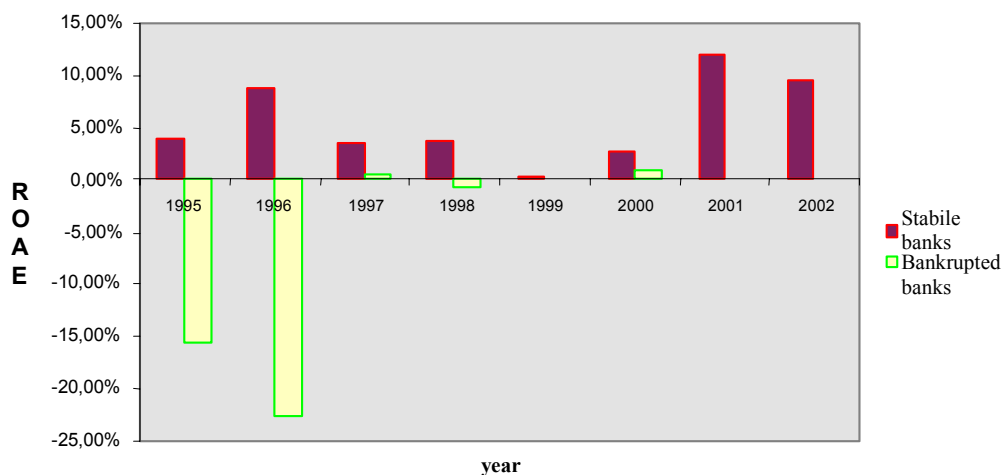
Development and trends of ROAE from 1995 - 2002

Among stabile banks this indicators reached values from 0,36% (in 1999) to 12,00% (in 2001). The average value of ROAE was 5,59%. This figure has positive development, if its trend is increasing, but this cannot be confirmed in this case. It strongly decreased in 1999, this was caused by losses of stabile banks, especially concerning Živnostenská banka (value of ROAE in 1998 was 4,16%, later in 1999 -9,20% and in 2000 reached positive value again: 9,75%). Almost in similar way was the situation in the case of První městská banka, BNP – Dresdner Bank, IC banka and J&T banka.

Among unstable bank the ROAE figure reached its lowest value in 1996 (-22,59) and its highest value in 2000 (0,79%). The average value of ROAE was -6,26% for unstable banks. This reported average value was caused especially by appearing of big negative values in 1995 and 1996. Mentioned negative values in those years could be presented as results of heavy losses, especially concernig smaller bank institutions. When the process of disappearing of those banks from the Czech banking sector started, the values of ROAE got continuously improved.

The change in the trend of ROAE in 1999 was in case of stabil and unstable bank caused by Czech National Bank, which changed its methods for classification of receivables and creating of reserves and provisions. This caused increasing of incomes of most banks.

Graph nr. 2: Values of ROAE in the period 1995 – 2002



Source: own calculation

In the same way as it was mentioned at ROAA we can observe different values for stabile and unstable banks, the group of stabile and properly running banks generally reported positive values, on the other side the group of bankrupted banks reported strong negative values.

Trends in profit spread and its development from 1995 - 2002

The profit spread reached always lower values at unstable banks comparing to properly running banks, this was by the way caused especially by high interests offered on deposits.

The exception was the year 2000 when the profit spread at the group of problem banks was 5,5% higher comparing to the group of stabile banks.

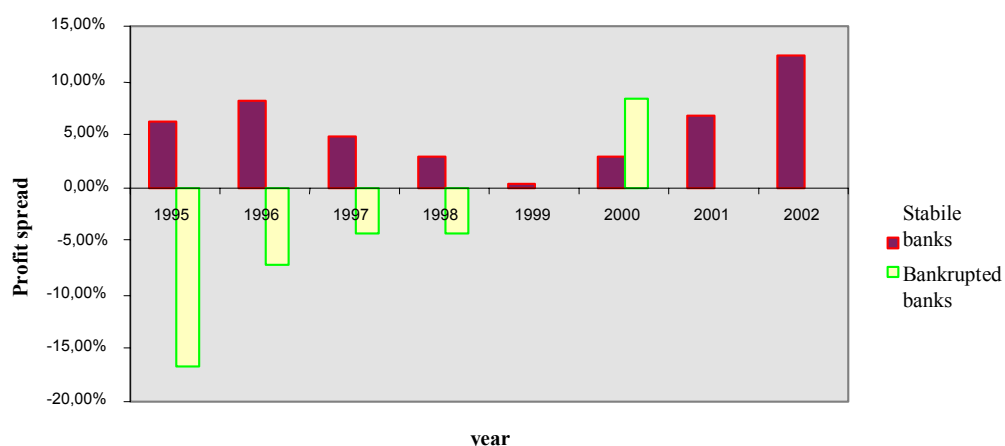
Stabile banks reached maximal profit spread in 2002 (12,31%) and its minimal value in 1999 (0,23%). The average value was 5,51%. Generally low value reported in 1999 was caused by losses of banks, when some banks reached the profit spread in negative values. For example První městská banka reached the profit spread valueho -20,35%, IC banka -22% and Živnostenská banka -5,5%. Comparing with this situation, year 2002 was successful and profitable for Czech banks. The only exception was e-Banka (-19%), when most banks reached the profit spread in the value over 10%, highest values reached BNP – Dresdner Bank (19,7%) and Komerční banka (16%).

Minimal level of profit spread was reached in 1995 (-16,69%) for problem banks, maximal level of values was reached later in 2000 (8,24%). The extremely low value from 1995 can be explained by fact that problem and unstable banks often reported huge losses together with low level of their revenues. For this reason was the profit spread in 1995 for Bankovní dům SKALA emerging -544%, Ekoagrobanka -202,5% and Česká banka -81,1%. Later in year 2000 the banks reported profit, except KB (profit spread -0,14%) and Union banka (-1,03%). The rest of banks was profitable in that year, the highest value of profit spread had Plzeňská banka 15,95% and Česká spořitelna 12,3% and ČSOB 8,24%. In accordance to continuous disappearing of problem and unstable banks, values of profit spread always increased in following years.

If I decided to put the year 2000 away from the watched chronological series, it would be possible to find a conclusion that stabile banks reached generally different values in comparison to problem and unstable banks. The year 2000 is not suitable for our analysis because of group of problem banks as I have already explained above.

The change in the trend of the profit spread in 1999 was in case of stabil and unstable banks caused by Czech National Bank, which changed its methods for classification of receivables and rules for creating of reserves and provisions. This caused increasing of incomes of most banks..

Graph nr. 3: Profit spread and its development from 1995 – 2002



Source: own calculation

Trends in interest spread and its development from 1995 - 2002

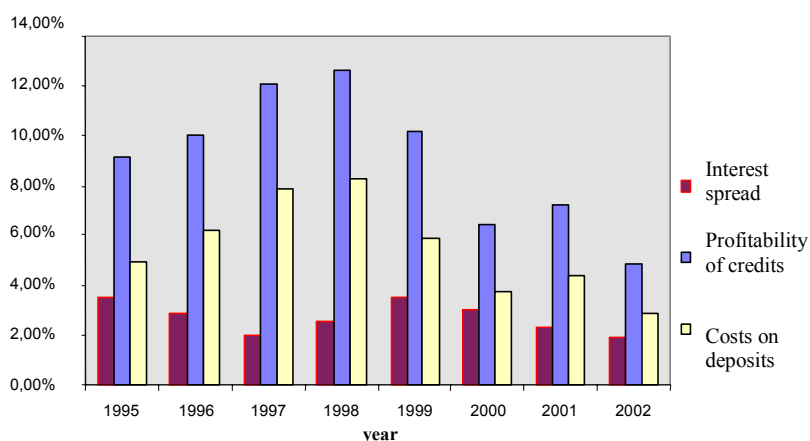
The development of the interest spread is given by the difference of profitability of credits and cost on deposits. In

Graph nr. 4 can be seen that minimal interest spread was in 2002 (1,97%) and maximal interest spread was reached in 1995 and 1999 (3,5%). The average value was 2,71%. High cost on deposits in 1998 was especially influenced by high cost payed on interests in the sum of 6 bil. CZK at CLB Praha (CLB Prague) – where the value of deposit costs was 30,04%, at J&T Banka were deposit costs (27,7%) influenced mostly by low payables (liabilities) (value 350 mil. CZK) and payables to clients (111 mil. CZK) and by low interest costs (127 mil. CZK.). Comparing ČMRZB to above mentioned values, here we have cost on credits 19,5%, especially caused by high payables to banks (6 bil. CZK) and on the opposite site relatively low level of interest cost in the sum of 723 mil. CZK only.

Those banks in the same time managed to reach high level of credit profitability in 1998 – Credit Lyonnaios Bank (CLB) Prague 32,5%, J&T Banka 28,6% and ČMRZB 13,5%. CLB Prague had receivables and credits given to banks at the value of 8,3 bil. CZK, receivables due from clients at 10,8 bil. CZK, bonds and other securities with fixed revenues used for trading at 337 mil. CZK and interest revenues at 6,4 bil. CZK. J&T Banka reached in comparing to CLB Prague generally lower values –receivables and credits given to banks at 545 mil. CZK, receivables due from clients at 269 mil. CZK, bonds and other securities at 509 mil. CZK and interest revenues at 379 mil. CZK.

Despite the the fact that stabile banks reached in 1998 maximal values of deposit costs and profitability of credits, the value of interest spread in 1998 was 2,52%, which can be evaluated as average value only.

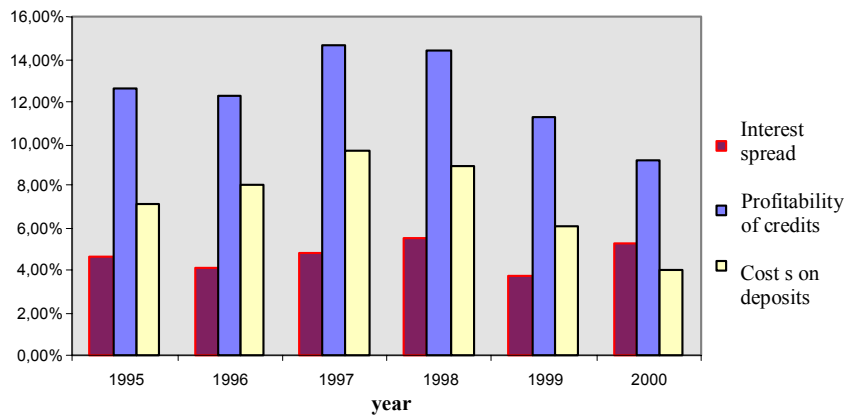
Graph nr. 4: Trends and development of interest spread from 1995 – 2002 (stabile banks)



Source: own calculation

In the development of the interest spread we observe that its maximal value for problem and unstable banks was reached in 1998 - value 5,48%, the minimal value in 1999 – value 3,79%. The average interest spread was 4,70%. Cost on deposits and profitability of credits reported by individual unstable banks didn't express any important differencies from the trend which was observed in development of other banks. There is only one exception - Zemská banka in 1996, when its interest spread value was – 4,3%. This was due to high cost on deposits (25,6%) in relation to low profitability of credits (21,3%).

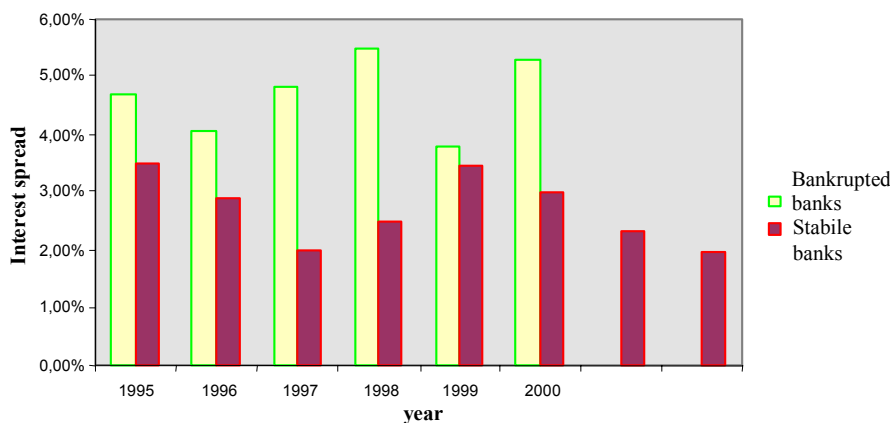
Graph nr. 5: Interest spread and its development from 1995 – 2000 (unstable banks)



Source: own calculation

According to situation presented in Graph nr. 6, unstable banks reached higher values than stable banks. Values reported at group of unstable banks usually varied from 3,79% - 5,48%, at the group of stable banks the values were from 1,97% - 3,5%. The optimum value for this figure should be under 3,5% for stable banks. In case the bank would reach the value of interest spread higher than 3,5%, we could evaluate this bank institution as unstable.

Graph nr. 6: Interest spread and its development from 1995 - 2002



Source: own calculation

4. Conclusion

This contribution presented at all watched financial indicators of rentability different values for the group of stable and properly running banks and for the group of unstable or

problem banks. This result is a baseline for working out the financial analysis of other financial indicators for above mentioned groups of banks. Financial indicators and its values which are the result of this wider analysis will be used to create a model of banking stability based on discriminant analysis. With help of this suggested banking stability model the decision about stable or unstable bank can be done.

Abstract

Príspevek se zabyvá analýzou vybraných finančných ukazateľů rentability, ktorá byla provedena na bankách působících v České republice v letech 1995 – 2002. Banky byly rozděleny do dvou skupin – na stabilní banky a na nestabilní banky. Vývoj jednotlivých finančních ukazatelů rentability (výnosnosti aktiv, výnosnosti kapitálu, ziskové marže, výnosnosti úvěrů a úrokové marže) měl potvrdit předpoklad odlišného vývoje pro skupinu stabilních bank a nestabilních bank. Údaje pro analýzu byly získány z veřejně dostupných zdrojů, tj. publikovaných rozvah a výkazů zisků a ztrát jednotlivých bank. Výsledky potvrzují, že ukazatele rentability stabilních bank a nestabilních bank se výrazně liší. Bližší vysvětlení příčin rozdílů mezi těmito skupinami bank bude využito k vytvoření modelu stability banky, založeném na diskriminační analýze. Pomocí tohoto modelu bude možno posoudit stabilitu nebo nestabilitu bank. Vypracování finanční analýzy je součástí zpracovávané disertační práce na téma „Problémy vzájemných vztahů stabilního rozvoje bank a podniků“.

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IS THE SHARE OF CLASSIFIED LOANS IN THE CZECH REPUBLIC INFLUENCED BY THE SECTOR STRUCTURE OF CREDIT PORTFOLIO?

Pavla Vodová¹

Key words

Classified loans, credit risk, sector structure of credit portfolio, collateral, regression model.

1. Introduction

The aim of this paper is to analyze if the share of classified loans in the Czech Republic is influenced by sector structure of credit portfolio.

At the beginning of the paper, importance of classified loans and criteria for their classification are characterized. Chapter 4 describes possible causes of classified loans. Chapter 5 contains the analysis of the influence of sector structure of credit portfolio on the share of classified loans.

2. Importance of Classified Loans

From the very nature of bank business arises that the oldest, the most important and primary risk in banking is credit risk. Basel Committee on Banking Supervision defines credit risk as follows: “Credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligation in accordance with agreed terms.”² While credit risk is connected not only with providing loans but it involves some other bank activities such as acceptances, guarantees and other off-balance sheet transactions, financial derivatives etc., loans are the largest and the most obvious source of credit risk. Consequently, the share of classified loans can be used as an approximate, ex post measure of credit risk.

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² *Principles for the Management of Credit Risk*. Basel: Basel Committee on Banking Supervision, 2000.

Classified loans are often also one of the factors that cause banking crisis (poor portfolios adversely affect the soundness of banks and potentially of the whole banking sector)³. The level of classified loans is generally used as an indicator of banking crisis. The applied threshold differs among studies: Goldstein a Turner (1996) exercise the threshold about 15 – 20 % of total credits, Caprio a Klingebiel (1997) determine the share as only 5 - 10 % of total credits. Considering the level of classified loans in the Czech Republic (see Table 1), the analysis of the causes of classified loans in the Czech Republic could obviously bring very important findings.

3. Criteria for Loan Classification

The rules for loan classification have been defined by the Arrangement of CNB No. 9/2002. In accordance with New Basel Capital Accord, banks have the possibility to choose whether they will classify single loans or they will asses the change of the value of credit portfolio with the use of statistical models.

In case of single loan classification, according to following criteria banks have to divide loans into 5 categories:

- Standard – this category contains sound loans that are repaying according to the schedule. Repayment difficulties are not foreseen and full repayment is expected. Standard loans are such loans where no installment is overdue more than 30 days and no credit has been rescheduled because of bad financial and income position of the borrower in last 2 years.
- Watch – full repayment of such loans is expected. However, these loans require more than normal attention. The criteria are following: no installment is overdue more than 90 days and no credit has been rescheduled because of bad financial and income position of the borrower in last 6 months.
- Substandard – full repayment of substandard loans is in doubt but partial repayment is highly probable. No installment is overdue more than 180 days.

³ TEPLÁ, L. Problémy stabilizace bankovníctví v ČR. *Ekonomie a Management*, vol. IV, 2001, pp. 14-18. ISSN 1212-3609

- Doubtful – the full repayment of such loans is highly unlikely but partial repayment is possible and probable. No installment is overdue more than 360 days.
- Loss – such loans are irrecoverable or repayable only partial and on very small amount. Loss loans are loans with installments overdue more than 361 days. This category also contains loans provided to borrowers that are in bankruptcy proceedings.

Under the term “classified loans” we understand watch, substandard, doubtful and loss loans. The term “nonperforming loans” has narrow interpretation: nonperforming loans comprise substandard, doubtful and loss loans.

The arrangement has also obliged banks to create reserves and provisions to classified loans. The reserves and provisions are created as a multiple of face value and corresponding coefficient. Following values of coefficients has been settled: 1 % of face value of watch loans, 20 % of face value of substandard loans, 50 % of face value of doubtful loans and 100 % of face value of loss loans.

In case of credit portfolio assessment, banks have to create credit portfolio that concerned sufficient number of homogenous loans. The length of the used underlying historical observation period must also be sufficient. Then the reserves and provisions are created amounting to statistical estimation of expected losses.

As you can see in Table 1, the share of classified loans ranged around 30 % and is decreasing only recently. The structure of classified loans develops favourably: while more than 50 % of the classified loans belonged to loss loans in 1997, more than half of the classified loans represent watch loans at present. The improvement is caused mainly by massive state help before privatization of big banks.⁴

⁴ ČERNOHORSKÝ, J. Transformace bankovního sektoru. In *Hospodářská politika v tranzitivních ekonomikách. Sborník příspěvků z mezinárodního vědeckého semináře*. Ostrava: Ekonomická fakulta VŠB-TU, 2002, pp. 23-26. ISBN 80-248-0178-7.; STAVÁREK, D. The Main Features of Restructuring of Czech Banks and the Banking Sector. In *Restructuring and Development Processes of Enterprises and Their Value Creation*. Warsaw: Cracow University of Economics, 2002, pp. 514-521. ISBN 83-907047-1-4.

Table 1 – Development of classified loans in the Czech Republic⁵

	94	95	96	97	98	99	00	01	02	04
Classified loans	36,5	33,1	29,3	26,9	27,1	32,2	28,9	20,8	15,8	11,2
Watch loans	N/A	N/A	N/A	22,8	22,8	31,7	33,3	36,1	47,5	56,5
Substandard loans	N/A	N/A	N/A	10,0	12,9	13,5	21,3	15,5	18,4	16,9
Doubtful loans	N/A	N/A	N/A	11,0	13,8	13,2	10,6	14,2	7,7	6,1
Loss loans	N/A	N/A	N/A	56,2	50,5	41,6	34,8	34,2	26,4	20,5

Source: Czech National Bank

4. Causes of Classified Loans

If we understand classified loans as an ex-post measure of credit risk we can say that the share of classified loans corresponds with determinants of credit risk. From this point of view classified loans can be caused by following factors:

- Structure and concentration of credit portfolio – it is determined by type of the borrower (whether the borrower is an individual or a company, how the financial health of the borrower is), its relationship with bank (how long and intensive the relationship is), currency and size of the loan and by its maturity, by credit portfolio concentration (credit concentrations are any exposure where the potential losses are large relative to the bank's capital, its total assets or the bank's overall risk level and include concentrations of credits to single counterparties, a group of connected counterparties and to sectors or industries)⁶.
- The existence and type of collateral – two different approaches to the relationship between credit risk and collateral are possible⁷.
- The quality of the bank management – it is the key factor of the profitability and efficiency of the bank. The inadequate credit risk management manifests in higher level of classified loans. The necessity to create loan loss provisions has significant impacts on bank's costs and profitability and can lead even to insolvency. This is the reason why

⁵ Classified loans as % of total credits; individual categories of classified loans as a % of total classified loans

⁶ See Vodová (2004) for more detailed description of these determinants.

⁷ Both approaches are characterized in Vodová (2004).

bank's shareholders should monitor the management of the bank. It is common familiar fact that state is an unpretentious owner. Therefore it can be assumed that state ownership of banks could lead to higher share of classified loans.

However, classified loans are an indicator and a possible cause of the banking crisis. Therefore we can perceive on classified loans from the macroeconomic point of view. Classified loans can be caused by deterioration of macroeconomic conditions (increase in unemployment rate, inflation rate, interest rates and other and by their volatility). The volatility of important macroeconomic variables influences unfavourably the business environment of banks and deteriorates the business environment of borrowers; it can worsen their ability to service the loans. Assessing credit risk becomes much harder in the period of growth, inflation and interest rates volatility.

And finally, Revenda (2003) came to a conclusion that classified loans are caused by:

- Lack of qualification and skills of bank management and their aggressive business strategy;
- Political pressure on banks to finance the privatization, mainly in case of state owned banks;
- Regulation rules for banks were created only gradually (arrangements for capital adequacy, liquidity, credit exposure and credit classification); their observance was controlled always not enough sufficient;
- Only poor monitoring of the bank management by banks' shareholders, mainly in case of state owned banks;
- Efforts of small banks to enter on credit market which had led to providing loans to subjects with high risk;
- Whole range of causes on the debtors' side, including their low willingness to repay debts.

5. Analysis of Causes of Classified Loans in the Czech Republic

For the analysis of causes of classified loans in the Czech Republic has been chosen a pool cross-section regression model:

$$Y_{it} = \beta_0 + \sum_{k=1}^K \beta_k X_{kit} + \varepsilon_{it}$$

where $X_{k i t}$ - the k-th independent variable for bank i in year t

Y_{it} - the share of classified loans for bank i in year t

T - the total number of time periods

K - the total number of independent variables

ε_{it} - the error term.

All needed dependent and independent variables were obtained from annual reports of Czech commercial banks (see Table 2). The sample involves only banks which have available not only their annual reports but the categorization of provided loans needed to obtain independent variables. The availability differs among banks and years.

Table 2 – Sample of banks

Bank	95	96	97	98	99	00	01	02	03
Citibank	x	x	x	x	x	x	x	x	x
Česká spořitelna				x	x	x	x	x	x
Českoslov.obchodní banka				x	x	x	x	x	x
eBanka				x	x	x	x	x	x
GE Capital Bank				x	x	x	x	x	
HVB Bank Czech Republic							x	x	x
IC banka					x	x	x	x	x
Interbanka						x	x	x	x
Investiční a poštovní banka					x				
Komerční banka			x	x	x	x	x	x	x
Plzeňská banka			x	x	x	x	x		
První městská banka						x	x	x	x
Raiffeisenbank			x	x	x	x	x	x	x
Union banka			x	x	x	x	x		

Volksbank				x	x	x	x	x	x
Živnostenská banka					x	x	x	x	x

At the beginning of the analysis two selected determinants of credit risk had been chosen and the influence of the collateral and state ownership of banks had been analyzed. In Table 3 you can see the specification of used independent variables.

Table 3 – Independent variables – the first analysis

Independent variable	Description
Unsecured loans as a percentage of total loans	UNTL
Loans secured by real estate as a percentage of total loans	RETL
Loans secured by bank guarantee as a percentage of total loans	BGTL
Loans secured by guarantee as a percentage of total loans	GUTL
State ownership (a dummy variable which is assigned a value „1“ for year where state was the major owner of the bank and „0“ for year where the bank had a private owner)	SO

The results obtained from the regression model provided by EView 4.1 are recorded in Table 4.

Table 4 – Results of the first analysis

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0,255222	0,117392	2,138047	0,0362
UNTL	0,183514	0,138757	1,322556	0,1905
RETL	0,159647	0,158173	1,009318	0,3165
BGTL	-0,391451	0,206927	-1,721161	0,0872
GUTL	-0,123779	0,298349	-0,414881	0,6796
SO	-0,077592	0,066741	-1,162580	0,2492
R-squared	0,162759	Mean dependent var		0,308447
Adjusted R-squared	0,099332	S.D.dependent var		0,213113
S.E. of regression	0,202251	Sum squared resid		2,699772
F-statistic	2,566607	Durbin-Watson stat		0,399371
Prob(F-statistic)	0,034998			

Source: author's calculation

As you can see in the table, these variables (with the only exception of loans secured

by bank guarantee) do not significantly affect the share of classified loans.

As a next step of the analysis of causes of classified loans, the independent variables with low explaining power have been removed (UNTL, RETL, GUTL and SO). So for the second analysis only the variable BGTL remains from original independent variables. If we perceive classified loans once again as an ex-post measure of credit risk it is possible to ask a question: Is the share of classified loans influenced by the sector structure of credit portfolio? Consequently, for the second analysis three new independent variables have been added – see Table 5.

Table 5 – Independent variables – the second analysis

Independent variable	Description
Loans secured by bank guarantee as a percentage of total loans	BGTL
Loans provided to financial firms as a percentage of total loans	FITL
Loans provided to nonfinancial firms as a percentage of total loans	NFTL
Loans provided to citizens as a percentage of total loans	CITL

The results obtained from the regression model provided by EView 4.1 are recorded in Table 6.

Table 6 – Results of the second analysis

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0,272152	0,096820	2,810921	0,0062
BGTL	-0,438418	0,172352	-2,543731	0,0129
FITL	0,041646	0,288863	0,144173	0,8857
NFTL	0,070490	0,110291	0,639128	0,5246
CITL	-0,005953	0,181986	-0,032712	0,9740
R-squared	0,077204	Mean dependent var		0,279858
Adjusted R-squared	0,030480	S.D.dependent var		0,210044
S.E. of regression	0,206818	Sum squared resid		3,379131
F-statistic	1,652336	Durbin-Watson stat		0,265048
Prob(F-statistic)	0,169469			

Source: author's calculation

We have asked this question: Is the share of classified loans influenced by the sector structure of credit portfolio? The answer is: Definitely no. As you can see in the table, used

independent variables (again with the only exception of loans secured by bank guarantee) do not affect the share of classified loans. Moreover, these results have much lesser explanatory power than in case of the first analysis – the value of adjusted R-squared is only 0,03. Almost all changes of the share of classified loans are caused by other factors. It is evident that for acquirement of higher explanatory power of the model it is necessary to involve completely other factors.

6. Conclusion

The share of classified loans can be used as an approximate, ex post measure of the oldest and the most important risk in banking - credit risk. Classified loans are often also one of the factors that cause banking crisis. Moreover, the level of classified loans is generally used as an indicator of banking crisis. The aim of this paper was to find if the share of classified loans in the Czech Republic is influenced by sector structure of credit portfolio.

From the results of linear regression model provided by EView 4.1 appeared that the sector structure of credit portfolio has no influence on the share of classified loans. Almost all changes of the share of classified loans are caused by other factors. It is evident that for acquirement of higher explanatory power of the model it is necessary to involve completely other factors. However, it is possible that findings of all analyses will show that classified loans are caused by unquantifiable factors, such as lack of qualification and skills of bank management, moral hazard of bank staff, frauds, corruption and other.

Abstract

V první části příspěvku je vymezen pojem klasifikované úvěry a zdůrazněn význam klasifikovaných úvěrů, jsou uvedeny kritéria pro klasifikaci pohledávek z úvěrů a tvorbu opravných položek, vývoj podílu klasifikovaných úvěrů na celkových úvěrech a struktura klasifikovaných úvěrů v České republice v letech 1994 - 2004. V další části jsou předkládány možné příčiny klasifikovaných úvěrů z několika různých pohledů. Uveden je i názor, že klasifikované úvěry byly v České republice způsobeny nekvantifikovatelnými faktory, jako je korupce, morální hazard, politický tlak na banky apod. Poté následuje samotná analýza, která byla prováděna metodou panelové regresní analýzy (cross-section regression). Z výsledků

analýzy vyplynula jednoznačná odpověď na otázku, která je kladena v názvu příspěvku: sektorová struktura portfolia úvěrů nemá v České republice žádný vliv na výši klasifikovaných úvěrů. Klasifikované úvěry jsou patrně způsobeny působením jiných faktorů.

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EVALUATION OF THE ROLE OF TURKISH BANKING SECTOR IN THE FINANCIAL LIBERALIZATION IN TURKEY IN THE LIGHT OF EU HARMONIZATION POLICY

Nihâl Yıldırım-MIZRAK

Key words

Turkish banking sector, financial crises in Turkey, regulation, deregulatory measures, self-regulating capacity, financial liberalization,

1. Introduction

As we know, the financial system comprises banks and other financial institutions, and performs in an economy the essential function of channelling funds to those individuals or enterprises that have productive investment opportunities. To realize this well, participants in financial markets must be aware of this important function. Among the others, banking sector is highly important and have critical role of the health of the economy. Because, as underlined above, banks and other financial institutions are what make financial markets work. Without them, financial markets wouldn't be able to move funds from people who save to people who have productive investment opportunities. Indeed, banks (depository institutions) are the main financial intermediaries that accept deposits from individuals and institutions and make loans. They also are involved in the creation of deposits, an important component of the money supply.

We also know that banks and other financial institutions are heavily regulated by the government in the most of all countries. That's why, the financial liberalization as a complement of the economic liberalization program has been important and very debated issues on the one hand in emerging market countries and in the current economic analysis on the other.

The advocates of financial liberalization start their argument from the intrinsic efficiencies, fairness and self-regulating capacity of markets. These three aspects of free markets are assumed to generate economic outcomes to those, which might be generated by even the best intentioned state-led controls and interventions. It is therefore argued in the neo-

liberal economic programs that the liberalization and opening-up of capital controls will inevitably result in an optimal allocation of capital and resources on the global scale. The benefits and the risks of financial liberalization has been discussed in the 1990s in all countries followed the deregulating program for the liberalization of the markets.

According to Polouček (2003) regulation is “the rules set by legislators as well as by other legally authorised bodies. The authorised body would be the government ministry, the central bank and the securities commission but after World War II, in many countries, an essential part of regulation was in the hands of self-regulating institutions, for example, banking associations or corporation dealers”.

Actually state regulation in Turkey is a part of the formal institutional structure. In fact, currently the relationship between institutions (financial interventions of the government regulatory agencies such as Treasury, the Central Bank of Republic of Turkey, the Capital Market Board and the Banking Regulation and Supervision Agency), and organizations (the firms listed on the İstanbul Stock Exchange, the Treasury, CBRT, ISE, CMB, BRSA) will reflect the evolution of the Turkish economy’s structure, especially the financial sector.

Reform of the Turkish financial sector is continuing nowadays, and that many difficult issues—such as the reform and consolidation of state banks—are being tackled. The Turkish authorities are keen to ensure that Turkey's banking sector is brought into line with European Union standards. Indeed, reform of the financial sector is a vital ingredient for a healthy, well-functioning economy. It is also a vital ingredient in making Turkey attractive to foreign investors.

Our paper focuses first of all on the role of the banking sector in the financial liberalization and it also examines the political economy of Turkey in the 1980s and 1990s to illustrate the importance of the underlying institutional infrastructure involved in the harmonization program with EU.

Our analysis also examines the effects of the financial crises (such as the 1994 crisis and the 2001-2002 crisis) on the banking sector which have led to the failure of the deregulation programs Turkey tried to undertake in the 1990s and 2000s.

2. Turkish banking sector, regulatory developments and liberalization efforts

Turkish banks play a significant role in the Turkish financial markets. According to the data of 2003, the Turkish banking sector comprises totally 50 banks (see **Table 1**): 36 commercial banks (3 state-owned; 18 national commercial banks; 2 banks supervised by SDIF, and 13 foreign banks), 14 non-deposit-taking banks (3 state-owned banks; 8 private banks and 3 foreign banks).

Table 1 – Banks operating in Turkey: 2001, 2002 and 2003.

	2001	2002	2003
COMMERCIAL BANKS	46	40	36
A.State-owned banks	3	3	3
B.Private banks	22	20	18
C.Banks in the SDIF	6	2	2
D.Foreign banks	15	15	13
NON-DEPOSIT-TAKING BANKS	15	14	14
A.State-owned banks	3	3	3
B.Private banks	9	8	8
D.Foreign banks	3	3	3
TOTAL	61	54	50

Source: The Banks Association of Turkey, www.tbb.gov.tr.

As for regulatory developments, Turkey's banking sector has changed dramatically in the past decades. The 80s have also seen profound changes in Turkish banking law. We can analyse the developments in the Turkish banking system in three distinct periods: early liberalization efforts in the 1980s and developments especially after 1987 leading to the 1994 crisis, the 1994 crisis and afterwards, and the 2000 disinflation program. The last subsection also includes an account of the November 2000 crisis in financial markets.

In 1980, the sector was consisting basically of two groups: public sector banks channelling credits to certain social groups (e.g. farmers and artisans), and a cluster of private sector banks, mostly owned by industrial groups which used to finance their own needs. There were only 2 (two) foreign banks in the country and the role of the banking system was extremely limited.

One of the major targets of the Structural Adjustment Program, which was implemented in 24th January 1980, was the liberalization of the repressed financial system.

The governments began to liberalize the foreign exchange regime, certain restrictions on capital movements were removed, and the convertibility of the Turkish Lira was realized. Meanwhile, restrictions on interest rates were removed, a short-term money market was established, the Central Bank was allowed to engage in open market operations and most of the regulations concerning the financial markets were eliminated in the context of liberalization and globalization. These deregulation efforts speeded up the linking of the domestic financial market to the rest of the world, and provided more competitive working conditions to the commercial banks (Ertuğrul; Selçuk, 2002: 25). It's important to underline the fact that liberalization and integration occurred more rapidly than expected, partly due to advanced in the telecommunications sector.

The so-called 24th January Program also produced really substantial changes in the banking sector. The banking environment had been modernised: interbank TL and foreign exchange markets had been set up; secondary markets for government securities had been developed; and all Turkish banks had to have their accounts externally audited.

After liberalization and integration to the EU efforts, which was created important structural changes in the banking system especially after 1987, the number of foreign banks also increased as we can see in the **Table-2**. By 1990 the number of banks had grown from 49 to 63. There were 16 foreign banks with branches in Turkey, and another eight joint ventures with a minority foreign stake. In fact, the sector was comprising (excluding the central bank) 32 national banks, 9 development and investment banks and 21 banks which are either partly owned by, or are branches of foreign banks in the end-1989.

Table 2 – Banks operating in Turkey, end-1989.

The central bank (CBRT)	1
National commercial banks	32
A. State-owned banks	8
B. Private banks	24
Other commercial banks	21
A. Banks established in Turkey	5
B. Banks having branch offices in Turkey	16
Development and investment banks	9
A. State-owned banks	3
B. Private banks	6
a. National banks	2
b. Foreign banks	4
Total	63

Source: Annual report of the Banks Association of Turkey, 1990.

The market share of the state banks (in terms of their in total assets) gradually decreased from 44 to 35 % and the share of private banks increased from 41 % to 50 % in total deposits. As we can see in the **Table 3**, the share of the state banks in total assets of the banking system in 1988 was 43.4 %.

Table 3 – Share of the state banks in total assets, 1988.

	Number	% of total assets
1) Commercial banks		
a) Public sector	8	43.4
b) Private sector	29	44.8
2) Foreign banks' branches	15	1.6
2) Development and Investment Banks		
a) Public sector	3	
b) Private sector	4	
TOTAL	59	100.0

Source: Turkey-Economy, TOBB Publications, August 1989: 22-25

Structural changes also in the balance sheets of banks realized during this period. Beginning in 1980 total assets of the banks increased from 18.5 billion (31 % of the GNP) to 134 billion dollars (68 % of the GNP) by the end of 1999. The relative share of non-deposits funds in total liabilities of private banks permanently increased. And then, they tried to substitute non-deposit funds for deposits. After 1987, the share of foreign currency denominated assets and liabilities of the banking sector began to increase. The share of

foreign currency denominated assets in total assets rose from 26 % in 1988 to 38 % in 1999. Similarly, The share of foreign currency denominated liabilities in total liabilities rose from 25 % in 1988 to 48 % in 1999. Short-term borrowing-based deficit financing policies of the governments increased the interest rates and encouraged short-term capital flows into the economy. The policy facilitated managing the public deficit and helped the central bank to build up its foreign currency reserves. These deficit financing and reserve accumulation policies led commercial banks to open short positions in foreign currencies. The short positions in the banking system increased from 1.8 billion in 1990 to 5 billion dollars in 1993. Although there was a decrease in 1994 as a result of a financial crisis in that year, the short positions of the banking system kept increasing and reached 13.2 billion dollars at the end of 1999 (Ertuğrul; Selçuk, 2002: 26-27). The commercial banks shifted also from direct loan extensions to purchasing government securities. The share of security investment of the banks in total assets increased from 10 % to 17.2 % in 1999.

Table 4 – Share of the commercial banks in total assets, 1999.

	% of total assets
Commercial banks	
c) Public sector	35.0
d) Private sector	50.0
Foreign currency denominated assets	38.0

Source: Annual Report, The Banks Association of Turkey.

The financial liberalization was completed to a great extent with the demise of restrictions on capital movements in 1989. As we mentioned above, private banks changed their global asset-liability management strategies and started to operate in short positions in foreign currency denominated assets since the existing policy provided large profit margins for them. Because of profitable short-positions, the dollarization in the banking. In private banks, the share of foreign currency denominated deposits in total deposits reached 72 % in 1999.

3. The regulatory effects of the crises on the banking sector

As we know, since the 1982 Mexican debt crisis, the globalization of markets, the liberalization of capital flows, and the information technology have affected the evolution of today's financial markets. In this respect, new management strategies, and regulations for financial institutions, especially for banking sector were initiated all over the world. However,

insufficient adaptation of the Turkish banking sector to these new changes since 1982, has occurred for both state and private banks in the system (Değirmen, 2003: 52).

The liberalization procedure of the January 24, 1980 Structural Adjustment Program in Turkey has not been complete, because its structure and imposed regulations were inconsistent. As a result, the Turkish banking system has been subject to serious problems. According to Parasız (2000), the most important crises, inducing bank insolvencies in the Turkish financial market, occurred following the Mexican debt crisis in 1982, the Gulf War in 1989, the Turkish financial depression in 1994, the Asian financial crisis in 1997, the Russian default in August 1998 resulting in Turkish insolvencies in 1999.

At the end of 1993, the policy reversal of the government – a lower interest rate, higher depreciation policy and the cancellation of the Treasury auctions compelled the banking system to an urgent rearrangement of foreign currency denominated assets and liabilities. This adjustment started the events, which led the economy to the 1994 crisis. In January 1994, the TL was devaluated around 13 %. Although the devaluation was small, it destroyed the balance of sheet of commercial banks. After three months of turmoil, the government launched a stabilization program on April 5, 1994 and devaluated in nominal terms the TL by another 65 %.

This 1994 crisis was a turning point for the state banks. An econometrical study shows that the state banks were more efficient than the private banks in terms of credit extension and deposit collection during 1981-1993. But the after the 1994 crisis, private banks became more efficient than the state banks in terms of credit extension and deposit collection. The inefficiency of the state banks stems from the implicit resource allocation decisions of the government. The state banks lost almost 90 % of their net worth during the 1994 crisis. The ratio of net income to total assets declined from 3.1 % in 1993 to –0.1 % in 1994 and remained below the same ratio for the private banks in the following years. We can see in sum the efficiency situation of th state and private banks in the **Table 5** which shows Net Income-Average Total Assets Ratio and Net Interest Income-Average Total Assets Ratio.

Table 5 – Net Income-Average Total Assets Ratio (1) and Net Interest Income-Average Total Assets Ratio (2), in %.

	1993	1994	1995	1996	1997	1998	1999
(1)							
Privately owned	.39	3.8	5.7	5.8	4.8	5.6	5.6
The state banks	3.1	-0.1	0.2	0.9	0.8	0.8	0.5
(2)							
Privately owned	11.2	12.4	11.5	12.5	13.2	14.9	12.3
The state banks	8.7	7.9	2.9	6.2	4.2	4.9	3.7

Source: Ertuğrul; Selçuk, 2002: 31.

The measures taken after the 1994 crisis couldn't relieve the vulnerability of the banking system. The commercial banks and the government returned to the allure hot money policy just after the so-called crisis. Short-term borrowing from abroad and lending at home as a result of hefty profit margins on the Treasury bills and government bonds in dollar terms. The excessive risk-taking behavior of private banks increased the vulnerability of the sector to even small shocks. According to Ertuğrul and Selçuk (2002), protracted fiscal imbalances, inadequate regulation and supervision of banking system, poor risk management, and implicit and explicit government guarantees prevented the provision of the preconditions of a sound financial system.

Turkish government had to start to implement a disinflation program under the guidance of an IMF Staff Monitored Program in July 1998. The program achieved some improvements concerning the inflation rate and fiscal imbalances but it could not relieve the pressures on the interest rates. The 1998 Russian crisis, the April 1999 general elections and two serious earthquakes in August and October 1999 led to a deteriorating fiscal balance of the public sector. Another IMF-backed disinflation program was accepted. The program brought some structural changes. Concerning to banking sector, a new banking law was enacted in June 1999 and later modified in December 1999. An independent Banking Regulation and Supervision Agency (BRSA) was established with this law. The new banking law stipulates many rules and principles, which are compatible with the regulation and supervision standards of the Basel committee. In this context, responsibilities and qualifications of the main shareholders were re-arranged, new provisions of credit extension

and the raising of funds were accepted, the minimum capital requirement and capital adequacy were redefined in accordance with the BIS regulations and actions which will be taken by the BRSA for bank failures were determined. Just before launching the stabilization program, five private insolvent banks were taken under the control of the Savings Deposits Insurance Fund (SDIF-a control unit in the CBRT). In December 1999, it was prepared a special program under the title of “Strengthening the banking system and banking regulation” in order to provide the appropriate prudential requirements in line with EU and international standards. The government committed to carry out necessary amendments for providing full autonomy to the BRSA and strengthening the prudential standards for lending and, declared the new regulations about capital adequacy, loan-loss provisions and foreign exchange exposure limits. The government undertook also some measures to remove the distortions created by the state owned banks, which were commercialized immediately after.

Despite the fact that all of these programs achieved many remarkable results in a short time, we saw unfortunately the Turkish liquidity crisis in November 2000, and the later currency crisis in February 2001 which threatened the viability of the Turkish banking system as a whole. Turkish government announced on 21st February 2001, the forced abandonment of the pegged exchange rate regime, which was in effect since the launching of the IMF-backed three-year stabilization program at the end of 1999. The SDIF had to take over the control of insolvent banks just after these banking crises. These incidents had also changed the agenda concerning the revision of financial interventions which are initiated by the government.

After meeting with officials from the IMF, the World Bank and the US Treasury, a new letter of intent was prepared which emphasized a major overhaul in the banking system and a promise of further acceleration of structural reforms designed in earlier letters of intent. The rapid restructuring of the banking system is the central issue in the revised program. The IMF approved on May 2001 this revision of the Turkey’s three-year Stand-By arrangement by 8 billion dollars US which put the overall IMF support to a total of 19 billion dollars since the beginning of the program in year 2000 (www.imf.org).

The result is that risky position of the banking sector declined and the financial structure of the banking system was strengthened as we see the data concerning 2003 in the Table 6 and Table 7.

In fact, the Turkish banking sector that has tried to reach the EU standards with these measures which improved substantially the financial system is likely to catch up with EU in terms of size and competition.

Table 6- Descriptive statistics of the Turkish banking sector and of some members of the EU, 2001, in %.

	Total Assets/GDP	Credits/GDP	Stocks-Bonds/GDP	Bank capital/GDP	Deposits/GDP	Deposits/Total Assets
Germany	288	137	69	12	124	43
France	157	99	55	13	80	51
Spain	216	116	45	19	123	57
Italy	188	89	15	13	52	27
Netherlands	479	281	111	18	222	46
Belgium	360	124	114	13	147	41
Turkey	93	23	41	5	65	70
Turkey (Sept.2003)	67	18	29	10	44	65

Source: OECD, Bank Profitability-2002 and IMF International Financial Statistics-2003.

Table 7- Number of banks, of their branches and employment in some EU countries and in Turkey, 2001

	Number of banks	Number of branches	Employment
Germany	2 370	37 259	717 000
France	1 067	25 874	411 000
Spain	281	38 676	246 000
Belgium	112	12 173	76 000
Finland	342	1 282	24 700
Turkey	61	6 908	137 495
Turkey (Sept.2003)	51	5 968	122 964

Source: OECD, Bank Profitability-2002 and IMF International Financial Statistics-2003.

4. Conclusion

In sum, the government's regulatory and financial interventions in the financial system and the banking sector mentioned above were due to some macroeconomic problems that the economy has faced on one hand and, the problems of the banks on the other hand. First of all, great fluctuations of the price mechanisms such as inflation, interest and exchange rates; secondly, the high ratio of public debt to the GDP; a low domestic savings rate and,

dependency on foreign financing . The banking sector's problems were the banks' needs for liquidity, banks' capital inadequacies, the disorganization in the structure of the system.

But all the measures mentioned in our analysis led to banking sector reorganizing their structures and adopting to the financial sector liberalization. These developments and structural adjustments brought about by the measures underlined above have also led banks to adopt the required institutional and functional features and, to a great extent, Turkish banks are now operating at an international level. The banks which have largely completed their technological infrastructure and automation, begun offering high technology products and services such as electronic fund transfers via internet. Thus, it can be argued that the banking sector can contribute now to high and stable economic growth if we taking into account the progress made by them.

Abstract

Finanční systém zahrnuje banky a další finanční instituce. V ekonomice mají významnou úlohu při transformaci zdrojů. Jako depozitní instituce, banky jsou rozhodujícím finančním zprostředkovatelem. Jsou také ve většině zemí institucemi velice striktně regulovanými. Proto je finanční liberalizace v rámci ekonomické liberalizace velice významným a v tranzitivních ekonomikách diskutovaným tématem. V Turecku je regulace státem součástí formální institucionální struktury. V současné době odrážejí vztahy mezi institucemi a státem (intervence státních institucí regulace jako Ministerstva financí, Turecké centrální banky, Výboru pro kapitálový trh a Výboru bankovní regulace a dohledu) změny ve struktuře turecké ekonomiky a především změny ve finančním sektoru. Restrukturalizace tureckého bankovního sektoru se přitom potýká s řadou problémů, jako je např. reforma a konsolidace státem vlastněných bank nebo důsledky finanční krize z roku 1994. Reforma tureckého bankovního sektoru přitom probíhá v souladu se standardy EU a finanční sektor se stává zdravou, dobře fungující částí fungující ekonomiky. To také činí Turecko atraktivní pro zahraniční investory.

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FIRMS AND CAPITAL MARKETS

CAPITAL INVESTMENT

Petr Červinek¹

Key words

Investment, capital investment, capital expenditures, capital structure of firm

1. Introduction

The aim of this article is to explain and to define capital investment. Considering non-existence of an exact definition seems it to be a reasonable challenge. It is important to proceed in accordance with methodology of concept definition. Our concept is defined on the basis of Aristoteles definition – „genus and class“. It means by application to set the next concept (genus) – it is in our case the concept investment – and on this basis is it essential to define class characteristic.

2. Investments

The inseparable elements of economic system are enterprises. There are realised many decisions in these enterprises. Some of them are more important, some of them are less important. Investment decisions count among more important decisions accepted by the firm management. It concerns decisions that determinate capital expenditures of the firm and the way of their financing. Investment decision-making that in positive or negative way determinates future behaviour of the firm has much to do with very uncertain future, is implemented on the basis of incomplete information and it is possible to control only some of the significant variables during the decision-making. We usually say that the firm decides on investments. The firm locks its present resources to profit from future incomes.

Investments are interpreted in different ways. According to the different points of view of investments we can encounter variant definition of investments. Among basic view belong

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macroeconomic point of view and finance theory point of view. Let us introduce some of them:

„Investment (1) Economic activity in which subject resigns to present consumption with expectation of product increase in future. The basic forms of investment are the investments into tangible assets (buildings, equipment and inventory) and intangible investments (education in other words „human capital“, research and development, health). Net investments are equal to value of total investments after subtraction of compensation for falling in value of capital. Gross investments are investments without subtraction of compensation for falling in value of capital. (2) In financial consequences investments have a completely different meaning: purchase of securities like stocks or bonds.“²

„Investments are characterised from macroeconomic point of view as usage of savings for production of capital goods, potentially for development of technologies and for acquisition of human capital. They mean giving up present (secure) value in purpose to get future (usually less secure) value. Quantitatively they represent difference between gross domestic product and summation of consumption, government expenditures and net export.“³

In macro economic point of view investments on the one hand come out of the achieved quality of GDP, consumption and other expenditures and on the other hand they have crucial influence on future development of these variables. Concept of investments from the finance theory point of view (financing and accounting of the economic subjects) is distinct from the macroeconomic point of view. Generally we consider the firm (enterprise) investments as more extensive money expenses with which is expected their future transformation into money incomes in long time run. As the inferior limit one year is used in praxis. Money expenses used this way are called capital expenses. They are different from operating expenses that are assumed to be transformed into future money incomes in a year. „Rising of the capital expenses is commonly accompanied with the optimism and decrease is mainly interpreted as a sign of recession.“⁴ It goes for macroeconomic level. It is necessary to

² Samuelson, P. A. - Nordhaus, W. D.: *Ekonomie*. 2.vyd. Praha: Nakladatelství Svoboda. 1995. 970 s. ISBN 80-205-0494-X

³ Valach, J.: *Investiční rozhodování a dlouhodobé financování*. 1.vyd. Praha: EKOPRESS, 2001. 15 s. ISBN 80-86119-38-6

⁴ Levy, H. – Sarnat, M.: *Kapitálové investice a finanční rozhodování*. 1.vyd. Praha: Grada Publishing, 1999. 53 s. ISBN 80-7169-504-1

make a note that the structure of the rising of the capital expenses can be an important indicator. Rising of the capital expense in non-productive sphere (commerce and services) and decrease of capital expenses in productive sphere give evidence of the fact that more goods consumed by the consumers of the given country will be produced abroad. It could cause difficulties in economy of the given country as result

In industrially advanced countries are the following usually considered as capital expenses⁵:

- expenses for reconstruction or expanding of tangible fixed assets,
- expenses for programs of research and development,
- expenses for permanent growth of inventory and debts,
- expenses for purchase of the long-term securities,
- expenses for workers education and training,
- expenses for publicity drive,
- expenses connected with evaluation of leasing and acquisition.

We can divide the capital investments in this concept of firm investments to material investments (expenses for reconstruction or expanding of tangible fixed assets), immaterial investments (expenses for programs of research and development) and financial investments (expenses for purchase of the long-term securities).

3. Capital investments

In present literature is not stated the exact definition of the capital investments concept. Most of the authors use this concept without previous specification. Authors who specify at least partially this concept do not define capital investments exact (we mean setting of the contents of the concept), but it is possible to indirectly deduce from the text that anticipates first mention of the capital investments what this concept means for the authors.

⁵ Moyer, R. CH. – McGuigan, J. R. – Kretlow, W. J.: *Contemporary Financial Management*. New York: West Publishing Company, 1992

As mentioned above, capital expenses are money expenses with which is expected future income not before passing one year. It is called medium- and long run expenses. We will consider medium- and long run investments as the capital investments and in most of the cases we will use only the long run investment concept. As further mentioned above, we can divide capital expenses in concept of firm investments to material investments, immaterial investments and financial investments. We will concern mainly on financial and material investments. Centre of our focus are money expenses entered into long-term credit securities (bonds, long-term bills) and into commercial securities (stocks, interests).

Under the concept of capital investments we will understand **money expenses that firm enters into estates, buildings, structures, machineries, devices, works of art, collections and into long-term credit and commercial securities, and under long-term security we mean security with maturity longer than one year.**

Firm can finance capital investments through suitable instruments and products of financial market. In the Czech Republic it concerns mainly financing through bank loans.

4. Conclusion

Article takes its place in the series of the articles referring to PhD thesis of the author and it will assist in further processing of the thesis.

Article summarizes different points of view of the concept investments and it is engaged in differences between the macroeconomic point of view and the point of view of the finance theory. Next the article is trying to define the “capital investment” concept.

Abstract

V odborné literatuře se setkáváme s pojmem kapitálové investice. Tento pojem ovšem není přesně definován. Příspěvek se pokouší napravit tuto situaci a definovat pojem kapitálové investice. Za kapitálovou investici považujeme peněžní výdaje, jež firma umísťuje do pozemků, budov, staveb, strojů, zařízení, uměleckých děl, sbírek a do dlouhodobých úvěrů a cenných papírů, přičemž pod pojmem dlouhodobý chápeme období delší než jeden rok.

Příspěvek dále sumarizuje a srovnává jednotlivé pohledy a přístupy a upozorňuje na rozdíly pramenící z makroekonomického pohledu a z pohledu finanční teorie. Dále naznačuje vliv kapitálových investic na firmu a konstatuje, že firmy mohou v České republice financovat kapitálové investice prostřednictvím různých vhodných nástrojů a produktů finančního trhu, ačkoliv nejvíce jsou využívány bankovní úvěry.

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VERIFICATION OF SUITABILITY APPLICATION COMBINATION POSITION STRATEGIES UNDER RISK ON BASE OF ESTIMATED STOCHASTIC PROCESS¹

Andrea Kolková²

Key words

Option, option strategy, payoff, profit, expected return, standard deviation, Value at Risk, mean variance model, Monte – Carlo simulation, Wiener process, geometric Brownian motion, Geometric mean reversion process, risk lower, risk aversion

1. Introduction

Option strategy is an investment position, where one or the more assets are option. Combination position strategies are one of the most popular option strategies today.

The purpose of this paper is to confirm if combination position strategies are preferable for employment or not. Underlying asset of these strategies is stock indices Standard & Poor`s 500, which is simulated. In this paper Monte Carlo simulation is applied on base of estimated stochastic process. Confirming applicability is realized through mean variance model.

2. Combinations positions strategies

Combination position strategies are option trading strategies that involve taking a position in both calls and puts on the same underlying asset. Typically, combinations are used either when it is expected price stability or volatility, but with neutral expectations of the price movements direction.

These strategies include straddles, strangles, strips and straps. Straddle is profitable when prices are volatile, so buying straddle is sometimes called buying volatility.

¹ The paper is published as product part investigation within the frame of doctoral thesis.

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Alternative to buying a straddle is strangle, where one buy a lower strike price put with and higher strike price call option.

By changing the ratio of puts and calls in these combination strategies, it can be reached from a price increase or from a price fall. A strip is a variation on a straddle, where one buy's more put than call options. This strategy is profitable if price decline is more probable, whereas in the case of strap, opposite is true.

3. Stochastic process

Any variable whose value changes over the time in an uncertain way is said to follow a stochastic process. Stochastic processes can be classified by discrete time or continuous time. Discrete time stochastic process is one where the value of the variable can change only at certain fixed time moments, whereas a continuous time stochastic process is one where changes can take place at any time.

3.1 Random Walk

Random walk define the price by the following equation,

$$\Delta x = \sigma \cdot \tilde{\varepsilon}, \text{ where} \tag{3.1}$$

$\tilde{\varepsilon}$ random variable,

σ standard deviation.

3.1.1 Wiener process

Wiener process is a type of Markov stochastic process with a mean zero and a standard deviation of 1,00 per year. It is characterized by the equation,

$$dz = \tilde{z} \cdot \sqrt{dt}, \text{ where} \tag{3.2}$$

\tilde{z} random variable from standardized normal distribution,

dt size of one move the length of the time interval.

3.1.2 Geometric Brownian Motion

Price (dS) following Geometric Brownian Motion can be characterized by the following stochastic differential equation,

$$dS = \alpha \cdot S \cdot dt + \sigma \cdot S \cdot dz, \text{ where} \quad (3.3)$$

α drift rate,

σ standard deviation,

dz Wiener process with mean zero and an unit variable.

Geometric Brownian motion is stochastic process which is applied usually assumed for a stock price. Under this process, the returns are normally distributed. The value of the underlying asset has a lognormal distribution (see Hull, 1997).

3.2 Mean reversion

This process is often used for interest rate modeling. The paper detail only geometric mean reversion process and geometric Ornstein – Uhlenbeck model.

3.2.1 Geometric mean reversion process

Geometric mean reversion can be described by the following stochastic differential equation (Metcalf, Hasset, 1995),

$$dS = \left[\alpha + \lambda (\bar{S} e^{\alpha t} - S) \right] S dt + \sigma S dz, \text{ where} \quad (3.4)$$

λ speed of mean reversion,

\bar{S} initial price.

Parameter λ represents the speed of mean reversion. It can take on any value between 0 and 1, if λ equals 0, then the process of valuing underlying asset is the random walk. If λ is larger than 0, the process shows strong mean reversion properties.

3.2.2 Geometric Ornstein – Uhlenbeck model

If the asset price follows the geometric Ornstein-Uhlembeck process, it can be described by the following equation (Metcalf, Hasset, 1995),

$$dS = \lambda (\bar{S} - S) S dt + \sigma S dz. \quad (3.5)$$

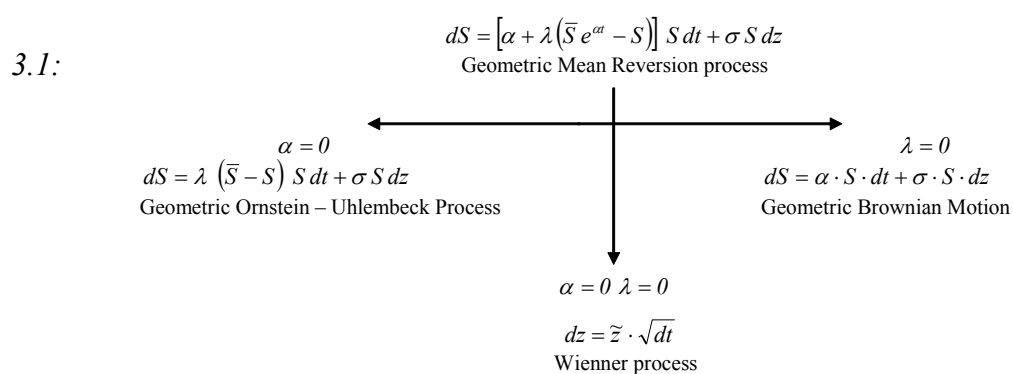
It is geometric mean reversion process, when the trend coefficient equals zero.

3.3 Comparison random walk and mean reversion

Stochastic process Standard & Poor's 500 is supposed to be a Random walk or Mean Reversion. For Estimating stochastic process can be first issued, Standard & Poor's 500 follow the geometric mean reversion process (from 3.4).

Parameter speed of mean reversion and trend coefficient were estimated from the Ordinary Least Squares method. For this estimating it is necessary the verification of linear regress model. If the parameter speed of mean reversion is not relevant (is equals zero), then Standard & Poor's 500 follows geometric Brownian Motion (from 3.3). If the trend coefficient is not relevant, the Standard & Poor's 500 follow Geometric Ornstein – Uhlembeck process (from 3.5). In the course of statistical insignificant both coefficient the underlying asset price follow the Wiener process.

Comparison random walk and mean reversion is shown in Figure 3.1.



Comparison random walk and mean reversion. (This is adapted from Metcalf, Hasset, 1995 and Guimaraes Dias, 2004.)

4. Stochastic process estimation

In this paper underlying asset is stock index. Many different index options currently trade throughout the world. The most popular contracts in the United States are those on the Standard and Poor's 500 Index (SPX), the Standard and Poor's 100 Index (OEX), the Nasdaq 100 Index (NDX), and the Dow Jones Industrial Index (DJX). All of these are traded on the Chicago Board Options Exchange. Some index options are European and some American. For example, the contract Standard and Poor's 500 Index (SPX) is European, whereas that on the Standard and Poor's 100 Index (OEX) is American.

Parameters of Geometric Mean Reversion are estimated from the Ordinary Least Squares method. This method is based on the analysis of historical prices of stock index and continuous returns of these prices. Continuous return is defined as follows,

$$d \ln S = \ln \left(\frac{S_t}{S_{t-1}} \right). \quad (4.1)$$

Regression function return and historical prices is evaluated help Data analysis in Excel. These dependencies can be inscribed with this formula,

$$dS_t = -0,003458716 + 2,67481 \cdot 10^{-6} \cdot S_{t-1}. \quad (4.2)$$

Next, it is necessary to confirm the statistical importance of the coefficients in the model. It can be used Excel repeatedly.

Table 4.1: Statistical verification of relevant coefficient model.

	Coefficients	df	Critical t	Calculated t	α	P value	Formula 1	Formula 2
	-			-			H0	H0
X0	0,003458716	1060	2,244587449	2,740871637	0,05	0,00623066	negative	negative
X1	2,67481E-06	1060	2,244587449	1,596570519	0,05	0,11065953	H0	H0
							accept	accept

4.1 Verification parameter of geometric mean reversion process

Geometric mean reversion process is described in formula (3.4),

$$dS = \left[\alpha + \lambda (\bar{S} e^{\alpha t} - S) \right] S dt + \sigma S dz.$$

It is prepared the substitute,

$$a = \alpha dt + \lambda \bar{S} e^{\alpha t}, \quad (4.3)$$

$$b = \lambda dt, \quad (4.4)$$

next, can be simplified the geometric mean reversion process,

$$dS_t = a - b S_{t-1}. \quad (4.5)$$

Equation (4.5) can be derived by Ordinary Least Squares Method. See (4.2).

After substitution in an equation, the parameter (4.3) and (4.4) are estimated following value,

$$\lambda = 0,00300294,$$

$$\bar{P} = -1,10369075.$$

Stock index Standard & Poor's 500 can be described (3.4) with equation,

$$dS_t = -0,001752952 + 0,00300294(-1,10368893 - S_{t-1})dt + 0,021899681 dz. \quad (4.6)$$

Parameter b from (4.4) is on base statistical verification irrelevant (see tab. 4.1). It can be verified, that speed parameter of mean reversion λ is equal zero. For simulation stochastic process equation (4.6) can not be used. On base graf 2 can be stochastic process described with geometric Brownian motion (3.3). For stochastic process simulation is Monte-Carlo method used.

5. Verification suitability application combinations positions strategies

On base of simulated stochastic development of stock index and selected strike prices and option premiums, it is calculated profit of strategies straddle, strangle, strip and strap. Next, the standard deviation, Value at Risk and mean value (tab. 5) are computed.

tab. 5: Characteristic of combinations positions strategies

	Long straddle	Long strangle	Short straddle	Short strangle	1_2short strip	1_2 short strap	1_2 long strip	1_2 long strap
Max. loss	-969,57	-320	-823,01	-1408,01	856,98	-2206,03	-2379,05	-2199,57
Mean value	-337,09	261,58	337,09	-261,58	1981,13	125,05	-1711,135	295,66
Standard deviation	482,53	467,27	482,53	467,27	456,83	979,72	456,83	1970,68
Variance	232602,56	218123,88	232602,56	218123,88	208485,54	958896,43	208485,54	3879724,3
Value at Risk	951,90	313,17	564,80	1149,80	-1115,19	1691,57	2347,54	2165,45

Mean value is understand as characteristic of return and standard deviation and Value at Risk as risk parameter. Verification suitability is realized through mean variance model

(tab. 5). According to the risk preferences, investors are classified into three groups. For simplification, we suppose risk lover with profit function $U(X) = e^{0,0011 \cdot x}$, investors with avers to risk $U(X) = -e^{-0,0011 \cdot x}$, neutral risk investors $U(X) = x$.

It is apparent from the results, that on the base of mean value function maximization risk lover investors choose 1:2 long strap, investors with avers to risk 1:2 short strip and risk neutral 1:2 short strip.

6. Conclusion

The purpose of this paper was to confirm combination position strategies are suitable for employment or not. First, stochastic process of stock index Standard & Poor's 500 was estimated. This stock index follows the geometric Brownian motion. On the base of this process was simulated 1000 value this stock index. Then combinations positions strategies were applied. After the profit calculation, the standard deviation, Value at Risk and mean value was specified. Maximization mean value of function criterion of profit says that risk lover investors choose 1:2 long strap, investors with avers to risk 1:2 short strip and risk neutral 1:2 short strip.

Abstract

Cílem příspěvku je ověření, zda kombinační poziční strategie jsou vhodné k aplikaci při simulovaném vývoji podkladového aktiva. Podkladovým aktivem opčních strategií je akciový index Standard & Poor's 500. Hodnoty tohoto indexu jsou simulovány na základě metody Monte-Carlo, která je aplikována na odhadnutý stochastický proces. Odhad stochastického procesu je proveden pomocí metody nejmenších čtverců. Burzovní index se dle tohoto odhadu vyvíjí na základě geometrického Brownova procesu. Po provedení odhadu je simulováno 1000 hodnot burzovního indexu a na tyto hodnoty jsou aplikovány opční strategie složené z opcí SPX Option. Z těchto strategií je vyčíslen zisk a následně i charakteristiky výnosu (střední hodnota) a rizika (rozptyl a Value at Risk). Na základě kritéria maximalizace střední hodnoty funkce užítku je pak určeno, které opční strategie jsou pro dané hodnoty burzovního indexu vhodné a které ne.

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CONSEQUENCES OF PUBLIC COMPANY CAPITAL DEFINITION IN STATUTORY PROVISIONS

Karel Kořený

Key words:

share capital, equity, share premium, primary share issue, share capital increase, share face value, security price.

1. Introduction

On incorporation of a company in the Czech Republic, shares are customarily issued at their face value, or, as the case may be, with a negligible share premium. The present statutory provisions are one of the causes of such present practice.

The objective of this article is to evaluate the present statutory provisions of joint stock company capital definitions, highlight their consequences when acquiring further capital funds by a new shares issue, and propose a change of the established term “share capital” (or registered capital, in Czech “základní kapitál”).

2. Terms Definition

Par value (face value, nominal value) is set by the company issuing the stock. Par value represented the original investment behind each share of stock in goods, cash and services. It is also an assigned amount used to compute the dollar accounting value of the common shares on a company’s balance sheet.¹

Share capital (capital stock, common stock, subscribed capital) may be expressed as a sum of face values of all the issued shares. The minimal value of the share capital is stipulated under the Commercial Code² and it is entered in the Commercial Register.

¹ Dictionary of Finance and Investment Terms, p. 176, 404.

² Commercial Code, § 162

Shareholder's equity (owner's capital) is, in accounting terms, considered the company's liability and it is a long term resource of the company funding. It expresses the share of owners in the company's assets. Shareholder's equity can be reckoned as total assets (or liabilities) minus total debts and it is made up of the share capital, capital funds including share premium, funds created from profit and the attained profit (loss).

Share premium (additional paid-up capital, capital in excess of par/face value, surplus) is difference between the price at which the share is sold at the primary market (issue price³) and their face value.

3. Problem Definition

In the course of the large-scale privatisation at the beginning of the 90's, state companies were transformed to joint stock companies. The assets of state companies were valued on accounting basis and almost in such amount they were put by the National Property Fund to the joint stock company regardless the market value of such assets.

After completion of the voucher privatisation and after introducing the issues on the market, the market value of such companies' shares fell far below their face value (CZK 1,000). Most shares of the companies traded on the stock exchange have maintained their price markedly below their face value.

A similar situation may be observed with newly incorporated companies which have not been established as a result of transformation of state companies. Majority of the newly established companies issued their shares at the face value or with a limited share premium (Table No.1 shows and illustrative example). In the case that the company does not generate profit at the beginning, decline will be observed in equity value and probably also in share price (see Table No.2).

³ Commercial Code, § 163a

Table No. 1: Share issue at the face value

OWNER'S EQUITY	2,000,000
Share capital	2,000,000
Capital funds	0
Funds created from profit	0
Profit (loss)	0

Table No.2: Reported loss of the joint stock company

OWNER'S EQUITY	1,200,000
Share capital	2,000,000
Capital funds	0
Funds created from profit	0
Profit (loss)	- 800,000

Provided that the company is in need to acquire new capital by a share issue, a big problem occurs. Under the Czech legislation, new shares can be issued only at their face value or at a higher value (including share premium). Share discount is not permitted (Section 163a thereof). Consequently, companies with the share price below the face value may not reach the needful capital for their development by issue of new shares.

Hence, at the present time, **only a limited number of Czech companies** are able to **issue shares effectively** and so acquire capital for their development (or the company restructuring). The most natural means of funding of the Czech companies development needs is then practically closed.

4. Proposed Solution

How should be such a situation concerning majority of Czech companies resolved? The first step rests in **decrease of company's share capital by decreasing the face value of the share below the market value** at the public market.

The company's creditors can successfully block the decrease of share capital as they have the right to secure their claim under the Commercial Code, Section 215. This, at first sight understandable requirement of the Commercial Code, completely conflicts with the economic reality and considerably inhibits restructuring of Czech companies. **Worsening of possibilities to recover receivables will occur earlier, as soon as the debtor appears in economic troubles (and in the time of occurrence of cash-flow and solvency problems), not later, when the solution is sought of decreasing the share capital in the case of accumulated problems.** The whole process of reducing share capital is furthermore time consuming.

The second step is **increase of share capital by issue of new shares**. It is only this step which makes it possible for the joint stock company to acquire the needed financial funds. In the Czech companies practice, this means is not commonly utilised. Hence, the prevailing method of increasing share capital is **capitalisation of receivables** (and loans) **of the pre-selected subscribers** (creditors)⁴. It will help the company to lower the interest encumbrance by restructuring financing resources and provide time for seeking the solution of the arisen situation. It does not however, on its own, bring new financial resources to the company, which are needed for further existence and development of the company.

The custom of Czech companies to issue shares at the face value of CZK 1,000 has prevailed after the large-scale privatisation until now. The practice in advanced countries has been utterly different. They issue shares **at low face value and with high share premium**. Table No. 3 shows an example of Zurich stock exchange remarkable differences between the face value of the issued shares and their issue price. This makes a satisfactory "cushion" for these companies for new share issues in the case of price decrease. In the United States the difference is even larger – companies often issue shares at the face value of 1 cent or even lower and offer them at the issue price at tens dollars.

When decreasing their share capital by reduction of the share face value, some companies may also face a requirement of **minimal share capital** set out under the Commercial Code. This requirement forces joint stock companies to issue shares with relatively low share premium and the "cushion" is not created as prevention for reduction of

⁴ More details are provided in: KOŘENÝ, K. Analysis of Primary Issues of Stock in the Czech Republic – year 1999

share price when the company economic results are not favourable. The mentioned requirement for the minimal share capital then becomes counterproductive.

Table No.3: Selected IPOs at Swiss Exchange in year 1998

Issuer	Shares number	Face value	Issue date	Issue price	Share price at the end of year	Price change (in %)
Micro Value AG	250 000	200	4.3.	422,5	385,0	-8,9
Cicorel Holding SA	350 000	10	24.4.	460,0	237,0	-48,5
Straumann Holding AG	770 000	10	2.6.	421,0	300,0	-28,7
Adval Tech Holding AG	200 000	20	4.6.	430,0	284,0	-34,0
Barry Callebaut AG	5 170 000	100	15.6.	310,0	312,0	0,6
Gretag Imaging Holding AG	6 023 410	10	15.6.	139,0	118,0	-15,1
Schaffner Holding AG	632 000	50	16.6.	315,0	205,0	-34,9
Bachem AG	339 900	10	18.6.	1 400,0	1 990,0	42,1
Feintool International Holding	550 000	50	17.8.	335,0	301,0	-10,1
Castle Private Equity AG	4 000 000	50	3.9.	110,8	109,0	-1,6
Alpine Select AG	1 960 000	50	15.9.	86,5	66,5	-23,1
Swisscom AG	73 550 000	25	5.10.	376,5	575,0	52,7
Starrag	168 000	100	16.3.	450,0	549,0	22,0

Source: Factbook 98, Swiss Exchange SWX, own calculations

In order to harmonise joint stock company and shareholders' interests (high "cushion") and business partners interests (minimal capital put into the joint stock company) it would be more favourable to **use economic category 'own equity' than 'share capital'**. The category of own equity expresses better than share capital the proportion of shareholders in the company assets and so it is more appropriate for business partners. In the case of generating loss of the joint stock company, the value of share capital remains the same, but own equity decreases. The category of own equity rather than share capital expresses better decreasing solvency of the company's business partners. The requirement for the minimal *own equity* (instead of the requirement for *share capital*) would also enable to issue shares at the low face value and high share premium. Table No.4 shows situation, when the joint stock

company issues shares at the share price of CZK 10 and with share premium of CZK 990. In the case of loss (CZK 800,000), the company may issue new shares of CZK 400 (at the face value of CZK 10 and share premium CZK 390).

Table No. 4: Issue of Shares with High Share Premium

OWN EQUITY	2,000,000	OWN EQUITY	1,200,000
Share capital	20,000	Share capital	20,000
Capital funds	1,980,000	Capital funds	1,980,000
Funds created from profit	0	Funds created from profit	0
Profit (loss)	0	Profit (loss)	- 800,000

Another consequence is that the joint stock company does not satisfy the condition of minimal own equity (CZK 2 mil), therefore it **must** increase own equity at the minimal required level.

5. Conclusion

The following changes would contribute to standardisation of the Czech capital market:

- a) replacement of the notion “share capital” by “own equity” in Section 162 of Act No. 513/1991 of Coll., the Commercial Code,
- b) issue of shares with low face value and high share premium.

The consequence of the proposed changes would make it easier to issue new shares in the case that the company appears in financial problems. At the same time, protection of creditors would improve because the joint stock company would be forced to increase own equity in the case that it declined below the minimal level set out under the law.

Abstract

Cílem článku je posoudit současnou právní úpravu definice kapitálu akciových společností, upozornit na její důsledky na možnosti získávání dalšího kapitálu emisí nových akcií a navrhnout změnu používaného pojmu „základní kapitál“. V článku autor definuje pojmy vlastní kapitál, základní kapitál a emisní ážio. Dále pojednává o dosavadní praxi, kdy akciové společnosti vydávají akcie za jmenovitou hodnotu, případně s nízkým emisním ážiem. Konstatuje, že jednou z příčin je i současná právní úprava obchodního práva (obchodního zákoníku), která pro akciové společnosti předepisuje minimální výši základního kapitálu, ne vlastního kapitálu. Na závěr autor doporučuje akciovým společnostem vydávat akcie s nízkou jmenovitou hodnotou a s vysokým emisním ážiem a navrhuje nahradit v obchodním zákoníku pojem základní kapitál pojmem vlastní kapitál.

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BUDGETARY -- CAPITAL AND FINANCIAL DECISION MAKING OF SLOVAK FIRMS (RESEARCH RESULTS)

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Milan Sochor¹

Key words

financial and capital structure, costs of capital, financial plan, methods and models of developing a financial plan,

Introduction

Future prosperity of a firm is considerably influenced by the quality of decisions on budget and capital taken by the firm. This mainly involves the decision making on long-term financial plan, projects of the firm's development, capital structure, and dividend policy. And it is in particular on these areas of financial management that the research in Slovak firms was focused. The research was carried out as part of work on the internal grant research on "Optimum Allocation of Capital and Management of Financial Processes in a Firm", dealt with by the authors of the present paper from 2003 to 2004, at the Department of Corporate Finance, University of Economics, Bratislava. Some of the research results (decisions on capital structure and approaches to developing a financial plan) will be presented at this conference.

1. Methods of Research

The research was carried out by means of survey in 300 Slovak firms. Respondents (firms) were selected on a more or less random basis. The survey was participated also by the students pursuing external studies at the Faculty of Business Management via student seminar papers submitted in the academic year 2003/2004. Proper completion of survey questionnaires was verified by means of reverse questions addressed to the respondents. After completing duplicities and various incorrectly completed questionnaires, responses from 261

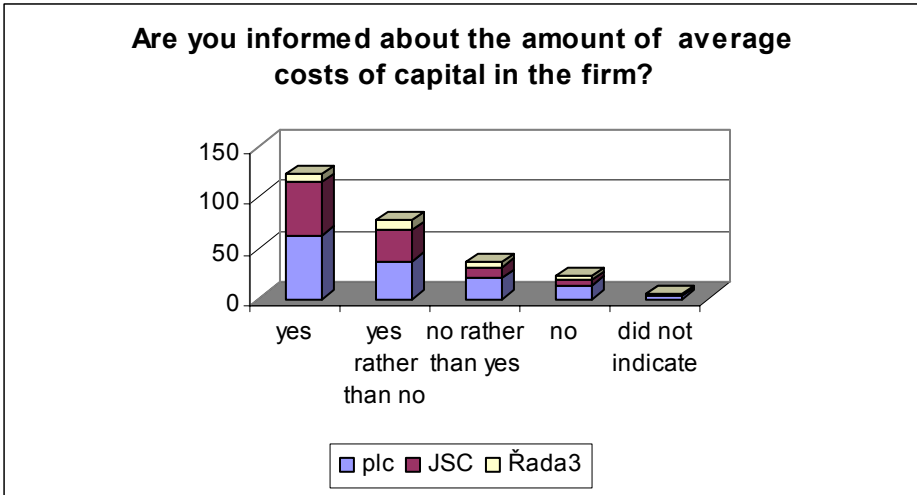
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firms were obtained. In terms of legal form, 134 limited liability companies, 99 joint stock companies and 27 other legal forms took part in the survey. The sample of firms investigated contains small, medium and large firms. Of the total of 48 questions, 14 questions concerned capital structure and 19 questions were about financial planning.

2. Results concerning Capital Structure

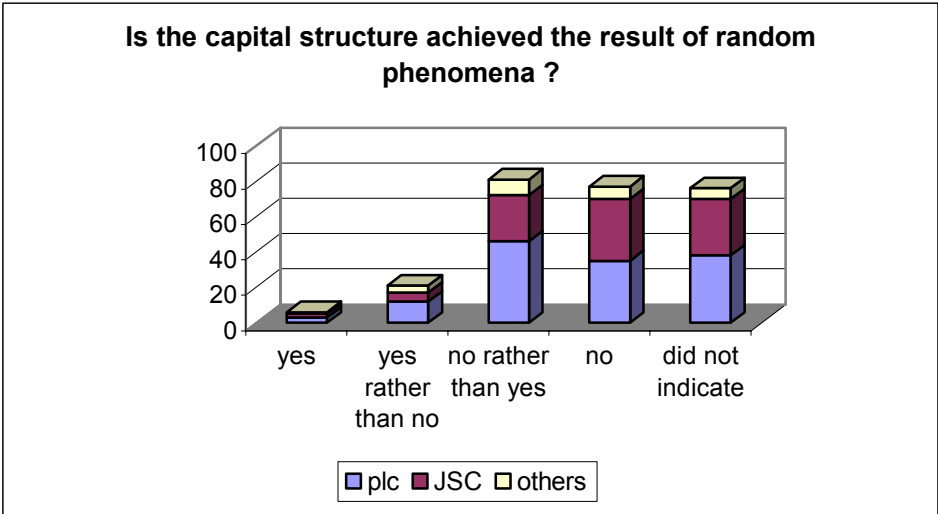
Preliminary results (obtained from firms’ representatives) indicate that 55 % firms deal with with the price of acquired resources; 18 % of respondents asked are not concerned about the price. Approximately 47 % of firms clearly have confirmed that they are informed about the amount of average costs of capital, and 30 % have given a "yes rather than no " response to the question. In answer to the question whether they deal with with financial and capital structure of the firm, they have answered approximately in the same way. In joint stock companies these issues are paid more attention (64 % firms) than in companies with limited liability (52 % firms). Responses have confirmed that if a firm does not deal with financial and capital structure, also costs of acquiring financial resources are not significant for the firm, or for its managers. Likewise responses to the question which factors in the firm affect the firm’s capital structure to the greatest extent correspond to the results mentioned above. It is in particular costs of capital that are considered by 51 % of firms to be the most significant factor. The second place is occupied by the factor of the firm’s assets and requirements of financial security are placed third). In terms of the type of legal form, there are no essential differences in responses.

Chart 1 Structure of responses to the question "Are you informed about the amount of average costs of capital in the firm?" (%)



Approximately 30 % of firms inquired strongly declare that the capital structure achieved does not result from random phenomena. About 10 % of firms claim that the firm’s capital structure *is rather than not* or *definitely is* the result of random phenomena. Responses to the question if the capital structure achieved results from planned decisions should render a mirror picture of those responses. If 30 % of firms unequivocally say, the capital structure achieved is not the result of random phenomena, then the same number of firms should say that it is the result of planned decisions. As many as 47 % of firms respond that it is clearly the result of planned decisions, i.e. by 17 percentile more. Despite these disproportions, these responses have their informative value. When evaluating the overlap we may consider 30 % of firms as optimising their capital structure in some way. At about 29 % of firms have given no response to the question; a possible explanation is that firms do not pay any attention to these problems. This condition must have improved in comparison with the initial transformation period in this area.

Chart 2 Pattern of responses to the question "Is the capital structure achieved the result of random phenomena ?“ (%)



Results of the survey have also rendered a picture of a real level of indebtedness of Slovak firms. From the year 2000 to 2002 average indebtedness (payables/total assets) ranged around 42 %, while it was higher in private limited companies (plc.), app. 46 % and in joint stock companies (JSC) -- 42 %; in other legal forms -- 25 %. At the same time, the interval from 30 to 50 % is viewed by most firms (135 of 261) to be an optimum level of indebtedness. Of this number 51 firms consider optimum indebtedness to amount to 30 %.

Only 42 firms consider the option of becoming indebted above 60 % to be an optimum one. It follows that a prevailing number of firms (219, i.e. 84 %) tends to be indebted under 50 %.

Also these, so far incomplete, results of the survey indicate that the firms do not "behave", or do not succeed in behaving in accordance with optimum theoretical assumptions or pre-requisites resulting from theoretical conclusions.

3. Results on financial planning area

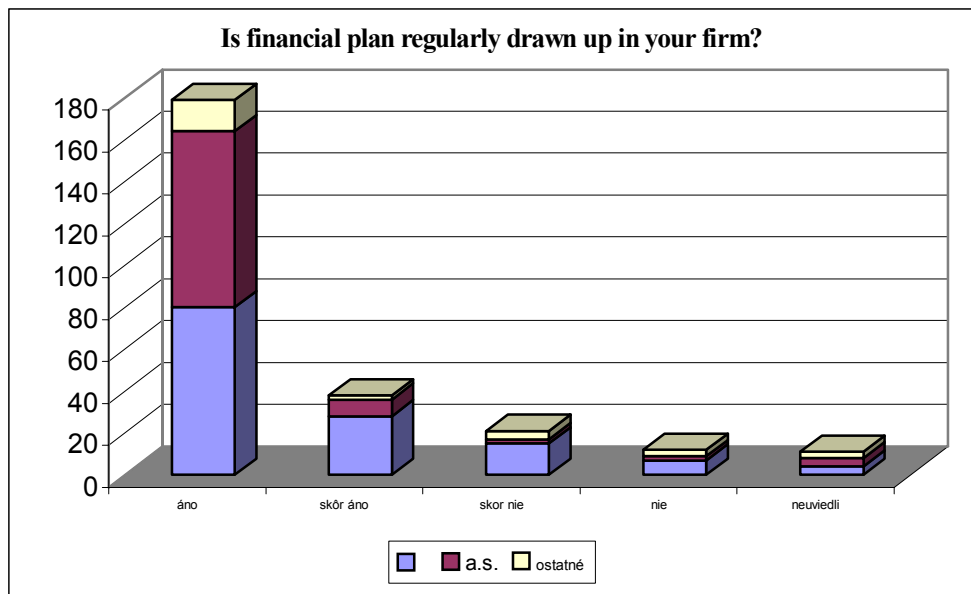
Present-day economic environment, in which our firms operate is characteristic of an increasingly rising competition on the Slovak Republic's market and also abroad. The only possible solution to survival in this situation, is to incorporate modern methods and techniques of firm's management into every-day life of firms. Probably hardly anybody doubts nowadays about the need for planning and its place in managing firms. It is just effective planning that enables the firm to further develop, and it prepares the firm for possible changes in the future. An important subsystem of the entire planning system is financial planning. It enables managers to obtain information on future financial consequences of present-day decisions and at the same time makes it possible to retrospectively re-assess the decisions planned in view of future financial consequences.

The importance of financial management also bears witness to the fact that in as many as 217 firms, which accounts for 84%, financial managers regularly draw up financial plan (Chart 1). As expected, in terms of legal forms, a dominant position is held by joint stock companies and limited liability companies (around 80%). According to the research results, financial plan is not drawn up in 13% of firms, while a dominant position within this group is held by the following legal forms: natural person, limited partnership and others, which are typically locally important and of a small size (low number of employees).

Table No 1

	yes	tend to agree	tend to disagree	no	did not indicate	
plc	80	28	15	7	4	
JSC	84	8	2	2	4	
others	15	2	4	3	3	
total	179	38	21	12	11	261
	69%	15%	8%	5%	4%	100%

Chart No 3



Importance of financial planning is obvious also from the fact that every firm faces daily the changes in a turbulent environment of global economy. These changes also include permanent changes in legislation and in fiscal conditions, a more difficult access to financial resources, globalisation of competitors' markets, concentration of demand and supply, rising competition and dynamics of competition, changes in buyer behaviour that are difficult to forecast, general changes in values, and the like.

If the firm wishes to adapt, financial planning is becoming an irreplaceable instrument. At present, there are numerous methods of compiling a financial plan.

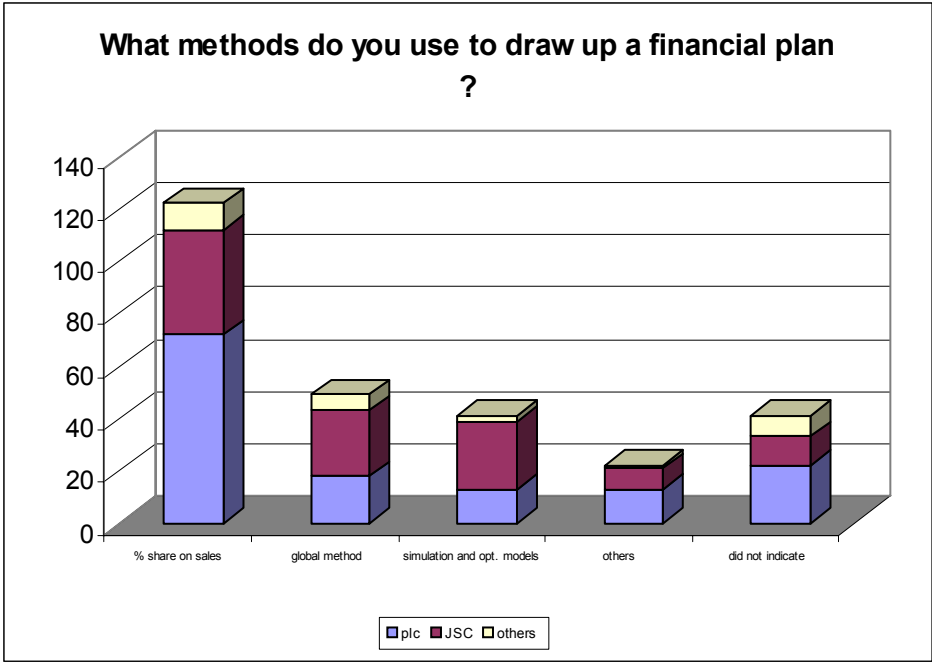
While drafting a financial plan, according to results of the research, the follow-up of the plan to previous periods has been unanimously demonstrated. This is attested to by most frequently used methods and methods of developing a financial plan. As many as 122 firms, which accounts for 46%, use the method of percentage share on sales in developing the plan. A characteristic feature of this method is that it enables to establish the influence of planned growth of sales on the structure of assets, liabilities and profit in order to identify the need for additional resources. The starting point of designing the plan is the original balance sheet, the items of which are changing in dependence on sales, by means of percentage share on sales. Another method used in developing the financial plan by about 19% of firms examined is global method. This method is based on worked out material components of the plan (plans of

sale, manufacturing, purchase, investment, technical development, human resources, and the like), from which the plan takes over data on financial requirements and the amount of financial resources created. Utilising simulation and optimisation models in creating financial plan has been indicated by 16% of firms of the sample examined. Its advantage constitutes multivariance of planning in formulating objectives, assumptions and constraints.

Table 2

	% share on sales	global method	simulation and opt. models	others	did not indicate
Ltd.	72	18	13	13	22
JSC	40	25	26	8	11
others	10	6	2	1	8
total	122	49	41	22	41

Chart 4



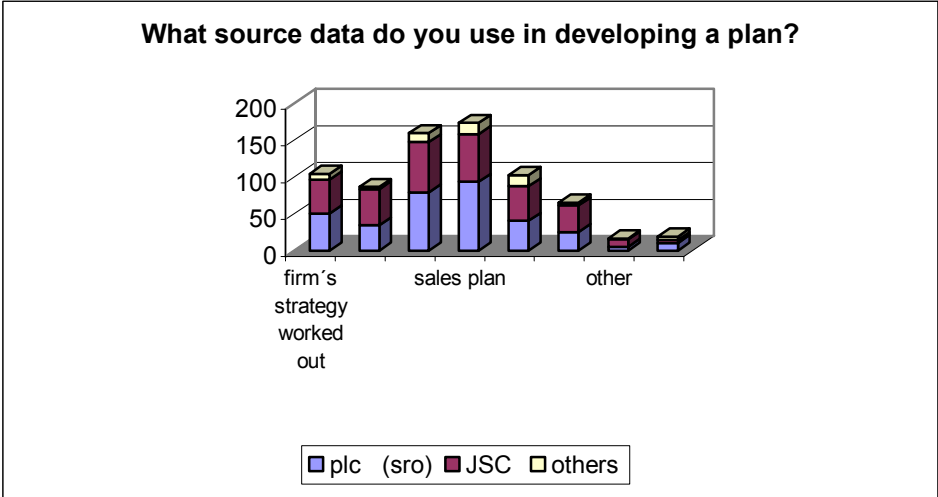
Likewise the source data for developing a financial plan are closely related with the methods used in developing the financial plan. The data from sales plan are used by 66% of firms of the sample investigated. A dominance of this statement is obvious from a firm’s position in market economy. In a competitive environment, no firm can afford to produce goods for stock without putting its financial standing at risk. In terms of source data, an important role is played by the results of financial analysis for the past period. These data are

used in developing financial plan by 61% of firms. The importance of financial analysis for financial planning is beyond dispute, as its role is to identify the firm’s weaknesses that might lead to future problems, and strengths on which the firm may rely in the future. Financial analysis is, then, a basis for adopting the right decisions about the firm’s future, and therefore it cannot be omitted in financial planning. 40% of firms from the sample investigated consider the firm’s strategy worked out. Other source data used by financial managers are: manufacturing plan (39%), formulated own objectives (33%), technology development plan (25%), and other data (6%) -- Chart 3.

Table 3

	firm’s strategy worked out	formulated objectives for developing financial plan	results of financial anal. for past period	sales plan	manu- facturing plan	technolo- gy develop- ment plan	other	did not indicate
plc (sro)	50	34	79	93	40	25	5	10
JSC	46	49	68	65	47	36	10	4
others	8	3	12	15	15	4	1	5
total	104	86	159	173	102	65	16	19

Chart 3



Conclusion

The present paper covers only a part of survey results. All data obtained from the survey will be comprehensively processed and presented in the final report on internal research grant.

The importance that the authors ascribe to ascertaining authentic opinions of financial managers, or representatives of firms' management, is based on the conviction that this information are irreplaceable in the process of interaction of economic theory and economic practice.

Abstract

Východiskom tohto príspevku sú výsledky anketného prieskumu uskutočneného v 261 slovenských podnikoch kolektívom pracovníkov katedry podnikových financií Ekonomickej univerzity v Bratislave. S hľadiska právnej formy bolo 134 firiem spoločnosťami s ručením obmedzeným, 99 akciových spoločností a 27 firiem s jinou právnou formou. Prieskum bol zameraný na prijímanie rozpočtovo-kapitálových a finančných rozhodnutí podniku. Časť výsledkov prieskumu (rozhodnutia o kapitálovej štruktúre a prístupy k tvorbe finančného plánu) tvoria obsah príspevku. Výsledky naznačujú, že pro viacej ako polovinu podnikov je cena kapitálu kľúčovým faktorom rozhodujúcim o kapitálovej štruktúre spoločnosti. Navyše neexistujú významné rozdiely medzi jednotlivými právnymi formami podnikov. Finančné plánovanie predstavuje pre finančných manažerov 84 % podnikov integrálnu súčasť finančného riadenia spoločnosti. Najpoužívanejšou metódou finančného plánovania je v rámci všetkých právnych foriem podnikov metoda procentných podielov na predajoch.

EUROPEAN STOCK MARKET RETURNS¹

Lumír Kulhánek²

Key words:

Stock markets, financial globalization, stock market returns, portfolio diversification, Central European Transition Countries

Introduction

The motives for international investing are examined along with advantages and disadvantages regarding the strategy of international investing on the stock markets. With reference to this fact, it is necessary to pay attention in Europe to the development of the stock markets in transition economies that were incorporated into the European Union in 2004.

There are a great number of reasons for this research. Among the main ones can be ranked the fact that globalization tendencies lead to the integration of the closed economies into the international capital flows, capital markets have arisen in the Central European transforming economies and the extension of activities of the private investors have taken place.

The subject of the analysis will not be integration, globalization and integration factors of financial markets. We proceed rather from the assumption that the globalization of financial markets is caused by a great number of factors, to which belongs: the deregulation of financial markets, the development of telecommunication and information technologies, and institutionalization.

¹ The paper is prepared with the support of the Grant Agency of the Czech Republic Project No. 402/02/1408 „Comparing Financial Markets Development in the Czech Republic and EU-Countries”. The previous version of the analysis based on monthly data (Kulhánek and Uherek, 2003b) was presented at the Workshop "European Integration and Banking Efficiency" to be held on the 30-31 October 2003 in The Research Centre on Financial Economics (CIEF) of the Faculty of Economics and Business Administration of the Technical University of Lisbon, Portugal.

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In this paper, first, we will take notice of the development of the stock markets in the three transition economies and new EU-members – in the Czech Republic, Hungary and Poland. Subsequently, a comparison will be made with the development of the stock markets in the “old” countries of the European Union, where only Great Britain, Sweden and Denmark are not part of the euro area. Both main quantitative characteristics of the development of stock markets will be analyzed (monthly returns and risk, daily returns and risk), as well as the correlations of monthly returns and daily returns among particular countries.

1. Data

The analysis of the national stock markets development and their international comparison are made by applying monthly data for national stock markets indexes both daily data of stock markets indexes. The data are drawn from the Morgan Stanley Capital International (MSCI) database of national stock market indexes. These MSCI stock market indexes on the monthly basis have been available for the Czech Republic and Hungary since December 1994, for Poland since December 1992.³

The choice of the stated MSCI indexes was given by several facts. On the one hand MSCI indexes are most widely used benchmarks by global portfolio managers. MSCI uses a consistent and transparent index construction and maintenance methodology ensuring an accurate representation of each country’s underlying industry group distribution and market capitalization. It is significant for an international comparison that MSCI stock indexes are available in a local currency, the USD and the Euro.⁴ Analyses have been carried out on the basis of indexes in the US dollars.⁵

In this paper, the period from 01.01.1995 to 30.09.2004 is examined for monthly returns and for daily returns the period from 01.10.1997 to 04.03.2004. Further, for more detailed analysis and comparison of changes, this sample period is divided into two sub

³ See <http://www.msci.com>.

⁴ An important issue arises if portfolios are composed of securities from different countries is the choice of a numeraire for measuring the risk and expected return. As a matter of tradition, the local currency is used in most cases to calculate these security characteristics, which means that return and variance values for foreign securities need to be adjusted for the currency gains or losses.

⁵ A comparison results of the analyses with the results assessed according to the development of stock indexes in the US dollars (Kulhánek 2002a, 2002b) is possible.

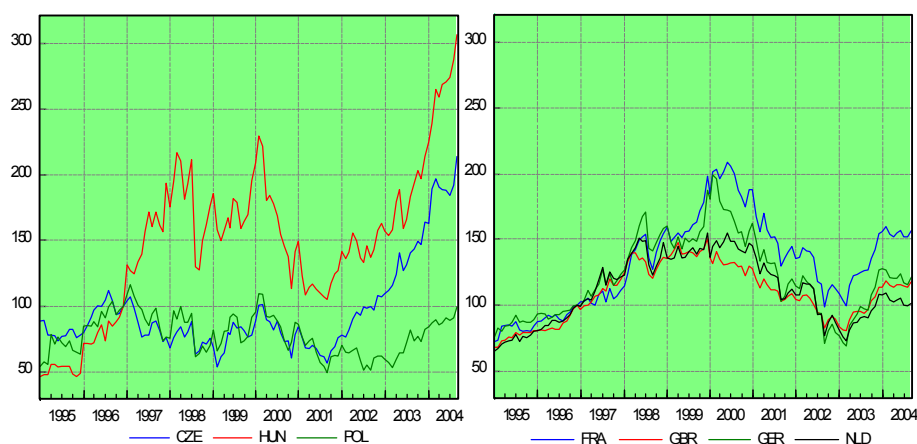
periods – the first one from 01.10.1997 to 31.12.2000, and the second one from 01.01.2001 to 04.03.2004.

2. The development of national stock market indexes

The development of particular stock markets in the examined three new EU-countries (the Czech Republic, Hungary and Poland) and the development of stock markets in the Netherlands, France, Germany and in the Great Britain in the years 1995-2004 are showed in Figure 1. As it is apparent from the Figure 1, the increasing trend of stock markets (with a decrease in the year 1998) was replaced in transition economies and in the selected EU-countries from the beginning of the year 2000 by a plunge continuing up to the third quarter of the year 2001 in transition countries and up to the first quarter of the year 2003 in developed EU-countries.

Yet, in transition economies we can notice the stoppage of the decrease or a mild recovery of the stock market as early as in the last quarter of the year 2001, the development in particular transition countries is different though.

Figure 1: Development of selected stock market indexes in the period 1995-2004



The detailed examination of the development of stock market indexes in the sub-period I (from 30.09.1997 to 31.12.2000) is represented in Figure 2, from which a relative synchronous development of the most developed European stock markets is evident (see France, Great Britain, Germany and the Netherlands in the right part of Figure 2).

The highest daily increase in the stock market index in that sub-period 1997-2000 was registered in Hungary (29.10.1997: 12,36 %) and in Poland (18.01.1999: 7,64 %)⁶, the highest daily decrease in the stock market index in that sub-period 1997-2000 in Hungary too (28.10.1997: -19,40 %) and further in Poland (also 28.10.1997: -10,31 %). The Czech stock market recorded in this period the highest daily growth of 7,33 % (11.05.1999) and the highest daily decrease of -6,69 % (27.8.1998). The highest increase in the daily index for France, Germany, Great Britain and the Netherlands was registered in Germany (6,11 %), the highest decrease in the daily index in Germany too (-7,53 %).

Figure 2: Development of selected stock market indexes in sub-period I (1997-2000)

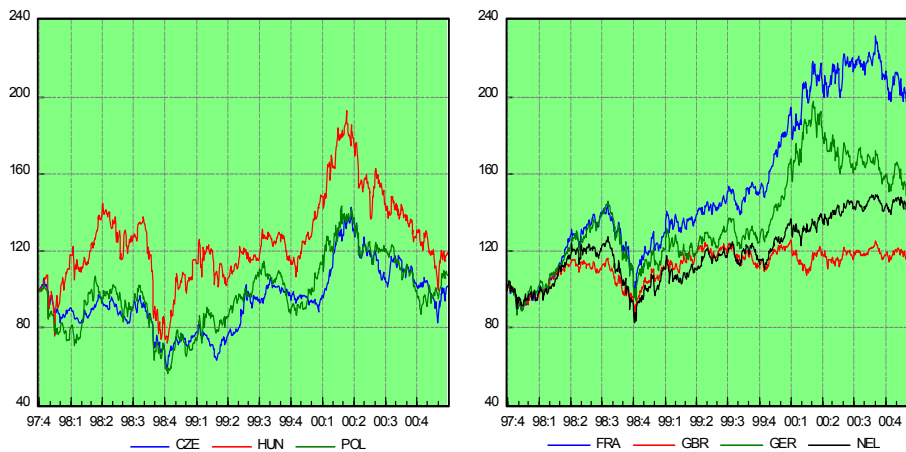


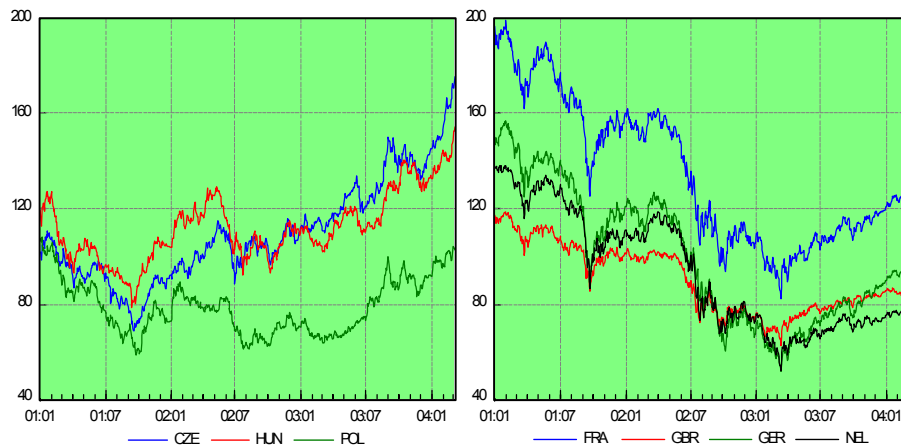
Figure 3 represents the development of national stock markets in the second sub-period of the examined period (from 01.01.2001 to 04.03.2004). A characteristic feature for this sub-period is first the slump of stock indexes practically in all examined countries. Starting in September 2001 the stock markets in the Czech Republic, Poland and Hungary began to turn up. Stock markets both in the Netherlands, Germany, France and Great Britain (see the right part of Figure 3); both in the other developed EU-countries began to turn up from the second quarter of the year 2003.

The highest daily increase in the stock market index in the sub-period II was registered in Poland (6,29 %), the highest daily decrease in the Czech Republic (-7,81 %). The highest daily increase in the stock market index between four examined EU-countries in this sub-

⁶ In the EU the highest daily increase was registered in Finland (18,86 %).

period II was registered in the Netherlands (7,84 %), the highest daily decrease in Germany (-8,67 %).

Figure 3: Development of selected stock market indexes in sub-period II (2001-2004)



3. Returns and risk

Main characteristics of the monthly returns of the national stock markets in the US dollars (mean and standard deviation of returns and also other characteristics) for the entire sample period of 1995:01 – 2004:09 are depicted in Table 1.

Table 1: Selected characteristics of the monthly returns in the period 1995-2004

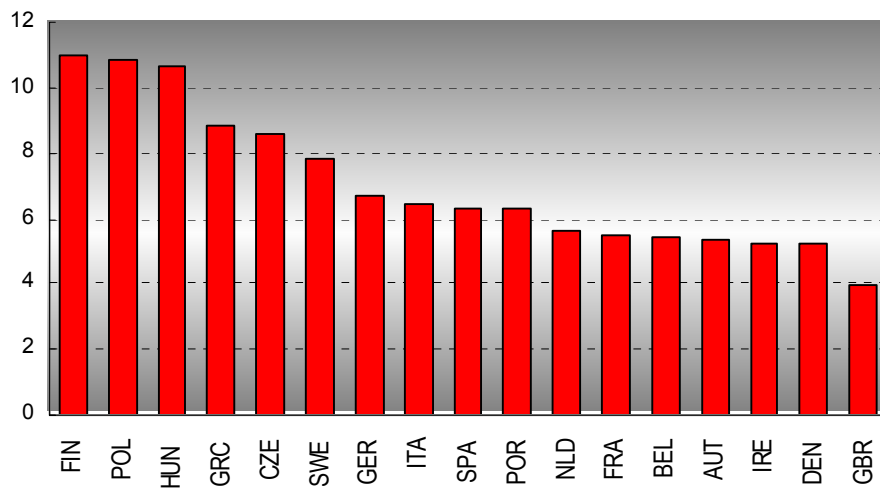
	Mean	Median	Max.	Min.	S.Dev.	Skew.	Kurt.	J-Bera	Obs.
CZE	0,661	1,840	26,298	-32,400	8,61	-0,49	4,61	17,4	117
HUN	1,385	2,390	37,956	-49,094	10,66	-0,74	7,45	107,0	117
POL	0,340	0,809	33,930	-42,981	10,85	-0,22	4,99	20,3	117
AUT	0,404	0,587	11,499	-19,543	5,35	-0,67	3,80	11,9	117
BEL	0,524	1,018	16,160	-20,845	5,42	-0,96	5,66	52,3	117
DEN	0,860	1,442	11,470	-14,479	5,22	-0,52	3,35	5,8	117
FIN	1,001	0,909	28,043	-38,230	11,01	-0,43	3,98	8,4	117
FRA	0,636	1,028	14,238	-16,648	5,51	-0,39	3,74	5,7	117
GBR	0,453	0,501	9,574	-11,122	3,93	-0,31	3,11	2,0	117
GER	0,381	0,709	20,203	-27,907	6,73	-0,80	5,82	51,2	117
GRC	0,542	0,424	25,324	-25,625	8,84	-0,02	3,60	1,8	117
IRE	0,558	1,535	11,651	-15,260	5,23	-0,97	4,39	27,7	117
ITA	0,575	0,251	17,861	-15,369	6,42	0,00	2,92	0,0	117
NLD	0,387	0,892	12,155	-19,620	5,60	-1,02	4,94	38,6	117
POR	0,498	0,745	15,114	-21,514	6,29	-0,41	3,46	4,3	117
SPA	0,949	0,904	14,857	-24,522	6,33	-0,61	4,74	22,1	117
SWE	0,893	1,588	20,549	-25,457	7,82	-0,54	3,96	10,1	117

CZE: Czech Republic, HUN: Hungary, POL: Poland, AUT: Austria, BEL: Belgium, DEN: Denmark, FIN: Finland, FRA: France, GBR: Great Britain, GER: Germany, GRC: Greece, IRE: Ireland, ITA: Italy, NLD: the Netherlands, POR: Portugal, SPA: Spain, SWE: Sweden.

Source: Own calculations.

The data in Table 1 confirm general assertions that stock markets in transition countries not only may offer higher returns, but also risks (standard deviations) associated with the returns are frequently higher than in the established markets as well (see also Figure 4). The highest standard deviation of the daily returns was registered in Finland (11,01), Poland (10,85) and Hungary (10,66).

Figure 4: Standard deviation of the monthly returns



Main characteristics of the daily returns of the national stock markets for the entire sample period of 1997 - 2004 are depicted in Table 2. Also the data in this table confirm general assertions that stock markets in transition countries not only may offer higher returns, but also risks (standard deviations) associated with the returns are frequently higher than in the established markets as well.

In cases of some countries (see developed countries in the Table 2) it can be noticed with Kulhánek and Uherek (2003a) that a higher risk does not have to be accompanied by higher returns. Poland and three of developed EU-countries show a very low negative mean of daily returns for the sample period 1997:10-2004:03.

Table 2: Selected characteristics of the daily returns in the sample period 1997:10-2004:03

	Mean	Median	Max.	Min.	S.Dev.	Skew.	Kurt.	J-Bera	Obs.
CZE	0,044	0,062	6,759	-7,393	1,68	-0,15	4,46	154,4	1677
HUN	0,022	0,081	12,416	-19,012	2,09	-0,83	13,11	7334,4	1677
POL	-0,007	0,000	9,017	-11,591	2,08	-0,15	5,19	342,9	1677
AUT	0,019	0,018	3,967	-6,287	1,17	-0,42	5,05	342,2	1677
BEL	0,009	0,028	8,730	-6,386	1,40	0,21	6,30	773,7	1677
DEN	0,022	0,033	5,561	-6,252	1,31	-0,30	4,65	215,4	1677
FIN	0,051	0,046	15,914	-20,067	2,84	-0,36	7,29	1324,4	1677
FRA	0,021	0,096	5,957	-6,336	1,49	-0,11	4,44	147,6	1677
GBR	-0,001	0,000	5,256	-5,273	1,23	-0,13	4,55	171,6	1677
GER	0,002	0,039	6,889	-7,776	1,72	-0,12	4,39	138,5	1677
GRC	0,002	0,017	8,434	-9,850	1,95	-0,05	5,42	409,9	1677
IRE	-0,001	0,014	5,956	-7,754	1,34	-0,33	5,90	620,0	1677
ITA	0,017	0,041	6,665	-7,111	1,46	-0,17	4,76	224,4	1677
NLD	-0,008	0,000	6,570	-8,472	1,55	-0,11	5,38	400,1	1677
POR	0,002	0,000	5,074	-6,479	1,26	-0,23	4,66	207,2	1677
SPA	0,022	0,018	7,014	-6,389	1,57	0,01	4,58	174,5	1677
SWE	0,011	0,036	11,415	-9,671	1,97	-0,01	5,33	377,9	1677

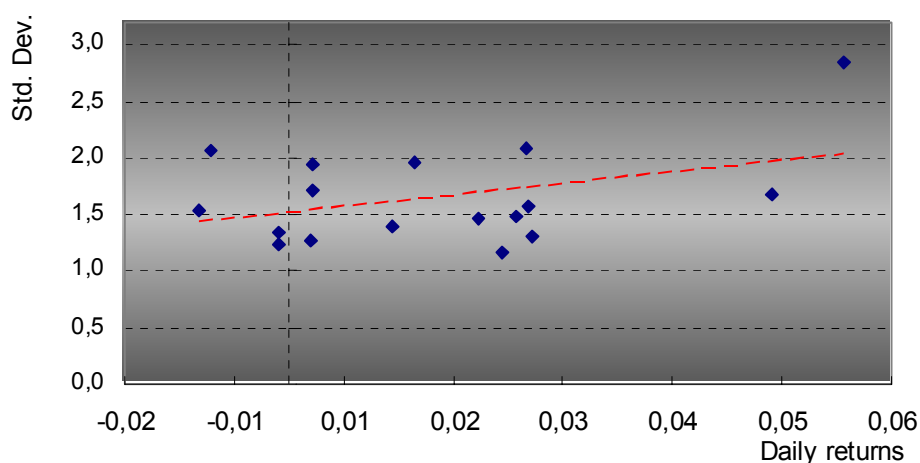
CZE: Czech Republic, HUN: Hungary, POL: Poland, AUT: Austria, BEL: Belgium, DEN: Denmark, FIN: Finland, FRA: France, GBR: Great Britain, GER: Germany, GRC: Greece, IRE: Ireland, ITA: Italy, NLD: the Netherlands, POR: Portugal, SPA: Spain, SWE: Sweden.

Source: Own calculations.

The highest average daily return in the sample period was registered in transition economies by the stock market in the Czech Republic (0,044 %) and in Hungary (0,022 %), in the EU-countries by the stock market in Finland (0,051 %). In Poland it amounted to -0,007 % and it was comparable with the average daily return in the Netherlands (-0,008). Stock markets in the Great Britain and Ireland recorded also in this period negative average daily returns in US dollars terms.

The highest standard deviation of the daily returns was registered in Finland (2,84), Hungary (2,09) and Poland (2,08), but also in Sweden and Greece (1,97 and 1,95). For the Czech stock market it amounted 1,68 and it is comparable with the standard deviation of daily returns in Germany (1,72), Spain (1,57) or the Netherlands (1,55).

Figure 5: Daily Returns and Risk (1997-2004)



The monitoring of daily stock market returns and risk (measured by standard deviation of daily returns) and their international comparison proves in principle the fundamental relation between returns and risk. As it is obvious from Figure 5, the highest daily average return, which the Finnish stock market achieved, was connected with the highest standard deviation. Similar relatively high average daily returns of the Hungarian stock market were related to the high risk⁷ (or standard deviation). Then again, the stock markets in the Denmark, Portugal or in Austria showed low average daily returns and low standard deviations. Relatively high average daily return of the Czech stock market (the second highest return from the examined stock markets) was connected with the relatively low standard deviation.

For the purposes of valuating changes in the development of stock markets, the entire examined sample period from 01.10.1997 to 04.03.2004 (i.e. 1677 observations) was divided into two sub-periods: sub-period I (from 01.10.1997 to 31.12.2000, 848 observations) and sub-period II (from 01.01.2001 to 04.03.2004, 829 observations). Characteristics of daily stock market returns of these two sub-periods are depicted in Table 3.

Data in the Table 3 represent the decrease in stock indexes from the year 2000 and confirm a different character of the development in two sub-periods. Whereas in the sub-

⁷ What is characteristic for the stock markets of transition economies is the fact that they are connected with a higher risk. This higher risk does not guarantee higher return though.

period I all observed developed stock markets, with the exception of Austria and Ireland, registered a positive daily average return (with maximum 0,160 in Finland and 0,061 in France), in the sub-period II only two observed transition economies and five of developed EU-countries (Austria, Portugal, Belgium, Spain and Denmark) recorded a positive average daily returns (the Czech Republic 0,103 %, Hungary 0,067 %, Austria 0,075 %, Portugal and Belgium 0,002, Spain 0,018 % and Denmark 0,015 %). At the same time all other stock markets of the observed EU-countries recorded negative average daily returns.

The highest decrease in returns was registered by the stock markets in Finland, France, Italy and Sweden. Increase of standard deviation was registered in seven developed EU-countries. Decrease was registered in the Czech Republic, Poland, and Hungary and in six developed EU-countries (Austria, Denmark, Greece, Italy, Ireland and Portugal).

Table 3: Changes in characteristics of daily stock market returns

	Mean		Maximum		Minimum		Std. Dev.		Obs.	
	97-00	01-04	97-00	01-04	97-00	01-04	97-00	01-04	97-00	01-04
CZE	-0,014	0,103	6,759	5,817	-7,273	-7,393	1,83	1,52	848	829
HUN	-0,023	0,067	12,416	5,755	-19,012	-8,091	2,53	1,52	848	829
POL	-0,014	0,000	9,017	5,837	-11,591	-5,266	2,40	1,69	848	829
AUT	-0,034	0,075	3,967	3,450	-6,287	-4,308	1,25	1,09	848	829
BEL	0,017	0,002	7,578	8,730	-4,313	-6,386	1,30	1,49	848	829
DEN	0,029	0,015	4,113	5,561	-6,252	-6,033	1,37	1,23	848	829
FIN	0,160	-0,061	15,914	9,888	-19,994	-20,067	2,84	2,84	848	829
FRA	0,061	-0,020	5,285	5,957	-4,337	-6,336	1,35	1,62	848	829
GBR	0,010	-0,012	3,655	5,256	-3,422	-5,273	1,12	1,34	848	829
GER	0,028	-0,025	6,008	6,889	-6,078	-7,776	1,56	1,88	848	829
GRC	0,024	-0,020	8,434	7,573	-9,850	-8,285	2,30	1,50	848	829
IRE	-0,002	0,000	4,944	5,956	-7,559	-7,754	1,35	1,34	848	829
ITA	0,047	-0,013	6,625	6,665	-7,111	-6,170	1,53	1,38	848	829
NLD	0,018	-0,035	5,931	6,570	-4,854	-8,472	1,34	1,74	848	829
POR	0,002	0,002	5,074	3,620	-6,479	-5,023	1,36	1,16	848	829
SPA	0,026	0,018	7,014	6,341	-6,389	-5,546	1,54	1,60	848	829
SWE	0,038	-0,016	11,415	8,306	-8,339	-9,671	1,89	2,04	848	829

CZE: Czech Republic, HUN: Hungary, POL: Poland, AUT: Austria, BEL: Belgium, DEN: Denmark, FIN: Finland, FRA: France, GBR: Great Britain, GER: Germany, GRC: Greece, IRE: Ireland, ITA: Italy, NLD: the Netherlands, POR: Portugal, SPA: Spain, SWE: Sweden.

Source: Own calculations.

4. Stock market linkages

In connection with the integration of Central European countries into the European Union (and a follow-up perspective of the participation in the Economic and Monetary Union) it is necessary also to consider now and in future the international diversification of portfolios in the management of portfolios to an increasing extent.

Seeking new investments alternatives, of which proceeds will be at least partially negatively correlated or less than perfectly positively correlated, and the application of the effects of the international diversification require the knowledge of the correlation coefficients of national stock market returns.

For this purpose the correlation coefficients of monthly returns both daily returns for the entire observed period were identified (see Table 4 and Table 5).

As it is noticeable from Table 4 and Table 5, very high correlation coefficients are (traditionally⁸) showed by the stock market returns in France, Germany and the Netherlands.

In the case of France and Germany both France and the Netherlands the value of the correlation coefficient of monthly returns (0,86) is the highest at the same time out of the entire stock market monthly returns sample analyzed in this paper. Correlation coefficient is also very high for the Germany and Sweden (0,82), the Netherlands and Great Britain (0,81), France and Great Britain (0,78), France and Sweden (0,78).

Monthly stock market returns in three Central European transition economies show considerably lower correlation coefficients. The Czech stock market is mostly correlated with the Hungarian stock market (correlation coefficient for monthly returns 0,61) and with Polish stock market (correlation coefficient for monthly return 0,55).

Figure 6 represents the correlation coefficients of monthly returns against the German stock market.

⁸ See Kulhánek (2002a), among others.

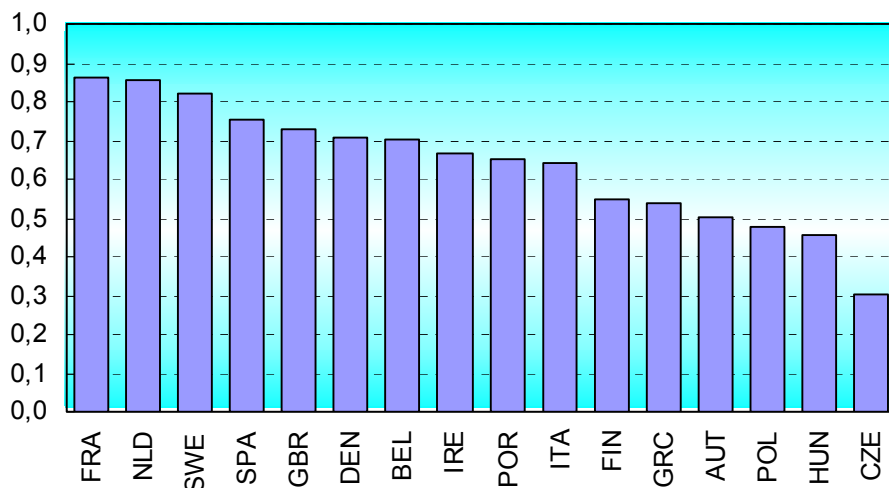
Table 4: Correlations matrix of the monthly returns for the period 1995:01-2004:09

	CZE	HUN	POL	AUT	BEL	DEN	FIN	FRA	GBR	GER	GRC	IRE	ITA	NLD	POR	SPA	SWE
CZE	1	0,61	0,55	0,19	0,13	0,34	0,24	0,29	0,23	0,30	0,32	0,26	0,25	0,19	0,32	0,33	0,33
HUN	0,61	1	0,68	0,35	0,32	0,49	0,38	0,46	0,40	0,46	0,44	0,40	0,43	0,38	0,54	0,50	0,42
POL	0,55	0,68	1	0,27	0,28	0,36	0,48	0,45	0,35	0,47	0,38	0,41	0,34	0,40	0,44	0,48	0,46
AUT	0,19	0,35	0,27	1	0,59	0,52	0,17	0,49	0,53	0,50	0,41	0,49	0,42	0,57	0,51	0,49	0,34
BEL	0,13	0,32	0,28	0,59	1	0,63	0,29	0,73	0,70	0,70	0,48	0,60	0,57	0,78	0,60	0,62	0,48
DEN	0,34	0,49	0,36	0,52	0,63	1	0,40	0,69	0,65	0,71	0,45	0,57	0,57	0,71	0,64	0,64	0,63
FIN	0,24	0,38	0,48	0,17	0,29	0,40	1	0,57	0,52	0,55	0,32	0,40	0,45	0,51	0,43	0,47	0,65
FRA	0,29	0,46	0,45	0,49	0,73	0,69	0,57	1	0,78	0,86	0,53	0,59	0,72	0,86	0,71	0,77	0,78
GBR	0,23	0,40	0,35	0,53	0,70	0,65	0,52	0,78	1	0,73	0,43	0,69	0,54	0,81	0,55	0,71	0,64
GER	0,30	0,46	0,47	0,50	0,70	0,71	0,55	0,86	0,73	1	0,54	0,67	0,64	0,86	0,65	0,75	0,82
GRC	0,32	0,44	0,38	0,41	0,48	0,45	0,32	0,53	0,43	0,54	1	0,44	0,44	0,47	0,49	0,55	0,44
IRE	0,26	0,40	0,41	0,49	0,60	0,57	0,40	0,59	0,69	0,67	0,44	1	0,45	0,70	0,50	0,65	0,55
ITA	0,25	0,43	0,34	0,42	0,57	0,57	0,45	0,72	0,54	0,64	0,44	0,45	1	0,65	0,57	0,70	0,60
NLD	0,19	0,38	0,40	0,57	0,78	0,71	0,51	0,86	0,81	0,86	0,47	0,70	0,65	1	0,63	0,73	0,74
POR	0,32	0,54	0,44	0,51	0,60	0,64	0,43	0,71	0,55	0,65	0,49	0,50	0,57	0,63	1	0,69	0,61
SPA	0,33	0,50	0,48	0,49	0,62	0,64	0,47	0,77	0,71	0,75	0,55	0,65	0,70	0,73	0,69	1	0,72
SWE	0,33	0,42	0,46	0,34	0,48	0,63	0,65	0,78	0,64	0,82	0,44	0,55	0,60	0,74	0,61	0,72	1

CZE: Czech Republic, HUN: Hungary, POL: Poland, AUT: Austria, BEL: Belgium, DEN: Denmark, FIN: Finland, FRA: France, GBR: Great Britain, GER: Germany, GRC: Greece, IRE: Ireland, ITA: Italy, NLD: the Netherlands, POR: Portugal, SPA: Spain, SWE: Sweden.

Source: Own calculations.

Figure 5: Correlation coefficients of monthly returns against German stock market



As it is noticeable from Table 5, in the case of France and the Netherlands the value of the correlation coefficient of daily returns (0,85) is the highest at the same time out of the entire stock market daily returns sample analyzed in this paper. Correlation coefficient for

daily returns is also very high for the France and Germany (0,81), France and Italy (0,80), France and Spain (0,80).

Daily stock market returns in three Central European transition economies show considerably lower correlation coefficients. The Czech stock market is mostly correlated with the Hungarian stock market (correlation coefficient 0,40); with Polish and French stock markets (correlation coefficients 0,37) and Swedish stock market (correlation coefficient 0,36). Correlation coefficients of the Czech stock market daily returns with stock market returns in other EU-countries are lower.

Daily returns of the Polish stock market are mostly correlated with the Hungarian market (0,47), with the Czech market (0,37), with the Finnish and Swedish markets (0,36). Correlation coefficients with market returns in other EU-countries are also lower.

Table 5: Correlations matrix of the daily returns for the period 1997:10-2004:03

	CZE	HUN	POL	AUT	BEL	DEN	FIN	FRA	GBR	GER	GRC	IRE	ITA	NLD	POR	SPA	SWE
CZE	1	0,40	0,37	0,29	0,30	0,33	0,32	0,37	0,32	0,34	0,31	0,31	0,34	0,34	0,34	0,35	0,36
HUN	0,40	1	0,47	0,36	0,28	0,32	0,38	0,38	0,35	0,37	0,27	0,38	0,40	0,36	0,38	0,40	0,40
POL	0,37	0,47	1	0,28	0,25	0,29	0,36	0,33	0,32	0,33	0,29	0,33	0,32	0,32	0,33	0,32	0,36
AUT	0,29	0,36	0,28	1	0,41	0,43	0,24	0,38	0,32	0,38	0,28	0,43	0,39	0,37	0,44	0,42	0,32
BEL	0,30	0,28	0,25	0,41	1	0,50	0,37	0,70	0,60	0,63	0,31	0,48	0,62	0,73	0,47	0,63	0,49
DEN	0,33	0,32	0,29	0,43	0,50	1	0,39	0,54	0,46	0,51	0,31	0,45	0,51	0,53	0,47	0,52	0,50
FIN	0,32	0,38	0,36	0,24	0,37	0,39	1	0,63	0,54	0,56	0,24	0,36	0,52	0,57	0,40	0,54	0,70
FRA	0,37	0,38	0,33	0,38	0,70	0,54	0,63	1	0,76	0,81	0,30	0,49	0,80	0,85	0,56	0,80	0,71
GBR	0,32	0,35	0,32	0,32	0,60	0,46	0,54	0,76	1	0,69	0,25	0,49	0,67	0,77	0,44	0,66	0,61
GER	0,34	0,37	0,33	0,38	0,63	0,51	0,56	0,81	0,69	1	0,29	0,45	0,73	0,77	0,52	0,72	0,64
GRC	0,31	0,27	0,29	0,28	0,31	0,31	0,24	0,30	0,25	0,29	1	0,33	0,31	0,30	0,33	0,32	0,27
IRE	0,31	0,38	0,33	0,43	0,48	0,45	0,36	0,49	0,49	0,45	0,33	1	0,46	0,49	0,43	0,45	0,43
ITA	0,34	0,40	0,32	0,39	0,62	0,51	0,52	0,80	0,67	0,73	0,31	0,46	1	0,76	0,56	0,77	0,62
NLD	0,34	0,36	0,32	0,37	0,73	0,53	0,57	0,85	0,77	0,77	0,30	0,49	0,76	1	0,50	0,75	0,65
POR	0,34	0,38	0,33	0,44	0,47	0,47	0,40	0,56	0,44	0,52	0,33	0,43	0,56	0,50	1	0,60	0,48
SPA	0,35	0,40	0,32	0,42	0,63	0,52	0,54	0,80	0,66	0,72	0,32	0,45	0,77	0,75	0,60	1	0,62
SWE	0,36	0,40	0,36	0,32	0,49	0,50	0,70	0,71	0,61	0,64	0,27	0,43	0,62	0,65	0,48	0,62	1

CZE: Czech Republic, HUN: Hungary, POL: Poland, AUT: Austria, BEL: Belgium, DEN: Denmark, FIN: Finland, FRA: France, GBR: Great Britain, GER: Germany, GRC: Greece, IRE: Ireland, ITA: Italy, NLD: the Netherlands, POR: Portugal, SPA: Spain, SWE: Sweden.

Source: Own calculations.

Conclusion

The integration of the European stock markets has increased in the course of the nineties. The comparison of daily returns and risks on stock markets in the Central European transition countries (Czech Republic, Poland and Hungary) has confirmed characteristics in the period observed which are typical for the emerging markets.

Stock markets in transition countries have become increasingly interconnected. The daily returns correlation coefficients are generally positive but too low. From a point of view of the international portfolio investment a low correlation between stock market returns in the Central European transition countries and in the EU-countries can contribute to the decrease in portfolio risk and be applied to the portfolio diversification.

Abstract

V příspěvku je sledován vývoj indexů akciových trhů v zemích Evropské unie, které byly členskými zeměmi již před rokem 2004 a je srovnáván s vývojem v České republice, Maďarsku, Polsku. Hlavní pozornost je věnována analýze denních a měsíčních výnosů těchto akciových trhů a jejich změnám v průběhu sledovaného období. Posouzeny jsou základní charakteristiky denních výnosů národních akciových indexů a vzájemná propojenost těchto trhů na základě korelačních koeficientů od třetího čtvrtletí roku 1997 do prvního čtvrtletí roku 2004. Analýza měsíčních výnosů zahrnuje období od počátku roku 1995 do třetího čtvrtletí roku 2004. V obou případech je možno z hlediska výnosů a rizika považovat český, maďarský i polský akciový trh nadále za rozvíjející se trhy. Vzájemná cenová propojenost těchto tří trhů je vyšší než jejich propojenost s vyspělými evropskými akciovými trhy, dosahuje však řádově nižších hodnot korelačních koeficientů denních i měsíčních výnosů akciových trhů nejvyspělejších zemí Evropské unie.

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FACTORS IN THE IPO MECHANISM THAT AFFECTING IPOS INITIAL RETURNS IN ISTANBUL STOCK EXCHANGE (ISE)

Vedat SARIKOVANLIK*

Key Words

IPO, initial return, Turkey, Istanbul Stock Exchange, price performance

1. Introduction

An Initial Public Offering (IPOs) is the initial selling of stock to the public. After these shares are initially issued in the Primary Market at the Offering Price, they are traded in the Secondary Market. The performance of initial public offerings (IPOs) have long been a question to be answered for finance literature and this issue have been examined by a large number of studies. These studies have been concerned and documented the first day excess returns (referred as underpricing/underperformance) of the IPOs. The available evidences show that the IPO firms stock return performance deteriorates in the day after going public (Ghosh, 2004). The pioneering study on that issue has done by the Ibbotson (1975). Ibbotson documented implications on initial excess returns of U.S. common stock IPOs. The short run underpricing of initial public offerings (IPOs) is one of the best documented anomalies in finance. Ritter (1987), Welch (1989), Ibbotson *et al.* (1994) and Rajan and Servaes (1997) among others provide evidence on the existence of average excess initial returns in the US IPO market. Lee *et al.*(1994), Jacquillat (1986), Kaneko and Pettway (1994), Ljungqvist (1997), Buckland *et al.* (1981), Jenkinson and Mayer (1988) and Levis (1993) among others provide evidence of abnormal returns in Australia, France, Japan, Germany and U.K. IPO market. Also Kıymaz (2000), Aktaş *et al.* (2003) provides information about abnormal first day return for Turkish IPOs market.

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Numerous studies have been attempted to explain this puzzling abnormal price behavior. Most of them have reported differences in underpricing by looking at the different characteristics of the offering mechanism. For example, they report differences in underpricing by offering type, country, underwriter reputation, industry type, in hot and cold market cycles, to name a few. The literature dealing with underpricing is rich with theories that have been put forward to explain this anomaly (Khurshed and Mudambi, 1999). The IPOs literature emphasizes the information gap between the issuers and investors to be the main cause of the anomalies present in primary equity market. Rock (1986) explains this anomaly in terms of horizontal information asymmetry amongst investors. Asymmetric information about the companies' reliability, earning potential and authenticity of the information disclosed remained the major factor driving the uncertainty among the investors.

Several factors have been developed and examined in prior studies concerning the performance of IPOs. As a consequence, studies searching for the causes of IPO phenomena showed that initial excess return of IPOs are associated with the factors such as offering type, floating ratio, IPO type, underwriter type, and price level. For that reasons it could be claimed that investors use some fundamental parameters within these variables for their IPOs investment decisions such as firm-commitment/best effort for offering type; above/below average/median for floating ratio; share sell/capital raise for IPOs type; bank/non-bank for underwriter type; and finally above and below average/median for price level.

While there are plenty research explaining the importance of above-mentioned parameters in determining the price of an initial offering, most of them are focusing on regression analyses with the hope of revealing the explanatory power of the independent variables they put in their models. In this specific analysis we are questioning whether these independent variables, decomposed in sub-groups are directly related to IPOs initial returns. In other words, the validity and acceptability of these factors (firm-commitment/best effort for offering type; above/below average/median for floating ratio; share sell/capital raise for IPOs type; bank/non-bank for underwriter type; and finally above and below average/median for price level) are going to be examined.

In this study, IPOs issued in Istanbul Stock Exchange (ISE) Turkey, beginning from the 1990 until 2004 are put together to test their performance. The attention has been focused on the effects of differences in IPOs mechanism and the initial returns. Therefore, 277 IPOs

for the period of 1990-2004 are taken into consideration and have been categorized into five main groups: *offering type, floating ratio, IPOs type, underwriting type, and price level* and then into subgroups such as: *firm commitment-best effort, below and above floating ratio average/ median, bank--non-bank underwriter, share sell-capital raise, below and above average/ median price level*. Straight after, the equality of means of these sub-groups with respect to initial returns is tested with SPSS statistical program.

This study provides data for some emerging markets comparatively similar with Turkish financial market and makes a contribution on the IPOs performance literature.

The rest of the paper is organized as follows: The next section describes the hypothesis, data and methodology. Following that section empirical findings and results of the analysis are discussed. Conclusion part is contained in the last section.

2. Hypothesis, Data and Methodology

In this study, whether independent variables, decomposed in sub-groups are directly related to IPOs initial returns will be analyzed. Mainly, there is one null hypothesis to be tested which is the claim that all IPOs' initial returns between sub-group factors are equal. The sub-group factors are share sell and capital raise for IPOs type, firm commitment and best effort for offering type, bank or non-bank for underwriter type and finally, below or above average / median for price level and floating ratio.

The data used in the study consist of first day closing prices of the IPOs issued from 1990 through 2004, and obtained from ISE data bank. The initial return of an IPOs is, then computed as follows:

$$IR = \frac{(P_t - OP)}{OP} \times 100$$

Where,

IR = initial return of IPO in percentage (first day trading)

P_t = closing IPO price

OP = offering IPO price

There are 5 main groups and 14 subgroups in the analysis as shown in Table 1. The sample size for each group might be different due to lack of information. Only relative and available data are included into analysis. The average price level for the sample is 11,743 Turkish Lira (TL), whereas the median is 7,100 TL. The average and median floating ratios for all IPOs are 24.95% and 16.67% respectively. The remaining sub groups for offering type are firm commitment and best effort, for underwriter type are bank and non-bank underwriter, for IPO type are share sell and capital raise. The equality of means is tested using SPSS independent samples t-test technique.

3. Empirical Findings and Results

In examining the factors affecting the initial returns in Istanbul Stock Exchange (ISE), 277 IPOs for the period of 1990-2004 are taken into consideration and have been categorized into groups and subgroups as shown in Table 1. These parameters are playing an important role for investors in assessing the value of an IPOs. In finance literature there are plenty research explaining the importance of above-mentioned factors in determining the price of an initial offering. Most of them are focusing on regression analyses and hoping to reveal the explanatory power of the independent variables they put in their models.

Table 1: Descriptive Statistics

GROUPS & SUB-GROUPS	N	1st day average Initial Return	Standard Deviation
A. ALL OFFERINGS	277	0.0662	0.1731
B. OFFERING TYPE			
1. Firm Commitment	180	0.0637	0.1114
2. Best Effort	26	0.1054	0.1210
C. FLOATING RATIO			
1. Floating Ratio<24.95 avg.	95	0.0740	0.1061
2. Floating Ratio>=24.95	182	0.0598	0.1994
3. Floating Ratio<16.67 med.	134	0.0595	0.2221
4. Floating Ratio >= 16.67	142	0.0693	0.1098
D. UNDERWRITER TYPE			
1. Bank Underwriter	216	0.0641	0.1903
2. Non-Bank Underwriter	56	0.0589	0.0845
E. IPO TYPE			
1. Share sell	135	0.0660	0.2243
2. Capital raise	113	0.0625	0.1072
F. PRICE LEVEL			
1. Price < 11,743 avg.	196	0.0513	0.0894
2. Price ≥ 11,743 avg.	81	0.0718	0.1975
3. Price < 7,100 median	137	0.0502	0.0933
4. Price ≥ 7,100 median	140	0.0794	0.2268

In this specific analysis we are questioning these independent variables (factors) directly with respect to IPOs returns. In other words, the validity and acceptability of these factors are going to be examined.

All IPOs have an average 6.62% initial return and 17.31% standart deviation. A positive first day return for all main and sub groups is evident for all IPOs issued in Turkey between 1990 and 2004. But different initial returns are observed for all sub groups. These differences are tested by t-test whether they are statistically significant or not. The means of IPOs initial returns are decomposed according to offering type (firm-commitment/best effort), floating ratio (above/below average/median), IPOs type (share sell/capital raise), underwriter type (bank/non-bank), and price level (above and below average/median). Then, independent sample t-test is employed to test whether the mean of initial IPOs return is the same for

possible outcomes in each group. Using 1990-2004 Istanbul Stock Exchange IPOs data the equality of means within groups are shown in Table 2.

Table 2: t-test Results for Period 1990 – 2004

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
OFFER TYPE - Firm Commitment - Best Effort	Equal variances assumed	.507	.477	-1.768	204	.079	-0,0884	4,82E+00
	Equal variances not assumed			-1.661	31.429	.107	-0,093	9,49E+00
FLOATING RATIO - Average Rate >=24.95% - Average Rate < 24.95%	Equal variances assumed	.521	.471	.651	275	.516	-2,89E+02	5,74E+01
	Equal variances not assumed			.778	274.879	.437	-2,19E+02	5,04E+01
FLOATING RATIO - Median Rate >=16.67% - Median Rate < 16.67%	Equal variances assumed	0,301	0,584	0,468	274	0,64	-0,03138	0,05094
	Equal variances not assumed			0,46	191,86	0,646	-0,0322	0,05176
IPO TYPE - Share Sell - Capital Raise	Equal variances assumed	.375	.541	.153	246	.879	-4,18E+02	4,89E+01
	Equal variances not assumed			.162	199.323	.872	-3,94E+02	4,65E+01
UNDERWRITER TYPE - Bank - Non-Bank	Equal variances assumed	.644	.423	.201	270	.841	-4,61E+02	5,66E+01
	Equal variances not assumed			.305	204.400	.761	-2,86E+02	3,91E+01
PRICE LEVEL - Average Price >=11743 - Average Price < 11743	Equal variances assumed	.896	.345	-.823	275	.411	-6,39E+02	2,62E+01
	Equal variances not assumed			-1.091	272.818	.276	-5,28E+02	1,51E+01
PRICE LEVEL - Median Price >=11743 - Median Price < 11743	Equal variances assumed	1.835	.177	-1.409	275	.160	-7,01E+02	1,16E+01
	Equal variances not assumed			-1.398	179.910	.164	-7,05E+02	1,20E+01

According to t-test results, none of the sub-groups are statistically significant. In other words, share sell and capital raise for IPOs type; firm commitment and best effort for offering type; bank or non-bank for underwriter type and finally, below or above average / median for price level and floating ratio do not play a critical role in determining the initial IPOs returns for 1990-2004 period in Istanbul Stock Exchange.

Since the analysis period (1990-2004) is long and subject to major changes in economic conditions and social life in Turkey, at this stage of the study, the overall sample

period is divided into three equal sub-periods: 1990-94, 1995-99 and 2000-04. To test the effects of these different economic conditions on the validity and acceptability of the factors chosen above, tests are run for sub-periods again. Dividing the overall sample period in three equal sub-periods, the findings are reported in Table 3.

Table 3: t-test Results for Sub-periods 1990–1994, 1995-1999, 2000-2004

GROUP	Sub-group		t-test sig. 2 tailed		
			1990-1994	1995-1999	2000-2004
OFFER TYPE	Firm Commitment	Equal Var.	.434	.006	.059
	Best Effort	No.Eq.Var.	.356	.050	.453
FLOATING RATIO	Average >=24.95%	Equal Var.	.911	.242	.451
	Average < 24.95%	No.Eq.Var.	.859	.223	.519
	Median >=16.67%	Equal Var.	.723	.636	.611
	Median < 16.67%	No.Eq.Var.	.655	.647	.578
IPO TYPE	Share Sell	Equal Var.	.668	.062 *	.900
	Capital Raise	No.Eq.Var.	.456	.037 *	.876
UNDERWRITER TYPE	Bank	Equal Var.	.589	.550	.981
	Non-Bank	No.Eq.Var.	.275	.519	.980
PRICE LEVEL	Average >=11743	Equal Var.	.844	.531	.167
	Average < 11743	No.Eq.Var.	.814	.491	.188
	Median >=7100	Equal Var.	.491	.717	.459
	Median < 7100	No.Eq.Var.	.494	.715	.441

* F value = 2.018 Sig. 0.158

The results of Table 3 are confirming the previous ones, except for offer type category between 1995-1999. During this period 102 IPOs are issued by firm commitment underwriting and yield 5.58 % initial return, and 13 IPOs by best effort underwriting with 12.56 % initial return. These two initial returns are statistically different with 99 % of confidence level. Since 13 and 102 IPOs are too way different, one might pose a doubt on the validity of means, nevertheless standart deviations are very close (11.32 %, 7.96 %).

IPO type category (Share Sell – Capital Raise) produces equal variances with F-value 2.018, Sig.0.158 and consequently t-test value shows up statistically insignificant.

4. Conclusion

In this analysis we are questioning whether firm-commitment/best effort for offering type; above/below average/median for floating ratio; share sell/capital raise for IPOs type; bank/non-bank for underwriter type; and above and below average/median for price level

variables, decomposed in sub-groups, are directly related to IPO initial returns. In other words, the validity and acceptability of these factors are examined.

The implications of the study show that there is *not* statistical evidence to support that all above-mentioned sub-groups are affecting IPOs initial returns in different manner. In other words, investors in Turkey do not care if an IPOs is backed by a bank or non-bank institution, or an IPOs is issued for capital raise purpose or an old shareholder is selling his or her stakes at the company. All different factors in groups and sub-groups for an IPOs are telling nothing to Turkish investors. These considerations are equally valid for all remaining groups of Table 1.

In Istanbul Stock Exchange (ISE) investors in IPOs between years 1990 and 2004, and subsequently for almost three sub-periods do not consider important share sell or capital raise for IPO type, firm commitment or best effort for offering type, bank or non-bank backed underwriting, above or below average/median for price level and floating ratio.

Abstract

V příspěvku je analyzována výkonnost primárních emisí (Initial Public Offering, IPO) na burze cenných papírů v Istanbulu. Datový soubor se skládá z 277 IPO provedených v letech 1990-2004. Pro testování výkonnosti bylo zvoleno pět hlavních kategorií: typ procesu nabídky, variabilita kurzu, typ IPO, typ underwritingu a cenová úroveň. Cílem je zjistit, jaká kombinace charakteristik IPO vede k maximalizace počátečních výnosů emise. Jednotlivé kategorie indikátorů jsou charakterizovány takto: underwriting vs. nejlepší snaha, variabilita nad (pod) průměrem (mediánem), bankovní vs. nebankovní underwriter, prodej akcií vs. navýšení kapitálu, cena nad (pod) průměrem (mediánem). Empirické výsledky studie naznačují, že neexistuje žádná významná statistická závislost, že některé z definovaných ukazatelů a charakteristik IPO emisí ovlivňují její úspěšnost charakterizovanou mírou počátečních výnosů z emise.

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EXCHANGE TRADED FUNDS (ETFs) - WIDELY USED INVESTMENT INSTRUMENTS

Martin Svoboda¹

Key words

Exchange Traded Funds, Index Participation Shares, warehouse receipt, Unit Investment Trusts, Country Baskets

1. Introduction

First introduced in 1993 in the US, exchange-traded funds have exploded onto the scene. In Europe, they have rapidly gained ground since trading commenced in 2000.

2. Historical Market Developments

In their brief history, index-based exchange-traded funds (ETFs) have mushroomed around the globe, covering a variety of styles, sectors, countries, and regions. Because of their low cost, ease of trading, and utility as hedging tools, ETF assets have grown exponentially since 1993. By the end of the second quarter 2003, they stood at over US\$ 96 billion (Euro 109 billion), with US\$ 14 billion (Euro 16 billion) of that being traded on markets outside the US.

The unique structure of ETFs originated in the receipt-based commodities markets. Nate Most, current Chairman & President of the iShares Trust, called upon his background in commodities as well as his work in derivatives at the American Stock Exchange (AMEX) to develop the concept of exchange-traded funds. He reflect on what started as a simple goal and how it all evolved into ETFs, and the number of critical requirements that had to be met and overcome to make the ETFs possible.

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By the early 1980s, it was increasingly common for institutional investors to own large baskets of stocks that tracked indexes and to trade index futures based on those indexes. This led to Index Participation Shares (IPS), which began trading on the Philadelphia Stock Exchange in 1989, and later on AMEX. While they could be bought on margin and loaned out like stocks, IPS essentially behaved like futures. They were settled on cash, and tracked the index very closely. The IPS gave way to the TIPS in 1989. Toronto Stock Exchange Index Participations (TIPS) were warehouse receipt-based instruments designed in order to track the Toronto-35 index. Unlike other tradable instruments like IPS and futures, TIPS were not derivatives. Like today's ETFs, TIPS were units of a trust created by the Toronto Stock Exchange. The underlying assets of the trust were actual shares of the 35 constituent companies that made up the TSE 35 Index. These shares were held by the trust in the same proportion as they are reflected in the index and shares were priced at about 1/10 the value of the total index by market cap. Later Toronto 100 Index Participations (HIPS) were introduced.

The origin of the first true ETFs was caused in part by the financial distress faced by the American Stock Exchange (AMEX) in the 1980s. Nate Most saw that his employer was faced with a chronic lack of financial resources, and came up with a product that he thought the AMEX could easily trade. While working at the Pacific Commodities Exchange, Most became accustomed to warehouse receipts. You store a commodity and you get a warehouse receipt and you can finance on that warehouse receipt. Because you don't want to be moving the merchandise back and forth all the time, you keep it in place and you simply transfer the warehouse receipt. That was the mental spark that ultimately led to the ETF concept. If you could simply exchange large baskets of stocks for a sort of warehouse receipt that could then be divided into small pieces, these shares could then trade on the secondary market.

The first ETFs were set up as Unit Investment Trusts (UITs) – they were less expensive to run because they didn't require a board of directors. As more funds were released and other benefits of management investment company funds (like lack of dividend drag and ability to loan stocks) were factored in, this cost became insignificant.

Open-ended WEBS (from Morgan Stanley and Barclays Global Investors) and the now defunct Country Baskets (from Deutsche Bank) were introduced in 1996, allowing American investors to buy into foreign stock indices by purchasing shares on the American Stock Exchange. In 1998 came the "Diamonds", tied to the Dow Jones Industrial Average.

The next year the Nasdaq 100 Trust (“Cubes”) conquered the market. In Europe, Deutsche Börse has clearly led the charge. The market for exchange-traded funds in Germany has grown exponentially since the introduction of Deutsche Börse’s XTF segment in April 2000.

Average monthly turnover is 2 billion Euro. As of June 30, 2003, the number of exchange-traded funds available globally had grown to 169, with 103 of those trading on US markets and the rest trading in nine different countries. With assets in Europe ballooning at a rate that exceeds ETF growth in the US, the European ETF market is set to match or exceed the explosive growth enjoyed by ETFs in the US. Most analysts project a huge rise in assets under management and number of funds, as ETFs enter many parts of the investment world.

3. Global ETF Growth

- Early 1980s - Program trading and futures allow institutional investors to buy and manage large baskets of stocks.
- 1987 - Index Participation Shares (IPS) trade on AMEX.
- 1989 - Toronto Index Participation Shares (TIPS) begin trading in Canada. First tradable instrument actually tied to underlying shares. TIPS were based on TSE-35 Index.
- 1993 - SPDRs S&P 500 funds becomes first true ETFs.
- 1995 - MidCap Spider launched.
- 1996 - WEBS and Country Baskets become first ETFs based on single country basket.
- 1998 - Diamonds, HOLDRs and Select Sector SPDRs introduced.
- 1999 - iUnits 60 Canadian fund and Hong Kong Tracker becomes first non-US ETFs; QQQ and additional HOLDRs launched.
- 2000 - ETFs begin trading in Germany and the UK, Israel, Switzerland and Sweden; more than 90 new ETFs launched globally; first active ETFs launched in Germany; first fixed income ETFs launched in Canada.
- 2001- As of June 2001 the total number of ETFs worldwide reached 169 with global assets of over \$109 billion and no end in sight. ETF market starts in France.

4. Conclusion

Exchange Traded Funds (ETFs) have become popular a widely used investment instruments on financial and capital markets. In a world in which new financial products come and go in the blink of an eye, ETFs might well considered the leading financial innovation of the last decade. ETFs offer many advantages. ETF are based on a sector, large-cap, mid-cap, small-cap, value, growth, domestic, international country and regional equity indices as well on corporate and government fixed income indices. ETFs can be used to short indexes even on a down tick in the US, can be purchased on a margin, are lendable, and are purchased on a commission basis just like other equities.

Abstract

Jednou z posledních inovací na světových trzích kolektivního investování jsou Indexové akcie (Exchange Traded Funds - ETF). Indexové akcie jsou cenné papíry, které mají charakter akcií fondů, podílových listů investičních trustů nebo depozitních stvrzenek. Indexové akcie mají zpravidla charakter pasivních fondů investujících do zvolených indexů. Od klasických indexovaných fondů se však zejména liší tím, že jsou oceňovány a obchodovány během obchodního dne průběžným způsobem. Kromě toho lze využít při jejich nákupu úvěru (margin trading) a lze s nimi realizovat i krátké prodeje (short selling). Při koupi tohoto indexového produktu pasivního investování může investor za mírné poplatky koupit celý akciový trh. Jejich hodnota závisí na vývoji jednotlivých akciových indexů, které slouží jako podkladová aktiva. Indexové akcie se hodí pro dlouhodobé i krátkodobé orientované podnikatelské subjekty, které zvažují alokovat své volné finanční prostředky na finančních trzích. Jejich cena je kotována nepřetržitě a toho využívají tzv. day traders, kteří těží z denních pohybů kurzů. Protože kurzy indexových akcií přesně kopírují kurzy podkladových burzovních indexů, jsou transparentní a je jednoduché sledovat jejich aktuální cenový stav.

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THE MEASUREMENT OF EFFICIENCY OF THE ENTERPRISE¹

Jaroslav Sedláček²

Key words

Methods of measurement, efficiency, accounting statements, date, enterprise

1. Introduction

The efficiency of the enterprise is generally defined as achievement of expected efforts during a time period. The efforts are defined as activities of the enterprise, whose result is a product, good or service used for external usage (for sale). Economically it is possible to define the efficiency as the difference between revenues obtained from the sale of efforts and resources depleted in production of these efforts. In other words it is the economic result of the enterprise during some time period registered in accounting evidence in profit and loss statement. Is it possible to consider this economic result contemporaneously as an objective measure of the efficiency of the enterprise?

2. The Methods of Measurement of Efficiency of the Enterprise

The economic theory offers more approaches for measurement of the efficiency of the enterprise that are based not only on accounting data but also on information provided by the capital market. To the most known methods belongs:

a) indicator Return on assets

$$\text{ROA} = \frac{\text{earnings}}{\text{assets}}$$

that represents return on embedded assets (or capital). For measurement of efficiency in the form of so called gross productive intensity of embedded assets before counting out of cost interests and taxes serves the indicator, in whose nominator are used earnings before interests

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and taxes (EBIT). If we instate into the numerator the net profit and into the denominator the equity, indicator return on assets (ROE) expresses, what efficiency the enterprise achieves for its owners.

b) Indicator Economic value added

$$\text{EVA} = \text{NOPAT} - C \cdot \text{WACC}$$

Where NOPAT is Net Operating Profit After Taxes, C is capital strapped in assets used for the main activity (NOA – Net Operating Assets) and WACC are Weighted Costs of Capital. Sometimes this indicator is modified into this form:

$$\text{EVA} = (\text{ROE} - r_e) \cdot E$$

Where r_e is an expected profitability corresponding to the comparable risk (alternative costs of equity (E)). The indicator shows the value that was added by the economic activity of the enterprise above the level of the costs of capital (rates of profitability accepted by creditors as well as owners). Its advantage is that it provides more real information about the efficiency of the enterprise and contemporaneously motivates the management to decisions that lead to the increase of the market value of the enterprise.

c) Indicator Market value added

$$\text{MVA} = \text{MV} - \text{IC}$$

Where MV is a market value of the total capital, i.e. equity as well as debts and IC is a value of the total capital invested into the enterprise at the beginning of analyzed period. The indicator comes out from the draft that defines increasing of the value for owners via increasing of the market value of the enterprise. The main advantage of this indicator is fact that the value is recognized by the market and there is no threat of its undesirable influence by the management of the enterprise. But this indicator can be used only in case of the firms traded on public markets.

d) indicator Shareholder value added

$$SVA_t = SV_t - SV_{t-1}$$

Where SV_t is the value of the firm for shareholders in time t and it is appointed as the present value of the cash flow from operating activity during planned period (most often 5 years) + the residual value of the firm at the end of the planned period (discounted) + the market value of non-operating assets – liabilities of the enterprise. The indicator reflects the approach to the enterprise as to specific form of investment producing for owners free cash flows. The critical factor in using of this indicator is the measure of reliability of preliminary information.

3. Factors Influencing the Measurement of the Efficiency

Each from described methods of measurement of the efficiency of the enterprise has its patrons and critics. Methods based on the future cash flows hint on inaccuracies in estimations of next events. Indicators of the capital market can be influenced by speculative plans or by other plans influencing the market value of the enterprise. Even though traditional methods of measurement of the efficiency of the enterprise's capital based on accounting data can not be considered as good as gold especially because of content delimitation and quantification of the economic result as well as of the enterprise's capital. As the main factors influencing the economic result must be mentioned:

- Way of recognition of revenues. The revenue can be recognized in the moment, when three conditions are fulfilled:
 - revenue is earned,
 - revenue is realized or realizable,
 - persuasive evidence that a transaction has taken place exists.
- Differentiation of revenues from gains of value. Revenues represent increasing of the value of assets or decreasing liabilities coming from deliveries of products or goods, from providing services or from other activities representing the main profit-making activities of the enterprise. The gains of the value represent the increasing of the equity resulting from the residual transactions of the enterprise, except revenues and investment of the owners.

- Definition of the cost as outflow or other consumption of assets or as a creation of liabilities that result from delivery or production of products (goods), providing services or other activities which are the part of continuing main profit-making activities of the firm.
- Invoking of the matching principle, that brackets to revenues corresponding expenses. For creation of the cost, there must be the revenue first, that made the creation of the cost possible. The enterprise should be able to identify, which cost made possible a concrete revenue.
- Segmentation of the costs on costs shown in the profit and loss statement in the moment of their creation and on costs shown in the moment of the sale. Costs, that are tightly connected with a certain period (where the rate of future welfare can not be determined) and costs, where can not be defined any logical way of their allocation, have been shown already in the moment of their creation in the profit and loss statement as expense (cost). Conversely, in the case of goods or products, costs of goods sold do not become the expenses before the moment of the sale of the goods.
- Differentiation of costs from losses of the value. Losses of the value result from secondary activities and represent decreasing of equity of the enterprise except expenses and distribution to owners. If it is clear that future economic benefit of sooner accredited asset has decreased or eliminated, or that sooner created liabilities have not been connected with corresponding economic welfare, the losses can stand out of control of the enterprise (out of management).
- Differentiation of revenues from gains of the value, that similarly as losses influence the change (in this case increasing) of equity of the enterprise and result from secondary or random transactions. That can be prizes, gifts, sale of unnecessary equipment, increasing of the value of assets hold from the change of the market value, exchange rates, etc.
- Internal corporate rules for showing of exceptional economic result.
- Conditions created by enterprise for creation and settling of rectifying items and reserves.

- Well-established accounting methods for valuation of assets and liabilities.
- Rules for the accounting classification of fixed (long-term) assets of the enterprise and methods of its amortization.

4. Conclusion

In spite of all protestations against the methods of measurement of enterprise's efficiency it is clear, that the accounting information (in the form of costs, revenues, or profit or loss of the enterprise) will play an important role in financial reporting. As it was particularly shown in the previous point, a lot of factors have an impact on creation of accounting data. These factors can positively or negatively influence the reporting of the economic result as well as reporting of the efficiency of the enterprise. Just to find out, how the accounting methods can influence the reporting of efficiency of the enterprise, is the goal of a project of GACR, GAČR, whose solution has been started at ESF MU in Brno.

Abstract

Příspěvek nastiňuje některé faktory, které způsobují odlišné zobrazení majetku a závazků podniku v účetnictví a mohou vést k diferencím ve stanovení jeho výsledku hospodaření. Za klíčové lze považovat způsob rozpoznání výnosů, rozlišení výnosů od přírůstků hodnoty, definici nákladů, segmentaci nákladů, rozlišení nákladů od úbytku hodnoty, interní pravidla pro vykazování mimořádného hospodářského výsledku, pravidla pro účtování a klasifikaci fixních aktiv a další. Současně uvádí výběr metod užívaných k měření výkonnosti podniku s cílem poukázat na veličiny, které jsou výstupem z účetnictví. Mezi hlavní lze zařadit výnosnost aktiv, ukazatel EVA (Economic Value Added), indikátor MVA (Market Value Added) a ukazatel SVA (Shareholder Value Added). Příspěvek je nutno chápat jako úvod pro zkoumání vlivu účetních metod na vykazování výkonnosti podniku.

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COMPARATIVE ANALYSIS OF CONDITIONS FOR A COMPANY FOUNDATION BY THE CZECH INVESTOR IN INTEGRATED EUROPEAN UNION

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Key words

Registered capital, mobility of capital, VAT rate, insurance costs, minimum wage rate

Introduction

Entry conditions on integrated market brought many new structural impulses to Czech business subjects – protective duties have been abandoned, our farmers have been involved in integrated agricultural policy, changes in the tax system, growth of personal mobility, liberalization of capital flow, subventions for economically backward regions or bad structuralised regions.

The united EU market offers other new possibilities, such as market without frontiers with 500 million consumers. It is necessary to have a wide international view, higher education in investment and management, finally, speaking other foreign languages, especially English to be successful on this market. If you do not understand their philosophy, you could suffer from severe competition on the market, and then you could have problems with international law, which protects the united market in the EU. It may not be forgotten that the “old” EU members have an advantage – time spent on the European market. It is the reason why Czech investors could have some other problems to face. These were the fundamental reasons why we have prepared this analysis.

The purpose of the analysis is to map out conditions for founding a company in the EU by using its keystones “Free mobility of goods, services, persons and capital” in real life. In our analysis we shall put special emphasis on the sections concerning persons and capital.

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1. Methods of analysis

To found a company in another country than the Czech Republic, it is critical to make a comparative analysis of future costs of carrying on business in our republic and the EU. We have divided these into the three following sections (see Table 1).

Table 1 Methods of business costs analysis

Section	Criterion
Goods and services free mobility	<ul style="list-style-type: none">• Basic principles in the integrated EU market
Free mobility of persons	<ul style="list-style-type: none">• Wages and salaries costs,• Insurance costs paid by employer• Long-term residence in EU, permission for working in another country
Free mobility of capital	<ul style="list-style-type: none">• Amount of registered capital for foundation of common company forms such as limited liability company, joint stock company or self proprietor• administrative costs and barriers,• VAT rate

2. Free mobility of capital

a) Comparison of requests on registered capital in the EU countries

When we intend to carry on business in the Czech Republic, we are obliged to follow the Czech Commercial Code, which stipulates the amount of the registered capital, which depends on the company legal form. In order to be permitted to establish a company with limited liability in the Czech Republic, you will need CZK 200,000 (€ 6,329) and for joint stock company you need CZK 2,000,000 (€ 63 291).

In our business law exist other business forms, such as self proprietor, partnerships, limited partnerships, where you do not need to have a registered capital except in the case of a co-operative, but on our market there are only two dominating forms - company with limited liability and joint stock company. Why are the other forms inessential for our analysis? In majority of countries their definition is not identical. This is the reason why we specialize on these two forms – limited liability company and joint stock company. This could be illustrated by the statistics in the selected EU countries as showed in the table below:

Table 2 Comparison of the amount of registered capital

Country	Common forms of company type	Currency	Request on capital	Capital in €
Great Britain	Company with limited liability (CLL)		not requested	
	Joint Stock company (JSC)		not requested	
Denmark	CLL	DKK	125,000	16,788
	JSC	DKK	500,000	67,152
Estonia	CLL	EEK	40,000	2,547
	JSC	EEK	400,000	25,467
Ireland	CLL		not requested	
	JSC		not requested	
Italy	CLL	EUR	10,000	10,000
	JSC	EUR	100,000	100,000
Hungary	CLL	HUF	3,000,000	12,173
	JSC	HUF	20,000,000	81,153
Germany	CLL	EUR	25,000	25,000
	JSC	EUR	50,000	50,000
The Netherlands	CLL	EUR	18,000	18,000
	JSC	EUR	45,000	45,000
Portugal	CLL		not requested	
	JSC	EUR	25,000	25,000
Austria	CLL	EUR	35,000	35,000
	JSC	EUR	70,000	70,000
Greece	CLL	EUR	18,000	18,000
	JSC	EUR	60,000	60,000
Slovenia	CLL	SIT	1,500,000	6,249
Slovak rep.	CLL	SKK	200,000	4,998
	JSC	SKK	1,000,000	24,989
Poland	CLL	PLN	50,000	11,450
	JSC	PLN	100,000	22,900
Finland	CLL	EUR	8,000	8,000
France	CLL		not requested	
	JSC	EUR	37,000	37,000
Lithuania	CLL	LTL	10,000	2,895
	JSC	LTL	100,000	28,951
Belgium	CLL		not requested	
	JSC	BEF	2,500,000	61,982

From the viewpoint of “minimum costs”, the cheapest company with limited liability can be established in Estonia, Lithuania and Slovakia, while the most expensive will be in Austria, The Netherlands and Greece.

The cheapest joint stock company could be founded in Slovakia, Poland and Portugal, but the most expensive countries include Austria, Hungary, and Italy.

b) common administrative and other barriers

Each country has a priority to protect their own market and their producers, because the EU countries have not fixed uniformity of business law. It is the reason, why they impose barriers and restrictions. A common restriction is in a form of tax from registered capital, ranging from 0.5% to 1% (e.g. Belgium, Greece, Poland) or in a form of registration fee, ranging from € 30 (GB, Ireland) to € 800 (Hungary), banking guarantee amounting to 50 000 USD (Greece).

Establishing of a company in other country is more complicated also due to the fact, that corporate statutes will have to be translated into the local language (which extends the process of registration and raises administrative costs), while it is customary to translate the articles of association into English. This barrier exists in Estonia, Finland, Latvia, Slovenia, or they require that a country resident be a manager or a lawyer in the particular company (e.g. Denmark, Estonia, Ireland, Lithuania, Spain, Portugal and Slovenia).

The best conditions and minimum administrative costs are offered by Malta, where registration process will be accomplished within 3-4 days, the same will take 1-2 weeks in Portugal in the case of establishing a joint venture company with a Portuguese person; on the other hand, this process will take approximately 3-4 months in The Netherlands and Austria (and, moreover, you will have to hand in the certificates of education, tax receipts, etc.).

Table 3 Examples of administrative fees in EU

Country	Administrative cost	Currency	Amount	Price in €	Total in €
<i>Great Britain</i>	registration fee	GBP	20	30	30
<i>France</i>	registration fee	EUR	60	60	260
	fee for incorporation in Trade Register		200	200	
<i>Ireland</i>	registration fee	EUR	30	30	30
<i>Hungary</i>	registration fee	HUF	60,000	243	1,258
	fee for notification in Trade Register		250,000	1,015	
<i>Germany</i>	registration fee	EUR	750	750	1,000
	Fee for notification		250	250	
<i>Greece</i>	tax from registered capital 1% CLL	EUR	180	180	180
	Tax from registered capital 1% JSC		600	600	600
<i>Slovakia</i>	fee for notification in Trade register - CLL	SKK	10,000	250	250
	fee for notification in Trade register - JSC		20,000	500	500
<i>Poland</i>	notary fee –CLL 3% from reg.capital	PLN	1,500	343	343
	notary fee –JSC 3% from reg.capital		3,000	686	686
	fee for notification in Trade register		500	114	539
	registration fee		860	197	
	fee for notification in Trade register		1,000	228	
<i>Lithuania</i>	tax from registered capital 1% CLL	EUR	28.95	28.95	28.95
	tax from registered capital 1% JSC		289.51	289.51	289.51
<i>Belgium</i>	tax from registered capital 0,5% JSC	EUR	310	310	310

c) *Comparison of VAT rates*

One of the EU priorities is to reduce differences between the basic VAT rates, but at the present time these figures are considerable – about 10%. For a businessman, who intends to commence his production in the particular country, this factor is vital, of course. The VAT rate has an influence on the sales price of the product and its rate increases or reduces competitiveness on the foreign markets.

Table 4 VAT rates in EU

Country EU 15	Basic VAT rate
Luxembourg	15 %
Germany	16 %
Spain	16 %
Great Britain	17,5 %
Greece	18 %
The Netherlands	19 %
Portugal	19 %
France	19,6 %
Italy	20 %
Austria	20 %
Belgium	21 %
Ireland	21 %
Finland	22 %
Denmark	25 %
Sweden	25 %

Basic VAT rate - new EU members	
Country	Basic VAT rate
Cyprus	15 %
Malta	15 %
Estonia	18 %
Lithuania	18 %
Latvia	18 %
Czech rep.	19 %
Slovakia	19 %
Slovenia	20 %
Poland	22 %
Hungary	25 %

The minimum VAT rates are offered by Cyprus, Malta, Luxembourg, Germany and Spain – 15-16.5%, the maximum VAT rates are imposed in Hungary, Poland, Denmark, Sweden and Finland.

3. Free mobility of persons

After the big expansion of the EU in May 2004, many EU countries have accepted a “transition period”, which restricts free mobility of persons - employees in the EU. This period will definitely expire in 2011. Only Ireland and Great Britain opened their labour markets at once. We have illustrated the situation in Table 5. These restrictions are affected by their own situation on the labour market and their concern of inexpensive, but qualified foreign labour force arriving from the new EU countries.

Table 5 Focus on free mobility of people

EU Country	Requirements
Germany	- residence permission, - you cannot have the following sectors - building industry, security services, health services, accommodation services
Austria	- residence permission, - abstract from the criminal register
Luxembourg	- residence permission,
Denmark	- application fee - 2800,- CZK (approx. € 89), - residence permission for 2 months
Sweden	Employer must guarantee a minimum wage rate, accommodation, labour permission.
Spain	Entry visa, abstract from the criminal register, administrative fee, translation to Spanish
Italy	Quota of 8,000 permissions per year
Finland	Labour permission, employment contract, abstract from the criminal register
New Members from May 2004	Without barriers

a) Comparison of minimum wage rates

Minimum of wage cost is another factor playing role in the making of the decision as to where you intend to set up your business. We have made a comparison in Table 6. The

cheapest labour force is offered by Estonia, Lithuania, Latvia, Slovakia, while the most expensive can be found in Luxembourg, Belgium and the Netherlands.

Table 6 Comparison of minimum wage rate

Country	currency	Rate per month	Amount in €	Commentary
<i>Belgium</i>	EUR	1,233.54	1,233.54	
<i>Czech rep.</i>	CZK	6,700	212.23	
<i>Denmark</i>	DKK		Not defined	Problem is solved by collective agreement
<i>Estonia</i>	EEK	2,480	158.50	
<i>Finland</i>	EUR		Not defined	Problem is solved by collective agreement, minimum wage rate is different in concrete sectors
<i>France</i>	EUR	1,090.48	1,090.48	35 hours per week
		1,227.57	1,227.57	39 hours per week
<i>Ireland</i>	EUR		1,092.00	39 hours per week
<i>Italy</i>	EUR		Not defined	
<i>Cyprus</i>	CYP	345	598.20	
<i>Lithuania</i>	LIT	450	130	
<i>Latvia</i>	LVL	80	122	
<i>Luxembourg</i>	EUR	1,403	1,403	Rate is for unqualified staff
<i>Hungary</i>	HUF	54,000	219.11	For the unqualified - HUF 54,000; For qualified - HUF 100,000.
<i>Malta</i>	Lira	230.23	542.40	
<i>Germany</i>	EUR		Not defined	Problem is solved by the collective agreement, it depends on business sector
<i>the Netherlands</i>	EUR	1,264.80	1,264.80	For people aged over 23
<i>Portugal</i>	EUR	365.60	365.60	
<i>Austria</i>	EUR		Not defined	Problem is solved by collective agreement
<i>Greece</i>	EUR	504.83	504.83	Employees must receive 13 th and 14 th salary
<i>Slovakia</i>	SVK	6,080	151.93	
<i>Slovenia</i>	Tolar	103.64	442.60	
<i>Spain</i>	EUR	460.50	460.50	Employees must receive 13 th and 14 th salary
<i>Sweden</i>			Not defined	Problem is solved by collective agreement
<i>Great Britain</i>	GBP	702	1,028	39 hours per week; GBP4,5 per hour For workers between 18-21 years- GBP 3,80 per hour,

b) Insurance costs

You can see that the minimum costs for insurance paid by the employer are in the Great Britain, where an employee pays it on his own, the list is followed by Slovenia and Poland. The maximum rate is in France because they guarantee a pension at 70% of your wage rate.

Table 7 Outline of insurance costs

Country	Employer's costs in €	Commentary
Great Britain	0	SI- GBP 2 per week is paid by employee, employer 7% from profit above € 4,385
Slovenia	79.5	SI-employee 22,1%, employer 15,9%
Poland	104.1	SI - employee 18,71%, employer 18,29% contribution to labour fund 2,45% wage fund 0,08%, total 20,82%
Portugal	118.75	SI-employee 11%, employer 23,75%
Lithuania	155	Employer HI- 3%, pension fund 27%,accident insurance 1%, employee 3%
Hungary	165	employer HI - 11%, pension fund 22%, employee 2-8%
Estonia	165	employer pays all - 33% - health + social insurance
France	230	Employer 46%, employee 22%

SI – social insurance, HI – health insurance, the Calculation was made from a monthly wage rate of 500 €

Conclusion

Considering the simplified analysis of the named factors the following results may be concluded: the best conditions for founding a limited liability company are in Estonia or Lithuania (minimum rate of registered capital), for registration in Great Britain (minimum administrative costs), employing staff from Estonia (minimum wage rate), and considering insurance duty in again Great Britain (minimum insurance costs), VAT registration in Cyprus or Malta.

If we are agree that the combination of the above is not good to implement in common life, we could recommend staying in Estonia, having to stand the disadvantage of a long administrative process.

There is, of course, another possibility – not setting up “your own” company, but taking an opportunity to expand with an existing company abroad in the form of joint venture or strategic alliance – good conditions are in Portugal. Then, you could take the opportunity to get money from the EU funds, where good chances are offered at Cyprus and Malta by fast registration process and interest of the local government in supporting small and medium sized enterprise.

To act as a self-proprietor is more difficult in the EU than in our country – it is more complicated to obtain a trade licence, because one must have a qualification in the particular branch of business, than long-term experience and also, one has to be a member of the national professional institutions.

A business activity like commercial representation is not recommended, since many countries EU impose severe restrictions, which prohibit independent business - they view these as a mere representation. A clear reason – tax is paid to the country where the company has a registered place of business and it brings no benefits to the host country.

Benefits from the enterprise can be defined in two ways: firstly, a profit for the company’s owner, secondly, state revenue from the settled taxes. Low rate of corporation tax are offered at Cyprus a Malta. Tax rate is about 10%.

Business environment in the EU is very different, varying markedly country-to-country. Advantage for the new EU member states is good rate of exchange for Euro and this factor decrease costs for capital and wage rate. Disadvantage is that economic system has not developed properly so far. It may be the reason why they offer better conditions for foreign investors – they intend to facilitate their own development.

Finally, I would like to add that this material has not been drawn up to seek solutions for all the problems, but we would like to present a new way for Czech businessman and Czech companies in the EU environment and make up a simple analysis on possibilities and opportunities for their expansion.

Abstract

Příspěvek si ve své první části klade za cíl teoreticky vymezit oblasti a kritéria hodnocení nákladů vznikajících při zakládání podniků v rámci evropské integrace v souladu s jejími základními principy volného pohybu zboží a služeb, pracovní síly a kapitálu. V druhé části se zabývá zhodnocením podnikatelského prostředí v rámci členských zemí EU z pohledu potřeby kapitálu, administrativních nákladů a sazby daně z přidané hodnoty. Třetí část je věnována kritériím z oblasti volného pohybu osob, a to z hlediska výše minimální mzdy, omezení pobytu a nákladů na sociální a zdravotní pojištění placeného zaměstnavatelem. Závěrem je provedena srovnávací analýza podle nejnižších nákladů s uvedením faktorů, které dále způsob a formu podnikání ovlivňují. Výsledkem srovnávací analýzy je zjištění, že nejlepší podmínky pro založení společnosti jsou v Estonsku a Litvě, pro registraci ve Velké Británii, pro minimalizaci personálních nákladů v Estonsku a z hlediska povinného pojištění ve Velké Británii. Při akceptaci dlouhého administrativního procesu lze doporučit Estonsko.

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SMES AND THEIR FINANCIAL SOURCES

Hana Šedová

Key words

SMEs (small and middle enterprises), financial sources, internal and external financial sources, research.

Introduction

One of the issues facing Central and Eastern European countries in the transformation from centrally planned into market economies is the need to develop small and medium sized enterprises (SMEs) as part of a wider social and economic restructuring. The importance of SMEs grows up in all transition countries and in the Czech Republic. SMEs in all transition countries and in the Czech Republic have also similar financial problems. It seems to be important to find out the solution of SMEs financial problems in accordance to SMEs growing importance and their development.

Recent business all over the world demands new investments nearly in all their branches. Business projects are sometimes very expensive. Their costs are much higher and that is not allways possible to finance them by using internal financial sources. Then it is necessary to use other, maybe also foreign financial sources. But how and where to get them.

1. SMEs financial sources

Recent business in the Czech Republic seems to be very difficult. Small and medium enterprises can usually meet more financing problems than bigger ones.

Financial sources is possible to sort out in two main groups: internal and external sources. All alternatives are more or less complicated. Using internal financial sources in the Czech Republic is still very popular and many Czech businessmen rely only on their capacities. These facts were used as the foundation for the SMEs financial sources research at the area Zlín in years 2001, 2002 and 2003. At the beginning was said the hypothesis: „SMEs

do not often and effectively use external financial sources as various bank products and services.“

1.1 Financial sources and their SMEs use in Zlín area

There was provided the research at VOŠE Zlín according to sorting out financial sources in Zlín area in 2001, 2002 and 2003. The participants in this questionnaire were small and medium enterprises. These are results:

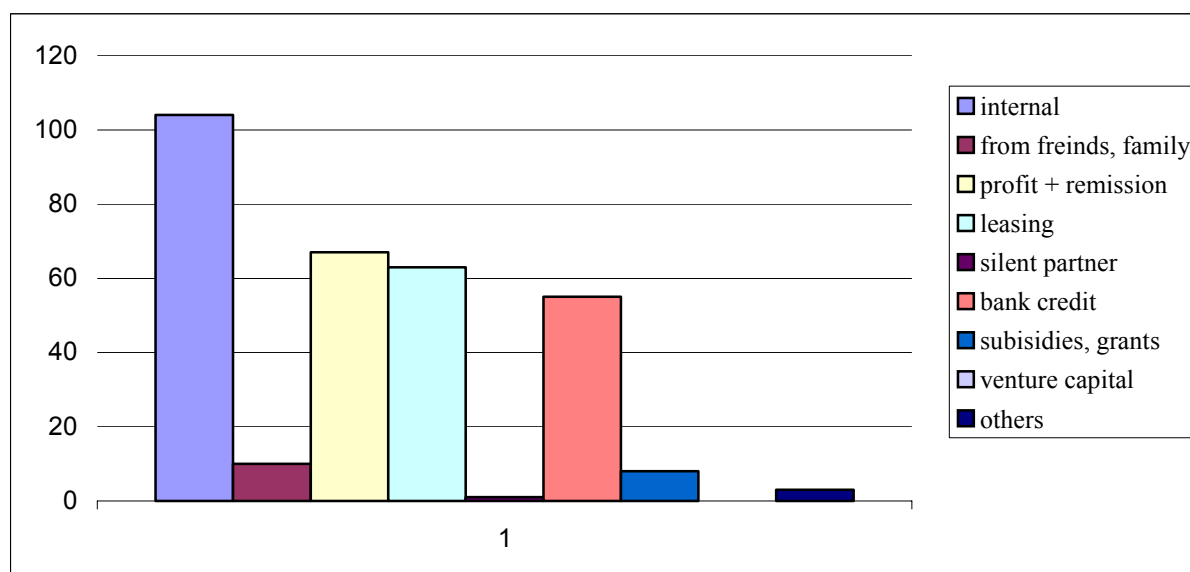
Table 1: SMEs financial sources (in percent)

Internal sources (from owners)	33
Profit	21
Leasing	19
Bank credit	17
From friends, family	3
Silent partner	2
Subsidies, grants	1

Source: H.ŠEDOVIÁ - research at VOŠE Zlín – 2001

The results showed that the Czech SMEs businessman relied mostly on internal sources in 2001. The answers confirmed the acknowledgment with internal sources SMEs preference. Only 17 percent respondents already used bank credit. Leasing became as well known external source and probably SMEs chose leasing as an easier financial source than bank credit. Subsidies and grants were used only in 1 percent. This described that SMEs were not very much interested in grants or subsidies in 2001. The reason was obvious and the research confirmed another hypothesis which was proclaimed at the beginning of this research: „ *SMEs are not interested in bank products and services and also are not well informed about them.*“ The information and the acquaintance with bank products and services – that was a great problem for SMEs in 2001.

Chart 1: SMEs financial sources



Source: H.ŠEDOVIÁ - research at VOŠE Zlín – 2002

Looking at the results shown above we can confirm that internal sources were still the most common with 33 percent questioned SMEs businessmen. External sources followed with 19 percent using leasing and 17 percent using bank credits. Subsidies and grants came with less than 10 percent. There the questions could rise up, if it was because of businessmen's difficult financial position – it meant they could not get or reach them. Or if it was because of not any information about getting subsidies and grants for small and medium enterprises.

The research followed also in 2003 and below are given following results:

Table 2: SMEs financial sources (in percent)

Internal sources (from owners)	83
Profit	17
Leasing	39
Bank credit	50
Project financing	8
Silent partner	0
Subsidies, grants	23

Source: H.ŠEDOVIÁ – research at VOŠE Zlín – 2003

SMEs still preferred internal sources to external sources. But there was seen a great movement in external sources use. 50 percent SMEs respondents used bank credits and 39 percent leasing. Bank credit became a very popular external source in 2003. Maybe it was because of a convenient credit rate in 2003. Banks started to work with a different attitude according to SMEs. Also subsidies and grants started to be a very popular and useful for SMEs.

Research conclusion

Internal financial sources can be filled up also by external sources as bank credits, stocks and bonds issuing, leasing, factoring, forfaiting, project financing, grants, state subsidies and venture capital. Some of these can be very difficult to obtain. These ideas are for recent SMEs well known. The SMEs research confirmed the hypothesis of SMEs internal sources preference and the hypothesis of a very bad SMEs information source about bank products and services. The situation in 2003 rapidly changed and SMEs used more bank credits and leasing than previous years. Also changed the SMEs information source mainly for bank products and services. Especially in 2003 internet became the most popular information source for Czech SMEs.

1.2 The Green Homes Co. and their project

The Green Homes Co. has been looking for a way of financing of its business plan aiming in introduction of earth-sheltered houses in the Czech market. The company has got all the necessary know-how, expertise and skills in the USA where this architecture has a long tradition. Currently 3 houses of this type are being built by private investors at one locality at the outskirts of Zlin. This project has raised an unexpected interest of media and general public. To catch the interest, the company would need to hire another design and civil engineers, technicians for communication with suppliers, should invest into a catalogue and promotional leaflets, not speaking about the office and its equipment, etc. In other words, the project that has already proved its viability, has got an ambition to become a business.

Which of course, needs a starting capital. As for internal sources, they have already been spent on purchase of the land and construction of a demonstration house (one of those 3 at the locality). The only external sources used so far were grants received from ecological

organizations, both Czech and international, provided in the early (preparation) stage of the project due to its eco-friendly nature. However, this amount has represented only 2 percent of the total costs.

1.3 The Green Homes Co. and their financial sources possibilities

For financing next steps the company considers the following possibilities:

- 1) **Bank credit.** An obvious interest rate of 9 – 10 percent would be acceptable as the business plan supposes min. profitability around 12 percent. However, the short history of the company (founded in 2001) seems to be a big handicap for getting the loan.
- 2) **Creation of a joint-venture with a capially strong company.** Some of suppliers to the project, mainly building companies, expressed an interest to create a Ltd. or similar company. This would, however, in fact mean acquisition of the Green Homes company and its project by a strong partner.
- 3) **Venture capital.** Venture capital meets with synergy effect. That is typical for its entry to equity enterprise capital. Usually the venture capital investor comes with minority share.

1.4 Venture capital as an interesting opportunity for the Green Homes Co.

The venture capital seems to be an interesting opportunity also for the Green Homes Co. The idea is to create a business into which Green Homes will insert the know-how, marketing and customers and the venture capital will insert money that are needed for the development of the project. Of course the venture capital requires to participate in management of the project, particularly in its finance and strategy issues. The aim of both partners is common – to increase the value of the company. The Green Homes need it for strengthening its position on the market, the venture capital for getting the best price for their share in the business after they decide to exit. The expectation of venture capital is to appreciate its investment by 100 – 150 percent in horizon of 4 – 5 years.

2. Financing programmes policy for small and medium enterprises in Japan, in Great Britain and in the Czech Republic

Public policy on innovative small and medium-sized enterprises is regarded as an important issue throughout the world. For example Japan is not an exception. In 1995, a new policy to revitalize the Japanese economy was implemented. The public policy program on innovative small and medium enterprises is operable only for 10 years. This program is similar to the United States Small Business Innovation Research (SBIR) program. Among the number of government support programs debt insurance, public venture capital investment and subsidies are the most widely used.

Another example - the English regional venture capital funds filled up a financing gap for investments in the range of 500 000 pounds for small and middle enterprises outside London in 2001. British small enterprises represent 99% of the United Kingdom's businesses. According to the British Venture Capital Association, encouraging investment in smaller businesses should be a priority.

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.

3. Conclusion

Individual help for SMEs would not be probably successful not only in the Czech Republic but also in all transition countries. The state will be the major influencing factor with the entry of rich (probably foreign) investors including also entry of foreign banks. One of the effective solutions are definitely the Region information centres in some areas in the Czech Republic. There will be accepted also other effective ideas.

While seeking for new financial sources in small and medium enterprises we can follow also rising importance of small and independent firms, their growing significance in all economic consequences. But the rising importance cannot help with financial sources finding. Green Homes do not have an easy financial position. They try to find the best financial possibility. As discussed in the article there is appearing venture capital as one of the convenient financial sources. Hopefully will be successful. There are appearing new external financial sources in the Czech republic from grants and new Europe union funds. Compared to SMEs research results from 2001 to 2003 we can say that recent SMEs will probably and hopefully have more external financial sources possibilities and also more information about them.

Abstract

Cílem příspěvku je zhodnocení finančních možností malé firmy, které má k dispozici pro uskutečnění svých plánů rozvoje. Jako příklad je použita malá stavební firma „Zelené domy“. Její financování je v příspěvku srovnáváno s obecnými problémy malých firem v České republice při získávání finančních zdrojů. Je poukázáno na některé zdroje financování, které se používají v českých podmínkách a konkrétně v této malé firmě. Důraz je položen zejména na bankovní úvěr, založení joint-venture s kapitálově silnou společností a na použití venture kapitálu. Diskutován je rovněž leasing, finanční zdroje od příbuzných a známých, tichý společník či využití dotací a grantů. Pro vzájemné srovnání je využito výsledků dříve provedeného výzkumu týkajícího se míry použití rozličných finančních zdrojů malých a středních firem.

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PRICING OF BARRIER OPTIONS UNDER VARIANCE GAMMA MODEL ¹

Tomáš Tichý²

Key words

Non-Gaussian returns, Variance Gamma process, barrier options, discrete barrier, stratified sampling, bridge sampling

1. Introduction

Theoretical models mostly supposed that returns of financial assets followed the law of Normal distribution. However, empirical results (starting e.g. from Fama, 1965) commonly demonstrate that returns are positively skewed with higher than normal peaks. Therefore, alternative models are of concern to modern financial mathematicians.

The family of processes which allow the trader to model also third and fourth moment of distribution is frequently called Lévy processes. These processes are in general typical by three parts – a linear deterministic part, a diffusion part (based on Wiener process) and a pure jump part (often with high intensity of jumps).

In this paper we pay an attention to a special example of Lévy processes – a Variance Gamma process (VG process from now). VG process is possible to be expressed in two ways – as a Brownian motion subordinated by a gamma process or as a difference between two gamma processes.

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However, both ways are based on **two independent processes**. And for this reason it can be little complicated to generate “random” numbers in order to apply Monte Carlo simulation technique, e.g. to price financial derivatives.

The aim of this paper is to apply some efficient ways of Monte Carlo simulation to price discretely monitored barrier options. First, in the Section 2 we define and briefly describe the basic characteristics of barrier options. In the following Section 3 we provide short review of the Lévy family of processes. In the subsequent Section 4 we look more closely at the VG processes and Section 5 reviews basic technique to generate the sample path with high efficiency. Finally, in Section 6 we present some numerical results. We close the paper by Conclusions.

2. Barrier options

A very common example of contingent claims is an European financial option that gives its owner the right, but not the obligation, to trade another financial security (underlying) at a prespecified time (an exact day) in the future for an agreed amount, which we call the exercise price, \mathcal{X} . The simplest claims, referred to as plain vanilla options, is: the one that gives the holder the right to buy, referred to as a **call option** and the other one that gives the holder the right to sell, referred to as a **put option**. The call and put payoffs are $\Psi_{call}^{vanilla} = (\mathcal{S}_{\mathcal{T}} - \mathcal{X})^+$ and $\Psi_{put}^{vanilla} = (\mathcal{X} - \mathcal{S}_{\mathcal{T}})^+$ respectively, where $(\cdot)^+ \equiv \max(\cdot; 0)$ and $\mathcal{S}_{\mathcal{T}}$ is the price of the underlying asset on the date of expiration. More generally, the payoff Ψ may depend on the whole life history of \mathcal{S} – on the path followed by the underlying asset price during the life of the option. And it is the reason why these assets are also known as path-dependent options.

Barrier options are path-dependent options whose (non)ability of exercising at final time depends on (un)hitting the barrier level at any time during the life of the option. The paper concerns primary on a special type of contingent claims with more complicated payoffs, **the reverse knock-out call option**. This type of contingent claim is as the standard call with the exception that it ceases to exist at the first time of hitting the prespecified **barrier level**, \mathcal{U} , set initially above the price of the underlying asset at time zero, \mathcal{S}_0 . That is, the option

could not be exercised at maturity if the underlying price had reached the barrier level \mathcal{U} during the option life (even if $S_T \geq X$). Thus, there exists discontinuity in the option payoff.

In particular, for the continuous barrier, the payoff function can be written as $\Psi_{call}^{up/out} = (S_T - X)^+ \cdot \mathcal{I}_{\max_{0 \leq t \leq T} S_t < \mathcal{U}}$, and $t \in [0; T]$. Here, t is used as a notation for the knock out time, the time of first hitting the barrier. Alternatively, we can define discrete barrier option, it can depend e.g. on $t \in \{0, \frac{1}{4}T, \frac{2}{4}T, \frac{3}{4}T, T\}$. In this case, the option may cease to exist just at three prespecified moments during the life of the option.

3. The Lévy Family of processes

The family of processes which allows us to model the non-normality of financial asset returns (and generalize the Brownian motion) is called Lévy processes. The underlying distribution of the Brownian motion, the normal distribution, is replaced here for example by Variance Gamma (VG) distribution (Madan and Seneta, 1987, 1990), the Normal Inverse Gaussian (NIG) distribution (Barndorff-Nielsen, 1995), the Hyperbolic Model (HM) proposed by Eberlein and Keller (1995), Meixner model (Schoutens, 2001) or CGMY (Carr, Geman, Madan and Yor, 2002).

To determine the distribution function \mathcal{F} of Lévy processes we can use the characteristic function ϕ . It is the Fourier-Stieltjes transform of the distribution function. Below we present two examples of Lévy processes.

The VG process is a three-parameter process given by the VG distribution. The parameters are $\{\theta, \sigma, \nu\}$ – θ primary controls the symmetry, similarly, ν is used to model the kurtosis. Its characteristics function is given by

$$\phi_{VG}\{u, \theta, \sigma, \nu\} = \left(1 - i \cdot u \cdot \theta \cdot \nu + \frac{1}{2} \cdot \sigma^2 \cdot \nu \cdot u^2\right)^{-\nu}. \quad (1)$$

The NIG process is also three-parameter process with parameters $\{\alpha, \beta, \delta\}$. Here, $\alpha > 0$, $-\alpha < \beta < \alpha$, $\delta > 0$ and if $\beta = 0$ than the distribution function is symmetric. Here is the characteristic function,

$$\phi_{NIG}\{u, \alpha, \beta, \delta\} = \exp\left(-\delta\left(\sqrt{\alpha^2 - (\beta + i \cdot u)^2} - \sqrt{\alpha^2 + \beta^2}\right)\right) \quad (2)$$

The following Table 1 gives us basic characteristics of VG and NIG distribution.

Table 1 – First four moments of VG and NIG processes

	VG $\{\theta, \sigma, \nu\}$	NIG $\{\alpha, \beta, \delta\}$
mean	θ	$\frac{\delta \cdot \beta}{\sqrt{\alpha^2 - \beta^2}}$
variance	$\sigma^2 + \nu \cdot \theta^2$	$\frac{\alpha^2 \cdot \delta}{\sqrt{(\alpha^2 - \beta^2)^3}}$
skewness	$\frac{\theta \cdot \nu \cdot (3 \cdot \sigma^2 + 2 \cdot \nu \cdot \theta^2)}{(\sigma^2 + \nu \cdot \theta^2)^{\frac{3}{2}}}$	$\frac{3 \cdot \beta}{\alpha \cdot \sqrt{\delta} \cdot \sqrt{\alpha^2 - \beta^2}}$
kurtosis	$3 \cdot \left(1 + 2 \cdot \nu - \frac{\nu \cdot \sigma^4}{(\sigma^2 + \nu \cdot \theta^2)^2}\right)$	$3 \cdot \left(1 + \frac{\alpha^2 + 4 \cdot \beta^2}{\delta \cdot \alpha^2 \cdot \sqrt{\alpha^2 - \beta^2}}\right)$

Unfortunately, processes from the Lévy family are commonly characterised by their complicated structure and closed form formula to price financial derivatives at Lévy market exist only rarely. And more, if there is any analytical formula, its body is still too difficult to proceed easy further without substantial computational cost to price the asset.

Therefore, we usually need to apply some numerical technique.

4. VG process and generating its sample path

In general, there are two ways how to look at the VG process. The first one is to consider it as the subordinated Brownian motion. It means that the Brownian motion is not driven by the time but by the Gamma process. The other one is to look at this process as to a difference between two independent Gamma processes.

Denote by $w(t)$ the Brownian motion with mean μ and standard deviation σ ,

$$(3) \quad \{w(t) = \mathcal{N}(\mu, \sigma^2)\},$$

which is driven by the time t . Simultaneously denote by $g(t)$ the Gamma process (independent on $w(t)$) driven by the same time t ,

$$(4) \quad \{g(t) = \mathcal{G}(\frac{t}{\nu}; \nu)\}.$$

Here $\mathcal{N}(\mu; \sigma^2)$ denotes the Normal distribution and its parameters – mean and variance; similarly, $\mathcal{G}(\frac{t}{\nu}; \nu)$ denotes the Gamma distribution and its parameters – scale and shape. Then the VG process $\mathcal{V}\mathcal{G}(t)$ with parameters $\{\theta, \sigma, \nu\}$ can be represented by the Brownian motion $w_{g(t)}$ driven by the Gamma process $g(t)$ defined above.

Hence,

$$(5) \quad \{w_{g(t)} = \mathcal{N}(\mu, \sigma^2) = \mathcal{N}(\theta, \sigma^2)\}.$$

Therefore, we can say that the time is measured by a “gamma-clock” instead of a standard time. Thus,

$$(6) \quad \mathcal{V}\mathcal{G}(t) = w_{g(t)}.$$

Consequently, the VG process $\mathcal{V}\mathcal{G}(t)$ with parameters $\{\theta, \sigma, \nu\}$ can be represented by,

$$(7) \quad \mathcal{V}\mathcal{G}(t) = \theta \cdot g(t) + \sigma \cdot \sqrt{g(t)} \cdot \varepsilon.$$

Here we define $\{\varepsilon \in \mathcal{N}(0;1)\}$. Therefore we can model the underlying asset price \mathcal{S} under risk-neutral conditions as

$$(8) \quad \mathcal{S}_\tau = \mathcal{S}_0 \cdot \exp(r \cdot \tau + \mathcal{V}\mathcal{G}(\tau) - \omega \cdot \tau),$$

where τ is $\mathcal{T} - 0$, $e^{\omega \tau} = \mathbb{E}[\exp(\mathcal{V}\mathcal{G}(\tau))]$, so that $\mathbb{E}[\mathcal{S}_\tau] = \mathbb{E}[\exp(r \cdot \tau)]$ and therefore

$$\omega = -\frac{1}{\nu} \cdot \ln\left(1 - \theta \cdot \nu - \frac{1}{2} \cdot \sigma^2 \cdot \nu\right).$$

Alternatively, the VG process can be expressed as a difference between two Gamma processes,

$$(9) \quad \mathcal{V}\mathcal{G}(t) = g_u(t) - g_d(t).$$

The Gamma process $g_u(t)$ measures all increases in the price. By contrary, $g_d(t)$ cumulates decreases in the price of the asset.

The fact, that both ways to express the VG process are based on two **independent** processes, complicates us the technique of simulation. In order two get reasonable future

prices of modelled financial asset (e.g. to price the option) we must realise n^2 of random paths. Of course, we can apply a technique to decrease the number of paths, if there is any available.

5. Increasing the efficiency of VG sample path

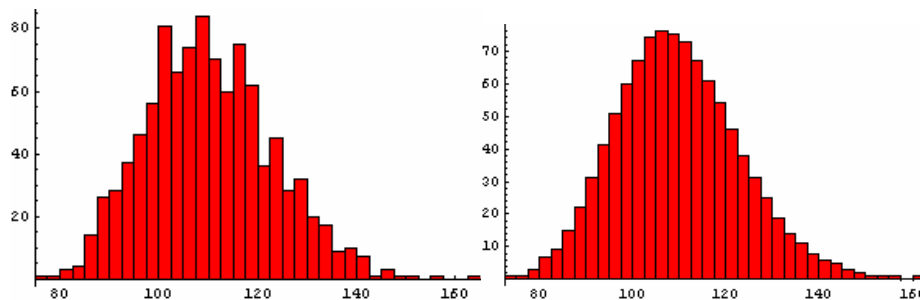
In this section we describe three techniques required to increase the efficiency of pricing barrier options under VG process.

First technique is called **stratified sampling**. In this way we can produce random numbers with characteristics almost equivalent to the target distribution with only a few paths. The key point is that we first divide the interval of possible increments of the random factor into few subintervals (stratas) with equal probability. Then we generate increments exactly from these intervals, so that we should receive random numbers with target characteristic.

Illustrate this procedure at Figure 1 bellow for an example of simple Geometric Brownian motion $w(t)$. The standard Monte Carlo simulation is run with 1 000 paths. In order to apply the stratified sampling directly, we first divide the interval of possible values of $w(t) \in (-\infty; +\infty)$ into 1 000 subintervals so that each has equal probability,

$$\Pr\{\tilde{w} \in (w_i; w_{i+1}]\} = p_i \quad \forall i, \quad i = 1, \dots, 1000.$$

Figure 1- standard MC simulation (on the left) and stratified MC simulation (on the right) of Geometric Brownian motion, 1 000 paths (subsets).



Then we take random number from each³ of these subintervals,

$$\tilde{w} = w_i + \mathcal{U} \cdot (w_{i+1} - w_i), \quad (10)$$

³ Alternatively, we can e.g. divide the original interval into 100 subintervals and subsequently take 10 random numbers from each of them.

where \mathcal{U} is a random number uniformly distributed between zero and one. Although the time cost for stratified sampling are slightly more than twice as much high, we can see substantial improvement over standard MC simulation in the shape of distribution function approximated by histograms, see Figure 1.

Since the procedure can look little cumbersome (it is sometimes difficult to handle infinity), we can adopt the indirect route described bellow.

First, we divide the unit interval into n subintervals. As a second step we generate uniformly distributed random numbers from these subintervals, $x_i = \frac{i}{n} + \frac{\mathcal{U}}{n}$. Finally, we take the inverse function to the cumulative distribution function of the target distribution (Normal, Gamma, etc.), $\mathcal{F}^{-1}(x_i)$.

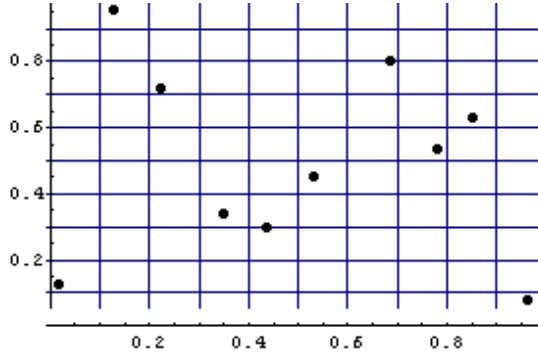
The **Latin Hypercube Sampling** is commonly used to generate more independent processes with high efficiency. The technique can be considered as an extension to stratified sampling for more dimensions. First we have to prepare stratas. Second, we randomly connect these stratas together, while ensuring that each of them will be used just once. The method is showed bellow for an example of VG process.

Recall that VG process consists of two independent processes, so we have two dimensions. We need to connect Gamma random number g_i and Gaussian random number ε_i randomly. It can be done by random permutation of subintervals. It means that we collect n coordinates to generate $\mathcal{VG}_{\mathcal{T}}$ process at time \mathcal{T} .

Figure 3 below shows an example for $n = 10$; the subintervals are $\{[0; \frac{1}{n}), [\frac{1}{n}; \frac{2}{n}), \dots, [\frac{n-1}{n}; 1)\}$; the random permutation for coordinate y is in this example $\{[\frac{1}{n}; \frac{2}{n}), [\frac{n-1}{n}; 1), \dots, [0; \frac{1}{n})\}$; the coordinates (e.g. for $i = 1$) are from the interval $\{x, y\} = \{[0; \frac{1}{n}), [\frac{1}{n}; \frac{2}{n})\}$; the “random” numbers are ($i = 1$):

$$\{g_i = \mathcal{G}^{-1}(x_i), \varepsilon_i = \mathcal{N}^{-1}(y_i)\} = \{g_i = \mathcal{G}^{-1}(0,02), \varepsilon_i = \mathcal{N}^{-1}(0,125)\}.$$

Figure 3 - The technique of Latin Hypercube Sampling for two dimensions



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. If we want to price barrier options (or any other of path dependent type) we must create other extension – **the bridge sampling**.

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).

In order to price the barrier option under VG process we need to know techniques of Brownian bridge and Gamma bridge. Alternatively, we can apply two gamma bridges.

In general, the method of Bridge sampling is based on conditional distribution functions. Suppose, we knew the value at time zero, w_0 , and we have just generated the value at final time \mathcal{T} , $w_{\mathcal{T}}$ with increment $z = w_{\mathcal{T}} - w_0$. Now we are interested in the value at intermediate time $\frac{1}{2}\mathcal{T}$. This value can be computed if we know the conditional distribution function $f_{x|z}$, where $x = w_{\mathcal{T}/2} - w_0$. Here, z is distributed conditionally on the value of z .

Hence, for Brownian bridge we can write

$$w_{t_j} = \frac{t_k - t_j}{t_k - t_i} w_{t_i} + \frac{t_j - t_i}{t_k - t_i} w_{t_k} + \sqrt{\frac{(t_j - t_i) \cdot (t_k - t_j)}{(t_k - t_i)}} \cdot \varepsilon_{t_j}, \quad (11)$$

with $t_i < t_j < t_k$, $\varepsilon(t) = \mathcal{N}[0;1]$.

Similarly, for Gamma bridge

$$g_{t_j} = g_{t_i} + \beta_{t_j} \cdot (g_{t_k} - g_{t_i}), \quad (12)$$

for $\beta_{t_j} = \text{Beta}\left[\frac{t_j - t_i}{\nu}; \frac{t_k - t_j}{\nu}\right]$. We can see that both procedure can be significantly simplified if

$$t_k - t_j \cong t_j - t_i.$$

6. Numerical study

Suppose a call option f with barrier \mathcal{U} set initially above the price of an underlying asset \mathcal{S} at time zero, $\mathcal{S}_0 = 100$, $\mathcal{U} = 125$. The time to maturity is one year, the riskless rate is 0.1, parameters specifying VG process are as these documented in Madan et al (1998) $\sigma = 0.12136$, $\nu = 0.3$, $\theta = -0.1436$, and $\omega = -0.133525$.

Now we compute prices for knock-out and knock-in options. According to knock-out-in parity we know, that the price of “in” plus “out” option must be the same as the price of plain vanilla option. Note, that we at first generate the final price of \mathcal{S} and make a test if it makes sense to proceed further to generate intermediate values.

Suppose an example of knock-out call. If the underlying price is from the interval $\mathcal{S}_T \in [\mathcal{X}; \mathcal{U}]$, $\mathcal{S}_T \in [100; 125]$ the option might be exercised. Subsequent procedure is to confront the barrier level during the maturity.

Results for quarterly barrier are included in the table bellow. Benchmark value is computed as in Madan *et al* (1998). The number of stratas gives us in fact the number of “random” path. Differences between values of the vanilla call obtained by direct simulation and from knock-out-in parity (knock-in + knock-out) are given by rounding. Section “Barrier call” present results for knock-in call and knock-out call, including its standard error. Clearly, starting with 10 000 of simulations the procedure gives us relatively fine results. There is no surprise that the vanilla call price does not vary a lot for last two rows. Opposite to this, the differences for barrier calls are more significant. We also provided time costs of computation (in seconds).⁴

⁴ All computations have been done in Mathematica® on 3.2 MHz PC.

Table 2 - Computational results for VG process

stratas	Vanilla call			Barrier call			Total time cost on simulation in seconds
	benchmark (analytical)	simulation	knock-out-in parity	knock-in	knock-out	standard error	
10	10,9815	11,1529	11,1530	7,3845	3,7685	1,4505	0,062
100	10,9815	10,5448	10,5448	7,5027	3,0421	0,4580	0,25
1000	10,9815	10,9502	10,9502	6,9157	4,0345	0,1730	2,375
10000	10,9815	10,9829	10,9830	7,0595	3,9235	0,0545	23,719
100000	10,9815	10,9830	10,9830	7,0103	3,9727	0,0173	236,609

7. Conclusion

Real market returns of financial assets are usually not distributed according to the law of Normal distribution. Also when pricing options, we cannot suppose that risk-neutral returns fulfill this conditions. In related papers, we have analyzed the pricing of Lookback and Asian call options, see Lichnovský and Tichý (2003a), (2003b). In this paper we focused on another type of path dependent options – the option with barrier. However, we give preference to the case of VG process (opposite to NIG process) here.

We have also provided some ways how to increase the efficiency of pricing barrier options under VG process via Monte Carlo simulation. This methodology wins since the path dependency of barrier options is only weak.

Abstract

Výnosy většiny finančních aktiv mnohdy porušují předpoklad normality. Rovněž při oceňování opcí nelze předpokládat, že rizikově neutrální výnosy splní tento předpoklad. Jedním ze způsobů, umožňujících modelovat i šikmost a špičatost, je Variance Gamma (VG) proces. VG proces náleží do obecné množiny Lévyho procesů a může být vyjádřen dvěma způsoby, a to jako Brownův pohyb podřízený gamma procesu nebo jako rozdíl mezi dvěma gamma procesy. V článku je ukázáno jak na základě metody Monte Carlo efektivně ocenit speciální typ exotické opce – opci s bariérou – za předpokladu, že se cena podkladového aktiva vyvíjí dle VG procesu. Vzhledem k charakteru podkladového procesu a typu studované opce je užito několika speciálních technik, které rozšiřují aplikaci metody Monte Carlo. Jedná se zejména o stratifikaci, Latin Hypercube Sampling (LHS) a techniku mostů, konkrétně pak Brownian bridge a Gamma bridge.

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NEW CHALLENGES IN FINANCING REGIONAL PROJECT AFTER THE EU ACCESSION

Ivo Veselý

Key words

EU, structural funds, project financing, education of entrepreneurs

Introduction

The EU accession has been completely changing principles of supporting policy for regional projects in the CR. Knowledge of project financing is necessary for successful compilation of a project.

1. Instruments of the EU structural policy

Following the reaching of the set goals in the area of the regional development, the Member States of the Union or their regional and local bodies make use of a series of instruments, which the structural policy has at its disposal. The structural funds play a substantial role on the Union level, along with the Cohesion fund and the European Investment Bank.

Structural funds contribute positively to the reduction of the regional differences and improvement of the environment. As early as in the year 1960, the *European Social Fund* was set up with the aim of contributing to the requalification of the workforce in the affected areas facing the unemployment problem of young people. In the year 1962, with reference to the introduction and financing of the common agricultural policy, the *Agricultural Regulatory and Guarantee Fund* was established. The *European Fund of the Regional Development* was established in the year 1975 and provides the broadest range of the financial means for the structural policy (approximately 51% of the total expenditures for this policy). Reasons for this fact can be seen in its broad orientation on the strengthening of the economic potential in the subsidized regions, the support of the far-reaching structural changes and the extensive

sector of assistance in supporting the economic growth and employment. It is possible to finance the cross-border cooperation and experience exchange among Member States. Following the signing of the Maastricht Treaty, another reform of the Structural Funds took place (1993), namely in the area of the establishment of the Cohesion Fund.

1.1 Forms of assistance from the structural funds

The first form of assistance is the assistance, which is conditioned by the initiative of the Member States (the so called national initiative). This form of assistance is drafted on the basis of the *Regional Developmental Plans (RDP)* submitted by the Member States for the competent regions. In the period of 1994-1999, approximately 90% of the structural fund means flowed into the national initiative, for the years 2000 and 2006, this share was increased up to 94%.

The second one dependent on the independent programmes of the European Union (Community's Initiative), which is granted by the EU Commission for measures of the special Community's interest. For the years 2000-2006, the number of initiatives is reduced to 4 and their total share in the structural funds was lowered from the above mentioned figure of 9% to 5%.

Innovative measures (1% of the total amount) are bound to the Community's Initiative. These focus mainly on the verification of new forms of the regional policy. In this case, the structural funds finance the studies, technical assistance measures and pilot projects.

1.2 Cohesion fund

Cohesion Fund was established in the year 1993 in the context of the Maastricht Treaty negotiations and a further deepening of the integration process within the project of the European Economic and Monetary Union. This fund is not officially ranked among the structural funds. It is independent and its role is to contribute to the accelerated development of the least developed Union's countries so that these are capable of meeting the convergence criteria for the European Monetary Union's entry.

The Maastricht Treaty stipulates that the financial means from the Cohesion Fund ought to be offered to the “Member States with the inhabitant’s GDP lower than 90% of the Community’s average, and which have a programme leading to the fulfilment of the conditions of the economic convergence”. By means of the Cohesion Fund, more comprehensive projects of the multinational nature are co-financed, which costs exceed 10 million EUR.

The means from the Cohesion Fund are only intended for the projects of the definite nature:

- Environmental projects contributing to the environmental policy of the Community and primarily to the priorities of the fifth policy programme and projects relating to the environment and continual sustainable development,
- Projects of the common interest in the area of the transport infrastructure, which are part of the priority realization of the trans-European networks set by the community.

1.3 European Investment Bank

- The European Investment Bank (EIB) plays a considerable role in the fulfilment of the structural goals.
- Its objective is to support financially the projects realizing the priorities of the Community, above all the activity relating to the realization of the structural and regional policy or some industrial policy.

2. Programme documents

To the programme documents of the European Union, which relate to the regional and structural policy, belong the following:

- National Regional Development Plan (NRDP),
- Community Support Framework (CSF),
- Single Programme Document (SPD) – for Prague,
- Sectoral Operational Programme (SOP),

Regional Operational Programmes (ROP) – following the EU entry, for the periods of 2004 – 2008 the so called Common ROP.

2.1 Czech Republic

In December 2002, the processing of the National Development Plan (NDP) was completed for the years 2004 – 2006 as a fundamental document for making use of the structural assistance, which was submitted to the Government of the Czech Republic for approval.

On the basis of the submitted NDP, the Commission has to elaborate the so called Community Support Framework, which will confirm the structure of the operational programmes and budget for its financing in the period 2004 and 2006.

The global objective of the NDP is “a sustainable development based on the competitiveness”. Among specific goals of the NDP can be ranked: the creation of conditions for the growth of the economy by strengthening the inner factors, increasing the qualification level, competitiveness, workforce mobility, approaching the Union’s standards in the area of environment along with the sustainable development of the regions.

The global and specific objectives of the NDP will be reached by implementing the five operational programmes (OP). Four operational programmes are *sectoral*: the OP - Industry and entrepreneurship, the OP - Infrastructure, the OP - Development of Human Sources and the OP - Development of the country and multifunctional agriculture. For seven cohesion regions, which are eligible for the support within the goal 1 of the structural funds, the *Common Regional Operational Programme* (CROP) is put forward, which was set up by uniting the prepared OP of the individual seven NUTS II regions. (LEBIEDZIK, 2003).

3. Activities supported from the structural funds

From the structural funds the following activities can be supported:

- Direct investments into the creation of new job possibilities

- Services for small companies (consulting, establishing or saving the existent companies, financial engineering, technology transfer, marketing, certifications etc.) with the aim of developing the regional and local potential and diversifying the economic activities
- The essential economic infrastructure (transport, telecommunication, energy, solid waste deposits, waste water purification, the renewal of the industrial localities, entrepreneurial parks)
- Research and development, technological innovations
- The infrastructure for education and health system, personal services
- The improvement of the infrastructure for processing and selling the agricultural and fish products
- The modernisation of equipment, quality certificates for the local agricultural and craft products
- The diversification of the economic activities in the rural area (mainly by means of tourism)
- Environment protection and natural heritage
- The redevelopment of buildings, the development of cultural values
- The restoration of the crisis affected municipal districts
- Transborder and multinational cooperation, experience exchange
- Finding new job opportunities for young people, the unemployed, who live in poverty or are endangered by the social isolation, by means of the employment assistance and training (entrance, continuing, multilevel), the preparation of instructors, research workers, administrative personnel, equal opportunities for men and women
- The development of new qualifications, e.g. for the purpose of increasing the adaptability towards the changes at the labour market
- The adaptation of the training structure and employment.

3.1 The European Regional Development Fund (ERDF)

The European Regional Development Fund (ERDF) is the main source contributing to achieving the development and support objectives of the structural adaptation of the regions to the underdeveloped development and structural problems resulting from the ongoing economic and social changes.

From the ERDF means the aid for the problematic regions is co-financed oriented chiefly on:

- The investments into the production determined for creating new or existent jobs
- The investments into the infrastructure, including the trans-European networks
- The investments into education in the regions
- The development of the local potential – the local development and the SME development in the problematic regions
- Research and development
- The investments into the environment protection

3.2 The European Social Fund (ESF)

In compliance with the European employment strategy the European Social Fund mainly focuses on the financing of retraining and the employment development, and its instruments can be used for co-financing all three Objectives. .

From the ESF means the following is supported:

- The integration of the unemployed, chiefly the long-term unemployed
- The integration of young people into the work process
- The integration of persons excluded from the labour market
- Support of equal opportunities on the labour market
- The workers' adaptation to the industrial changes
- The stabilization and employment growth
- Strengthening the human potential in research, science and technology
- Strengthening the education system and further qualification (MEZULÁNÍK, VESELÝ, 2003).

4. Project Financing

We can see that EU supporting policy is defined very generally. This time is presented on web pages more than 300 supporting possibilities in the Czech Republic

(www.edotace.cz). In this situation the knowledge of project financing principles play the most significant role. For the education in this area is proposed following course.

The aim of the course is to get particular target groups (entrepreneurs, municipality clerks, teacher, students etc.) acquainted with basic principles of development projects financing and to provide them with knowledge essential for successful compilation of a project. It means:

- Principles and methods of development projects financing
- Rules for preparation and content of project documents
- Knowledge of subsidiary mechanism principles in the Czech Republic and the EU
- Alternations of project execution process in commercial and municipal area.

4.1 Objectives of the course

1) Role of development projects

Project as a part of entrepreneur's, region's and municipality's development strategy execution. General characteristics of a project. Project classification.

2) Principles of project's compilation.

Basic requirements of a project. Lobby and project manager. Project management scheme.

3) Stages of project management

Initiation and planning, time-schedule. Analyse of objectives, problems and strategies. Deliberation of investment process management – activities, partners.

4) Preparation and execution of a project

Opportunity study. Pre-feasibility study. Feasibility study. Investment stage. Operational stage.

5) Feasibility study

Character and content. Marketing aspects. Production aspects. Manpower. Organization and management.

- 6) Financial aspects of feasibility study working out
Criteria of economical efficiency evaluation. Payback period. Sources of financing. Cash flows. Economical efficiency and financial stability of a project.
- 7) Multi-source project financing
Principles of multi-source financing. PPP – private public partnership. Subsidiary financial facilities in terms of the Czech Republic and the EU.
- 8) Analyse of development projects' costs and benefits
Objectives and range of analyse. Costs and benefits classification. Specificity of analyse according to the project, type (transportation, infrastructure ...). Evaluation criteria.
- 9) Specificity of municipal projects
Public contract letting (setting) in the Czech Republic and the EU. Choice and review of contractors. Content of contracts.
- 10) Evaluation of projects
Methods of project evaluation. Content and form of evaluation, ways of discussing the evaluation. The EU procedure in terms of project evaluation.
- 11) Best practices and case studies
Examples of development projects in Moravian-Silesian region and in the Czech Republic. Examples of the EU structural funds application.

5. Conclusion

The EU supporting instruments for regional projects are very generally defined. The knowledge of using those instruments is necessary for successful compilation of projects. Education of particular target groups and co-operation with consultancy institutions are the best solution.

Abstract

Vstup České republiky do Evropské unie výrazně ovlivnil možnosti rozvojových projektů. Hlavní změnou je to, že současný systém zvýrazňuje roli projektového financování jako základního prostředku získávání zdrojů. Článek ve své úvodní části nejprve vychází z obecného popisu podpůrných instrumentů využívaných v České republice i Evropské unii a jejich vzájemného srovnání. V aplikační části příspěvku je posléze konstatováno, že existuje dostatek využitelných dotačních titulů, k nimž podnikatelé mají přístup. Za základní problém je tedy vždy nutno považovat schopnost podnikatelů připravit úspěšný projekt. Pro zvýšení této schopnosti je navržen vzdělávací modul. Je zdůrazněna i nutnost intenzivnější spolupráce s poradenskými institucemi.

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THE EFFECT OF CONSOLIDATION STANDARD ON THE TRANSPARENCY OF FINANCIAL STATEMENTS AT THE ISTANBUL STOCK EXCHANGE

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Key Words

Consolidation, Transparency, Turkey, Financial Statements, Disclosure.

Introduction

Throughout the 1980s Turkey tried to liberalize and integrate its economy with the global economy. In the first decade they succeeded to liberalize trade, but neglected to enforce laws to regulate the transparency in the financial sector – now seen as a reform.

The 1990's saw the rise of hyper-inflation creating mini "booms and busts" where the Wholesale Price Index (WPI) reached 140% at the beginning of 1995 and the nominal interest rate hit a massive 320%. However, even through high inflation Turkey was somewhat surprisingly able to maintain a growth rate of almost 5% per annum throughout the 1990s. This created a dangerous perception that somehow, Turkey would 'muddle through'. Arguably, this fallacy persisted up to and including the time of the IMF-backed deflation program of 1999 which led to another economic crisis 18 months later.

Asian and Russian crises in 1998, which adversely affected Turkish economy have been Turkey's new additional problems. This also led to an immediate outflow of foreign investment. Treasury bills soared to around 140% and the annual inflation rate reached almost 102% by the end of January 1998¹. A three-year stabilisation program, backed by IMF was established with the primary objective of tackling high inflation. But this time, natural disasters hit twice the Marmara region which was contributing 13% of total GNP and had devastating effects on the economy. In the years of 2000 things started to change. Turkish economy has been experiencing big changes for the last three years. In the field of financial

¹ The Banker, Bank Snapshots, FT Business, 03 May 2004

services, substantial progress has been made in particular in the banking sector, under the IMF sponsored Banking Sector Restructuring Program².

A regulation on accounting practices, which is compatible with the International Financial Reporting Standards (IFRS), has been in force since July 2002 in order to ensure that the balance sheets of banks are compliant with IFRS requirements. Concerning securities, the Capital Markets Board (CMB) published two sets of implementing legislation concerning principles of consolidated financial statements and accounting for investments in associates in capital markets and financial statements in high-inflation periods in November 2001. This legislation has just entered into force as of December 31, 2003. In the field of investment services and securities markets, the adoption of the Regulation on Rules and Principles Regarding Consolidated Financial Statements and Accounting for Investments in Associates in Capital Markets by the CMB is an outstanding development.

Turkish Banking Sector

The engine of growth was not a boom in classical commercial activities, but the banks' banking on the government. The securities portfolio and repo transactions of the banking sector reflected this expansion. The consolidated balance sheet of the banking sector indicated that the ratio of securities portfolio to total assets increased by 55 percent while that of loans to total assets shrank by 29 percent during the last three years. It is obvious that the growth of Turkish banking sector is mainly triggered by the Government huge budget deficit³.

High inflation induces not only higher banking activity for reasons of increased opportunity cost of holding money, but higher profitability as well. In their study covering 80 countries over the 1988-1995 period, Demirgüç-Kunt and Huizinga (1999)⁴ show bank profits in high inflation countries to be twice as high as those in low inflation countries.

Simply, banks banked on the governments, and made substantial profits in a risky environment. Governments in dire need of financing deficits rendered these instruments even

² Bank Association of Turkey, Framework Agreement on Financial Restructuring Program, Presentation by the Banks Association of Turkey.

³ Bank Association of Turkey, Periodical Reports, September 2002

⁴ Demirgüç-Kunt, Asli and Huizinga, Harry. "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence." World Bank Economic Review, 1999, 13(2), pp. 379-408.

more attractive for banks through generous exemptions and tax credits⁵. Turkish Lira currency revaluation, consolidation, privatisation, economic revival and access to foreign markets all affected the banking sector in 2003.

Improvements in Turkey's economy in the second half of 2003, ending months of uncertainty caused by the war in Iraq, and the continued fight against inflation, coupled with national budgetary discipline, helped to preserve market stability in the country. The expected economic revival allowed the country to achieve a healthier asset-liability structure and to register higher profits and stronger growth in the banking system. Demand for consumer and institutional loans rose and the foreign trade expanded. The Turkish lira was revalued against foreign currencies. Turkish lira investment instruments also became more attractive. And an influx of capital into the economy prevented the growing current account deficit from turning into a financial problem⁶.

The currency revaluation affected the rates of balance sheet growth in banking system. The high amount of foreign currency held by the banks had a limiting effect on growth and affected their structure. The banking sector accounted for 67% of gross national product in the third quarter of 2003, down from 78% at year end 2002 as a result of a decline in the first half of the year⁷.

Istanbul Stock Exchange (ISE)

The ISE is the only securities exchange in Turkey established to provide trading in equities, bonds and bills, revenue-sharing certificates, private sector bonds, foreign securities and real estate certificates as well as international securities. There are eleven banks listed on ISE which are subject to disclose the financial statements prepared in accordance with the accounting standards. Following the liquidations, mergers and acquisitions in the banking system after the two crises, the total number of banks excluding the Central Bank declined to 50 by March 2004 as shown in Table 1.

⁵ Bank Association of Turkey, The Turkish Banking System

⁶ The Banker, *ibid*

⁷ The Banker, *ibid*

Table 1: Banks in Turkish Financial System.

	1980	1990	1994	1999	2004(*)
Commercial Banks	31	54	55	62	36
State-owned	8	7	6	4	3
Private	19	25	29	31	18
Foreign	4	22	20	19	13
Savings Deposits Insurance Fund	-	-	-	8	2
Investment and Development Banks	6	10	12	19	14
State-owned	4	3	3	3	3
Private	2	4	6	13	8
Foreign	-	3	3	3	3
Total	37	64	67	81	50

(*) *As of March*⁸

At the end of 2003, 10 deposit banks out of 11 banks listed on the Istanbul Stock Exchange – Akbank, Alternatif Bank, Finansbank, Sekerbank, Tekstil Bankasi, Turk Dis Ticaret Bankasi, Turk Ekonomi Bankasi, Garanti Bankasi, Turkiye Is Bankasi and Yapi ve Kredi Bankasi – controlled 32% of assets and 47% of Turkey’s bank branches and employees at the end of 2003. Their total assets rose 17% in 2003 to € 69.7bn. Seven of the 10 deposit banks are included in the 100 companies whose shares make up the Istanbul Stock Exchange 100 Index. Their total market value was € 13.8bn at the end of 2003 and accounted for 27% of the €49.5bn market value of the exchange⁹.

Current Developments

In the last 3 decades, the hyperinflation has been made too much vital destruction in economic and social areas in Turkey. From the accounting point of view, this destruction has been observed in financial reports. Cost based reported items in financial reports are far away from real (or up to date) values in hyperinflationary economies. Because, in the period of last 3 decades the cumulative price increases have been reached to 393,000 times¹⁰. As shown in Table 2, the yearly inflation rates have been some times more than 100% in this period.

⁸ Banks Association of Turkey, Periodical Reports

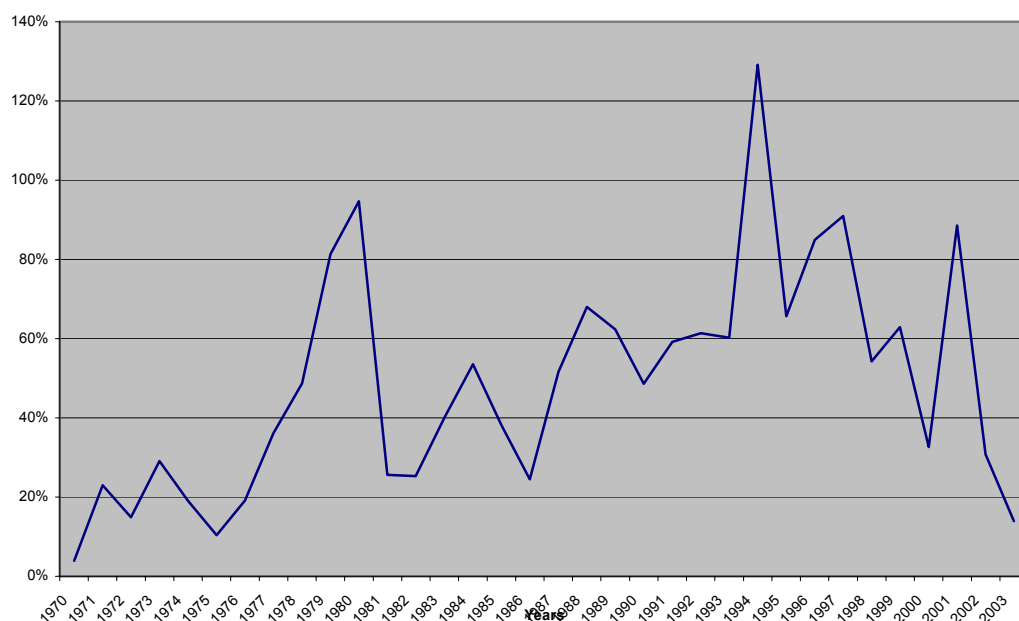
⁹ Banks Association of Turkey, Periodical Reports

¹⁰ From January 1970 to December 2003.

Although some precautions have been taken in order to prevent the destruction of inflation in financial statements, they were not a fully inflation accounting application. In 1997 Turkish Accounting Standard – 2 (TAS-2) has been issued as a first regulation about inflation accounting in Turkey by TMMOB¹¹. But this standard has not been applied by corporations because of it does not have any sanction. Four years later, in 2001 Capital Markets Board of Turkey has issued communiqué on inflation accounting and communiqué on consolidation of financial statements. These communiqués have been come to power as a standard for corporations in capital market. Two of communiqués have been applied for the first time in 2003. Additionally, in 2002 “Banking Regulating and Supervising Board” has been stated some communiqués. By these communiqués, inflation accounting and consolidation of financial statements has been become compulsory for banks in Turkey.

All of the above three standards are compatible with International Financial Reporting Standards. Further more, at the end of 2003 inflation accounting has been relevant for all corporations by a tax law (Law number 5024). This law has a different meaning for firms. Because, according to this law, the income tax would be calculated after the application of inflation accounting.

Table 2: Inflation Rates



¹¹ TMMOB is Turkish Accounting and Auditing Standards Board. It has been established by The Union of Chambers of CPA’s of Turkey (TURMOB).

Analysis

In this analysis we tried to point out transparency effects of XI-21 (Consolidation Standard), which replaced XI-20 (Inflation Accounting Standard) for the banks listed on Istanbul Stock Exchange. Only the balance sheets as of December 31, 2003 and income statements for the period of 2003 of selected banks in ISE have been included into the analysis. There are basically two different standards (inflation accounting XI-20 and consolidation standard XI-21) regarding to prepare financial statements. As of December 31, 2003 there had been only 11 banks which issued statements according to both standards in ISE.

Table 3: Changes Between Inflation Adjusted Balance Sheets (XI-20) and Consolidated Balance Sheets (XI-21)

	XI-20	XI-21	change
CASH AND CENTRAL BANK	2.594.565	2.860.103	0,10
MARKETABLE SECURITIES (Net)	13.255.425	15.517.499	0,17
BANKS & OTHER FINANCIAL INSTITUTIONS	3.802.071	6.418.256	0,69
MONEY MARKETS	1.886.663	2.083.723	0,10
AVAILABLE-FOR-SALE SECURITIES (Net)	23.266.215	24.850.434	0,07
LOANS GIVEN TO CUSTOMERS	39.317.598	45.258.506	0,15
FACTORING RECEIVABLES	0	559.447	0,00
HELD-TO-MATURITY SECURITIES (Net)	8.919.186	10.048.767	0,13
ASSOCIATES (Net)	2.015.161	2.049.395	0,02
SUBSIDIARIES (Net)	5.167.822	2.703.767	-0,48
OTHER INVESTMENTS (Net)	454.783	454.783	0,00
FINANCIAL LEASING RECEIVABLES (Net)	0	1.500.596	0,00
LEGAL RESERVES	5.613.036	5.927.186	0,06
MISCELLANEOUS RECEIVABLES	302.610	977.479	2,23
INTEREST AND REVENUE ACCRUALS	6.864.712	7.797.029	0,14
TANGIBLE ASSETS (Net)	6.904.943	8.151.827	0,18
INTANGIBLE FIXED ASSETS (Net)	175.165	244.374	0,40
OTHER ASSETS	1.284.908	1.660.836	0,29
TOTAL ASSETS	121.824.863	139.064.007	0,14
DEPOSITS	77.635.368	86.687.218	0,12
MONEY MARKETS	7.015.185	7.296.972	0,04
CREDITS	12.504.907	15.245.752	0,22
SECURITIES ISSUED (Net)	0	1	0,00
FUNDS	85.725	93.129	0,09
MISCELLANEOUS DEBTS	1.168.003	1.614.350	0,38
OTHER LIABILITIES	1.341.493	1.496.585	0,12
TAX, PREMIUM, INSURANCE PAYABLES	263.250	305.306	0,16
FACTORING LIABILITIES	0	235.834	0,00
FINANCIAL LEASING PAYABLES (Net)	64.119	12.839	-0,80
INTEREST AND EXPENSE PAYABLES	1.222.351	1.341.462	0,10
ALLOWANCES	1.304.019	4.211.701	2,23
OTHER CREDITS	26.786	35.930	0,34
SHAREHOLDERS' EQUITY	19.193.657	19.423.911	0,01
TOT. LIABILITIES & SHAREHOLDERS' EQUITY	121.824.863	139.064.007	0,14

Table 4: Changes in Each Banks' Balance Sheets According to Consolidation Standard XI-21

Bank #	1	2	3	4	5	6	7	8	9	10	11
ASSETS	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot
CASH AND CENTRAL BANK	0,00	0,00	0,00	0,08	0,01	0,03	0,04	0,00	0,00	0,07	0,01
MARKETABLE SECURITIES (Net)	0,00	0,07	0,01	0,00	0,14	0,70	0,05	0,85	0,00	0,21	0,16
BANKS AND OTHER FINANCIAL INSTITUTIONS	0,00	0,00	-0,25	2,71	3,21	0,06	-0,54	3,73	0,01	0,05	0,50
MONEY MARKETS	0,25	0,13	0,02	0,00	0,00	0,01	0,61	0,01	0,00	0,03	0,03
AVAILABLE-FOR-SALE SECURITIES (Net)	0,00	0,00	0,20	0,31	0,04	0,07	0,00	0,00	0,00	0,00	0,17
LOANS GIVEN TO CUSTOMERS	0,00	0,00	0,11	0,85	0,13	0,10	0,07	0,47	0,08	0,02	0,07
FACTORING RECEIVABLES	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
HELD-TO-MATURITY SECURITIES (Net)	0,00	0,00	3,48	0,49	0,10	0,13	0,00	0,07	0,00	0,00	0,04
ASSOCIATES (Net)	0,22	0,00	0,00	0,00	0,00	-0,01	-0,31	-0,95	0,00	0,00	0,01
SUBSIDIARIES (Net)	-0,38	-1,00	-1,00	-0,94	-0,38	-0,32	-0,53	-1,00	-0,99	-0,35	-0,82
OTHER INVESTMENTS (Net)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
FINANCIAL LEASING RECEIVABLES (Net)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
LEGAL RESERVES	0,00	0,00	0,00	0,64	0,00	0,00	0,05	0,00	0,00	0,00	0,04
MISCELLANEOUS RECEIVABLES	0,01	0,50	0,25	3,46	1,33	5,16	1,07	5,27	0,00	0,06	2,94
INTEREST AND REVENUE ACCRUALS	0,00	0,00	0,26	0,88	0,29	0,23	0,01	0,29	0,01	0,00	0,08
TANGIBLE ASSETS (Net)	0,02	0,20	0,15	0,72	0,13	0,35	0,11	0,33	0,00	0,02	0,04
INTANGIBLE FIXED ASSETS (Net)	0,01	0,12	0,62	0,35	0,71	12453	1,25	0,17	0,01	0,00	0,08
OTHER ASSETS	0,15	0,01	0,64	0,65	0,15	0,33	0,48	1,29	0,00	0,03	0,14
TOTAL ASSETS	0,00	0,00	0,10	0,72	0,14	0,14	0,04	0,50	0,02	0,01	0,10
Bank #	1	2	3	4	5	6	7	8	9	10	11
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot	D_Tot
DEPOSITS	0,00	0,00	0,08	0,98	0,17	0,00	0,02	0,55	0,05	0,00	0,06
MONEY MARKETS	0,15	0,03	0,02	0,19	0,00	0,02	0,09	0,00	0,00	0,00	0,01
CREDITS	0,00	0,00	0,19	0,20	0,09	0,53	1,47	0,63	-0,05	0,00	0,36
SECURITIES ISSUED (Net)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
FUNDS	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
MISCELLANEOUS DEBTS	0,00	0,06	0,09	1,02	0,97	1,12	1,16	0,49	0,00	4,12	0,18
OTHER LIABILITIES	0,00	0,00	0,17	0,42	0,04	0,06	0,00	0,19	0,00	0,00	0,19
TAX, PREMIUM, INSURANCE PAYABLES	0,01	0,05	0,17	0,26	0,08	0,15	0,06	0,32	0,01	0,47	0,28
FACTORING LIABILITIES	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
FINANCIAL LEASING PAYABLES (Net)	0,00	0,22	-1,00	-1,00	-1,00	-0,99	-1,00	-1,00	0,00	0,00	-1,00
INTEREST AND EXPENSE PAYABLES	0,00	0,02	0,12	1,20	0,13	0,02	0,03	0,31	0,04	0,19	0,07
ALLOWANCES	0,01	0,06	1,40	0,65	1,27	4,89	0,04	0,59	-0,29	0,04	8,50
OTHER CREDITS	0,00	6,90	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
SHAREHOLDERS' EQUITY	0,01	-0,13	-0,01	0,09	0,01	0,01	-0,07	-0,02	0,00	0,00	-0,01
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	0,00	0,00	0,10	0,72	0,14	0,14	0,04	0,50	0,02	0,01	0,10

In computing the changes we take the net amounts between inflation adjusted statements and consolidated financial statements, and divide them to the numbers in the inflation adjusted financial statements. In addition, we consolidate the financial statements of eleven banks. So, we reduce 11 financial statements to the one financial statement. But, this consolidation is somehow a pseudo-consolidation and is nothing more than a summation of numbers of financial statements accordingly. In other words, we do not eliminate receivables and payables to each other or do not offset gains or loss from each other. Consolidated financial statements are shown in Table – 3 and Table – 5.

When XI-21 has entered into force in 2003, all banks listed in ISE as you see in Table 4 have experienced a spontaneous improvement in their statements. So that, investors got better insight and better information.

Table 5: Changes Between Inflation Adjusted Income Statement (XI-20) and Consolidated Income Statement (XI-21)

INCOME STATEMENT	XI-20	XI-21	change
INTEREST INCOME	14.423.313	16.261.245	0,1274
INTEREST EXPENSE	10.841.307	11.422.173	0,0536
NET INTEREST INCOME (I-II)	3.582.006	4.839.072	0,3509
COMISSION AND FEES	1.741.777	2.276.387	0,3069
DIVIDEND INCOME	12.397	9.844	-0,2059
NET COMMERCIAL INCOME (LOSS)	4.414.809	4.653.588	0,0541
NET PROFIT (LOSS) ON INVESTING SECURIT.	64.957	123.415	0,8999
OTHER OPERATING INCOME	937.083	4.230.818	3,5149
TOTAL OPERAT. INCOME (III+IV+V+VI+VII+VIII)	10.753.029	16.133.124	0,5003
ALLOWANCES FOR CREDIT AND OTHERS (-)	1.387.247	1.477.203	0,0648
OTHER OPERATING EXPENSES (-)	5.613.946	10.214.657	0,8195
OPERATINF INCOME (IX-X-XI)	3.751.836	4.441.264	0,1838
INCOME/LOSS FROM ASSOC. AND SUBSID.	234.643	77.023	-0,6717
NET MONETARY GAIN (LOSS)	-502.386	-717.636	0,4285
INCOME BEFORE TAX (XII+XIII+XIV)	3.484.093	3.800.651	0,0909
TAX DUE (-)	969.396	1.087.612	0,1219
OPERAT. INCOME/LOSS AFTER TAX (XV-XVI)	2.582.521	2.762.851	0,0698
EXTRAORDINARY INCOME/LOSS AFTER TAX	5.286	8.956	0,6943
NET INCOME/LOSS (XVII+XVIII)	2.587.807	2.766.691	0,0691
EPS in TL	44.803	62.444	0,3938

Conclusion

In the analysis, remarkable percentage changes between two financial statements are examined. Not all big changes are taken into the consideration. For example, there is a 223% increase in miscellaneous receivables account, but, as far as total assets are concerned this item counts for only 0.7% in the balance sheet. That is why these changes are considered minor and are not included to the analysis. For this reason, only the considerable changes have been examined. In this manner, the meaningful changes in the accounts are as follows:

- Cash Equivalents and Central Bank Account increased 10%.
- Marketable Securities changed 17%. It points out \$1.5 Billion discrepancy between two financial statements.
- Banks and other financial institutions account increased 69%. It means \$1.7 Billion difference between two financial statements.
- Although available-for-sale-securities portfolio seems a small increase as 7%, it amounts as much as \$1 Billion difference between two financial statements.
- Loans-given-to-customers (Trade receivables) increased 15%. Although this difference seems not too much, it is the largest net amount on the assets side of balance sheet. The difference is \$4 Billion.
- Held-to-maturity-securities increased 13%.
- Subsidiaries have decreased 48%. Under normal conditions, in a consolidation process, this item is spontaneously set off. But in our case, the existence of special subsidiaries which are not included in the consolidation process makes this change.
- Interest and revenue accruals increased 14%.
- Tangible assets (net) increased 18%.
- Deposits increased 12%. Although this difference is 12%, it is the largest difference amount in the balance sheet. The difference amount is \$6 Billion.
- Received Loans (Trade Payables) increased 22%, which amounts \$2 Billion.
- Sundry Payables (miscellaneous payables) increased 38%. This difference is not large as much as the difference in received loans. It is just \$300 Million.
- Allowances (provisions) increased 223%. This difference is \$2 Billion.
- Shareholders' Equities have not been changed notably.
- Interest income increased 13%.

- Interest expense decreased 5%. As a result of this and the preview differences, the net interest income increased 35%.
- Commissions and fees increased 31%.
- Other operating income increased 351%. The difference is \$2.2 Billion. This is one of the largest differences in the income statement. As a result of above differences in the income statement, total operating income increased 50%. The difference in total operating income is \$3.5 Billion.
- Other operating expenses increased 82%. The difference is \$3 Billion. This is the largest difference in the income statement.
- As a result of above differences in the income statement the net income increased 7%. The changes in the net income figures improved the Earnings Per Share (EPS) ratio by more than 39%. The EPS in TL increased from 44,803 to 62,444.

As a result of the above analysis, it shows that the figures in consolidated financial statements are different and more reliable than unconsolidated financial statements of listed banks in ISE. Investors in ISE, after the Consolidation Standard gained a better insight of the banks listed in ISE.

Abstract

Cílem příspěvku je poukázat na efekt účetního standardu XI-21 týkajícího se sestavování konsolidovaných finančních výkazů na informační transparentnost v tureckém bankovním sektoru. Analýza vychází z dat publikovaných ve finančních výkazech 11 tureckých bank, které byly kótovány na Burze cenných papírů v Istanbulu v prosinci 2003. Zavedení nového účetního standardu změnilo v mnoha směrech obrázek o finanční situaci analyzovaných bank. K významným změnám lze zařadit například nárůst poskytnutých úvěrů o 15 %, nárůst objemu přijatých depozit o 12 % a nárůst objemu úvěrů od ostatních finančních institucí o 22 %. Z pohledu výkazu zisků a ztrát patří k nejvýraznějším změnám zvýšení poplatků a provizí o 223 % a nárůst ostatních provozních příjmů o 351 %. Na základě komparativní analýzy lze konstatovat, že v důsledku implementace nového účetního standardu získali investoři věrohodnější a transparentnější informace, čímž se zvýšila i atraktivita Burzy v Istanbulu.

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INSURANCE

PRESENT PROBLEMS OF LIFE INSURANCE IN SLOVAKIA AFTER THE ENLARGEMENT OF THE EUROPEAN UNION

Barbora Drugdová

Key words

insurance market, life insurance, premium of the life insurance, insurance legislation,

1. Introduction

The insurance market is a part of the financial market. The insurance market represents a system of different market tools and regulatory measures, which provide for the flow of funds and insurance services between insurance market participants in accordance with a principle of conditional recovery and non- equivalence.

The Slovak insurance market is well – developed. As many as 28 commercial insurance companies, of this number 23 associated in the Association of Slovak Insurers, operated in the Slovak Republic until 31.12.2002.

Transition of the economy in Slovakia to market economy principles brought with it a collapse of a monopoly on the insurance market. Changes in the legal system, represented by Slovak National Council Act 24/1991 Zb. on the insurance industry, in the wording of subsequent amendments, the latest Act 95/2002 on the insurance industry and the attractiveness of this branch of the financial sector led to a dynamic growth of this sphere of business, which is new here.

2. Life Insurance in Slovakia

In the countries of the European Union, but also in other developed market economy countries (the United States, Japan, United Kingdom, France), insurance is in general divided to life insurance and non-life insurance. In line with the aspirations to join the European Union, division of insurance to life and non-life insurance was also introduced in the legal

system here, instead of classification as personal insurance, property insurance, and insurance of liability for damage, as defined in the Civil Code.

Life insurance is oriented at a risk of surviving until certain age or death. The basic feature of this insurance is that the insurer will in all instances pay the benefits. The agreed-upon benefit is paid when the insured survives until the date of the end of the insurance policy or the date agreed-upon in the insurance policy, or in case of a premature death. Usually, a share of the insured in surpluses from insurance or profit from investment of the finances deposited with the insurance company is agreed-upon in the form of bonuses and also an increase of insurance payments.

There are several basic types of life insurance which are offered in various modifications. However, all types ensure the payment of benefits at a time of insured need, either directly to the insured or his/her heirs. The basic types of life insurance are: universal life insurance, endowment insurance, whole life insurance and endowment insurance (mixed insurance), retirement annuities.

Retirement annuities are a certain modification of life insurance. This insurance presents a possibility of including risk of death, survival to a certain age, and disability.

Insurance premium is the price for an insurance service. Factors that determine the amount of premium have an important role for the calculation of insurance premiums in life insurance. Elements that to a decisive degree influence the amount of insurance premium are above all evaluation of subjective and objective aspects of risk, or those features that can be objectively measured or quantified.

Subjective side of risk ensues from dangers that rest on the insured person himself. It has a positive or negative effect to a degree to which the insured person takes care or is careless towards preserving his/her life and to prolong his/her life. Subjective side of risk, such as care for health, is not directly expressed in premiums. In some economically developed countries, insurance companies reward verified abstainers (whether it concerns smoking or alcohol) who buy insurance by proving them discounts on premiums. For example, in the United States, smoking is taken into account in morality tables, whereby there

are separate morality tables for smokers and nonsmokers. (such as Unisex Version of the 1980, Commissioners Standard Ordinary Morality Table).

Objective side of risk is represented by age of the insured sex, marital status, occupation, hobbies environment and others. All these factors, as well as other factors, influence morality, or average length of life of the insured.

Factors that directly influence the amount of premium in life insurance include: likelihood of death or survival to a certain age, insurance term (or duration of insurance), time and form of payment of premiums, insurance sum, number of insured risks, waiting period (deferral period, period of deferral of effectiveness of insurance), number and amount of overhead surcharges, amount of profit and other surcharges, interest rate and interest.

Importance of life insurance in the national economy is rising. Life insurance is a stable component of the creation of the gross domestic product. In developed economies it is used as an active element of social policy of the state. It offers a suitable alternative to overcome problems associated with social security. It permits the insured to accumulate part of their income during their economic activity and in this way preclude a drop of their standard of living when income from economic activity is no longer available. The period of receiving pension is linked with a decline of the standard of living also in economically developed countries, needless to say in transforming countries, where social security systems inherited from previous regime are burdened by a high degree of social solidarity.

3. Present Problems of Life Insurance in Slovakia after the Enlargement of the Union

Fundamental demographic changes in the Slovak Republic are causing major problems in association with a growing economic burden of the productive part of the population to support the part of the population that is no longer active in work.

Accumulation of capital and its investment is an important aspect of development of the economy. Higher savings rate as a source of capital is deemed a factor of stability of a country, on which willingness of foreign investors depends to invest on our capital market. Life insurance has a specific character based on its long-term nature and stability of terms.

Therefore reserves accumulated in life insurance represent an important source of investment capital, and so help the recovery of the national economy. Its long-term nature requires a high degree of confidence between the insurer and the insured. Average insurance term in life insurance products is 15 to 20 years.

Modifications of legal norms began in the insurance industry and the process of harmonization of our insurance law started with community law of the European Union. . These amendments are also related to life insurance. The possibilities were widened for placement of reserves into foreign securities and the possibility was introduced to provide loans to the insured in life insurance.

Development of insurance in the area of life insurance in recent years is more dynamic than in non-life insurance. The Slovak Republic is gradually getting closer to the European average on the insurance market, which is about 51 percent in favor of life insurance.

Data in Table 1, shows that the ratio of life and non-life insurance here is unsatisfactory compared with countries with developed economies, such as Japan with 78:22, United Kingdom 65:35, France 60:40. Data in Table 2, shows that ratio of life and non-life in European Union.

The ratio of life and non-life insurance in the Slovak Republic was 43,2 : 56,8 as of 31.12.2002 according to the Slovak Association of Insurance Companies.

Commercial insurance companies active in the Slovak insurance market ranked by billed premiums in 2002 are in Table 3.

Finally, we can conclude that demand for non-life insurance still prevails. Interest is growing of the population as the main subject on the market in life insurance. Over the past three years life, insurance has been growing by roughly 30 percent annually.

However, the population is beginning to become aware with growing intensity of risks of life and the fact that the state will not be able with its social system to sufficiently contribute to their pensions.

Table 1: Ratio of life and non- life insurance in word insurance –2000

Country	Ratio life and non – life in %
Japan	78 : 22
United Kingston	70 : 30
France	65 : 35

Source: Comité Européen des Assurances, Paris 2001

Table 2: Ratio of life and non-life insurance in European Union

	Ratio life and non – life in %
1999	57,6 : 42,4
2000	58,8 : 41,2
2001	60,8 : 39,2

Source: ANIA, Italian Insurance in 2001

Table 3. Market share of Insurance in the insurance market in Slovakia, total premiums written, life insurance and non-life insurance- 2002.

Po r. čís.	Insurance company	Total premiums written	%	Total		Total		
				Non-life insurance	%	Motor insuran ce	Life insuran ce	%
1.	Slovenská poisťovňa, a.s.	12 772 751	35,20	8 311 166	40,33	2 742 482	4 461 585	28,46
2.	KOOPERATÍVA poisťovňa, a.s.	5 301 454	14,61	3 433 820	16,66	1 394 194	1 867 634	11,92
3.	Allianz poisťovňa, a.s.	4 484 492	12,36	3 629 786	17,61	1 312 598	854 706	5,45
4.	AMSLICO AIG Life	2 877 580	7,93	67 965	0,33	0	2 809 615	17,92
5.	Nationale-Nederlanden poisťovňa, a.s.	2 009 145	5,54	0	0,00	0	2 009 145	12,82
6.	Česká poisťovňa- Slovensko, a.s.	1 798 127	4,96	1 635 867	7,94	259 770	162 260	1,04
7.	UNIQA poisťovňa, a.s.	1 271 055	3,50	989 337	4,80	63 909	281 718	1,80
8.	ERGO, a.s.	1 017 924	2,81	352 347	1,71	34 976	665 577	4,25
9.	KONTINUITIA Slov.život.poisťovňa, a.s.	860 486	2,37	27 295	0,13	0	833 191	5,32
10.	UNION, poisťovacia a.s.	775 622	2,14	557 690	2,71	0	217 932	1,39
11.	Generali Poisťovňa, a.s.	600 223	1,65	301 811	1,46	46 296	298 412	1,90
12.	QBE poisťovňa, a.s.	546 209	1,51	204746	0,99	0	341 463	2,18
13.	R+V Poisťovňa, a.s.	453 055	1,25	223 898	1,09	0	229 157	1,46
14.	Komunálna poisťovňa, a.s.	401 340	1,11	293 773	1,43	88 632	107 567	0,69
15.	Univerzálna banková poisťovňa, a.s.	338 844	0,93	234 771	1,14	0	104 073	0,66
16.	Prvá česko-slovenská poisťovňa a.s.	285 643	0,79	0	0,00	0	285 643	1,82
17.	Poisťovňa GERLING Slovensko, a.s.	180 113	0,50	180 113	0,87	0	0	0,00
18.	.Wüstenrot životná poisťovňa, a.s.	118 846	0,33	0	0,00	0	118 846	0,76
19.	Poisťovňa TATRA, a.s	61 924	0,17	50 685	0,25	0	11 239	0,07
20.	Vzájomná životná poisťovňa, a.s.	53 014	0,15	52 334	0,25	0	680	0,00
21.	D.A.S. poisťovňa právnej ochrany, a.s.	50 388	0,14	50 388	0,24	0	0	0,00
22.	VICTORIA- VOLKSBANKEN Poisťovňa, a.s.	23 421	0,06	9 253	0,04	0	14 168	0,09
23.	Slovenská kancelária poisťovateľov	1 721	0,00	1 721	0,01	1 721	0	0,00
	CELKOM	36 283 377	100	20 608 766	100	6 060 050	15 674 611	100

Source: Annul Report 2003, Slovak Insurance Association

4. Conclusion

Finally, we can conclude that demand for non-life insurance still prevails. Interest is growing of the population as the main subject on the market in life insurance. Over the past three years life, insurance has been growing by roughly 30 percent annually.

However, the population is beginning to become aware with growing intensity of risks of life and the fact that the state will not be able with its social systém to sufficiently contribute to their pensions.

Abstract

Prechod slovenského hospodárstva na trhový princíp hospodárenia priniesol rozpad monopolu na trhu hospodárenia. Zmeny v legislatíve prezentované zákonom Slovenskej národnej rady č.24/1991 o poisťovníctve v znení neskorších noviel a zákon č.95/2002 mali za výsledok dynamický rozvoj. V súvislosti so vstupom do Európskej únie v oblasti poistenia a poisťovníctva sa v Slovenskej republike zaviedlo členenie na životné a neživotné, tak ako je to zaužívané v štátoch Európskej únie. Poistný trh v Slovenskej republike je rozvinutý a prevláda záujem o neživotné poistenie. V posledných rokoch ale rastie podiel životného poistenia. V súvislosti s celoeurópskou a prípadne svetovou úrovňou je ešte v oblasti slovenského poistného trhu čo doháňať. Týka sa to predovšetkým týchto oblastí: kvalitatívnej a kvantitatívnej úrovne poistného trhu, legislatívy v tejto oblasti, neustáleho zvyšovania nových a moderných poistných produktov, ako aj daňového zvýhodnenia v oblasti životného poistenia a ďalších oblastí.

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FINANCIAL ANALYSIS OF THE ALLIANZ – SLOVENSKÁ POISŤOVŇA A. S. IN SLOVAKIA AND ALLIANZ SEGUROS IN SPAIN

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Key words

financial indicators, written premiums, life insurance, non-life insurance, indemnity cost

1. Introduction

Every entrepreneurial entity must continually analyse its business activities and results. Every business decision needs to be adjusted to changes on the market so that the company would not lose its position but it would get greater market share and become more competitive. Therefore companies elaborate financial analysis to evaluate basic economic indicators and to draw conclusions for their future activities.

The role of financial analysis is to define which factors and to what level have taken part in creating corporate financial situation. That requires creating systematization and identifying the performance of these factors. Factors influencing corporate financial situation are divided into two groups. The first group is represented by *external* factors influencing the company and its environment (state budget policy, exchange rate, monetary banking policy, development of inflation rate, etc.). Every company can influence these factors in very limited level, it must accept them and adjust its business activities to these regulations. The second group is represented by *internal* factors that can be influenced by business activities of a firm. They can be further divided into quantitative and qualitative ones. The quantitative factors indicate the volume of business activity and are represented by volume of revenues, sales, VAT, etc. They express the level of transformation process of input into output. To gain both groups financial analysis uses the system of indicators that can measure the activities of above mentioned factors¹.

¹ KRÁĽOVIČ, J. - VLACHYNSKÝ, K.: Finančný manažment. 1. vydanie. Bratislava : IURA EDITION, 2002, s. 31. ISBN 80-89047-17-3

Financial situation is a complex and complicated issue therefore its analysis is dealt miscellaneously. The position of the user of analysis and their relation to analysed company are important in selection of approach and possible emphasize of some aspects of financial situation. Such miscellany of interests and attitudes is displayed in time related financial analysis. There exist two types of such analysis. “*Ex post*” analysis tries to explain current financial situation of a company in retrospect. This approach enables, to understand present situation and to formulate measures for future. But the achieved results cannot be changed, they were reached. The limits of “ex post” analysis can be overcome by “extending” of current financial analysis into future. The “*ex ante*” financial analysis has to forecast the development of corporate finance and to predict future corporate solvency with accuracy varied according to “distance of aimed future from present” (the forecast for the next year is more accurate than for five years)².

The purpose of financial analysis as the final phase of overall accounting process is to determine financial situation and efficiency of a company with the aim to recognize such factors and their intensity that created financial situation of a company. It enables to make conclusions that are the base for financial decision making (such as creating financial plan, recognising the strengths and weaknesses of a company and its competitors, etc.).

The basic information source for financial analysis of insurance companies are these financial statements:

- balance sheet of insurance companies,
- loss and profit statement of insurance businesses,
- cash flow.

Insurance companies use financial ratios that can be divided into several groups such as:

- liquidity indicators,
- performance indicators,
- profit margin,

² ZALAI, K. a kol.: Finančno-ekonomická analýza podniku. Bratislava : Sprint vfra, 1998, s. 44. ISBN 80-88848-18-0

- credit indeptedness,
- indicators of cash-flow analysis.

ALLIANZ GROUP

The two Allianz Group subsidiaries have been chosen for this analysis. They both have predominance of non-life insurance to life insurance and are active in similar economic conditions. They have had leading positions on their markets for several years. These subsidiaries offer similar insurance products. They both offer their services via internet that has become the inevitable tool of the managers. Allianz Group has recognized greater importance of information and communication systems therefore they try to attract customers offering services via internet.

Financial strength, tradition and professionalism are three basic work pillars that have created successful relation between client and Allianz insurance company for years. This effort has resulted in confidence of many customers who have appreciated high standard of financial services of strong and reliable partner.

The original German company was set up in Berlin in 1870 and during its more than 110 years long history it has become the symbol of reliability and capital power. At present Allianz Group via its subsidiaries, outlets and trusts has been operating in 77 countries worldwide and has employed about 180 thousand of employees. It takes care of more than 60 millions of clients via subsidiary global net. It has about 700 outlets. The greatest advantage of such big global corporation is the transfer of risk.

Tendency to merge with the domestic market leader has been the practice of Allianz AG on national markets. This enables to exploit financial sources of parent company, and knowledge and experience from national markets of acquisited insurance company to strengthen the position of Allianz AG (e. g. Allianz - Slovenská poisťovňa, a. s., Allianz Seguros, Allianz - Tiriac, Allianz Hungária, etc.).

ALLIANZ POISŤOVŇA, a. s.

Allianz poisťovňa, a. s. subsidiary of a holding company Allinaz AG Munich and a member of Allianz Group began to offer its services on Slovak market on 1st December 1993 by setting up its business operation in Bratislava. New limited company was established by agreement of Board of directors and supervisory board in June 14th, 1996. Since 1st January 1997 Allianz poisťovňa, a. s., as 100 % subsidiary of Munich Group has been active in Slovakia. The Ministry of Finance announced international tender on privatisation of Slovenská poisťovňa company. The winner to buy the state majority share of 66.79 % according to decision of selection board became Allianz AG Munich. The contract of sale was completed on February 1st, 2002 and since January 1st, 2003 Allianz - Slovenská poisťovňa, a. s. has become the strongest company on Slovak insurance market.

2. Analysis of Basic Indicators of Allianz poisťovňa, a. s.

Performance Indicators

Written Premiums

The development of written premiums during the period of 1999 to 2003 in Allianz poisťovňa, a. s. company is presented in table 1 and graph 1.

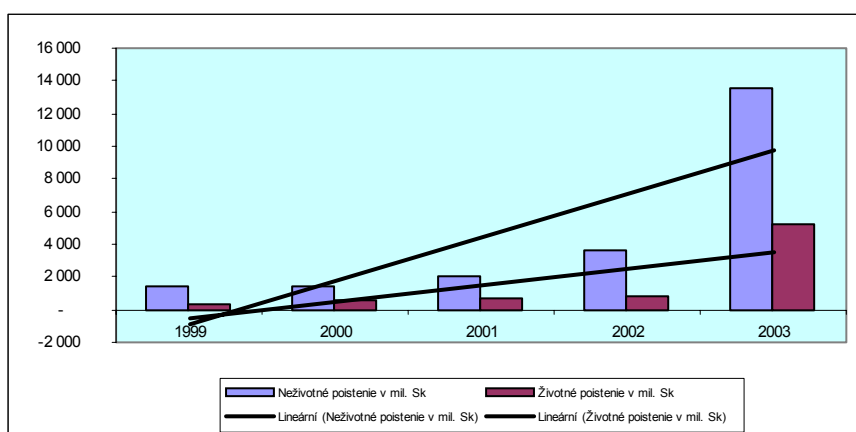
Table 1: Written premiums of Allianz poisťovňa, a. s. for years 1999 - 2003

Year		1999	2000	I _{2000/99}	2001	I _{2001/00}	2002	I _{2002/01}	2003	I _{2003/04}
Non-life insurance	mil. Sk	1 461	1 479	1,0123	1 988	1,3442	3 642	1,8320	13 597,6	3,73
Life insurance	mil. Sk	332	542	1,6325	690	1,2731	843	1,2217	5 216,8	6,18
Total written premium	mil. Sk	1 793	2 021	1,1272	2 678	1,3251	4 485	1,6748	18 814,4	4,19

Source: *Annual reports of Allianz poisťovňa, a. s. for years 1999 - 2003*

Gross written premium has rapidly grown up and Allinaz - Slovenská poisťovňa, a. s. has become the insurance company with the greatest volume of written premium on Slovak national market. The development of written premium in life and non-life insurance has still growing tendency.

Graph 1: Development of written premium in Allianz, a. s.



Source: Annual reports of Allianz, a. s. from years 1999 - 2003

Indemnity Costs

Table 2 presents the development of indemnity costs of Allianz, a. s. during the years 1999 - 2003.

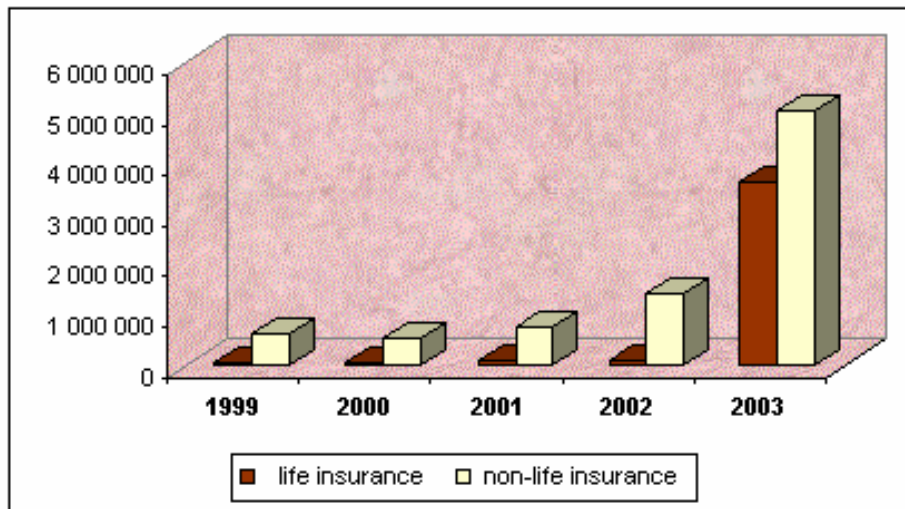
Table 2: Indemnity Costs of Allianz, a. s.

Year	Indemnity Costs of Allianz, a. s. in thousands Sk								
	1999	2000	I _{2000/99}	2001	I _{2001/00}	2002	I _{2002/01}	2003	I _{2003/02}
life insurance	51 086	61 317	1,2003	77 454	1,2632	100 481	1,2973	3 650 399	36,33
non-life insurance	609 908	557 331	0,9138	778 168	1,3962	1 422 395	1,8279	5 051 649	3,55
Total costs	660 994	618 648	0,9359	855 622	1,3831	1 522 876	1,7798	8 702 048	5,71

Source: Annual reports Allianz, a. s. years 1999 - 2003

Total indemnity costs in 2003 were increased by 500 % compared to the year 2002 influenced mainly by acquisition of Slovenská poisťovňa, a. s. and further increase of insurance portfolio. That resulted in dramatic growth of indemnity costs. The biggest growth was in costs of life insurance.

Graph 2: Indemnity Costs of Allianz, a. s.



Source: Annual reports of Allianz, a. s., years 1999 - 2003

Economic Result

In 1997 insurance company Allianz poisťovňa, a. s. became a shareholding company. Since that time it has been a profitable company that has assured its credibility with its shareholders and clients. Excellent results in commercial activity expressed by written premiums, risk frequency adequate to computed expectations and maximum economization of overheads have helped to absorb increased costs related to preparation of technical and organizational background for a new product, obligatory contractual insurance. In 2002 Allianz poisťovňa, a. s. was profitable but if we include result of Slovenská poisťovňa, a. s. in 2002 for better comparison to the year 2003, the total economic result of both companies was loss of Sk 1350.66 million. The first year of a new company Allianz - Slovenská poisťovňa, a. s. finished with profit of Sk 860.437 million.

Survey of calculated indicators according to Standard & Poor's is given in table 3. Market indicators represent values that do not comply with Standard & Poor's agency.

Table 3: Calculated Indicators of Allianz poisťovňa, a. s.

Indicators of Balance Sheet and Loss and Profit Statement		1999	2000	2001	2002	2003	S & P
annual rise of non-life premiums	%	11.80	1.23	34.42	83.20	273.35	od -10 do 30 %
annual rise of life premiums	%	37.80	63.13	27.31	22.17	518.84	od -10 do 30 %
Asset leverage	%	133.42	154.02	150.27	129.40	31.61	the higher the better
Reserve ratio	%	100.79	115.16	110.38	98.91	26.07	100 – 150
Solvency ratio	%	33.20	43.74	46.41	35.91	4.3	30 - 50 %
Technical coverage ratio	%	133.90	158.90	156.79	134.81	30.36	150%
investments / assets	%	79.55	79.17	72.87	74.42	90.78	not given
investments / technical reserves	%	134.46	133.17	138.59	125.34	125.13	>100 %
technical reserves / own property	%	286.60	247.13	230.65	319.48	493.44	<350 %
Further ratio indicators							
technical reserves / liquidity means	%	105.80	153.40	195.60	164.55	x	<100 %
liabilities / liquidity means	%	8.50	10.20	59.50	12.22	x	not given
ROA	%	9.05	7.22	0.40	2.51	1.907	not given
ROE	%	43.85	29.99	1.79	13.50	12.97	>5 %
written premiums / number of employees	mil Sk	6.95	6.50	7.07	11.93	x	not given

Source: own computations from results of annual reports

Indicators of *reserve ratio* and *technical coverage ratio* reached the amount below assigned interval in the years - 1999 and 2003. Based on results in the year 2003 technical reserves should be more increased to overcome difficulties during next year. This insurance company has increased the level of technical reserves but in the year 2003 this rise was not adequate to total development and to the size of a new insurance entity.

The extremely high level of *liquidity indicators* over assigned interval given by Standard & Poor's until 2002 resulted from low volume of liquidity means. It is therefore inevitable to increase liquidity means. More means should be transferred to the most liquid form so the company would be able to meet higher unexpected liabilities that result from its insurance technical activities. The level of liquidity means in the year 2003 has not been discovered.

Required relation between *profitability indicators* should fulfil this disparity:

ROE > ROA > interest rate

This condition was fulfilled under ordinary circumstances. In the year 2001 and partly 2002 the values of the profitability indicators were extremely low due to introduction of a new product - obligatory contractual insurance into practice. The dramatic fall of profit was marked by introducing new product and its advertising campaign. In years 2002 and 2003 the liquidity was influenced by merger of Allianz poisťovňa, a. s. and Slovenská poisťovňa, a. s.

ALLIANZ SEGUROS

Basic Information and Characteristics of Insurance Company

Allianz Seguros, subsidiary of insurance trust Allianz AG Munich and a member of Allianz Group entered the Spanish market by merger of three companies: AGF Unión Fénix, Allianz - Ras and Athena. Though Allianz has been the leading insurer on Spanish market and one of the biggest insurance companies its market share has still been increasing.

Picture 1: Property Structure of Allianz Seguros



Source: www.allianz.es

Being an universal insurer Allianz offers complete insurance portfolio to residents, entrepreneurs and businesses in both types of insurance - life and non-life. It serves more than 2 000 000 clients and has about 3 500 000 insurance policies.

A new advertising campaign with logo *“You are more sure with Allianz”* during the spring of 2002 helped to capture new clients. The company exceeded the number of its clients

over 2 000 000 and underwrote more than 3 500 000 insurance policies with profit higher than Eur 1 769 million. Nowadays it employs more than 9 000 brokers.

Products and services of Allianz Seguros offer to their clients **3P's**:

- protection (of property, entrepreneurship, risk),
- possibility of welfare system (life insurance),
- participation (on financial products, asset management).

3. Analysis of Basic Allianz Seguros Indicators

Performance Indicators

Written Premiums

Table 4 and Graph 3 display the development of gross written premiums of Allianz Seguros in the years 2000 - 2003.

Table 4: Written Premiums of Allianz Seguros

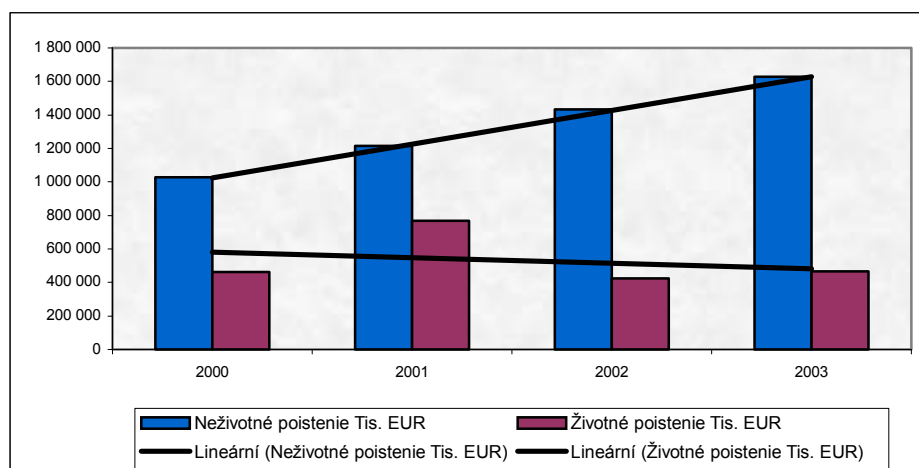
Year		2000	2001	I_{2001/00}	2002	I_{2002/01}	2003	I_{2003/02}
Non-life insurance	Thousands EUR	1 027 308	1 216 736	1,184	1 434 250	1,179	1 627 496,4	1,135
Life insurance	Thousands EUR	461 789	766 460	1,660	423 703	0,553	465 635,5	1,099
Total Written Premiums	Thousands EUR	1 489 097	1 983 196	1,332	1 857 953	0,937	2 093 131,9	1,127

Source: Annual Reports of Allianz Seguros from years 2000 - 2003

Total gross written premiums in 2003 reached the amount of thousands EUR - 2 093,131.9 and it was increased by 12.7 % compared to previous year. The decrease of gross written premiums in previous year reached the level of 6.3 %. Written premiums in non-life insurance has been constantly growing. Allianz Seguros has tried to balance this trend also in life insurance. Given data show clear disproportion of gross written premium of life insurance

to non-life insurance. Superiority of non-life insurance to life insurance is typical feature of all insurance companies in Allianz Trust worldwide.

Graph 3: Written Premiums of Allianz Seguros



Source: Annual Report of Allianz Seguros, years 2000 - 2003

Indemnity Costs

Table 5 presents indemnity costs development of Allianz Seguros in years 2000 - 2003.

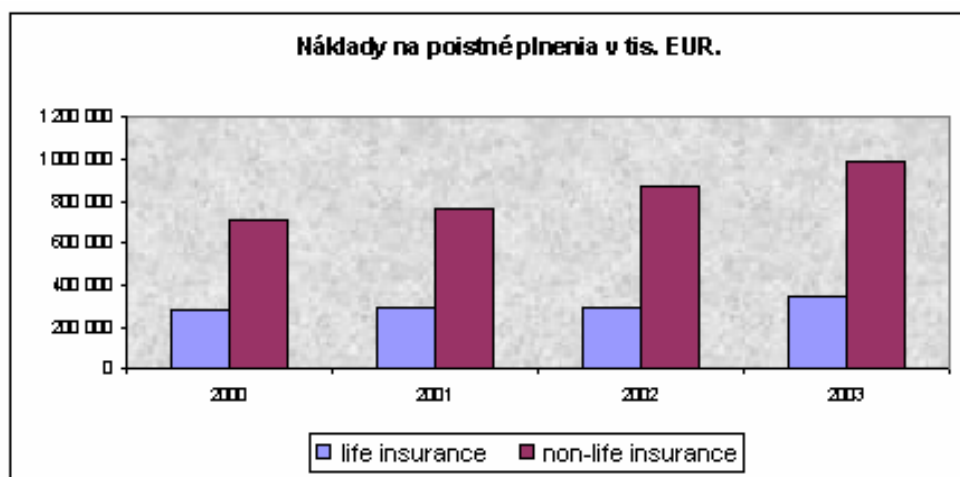
Table 5: Allianz Seguros Indemnity Costs

Years	Indemnity Costs in thousands EUR						
	2000	2001	I _{2001/00}	2002	I _{2002/01}	2003	I _{2003/02}
life insurance	279 092	287 881	1,032	292 553	1,016	347 131,2	1,187
non-life insurance	705 195	759 712	1,077	868 945	1,143	990 743,2	1,140
Total costs	984 287	1 047 593	1,064	1 161 498	1,109	1 337 874,4	1,152

Source: Annual Reports of Allianz Seguros, years 2000 - 2003

Total indemnity costs in 2003 grew by 15 % compared to the year 2002, which represented increase of EUR 176 376.4 thousands. The cost increase of 18.7 % in life insurance was marked as well as 14 % cost increase of non-life insurance. It can be concluded that moderate growth of indemnity costs appeared. Graph 4 presents indemnity costs development of Allianz Seguros.

Graph 4: Indemnity Costs of Allianz Seguros



Source: Annual reports of Allianz Seguros, years 2000 - 2003

Economic Result

The loss of EUR 31,582 thousand appeared in the year 1999. Since this year the company has become profitable. This was influenced by positive development of indemnity in the year 2000 and by synergic effect from merger. The highest profit of EUR 124 419.2 thousand was reached in the year 2003.

The survey of calculated indicators for the given period is described in table 6. Coloured indicators do not comply with criteria of Standard & Poor's Agency.

Table 6: Survey of Calculated Indicators of Allianz Seguros

Indicators of balance sheet and loss and profit statement		2000	2001	2002	2003	S & P
annual rise of premiums in non-life insurance	%	x	18.44	17.88	13.47	od -10 do 30 %
annual rise of premiums in life insurance	%	x	39.99	- 44.72	9.90	od -10 do 30 %
Asset leverage	%	x	215.44	283.05	277.60	the higher the better
Reserve ratio	%	x	235.29	300.82	292.98	100 – 150 %
Solvency ratio	%	x	16.13	19.84	20.13	30 - 50 %
Technical coverage ratio	%	x	251.43	320.67	313.10	150%
investments / assets	%	72.68	80.85	81.73	82.25	not given
investments / technical reserves	%	88.64	94.06	94.12	95.32	>100 %
technical reserves / own property	%	1 12.67	1 99.91	1 530.97	1 392.74	<350 %
Further ratio indicators						
technical reserves / liquidity means	%	x	x	x	x	<100 %
liabilities / liquidity means	%	x	x	x	x	not given
ROA	%	1.39	2.14	11.52	1.99	not given
ROE	%	23.99	37.32	26.84	32.16	>5 %

Source: own calculations based on annual reports

At present the growth development of written premiums in life insurance has been stable overcoming previous year decrease. Changes and sudden fluctuations during last period can negatively influence the business activities of insurance company and make the development of insurance company more difficult.

Based on above mentioned data it is necessary to raise basic property of Allianz Seguros. Its level does not comply with capital strength of Allianz Seguros, the level of its turnover and the number of its insurance policies.

Adjusting these two balance sheet indicators almost all indicators would reach the assigned criteria and total result of financial management would be more efficient.

4. Conclusion

The majority of insurance companies does not use the results of financial analysis to discover level of their sound business to such extent that would enable them to find out

shortcomings of their performance more easily. But all insurance companies will have to use all means of improving their efficiency to become more competitive.

Analysed Allianz subsidiaries did not reach assigned values in some indicators according to Standard & Poor's. These disparities were caused by different situation on insurance markets, legislation and some other negative circumstances appearing on given national market and such conditions the other observed company had not dealt with.

In case of indicators variation it is important to look for reasons in two ways e. g. in the development of total economy or in inadequately stated insurance strategy. If the economy in certain country has rapidly changed and is influenced by meaningful pressures also the business economy of insurance company will be following the economic development of a country. The second cause of disparities is incorrect strategy of insurance company that is illustrated by improperly assigned level of insurance balance sheet indicators, mostly in the level of written premiums.

The creation of a new economic and political configuration in Europe is the strong source of changes that will be displayed in the development of all insurance markets. To demonstrate this fact the two subsidiaries of Allianz Group have been chosen (the insurance company of a member country and the insurance company of a new member state). Both companies have overcome the great change in property ownership and therefore it is interesting to observe the changes in the development of these companies.

It can be generally stated that analysed subsidiaries of Allianz Group represent the strong and still business insurance entities in the selected countries. They both have had a leading market position that is expressed by good adjustment of these businesses to local markets. It can be said they have accurately managed the conditions and requirements of national markets with the know-how of a parent company.

Abstract

Príspevok si v úvode kladie za cieľ teoretické vymedzenie finančnej analýzy a jej nezastupiteľnej úlohy pre rozvoj špecifického podnikateľského subjektu – komerčnej poisťovne. Obsahom prvej časti je stručná charakteristika poisťovne Allianz – Slovenská poisťovňa, a.s., najmä finančná analýza založená na ukazovateľoch ratingovej agentúry Standard & Poor's v období 1999 – 2003. Druhá časť je venovaná finančnej analýze poisťovne Allianz Seguros v Španielsku v rokoch 2000 – 2003. Na základe získaných informácií možno konštatovať, že analyzované skupiny Allianz Group nedosiahli vo všetkých ukazovateľoch hodnoty zodpovedajúce Standard & Poor's. I napriek uvedenému obidve spoločnosti zaujímajú na národných poisťných trhoch významné pozície. Na základe získaných hodnôt jednotlivých finančných ukazovateľov možno predpokladať, že v nových konkurenčných podmienkach v rozšírenej EÚ dosiahnu po nevyhnutných problémoch súvisiacich s etablovaním sa na národných trhoch pozitívne výsledky vo väčšine dôležitých finančných ukazovateľoch.

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REASONS FOR BANKS TO ENTER INTO BANCASSURANCE

Anton Korauš¹

Key words

bank, bancassurance, insurance, banking, distribution, marketing advantages, profitability, new products, productivity, bank branches, client relationship management,

The main reasons why banks have decided to enter the insurance industry area are the following:

- Intense competition between banks, against a background of shrinking interest margins, has led to an increase in the administrative and marketing costs and limited the profit margins of the traditional banking products. New products could substantially enhance the profitability and increase productivity.

Financial benefits to a bank's performance can flow in a number of ways, as briefly outlined below:

- Increased income generated, in the form of commissions and/or profits from the business (depending upon the relationship)
- Reduction of the effect of the bank's fixed costs, as they are now also spread over the life insurance relationship
- Opportunity to increase the productivity of staff, as they now have the chance to offer a wider range of services to clients

Several European countries have made considerable regulatory changes regarding the banking and insurance sectors. Although regulatory changes vary from country to country there has been a pan-European trend towards the "universal bank" and the limitations of the past no longer exist. Banks are now able to operate across a broader range of activities, including insurance, via legally independent risk carriers. The insurance companies and banks

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are not competing within just the life insurance industry and banking industry respectively anymore but within the wider financial services marketplace.

Customer preferences regarding investments are changing. For medium-term and long-term investments there is a trend away from deposits and toward insurance products and mutual funds where the return is usually higher than the return on traditional deposit accounts.

This shift in investment preferences has led to a reduction in the share of personal savings held as deposits, traditionally the core element of profitability for a bank, which manages clients' money. Banks have sought to offset some of the losses by entering life insurance business.

Life insurance is also frequently supported by favorable tax treatment to encourage private provision for protection or retirement planning. This preferential treatment makes insurance products more attractive to customers and banks see an opportunity for profitable sales of such products.

The high operating expenses of bank branches have led many banks to decrease their branch network, as shown in the following table. The need for more efficient utilization of branches and bank employees is today as pressing as ever. However, in Italy the number of branches has increased due to the noticeable development in bancassurance. In the future, in view of ongoing consolidation, the bank branch networks will probably decrease as well.

Analysis of available information on the customer's financial and social situation can be of great help in discovering customer needs and promoting or manufacturing new products or services. Banks believe that the quality of their client information gives them an advantage in distributing products profitably, compared with other distributors (e.g. insurance companies).

The realization that joint bank and insurance products can be better for the customer as they provide more complete solutions than traditional standalone banking or insurance products.

Banks are experiencing the increased mobility of their customers, who to a great extent tend to have accounts with more than one bank. Therefore there is a strong need for customer loyalty to an organization to be enhanced.

Client relationship management has become a key strategy. To build and maintain client relationships, banks and insurers are forming partnerships to provide their clients with a wide range of bank and insurance products from one source.

Population growth rates have slowed significantly during the last decades in the western industrialized countries and this decrease in birth rates in conjunction with increasing life span will have a significant impact on the age structure of the population in the future. As a result it is likely that there will be increasing pressure on public pension systems and an increasing need for additional retirement provisions or long-term investment products. Banks see an opportunity to meet clients' growing needs in this area while making a profit.

Conclusion

Banks are used to having long-term relationships with their customers. Banks have developed skills in deepening the relationship with their customers over time, for example by marketing extra services such as deposit funds or taxation advice.

Life insurance operations are also used to managing a relationship over the long term with their customers. This allows similar skills to be practiced and the bancassurer can make use of the best that each partner has to offer.

Apart from the benefits that can be derived from the possible wide spread of branches across the country, bancassurers can have a competitive advantage over traditional insurers (non-bancassurers), derived from the provision of customer service through automated teller machines (ATMs). In particular the bancassurer can provide its customers with an ATM card that can be used to gain access to any ATM and request information such as cash values, unit price, policy status, next premium due date, loan accounts, surrender values, etc.

This channel of customer service can easily be extended so that the customer can gain access to information regarding his bank accounts and insurance policies through his personal computer.

Finally the Internet can be considered as an additional customer service channel since the customer can gain access to information regarding his bank accounts and insurance policies through this network as well.

Abstract

Neexistuje jednotný /ucelený/ spôsob vstupu ktorý by bol “najlepší” pre každého poist'ovateľa a každú banku. Podobne ako v ostatných oblastiach podnikania, je potrebné vychádzať z vhodného strategického plánu, vychádzajúceho z analýzy interného a externého prostredia. Existuje niekoľko spôsobov vstupu. Najlepší spôsob vstupu závisí teda od sily ako aj slabostí organizácie a tiež dostupnosti vhodného partnera, v prípade uzavretia partnerskej zmluvy. Pri akejkoľvek stratégii najdôležitejším faktorom ovplyvňujúcim jej úspešnosť je vplyv a vzájomná previazanosť medzi managementami oboch zúčastnených spoločností. Práve prepojenia medzi príslušnými úrovňami managementu ako aj ich napojenie na vrcholový management a s tým súvisiace určenie vhodnej authority, realizujúcej jednotlivé operačné a marketingové rozhodnutia, je životne dôležité. Podmienkou je silné napojenie oboch vrcholových managementov na dosahovanie “business” cieľov spoločnosti.

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TIME SERIES AS A BASE FOR CALCULATION IN INSURANCE COMPANIES

Jarmila Šlechtová¹

Key words

time series, matter-of-fact comparability analysis, space matrix comparability analysis, time comparability analysis

Introduction

As far as we confront the problem of analyses particular economic phenomenon that is in process of development during time period, it is often convenient to use arisen values of tracked indicator it means time series. The description of a mechanism behavior of such a process results from regression arithmetic. The one deals with one-side dependence of different values. It comes with the situations, when independent (explanatory) variables in position of source (cause) face dependent variables (explained) in position of results. In these cases general tendencies in changes of explained variables comparing to changes of explanatory variables are being analyzed. In time series analyses time is considered as the explanatory variable.

1. Time series term

Time series is sequence of materially and territorially comparable observations (data) that are unambiguously classified according to time, in direction past - present. Usually it is suggested, that time series is sorted out equidistantly, it means the distance between the contiguous observations of time series (called step) is consistent. We could even assume the distance to be equal to one (e.g. one day, month or year).

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Then we are able to formulate the time series as a sequence

y_1, y_2, \dots, y_n

or

$y_t, t = 1, 2, \dots, n$

where y means reviewed indicator (explained variable), $t = 1, 2, \dots, n$ means time variable and n means number of observations of the time series.

As analyses of time series there is considered a group of methods, that are used to describe time series and we seek to realize impact of time on creating of given sequence. The period we review economical indicator is called interpolation period.

As far as we have substantially well recognized impact of time factor in terms of time series analyses, there is a chance to use these knowledge for compilation to some measure quantified concept of next items level of time series for following time periods. Such a time series proceeding is called forecasting usage of time series analyses, period, that we create the forecast for, is called extrapolation period.

2. Time series classification

Due to significant differences in terms of reviewed indicators time series are sorted out from the following aspects:

- a) according to the crucial time aspect on interval time series (i.e. time series of interval indicators) and on moment time series moment (it is time series moment indicators),
- b) according to the periodicity used for following data in series, there are annual time series (or long term series) and short term time series, where data are tracked down quarterly, monthly, weekly or other different periods, monthly economic time series are used the most,
- c) according to particular kinds of followed indicators on primary indicators time series and on secondary (derivative) indicators,
- d) according to the methods of presentation of data on natural indicators time series (values of indicator are provided in natural units) and on money indicators time series.

Ad a) *Interval time series* means series of interval indicator, it is indicator whose size depends on interval length that is being followed. It is possible to create sum totals for those types' indicators. Interval indicators should relate to the same length intervals otherwise it would deal with out of focus comparison. This is typical for short term time series.

Time series of moment indicators are formed with indicators that relates to definite moment (most often days), e. g. store balance at the beginning or end of certain period, number of staff to last day of month etc. Since simple sum for several successive values of moment indicators doesn't make any real sense, this type time series are summed up by special average – chronologic average.

Ad b) *Time span* between critical moments of moment time series or the length of period of interval time series is called duration of time series. If duration is shorter than one year, we talk about short-term time series. Most common duration in economical analyses is monthly duration (as an example we can take CPI – consumer prices index that is monitoring monthly inflation, PPI – production prices index and many more). On the contrary, if duration is annual or even longer, we talk about annual (long term) time series (e.g. annual GDP time series). This classification is important, because systematic methods for analyses differ significantly.

Ad c) According to the character of indicator that creates time series, we divide them into time series on primary (prime) indicators and time series on secondary (implied) characteristics. Prime indicators are stated directly (non-implied), e.g. work time, number worker at certain date, store balance etc. Second category is represented by secondary (implied) indicators, that can arise in several ways, e.g. as a function of different prime indicators (e.g. profit, added value etc.), or as relative indicators (e.g. work productivity per worker etc.).

Ad d) Regarding to restricted possibilities of aggregating indicators expressed in natural units and due to their usually lower predicative ability it is logical, that most of important economical time series are presented in money form.

3. Comparability of data in time series

Before time series processing we must assure the data in the series are really comparable in terms of material, territorial and time view - point.

Concerning the material comparability, we have to realize, that sometimes indicators with the same names need not have the same content or meaning. If there are some changes of content meaning of indicator during the time, the data of time series are incomparable and practically useless.

Territorial comparability means possibility to use data in time series connected to the same geographical territory. Sometimes we may deal with different economical territory that can arise from changes organizational structure tracked units (e.g. some business premises getting independent or on the other hand merger of some offices).

Time comparability of data is a problem mainly by interval indicators of time series, it means indicators, which value depends upon a length of interval. E. g. by monthly time series arise problem caused by the fact, that particular months don't have an equal number of calendar days or work days. For achieving comparability all periods are converted to unified time interval in such cases. This operation is called purification of time series from calendar variations effect (also called calendar purification).

Another important problem of time comparability of data provided in money units is inherent price development. Basically two methods can be used for compilation of time series, it means either use of current (actual) prices for calculation of nominal value of an indicator or use of constant prices (fixed to given date) for time series compilation of real values of an indicator. Practical statistics inclines to use of constant prices.

4. Practical application

Floods are natural phenomena that are impossible to be prevented. Their occurrence and extent is greatly irregular. For the Czech Republic floods represent the most direct danger in terms of natural disasters and usually cause serious critical situation, with large economical

damages, losses on human lives in affected area and extended devastation of countryside including ecological damages.

In July 1997 the Czech Republic was affected, as a consequence of prolonged strong rainfall, by flood, that surpassed any experience of people and professionals at that time. The result was 60 deaths and total damages worth CZK 62,6 billions. Even next year couldn't go without flood, though it was in smaller extent, but nevertheless damages reached CZK 1,9 billions. After the years 1998 - 2001, when flood situation calm down relatively, really devastating floods appeared in 2002, when mainly Bohemian territory was affected and damages exceeded the ones in 1997 by some tens of billions of CZK.

These floods led to mobilization of insurance companies. They learned certain assumptions for future development on insurance market and wide range of precautions. Professionals agree on the fact, that many clients underestimated the importance of insurance. They often had very old insurance policy, dated back to sixties. They were very comfortable with low premium, but value of movable and immovable assets increased significantly especially in 90-ties. In some cases they greatly relied on state subventions and the like. Though after experience from previous years clients are expected to show more realistic approach to risk and to pass more attention to quality of consulting services and last but not least to evaluate insurance premium regarding the range of insurance protection.

Insurance companies will also be more careful. They will specify insurance terms and conditions more precisely considering the definition of floods and flowage. They will also pay attention to changes in hydrological situation and the emphasis will be put on calculation of insurance rates. In this area time series are widely used, even crucial.

These matters will force insurance companies to pay more attention to simulation of possible development in following years, whereof they can obtain important information, inevitable for assignment of premium and creation of insurance reserves. It certainly means an increase of insurance premium for clients of insurance companies, though it depends on individual approach of each insurance company. They may increase premium subsequently, though they undergo the danger of new huge floods to come to early for them to have adequate amount of technical reserves. They may choose the way that reflects coincidental character of natural risks and immediately increased premium will reach the level that even in

case of future devastating floods there would be no need for any significant adjustment of the premium. In case only small floods will occur, there is even space for some insurance price reduction, i.e. insurance rates.

Conclusion

The first part of the paper is aimed to theoretically explanation of time series term. Time series is defined as certain. The second part deals with classification of time series, which are sorted out according to different view - points. The third part is devoted to data comparability for time series compilation.

The fourth part provides ways of practical application of time series for non-life insurance premium (rate) calculations. Finally it is pointed out, that choice of methods and their results depends on the data being processed, whether they cover sufficient time period and last but not least if the data are collected according to the same criteria and in sufficient quantity.

Abstract

Příspěvek si ve své první části klade za cíl teoreticky vymezit pojem časová řada. Předkládá definici časové řady jako jisté posloupnosti statistických dat, pomocí nichž můžeme zkoumat dynamiku jevů v čase. Ve druhé části se zabývá představením druhů časových řad, které členíme podle různých hledisek. Třetí část se věnuje tzv. srovnatelnosti údajů při zpracování časové řady. Čtvrtá část je pak věnována praktické aplikaci časových řad pro stanovení sazeb pojistného pro neživotní pojištění. V závěru je pak zdůrazněno, že výběr metod i jejich výsledky závisí na tom, jaká data jsou zpracovávána, zda pokrývají dostatečně dlouhý časový úsek, ale též zda hodnoty jsou sbírány podle stejných kritérií a je jich dostatečné množství.

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ACCOUNTANCY

ACCOUNTING AND TAX LEGISLATION IN CONNECTION WITH THE ENTRY OF THE CZECH REPUBLIC INTO THE EUROPEAN UNION

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Key words

Public finances reform, income tax from legal entities, real estate tax, inheritance tax, real estate-transfer tax, road tax, VAT, consumption taxes, forms of International Accounting Harmonisation, Czech Republic, European Union, amendment of the Law on Accounting, small and middle-size enterprises, annual account.

1. Introduction

Economy of businesses inevitably heads for the global integration. A lot of businesses have the world economic power, balance sum and turnover several times bigger than a number of states. Information on financial economy of businesses and their particular members is of a considerable importance for a lot of different users. The participation of the Czech economy in the international economic integration becomes the life necessity². The attention that is recently paid to the accounting and tax problems is not accidental. It is a manifestation of a number of facts which must be taken into consideration on the basis of the constant development.

2. Public Finances Reform Currently as a Social Problem of the Czech Republic

In the frame of the Union unified market the rise of harmful tax competition potentially much easier. At the same time tax yields from the profit of legal entities, from interests and dividends of legal entities and natural persons, yields from the VAT and from the consumption tax are threatened most by the competitions between countries mostly. Therefore the necessity to harmonize integrated countries in the tax sphere, namely in national and even multinational systems is becoming more urgent.

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² Dana Kovanicová and collective. Financial accounting in context of world's development. (Prague: Polygon, 1999).

The reform of public finances, its concept, tools and impacts are at present time one of the most discussed matters. The Czech Republic belongs among countries with a high fiscal deficit. It is necessary to stabilize it and ensure the decline. The maximum of changes should be done by the year 2006, however it is evident that the public finances reform will have a long-term character. It is necessary to perceive the tax policy in the context of the total financial economic policy of the state.

The income tax from legal entities is with regard to the mobility of its base the subject of the severe competition tax competition between single EU states and the Czech Republic. (in the table 1 the survey of the firm profit tax in selected countries in 2004). In Hungary the income tax from legal entities represents 16%, which by itself is an advantage. In the Czech Republic the income tax from legal entities (even natural persons) recorded a high development. The pressure on the income tax is not given directly by matching this tax from the side of the EU, but for the sake of small economy (as ours is) so that the disadvantageous tax scheme did not discourage entering foreign capital. In this way even in our country actions concerning tax holidays for foreign subjects that are to stimulate foreign entrepreneurs to invest in the Czech Republic were taken.

Table no. 1: Profit tax of firms in selected countries in 2004³

<i>State</i>	<i>Tax base</i>	<i>State</i>	<i>Tax base</i>
Netherlands	34,5	Luxemburg	30,38
Germany	38,29	Denmark	30
Greece	35	Great Britain	30
Spain	35	Finland	29
France	34,33	Czech Republic	28
Austria	34	Slovakia	19
Ireland	12,5	Hungary	16
Sweden	28	Slovenia	25
Belgium	34,99	Estonia	26
Portugal	33	Latvia	15
Luxemburg	30,38	Lithuania	15
Denmark	30	Poland	19

By the European Union Counsel the Code of conduct for business taxation was adopted in the year 1997 with the objective to exclude undesirable tax competition among

³ www.finance.cz

member countries. The Code is not legally binding; however it has political importance. It should lead to the elimination of legislative regulations enabling more advantageous taxation of foreign subjects in a given country without these subjects providing any business activity that is the restriction of only harmful impacts of the tax competition.

Within *the real estate tax* it is planned with the property tax to introduce a new legal regulation with effect from January 1, 2005, which will be based on the value principle, at the same time the authority of self-governments should also be strengthened with the assessment of the tax considering local, mainly fiscal requirements. The similar principle should be set up for the building tax from January 1. 2007. Transition to a new way of taxation is to be done in such the way so that the property value would be set without the presence of experts or appraisers and so that total costs on tax administration were lowered.

With *the inheritance tax* the tax-exemption still remains for the 1st group of inheritors. *The real estate-transfer tax* lowered in 2004 on 3% from 5% from the tax base and some existing exemption with this tax will be invalidated.

By the amendment of act to the CR entry to the EU *the road tax* implements corresponding regulations of the EU Committee, concerning the exemption of vehicles registered in the other EU member states and eventually even in other states from the subject of the tax and will react on changes of customs authorities on border checkpoints with subjects from third countries.

With *the VAT* the selected goods and services are transferred from the reduced rate to the basic rate and the threshold for the compulsory registration is lowering. As well the basic rate is lowered from 22 % on 19% limit. With consumption taxes there will be gradual increasing of rates on the level of minimal rates valid in the EU, which concerns mainly cigarettes. View of VAT rates in single countries at the beginning 2004 is presented in the next table.

Table no. 2: View of VAT rates in single countries at the beginning 2004⁴

EU Member states	Basic rate	Reduced rate	Candidate states	Basic rate	Reduced rate
<i>Belgium</i>	21	0; 6; 12	<i>Czech Republic</i>	22	0; 5
<i>Denmark</i>	25	0; 5	<i>Estonia</i>	18	5
<i>Finland</i>	22	0; 8; 17	<i>Cyprus</i>	15	0; 5
<i>France</i>	19,6	2,1; 5,5	<i>Lithuania</i>	18	5; 9
<i>Netherlands</i>	22	0; 8; 17	<i>Latvia</i>	18	5
<i>Ireland</i>	21	0; 4,3; 13,5	<i>Hungary</i>	25	5; 15
<i>Italy</i>	20	4; 10	<i>Malta</i>	15	5
<i>Luxemburg</i>	15	3; 6; 12	<i>Poland</i>	22	3; 7
<i>Germany</i>	16	7	<i>Slovenia</i>	20	8; 5
<i>Portugal</i>	19	5 ; 12	<i>Slovakia</i>	19	-
<i>Austria</i>	20	10; 12			
<i>Greece</i>	18	4, 8			
<i>Spain</i>	16	4, 7			
<i>Sweden</i>	25	6, 12			
<i>Great Britain</i>	17,5	0, 5			

Changes in the sphere of *consumption taxes* were not already possible to be solved by the amendment of the existing Law and therefore on January 1, 2004 the new Law on consumption tax comes into force. This Law already fully correspond the instruction of the European Union about the consumption tax.

The permanent objective is to simplify the tax scheme and also administration, which contains many regulations and procedures by which it is becoming not transparent for a common taxpayer. However, no tax system can be reformed without the basic concept and consensus in the sphere:

- a) the tax payment ratio and social security of companies and households for creating gross domestic product,

⁴ www.finance.cz

- b) the ratio between direct taxation (in division on income tax of legal entities and natural persons) and indirect taxation (in division on value added tax and consumption tax),
- c) to which extent direct taxes should be used for the influencing concrete economic behavior of companies and households (tax preferences of certain activates, investment incentives, limitation of tax noticeability of some costs etc.).

3. Accounting Harmonisation Processes in the Czech Republic

The efforts for the international accounting harmonisation have already existed for several decades. Their result should be a unified accounting modification in all the countries, no matter whether within the frame of regional formations, whole continents or even in the whole world. The target that is being investigated is the achievement of understanding and the reciprocal comparability of financial statements.

Application of the International Financial Reporting Standards into the national legislation and formation of national accounting standards are becoming the basic trend in accountancy. This application will not already refer to large trading companies quoted at the stock market only but will also have an impact on all the small and middle-sized enterprises.

In order to achieve the accounting harmonisation the Czech Republic has already realised several steps for fulfilment of this target, mainly in the sphere of legal regulations. Changes have been set in over the past years by the ‘small’ and ‘big’ accounting amendments. Sequence of changes has continued with the appearance of executive edict to Law on Accounting effected from the year of 2003 and with the appearance of Czech Accounting Standards for Sole Traders effected from the year of 2004.

To a certain extent, the Czech Republic approached the international accounting harmonisation by the modifications of the Law on Accounting no. 563/1991 of the Collection⁵ with effect from 1. 1. 2002 and 1. 1. 2004. This amendments take note of the requirement of particular EU guidelines.

⁵ In the Czech Republic, the accounting started to be unified in 1945 during the renewal of the independent CR with the aim of rationalisation of keeping accounting in businesses, ensuring particular data for company management and creation of presumptions for inter-company comparison, facilitation of tax and financial inspections, etc.

The basic aim of the new law on accounting was *the effort to reach a full compatibility of the content of the Czech legal accounting modification with the ES law valid in the European Union* represented by particular directives of EU Council. The new legal modification simultaneously fulfils the tasks arising from the so-called "White Book", the evaluation of the European Committee on the request of the Czech Republic for the acceptance into the EU and also from a revised Recommendation or OECD Convention on struggling with corruption in international business transactions.

The amendment of the Law on Accounting no.353/2001 with effect from 1. 1. 2002, contrary to so far valid wording, stresses more some of the presumptions and general accounting principles stated in the Conception frame of the International Financial Reporting Standards and in IFRS 1. The amendment of Law on Accounting is inspired by IFRS 1 by the fact, that besides traditional parts of an accounting statement, that is a balance sheet, income statement (profit and loss account) and appendix, it gives an opportunity to require the cash flow statement and statement on changes of the own capital (§ 18). The amendment further takes into account that accounting units can also create an accounting statement in accordance with the International Financial Reporting Standards (§ 19), besides an accounting statement in accordance with the Law on Accounting and relating executive regulations.

At the end of the year 2003 the modification of the Law on Accounting no. 437/2003 of the Collection with effect from 1. 1. 2004 was approved. *The single-entry bookkeeping annulment* was the most substantial change of that amendment. Modified act includes a number of vital as well as less relevant adjustments. The main changes are the following:

- a) delimitation of individuals that have the entrepreneurial activities or are self-employed as the accounting units,
- b) full and simplified extend of bookkeeping and annual accounts,
- c) necessity of drawing up the annual account and of keeping the accounting in accordance with International Financial Reporting Standards,
- d) use of International Financial Reporting Standards in consolidation,
- e) newly defined conditions for annual account audit.

4. Investigation of Firm Readiness for Accounting Harmonisation in Conditions of the Year 2004

In the year 2004 the Accounting Department in Karviná, OPF SU, carried out the investigation of firm readiness for accounting harmonisation in conditions of the year 2004. The aim was *to find out the readiness of Czech entrepreneurial subjects for the entrance of the Czech Republic into the European Union and for co-operation with foreign state organs or business partners* in this area. Questionnaire included questions concerning *the readiness of Czech firms for accounting harmonisation*. It was designed for small and middle-size enterprises in four cities that are engaged in providing services or in productive and manufacturing activities.

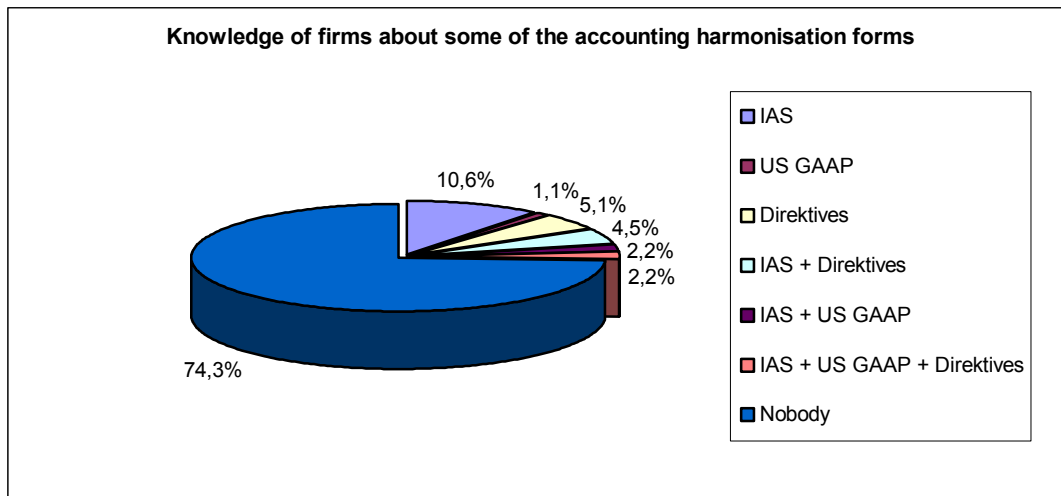
Results were elicited in spring 2004 and *179 informants* in total took part in it. Four localities, particularly 4 cities (Ostrava, Karviná, Zlín and Uherské Hradiště) were chosen for the investigation.

Table no. 3: Number of Inquired Firms in Investigated Localities in the Year 2004

Locality - city	Number of inquired firms in 2004	Percentage in 2004
<i>Ostrava</i>	44	24,6
<i>Karviná</i>	37	20,7
<i>Zlín</i>	50	27,9
<i>Uherské Hradiště</i>	48	26,8
Total	179	100,0

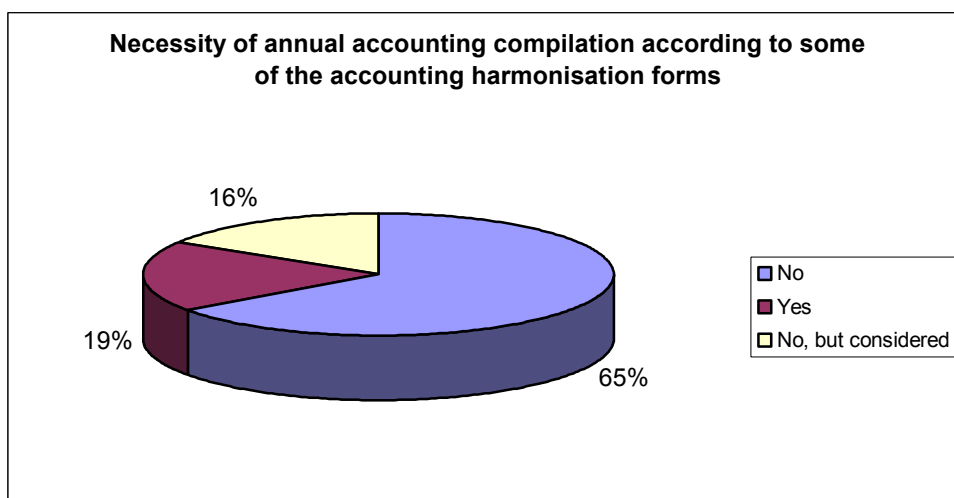
From the view of application of modified Law on Accounting and executive edicts there arises *the question concerning familiarity of firms with the content of some of the forms of accounting harmonisation*. Referring to the firm knowledge of content of some of the accounting harmonisation forms we investigated knowledge of: IFRS, US GAAP, EU Directives and even ignorance of accounting harmonisation forms.

Graph no. 1: Familiarity of Firms with Some Harmonisation Forms



Globally, 35 (18 %) informants are acquainted with the IFRS. 10 (5,5 %) informants are acquainted with US GAAP and 21 (11,7 %) informants with the EU Directives. Nevertheless, some entrepreneurial subjects acquainted with more forms of accounting harmonisation can be found. For instance 4 informants (2,2 %) are acquainted with all types of accounting harmonisation; 4 informants (2,2 %) with IFRS and US GAAP; 8 informants (4,5 %) with the EU Directives. However, in most of the firms (74,3 %) nobody is familiar with the content of any of the accounting harmonisation forms.

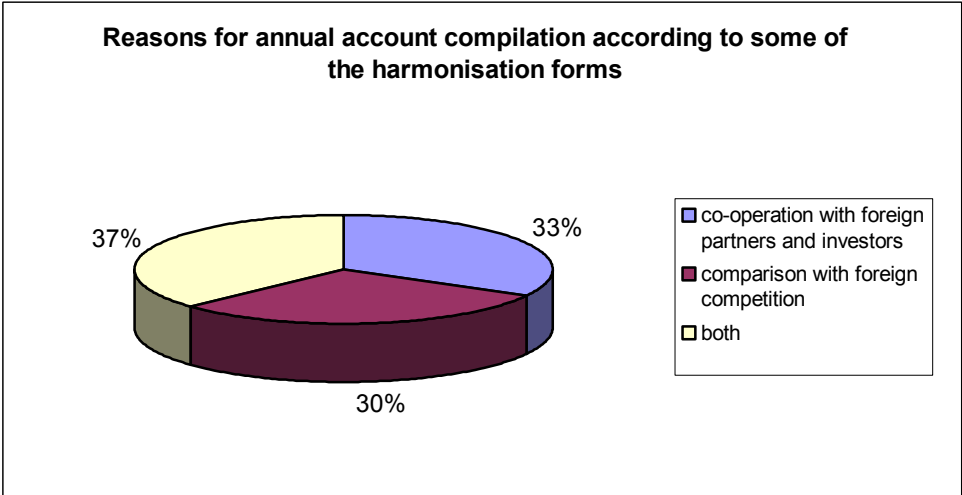
Graph no. 2: Necessity of Annual Account Compilation According to Some of the Accounting Harmonisation Forms



Another important question is about *investigating the necessity of the annual account according to some of the accounting harmonisation forms*. 29 informants (16 %) consider compilation of annual account according to some of the harmonisation forms and only 34 firms (19 %) compile their annual account according to some of the harmonisation forms.

Reason for annual account compilation according to some of the harmonisation forms is mainly the co-operation with foreign partners and investors, and further on, the investigated informants compile the annual account according to some of the harmonisation forms only *for their own comparison with foreign competition*. 12 firms out of 34 declare co-operation with foreign partners and investors as well as own comparison with foreign competition.

Graph no. 3: Reasons for Annual Account Compilation According to Some of the Harmonisation Forms



When analysing investigations realised in the year 2004 *a series of interesting conclusions from the view of this investigated issue has arisen; these have become the subject for other areas of research* and simultaneously referred to a wide scale of problems, imperfections and mistakes including surprising positive trends. These are appearing more often and becoming the objective of professional negotiations from the view of expansion of *entrepreneurial environment, accountancy, taxes and a series of closely related legislative measures*.

5. Conclusion

The primary reason for the existence of taxes is obtaining financial means for settlement of public goods. Therefore taxes should be the most neutral and financially undemanding for the state and taxpayers. Most of the OECD countries aim at decreasing total tax quota and stress indirect taxes. However the scale of influencing concrete economic behavior of companies and households by means of direct taxes differs significantly. The Czech legislative must take into account also external factors. In the sphere of indirect taxes the space is restricted European Union directives when regulations give only possibilities of alternative modifications (i.e. VAT group registration) and the question only remains to what extent two VATs will converge.

The world economic development, mutual co-operation, multinational companies' operation and world capital market development carry a further need of an accounting harmonisation. The Czech Republic, supposing the integration in the world economy (as well as the European Union), has to reconcile with such a development too. Therefore, wide specialist community should be interested not only in the knowledge of a Czech accounting modification but also the problems of an international accounting harmonisation⁶. Regarding the future modification of accounting of the Czech Republic as an EU member, it is necessary that there exists a connection to the international harmonisation of Accounting.

Abstract

V návaznosti na vstup České republiky do Evropské unie, změny účetních a daňových předpisů v okolních zemích a v neposlední řadě v souvislosti s reformou veřejných financí se opět do popředí dostává otázka dalšího vývoje českého účetního a daňového systému. V první části příspěvku je cílem poukázat na reformu veřejných financí jako sociálně ekonomický problém České republiky v současné době. Jsou zde vymezeny vývojové trendy u přímých a nepřímých daní v ČR. Druhá část příspěvku je věnována harmonizačním procesům v účetnictví České republiky se zaměřením na legislativní změny. Poslední část je zaměřena na průzkum připravenosti firem na harmonizaci účetnictví v podmínkách roku

⁶ An international accounting harmonisation is focused mainly on the accounting (financial) statements, our regulations on accounting refer to the keeping of accounting as a background document for the elaboration of accounting statements.

2004, jehož úkolem bylo zjistit připravenost českých podnikatelských subjektů na vstup ČR do Evropské unie a připravenost na harmonizaci účetnictví. Průzkum byl určen pro malé a střední firmy. Jeho podrobnější výsledky budou zveřejněny ve výzkumné zprávě.

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RECENT ACCOUNTING DEVELOPMENTS IN TURKEY ON THE WAY TO GLOBAL HARMONIZATION

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Key Words

Accounting Standards, Bank, Capital Market, Harmonization, Turkey.

Introduction

Accounting has been defined as the “process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information”. This definition is rather broad in that it encompasses information identification as well as all aspects of comprehensive financial reporting¹. The growth of multinational companies, international trade, and the globalization of capital markets are exerting strong pressures on accounting regulators to develop an international conceptual framework for financial reporting which will lead to the standardization of financial statements on a worldwide basis². There is much diversity in the current range of financial reporting practice around the world. If the development of accounting practice is influenced by economic, social and political factors, then it is not surprising to discover that different accounting methods, regulatory frameworks and even objectives of financial statements, exist in different countries. While both internal and external factors are important, the most important influences on the accounting system are as follows³; a) The political and economic system, b) The legal system, c) The taxation system, d) The corporate financing system, e) The accounting profession, f) Accidents of history, and g) Other influences.

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¹) Frederick D.S. Choi and Gerhard G. Mueller; International Accounting, Second Edition, Prentice-Hall, Englewood Cliffs, New Jersey, 1992, p.9.

²) John Arnold, Tony Hope, Alan Southworth, and Linda Kirkham; Financial Accounting, Second Edition, Prentice Hall International (UK) Limited, 1994, p.471.

³) Clare Roberts, Pauline Weetman, and Paul Gordon; International Financial Accounting, A Comparative Approach, Second Edition, Pearson Education Limited, England, 2002, p.9-27.

The growth of multinational companies, international trade, and the globalization of capital markets also force the countries to harmonize or to standardize their accounting and auditing practice with global practice. Some international institutions and local institutions have been playing key roles to other countries on this process for a long time. In Turkey, there are some local institutions that had set some local principles and standards to achieve the same goal, as well. In this paper, we examined the recent developments achieved by both international institutions and especially local institutions in Turkey to converge of accounting and auditing practices.

Global harmonization and international institutions

Given the increasing numbers of transnational users of accounts, several attempts have been made to reduce the differences among reports prepared in different countries. There are two approaches: standardization and harmonization. Standardization advocates the setting out of rules for accounting for similar items in all countries. Harmonization is less radical in that it allows for some different national approaches but provides a common framework so that major issues will be dealt with in similar ways across national borders⁴. The demand for global harmonization has set various international institutions. Each of the international institutions has been contributing to the development of accounting in a different manner. The most significant impacts has been made by the International Accounting Standards Committee (IASC; now the IASB: International Accounting Standards Board), International Federation of Accountants (IFAC), European Union (EU), International Organization of Securities Commissions (IOSCO), United Nations (UN), and Organization For Economic Cooperation and Development (OECD). The impacts of these institutions to global harmonization of accounting are underlined as following.

International Accounting Standards Board

Since the beginning of 20th century, multinational companies have been faced with problem of different accounting standards in every country. In order to solve this problem,

⁴) Barry Elliott and Jamie Elliott, Financial Accounting & Reporting, updated second edition, Prentice-Hall Europe, 1997, p.704.

world congresses of accountants have been organized in every 5 years⁵. In 1904, the First World Congress of Accountants has been held in St.Louis, Missouri, USA for global harmonization in the area of accounting. After many congresses, in 1972 in the world congress in Sydney an important decision has been taken for establishing an international body to develop international accounting standards. One year later, the International Accounting Standards Committee (IASC) was formed in 1973 through an agreement made by professional accountancy bodies from Australia, Canada, France, Germany, Japan, Mexico, the Netherlands, the United Kingdom and Ireland and the United States of America. The objectives of IASC as stated in its Constitution were⁶:

- a) to formulate and publish in the public interest accounting standards to be observed in the presentation of financial statements and to promote their worldwide acceptance and observance;
- b) to work generally for the improvement and harmonization of regulations, accounting standards and procedures relating to the presentation of financial statements.

IASC has been issued 41 International Accounting Standards until 2001. In 2001, IASC has been reorganized and named as International Accounting Standards Board (IASB) after the IASCs Constitution was changed. Since 2001, IASB has been issued 5 International Financial Reporting Standards (IFRS) in addition to prior IASs. Nowadays, many countries are setting out on what is termed “convergence” (bringing domestic standards into line with the IAS). The US position is also evolving slowly. On the one hand the USA is reviewing some of its own standards which are out of line with developments elsewhere, notably concerning business combinations, while on the other it is likely to continue to require some form of reconciliation statement from foreign issuers in the short to medium term. The “Norwalk Agreement”, signed by the IASB and the FASB in 2002, commits the US and IASB to convergence⁷.

⁵) The last congress has been held in Hong Kong in 2002. The next World Congress of Accountants will be held in Istanbul – Turkey in 2005.

⁶) International Accounting Standards Committee, “International Accounting Standards 2000”, London, 2000, p.11.

⁷) Axel Haller and Peter Walton; “Country differences and harmonization”, International Accounting, Second Edition, Edited by Peter Walton, Axel Haller, and Bernard Raffournier, International Thompson Business Press, London, 2003, p.14.

International Federation of Accountants (IFAC)

IFAC is the global organization for the accountancy profession. It works with its 158 member organizations in 118 countries to protect the public interest by encouraging high quality practices by the world's accountants. IFAC members represent 2.5 million accountants employed in public practice, industry and commerce, government, and academe. Its structure and governance provide for the representation of its diverse constituencies and interaction with external groups that rely on or influence the work of accountants. IFAC's overall mission is to serve the public interest, strengthen the worldwide accountancy profession, and contribute to the development of strong international economies by establishing and promoting adherence to high-quality professional standards, furthering the international convergence of such standards, and speaking out on public interest issues where the profession's expertise is most relevant. IFAC's governing bodies, staff and volunteers are committed to operating with efficiency and effectiveness and to developing international solutions that offer simplicity. They adhere to the following values as they carry out IFAC's work: a) Integrity, b) Transparency, and c) Expertise.

IFAC, through its Code of Ethics, encourages accountants worldwide to adhere to these same values. IFAC strives to serve the public interest through the development of standards in the areas of auditing, education, ethics, and public sector financial reporting; by advocating transparency and convergence in financial reporting; by providing best practice guidance for professional accountants employed in business; and by implementing a membership compliance program. IFAC works closely with its member organizations in to ensure the competence and integrity of accountants worldwide and to support accountants in their efforts to provide high quality services. IFAC is the primary spokesperson for the international profession and speaks out on a wide range of public policy issues. This is accomplished in part through outreach to numerous organizations that rely on or have an interest in the activities of the international accountancy profession⁸. IFAC has important contributions to the global harmonization in the area of accounting. IFAC supports the work of IASB by notifying its members. In the Statement of Membership Obligations - 7 (SMO) that is issued by the IFAC Board requires its member to suffer best effort to make IFRSs in effect in every member country.

⁸) <http://www.ifac.org/About/>, July 14, 2004.

European Union (EU)

In European Union, there exists a mechanism for a legally enforceable harmonization among member states. This harmonization has only been provided by the Directives until near past. In 2001 the Commission published a Regulation that requires member states to pass legislation to make IAS compulsory for consolidated accounts and optional for single accounts for all companies (depending on the discretion of the member states) from 2005. The Commission approved the Regulation in July 2002, giving member states time to adapt their national legislations. In contrast to its draft, the Regulation allows companies currently using US GAAP to continue to do so until 2007⁹.

The International Organization of Securities Commissions (IOSCO)

The International Organization of Securities Commissions (IOSCO) is looking to IASB to provide mutually acceptable International Accounting Standards for use in multinational securities offerings and other international offerings. In May 2000, IOSCO recommended that its members permit the use of 30 IASs for cross-border listing, although there are a large number of issues where international agreement has not been reached and national security regulators may therefore introduce additional or different requirements in these areas. However, the IASB and IOSCO initiatives have the potential to reduce the costs of foreign listings and should mean that the number of foreign listings will continue to grow. Particularly important here is the reaction of the EU which proposed in June 2000 that all listed companies should be allowed to use IAS by 2005. The SEC's reaction is equally important for the growth of foreign listings on US exchanges¹⁰.

United Nations (UN)

The early 1970s was a time when a number of institutions became interested in international accounting. Not only was the IASC formed, and the European Commission was evolving the Fourth Directive, but the United Nations (UN) and the OECD also started to take an interest in international standards and form committees to look at these. In the 1970s the UN's Center for Transnational Corporations assembled an ad hoc committee to look at

⁹) Axel Haller and Peter Walton; *ibid*, p.17.

¹⁰) Clare Roberts, Pauline Weetman, and Paul Gordon; *ibid*, p.716.

segmental reporting by multinational companies. The UN remains interested in international accounting matters and it has an accounting matters and it has an accounting policy secretariat in Geneva. This unit, which works under the auspices of the UN Conference on Trade and Development (UNCTAD), has two main lines of activity: technical assistance on a continuing basis, and an annual conference which reviews current issues in accounting. Technical assistance is given to developing countries and countries in transition from a command economy. The second arm of its activity is the annual conference of the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR). ISAR has recently addressed issues such as the accounting needs of small and medium-sized businesses in developing countries, environmental accounting, auditor liability and the adoption in individual countries of IASB standards. UNCTAD does not aim to set standards. Its main “clients” are in the developing world that it helps both with technical assistance and with the provision of technical input on current issues through ISAR. At most it aims to forge consensus, and its input to harmonization is in the form of influencing or informing individual member states¹¹.

Organization For Economic Cooperation and Development (OECD)

The OECD represents the wealthiest thirty or so countries in the world, and like the UN, started to take an interest in international accounting in the early 1970s. Its main output at that time was its 1976 guidelines on segmental reporting, which recommended that multinational companies should disclose turnover, operating profit and net investment for each significant geographical sector and industrial segment of its business. The OECD has a Committee on Accounting Standards that, like the UN, looks at current issues in accounting and also commissions’ papers. It organizes ad hoc conferences that are attended by government representatives and invited representatives of other relevant organizations (e.g. IASB, FEE)¹².

¹¹) Axel Haller and Peter Walton; *ibid*, p.18-19.

¹²) Axel Haller and Peter Walton; *ibid*, p.19.

Recent Accounting Developments in Turkey

The accounting developments in Turkey have a long history. This history was summarized in the Appendix-1 under the title “Accounting in Turkey: External Influences (Case Study)”. Recent accounting developments can be reviewed under following aspects:

- The acceptance of the act (3568) in 1989 that regulates accounting profession.
- The issuance of Uniform Chart of Accounts and Financial Reports in 1992.
- Establishment of Capital Markets Board and its accounting regulations.
- Banking Regulating and Supervising Agency and its accounting regulations
- Turkish Accounting and Auditing Standards Board
- Turkish Accounting Standards Board

The acceptance of the act (3568) in 1989 that regulates accounting profession

The Expert Accountants' Association of Turkey (TMUD) established in 1942, tried to issue professional and ethical standards to the members who were selected through professional exams and personal interviews. Following the establishment of IFAC in 1977 (of which TMUD was a founding member) the TMUD recommended the implementation of International Professional Standards of IASC in 1980. All IAS's were translated and presented to TMUD members for observation in their professional activities. As the TMUD had not been a powerful organization (membership of around 1200 independent accountants at the end of 1995) the implementation of IASC standards was not very effective. The forceful implementation of professional and ethical standards came with the legal recognition of the independent accountancy profession through the codification of the Law No.3568 in June 1989. The Law defined three types of professional accountants namely:

- Independent Accountants (the SM's)
- Certified Public Accountants (the SMMM's)
- Certified Public Accountants Under Pledge (the YMM's)¹³.

¹³) The terminology is borrowed from TURMOB "The Union of Chambers of Certified Public Accountants of Turkey".

Sections of the Law defined requirements for educational and practical experience for these three types of accountants as follows:

The Independent Accountants (The SM's), the lowest rank in the profession, with lower requirements for educational¹⁴ and practical experience were meant to keep accounts for their clients from their independent offices. They had to operate in accordance with professional and ethical standards of their local chambers to which they paid annual fees for membership. The SM's could not undertake consultancy and financial audit assignments.

Certified Public Accountants, the SMMM's, with higher educational and vocational standards¹⁵ were meant to do consulting activities aimed at designing accounting and financial systems for their clients from their independent offices. They could give "opinions" on accounts, but could not certify them. SMMM's had to operate in accordance with professional and ethical standards of their local chambers to which they paid annual dues. SMMM's and SM's were related to the same local chambers.

Certified Public Accountants Under Pledge, the YMM's, with the highest educational and vocational standards¹⁶ were meant to do all functions of the profession including the attest function of certifying financial statements of firms. The YMM's had to operate in accordance with professional and ethical standards of the separate local chambers.

According to international reciprocity, foreign accountants were subject to the same professional law and could operate in Turkey¹⁷. Major developments in the profession occurred following June 1989, with the codification of the "Law of Independent Accountancy, Certified Public Accountancy and Certified Public Accountancy under Pledge". Local

¹⁴) SM's were required to have at least 2 years of college education or a diploma from vocational high schools of commerce and finance, four years of on-the-job training for college graduates and 6 years for high-school graduates.

¹⁵) SMMM's were required to have a college degree (4 years of arts education following high school), 2 years of practical experience and succeed in professional exams organized by the local chambers.

¹⁶) YMM's were required to have at least 10 years of experience as an SMMM and succeed in the respective professional exams.

¹⁷) Law No.3568, dated: June 16, 1989. Article 8 of the Law read as follows:

"Foreign Independent Financial Consultants:

Article 8: Citizens of other countries in which the Independent Financial Consultancy Profession is officially organized, can be authorized by the Prime Ministry upon the proposal of the Ministry of Finance and Customs, to perform the services of the Turkish Independent Financial Consultants specified in Article 2 of this Law, provided that they have the same qualifications as the Turkish Independent Financial Consultants and that there is reciprocity between Turkey and the related country."

Chambers of Certified Public Accountants and the Union of Chambers of Certified Public Accountants of Turkey (the TURMOB) were organized for implementing professional standards¹⁸. TURMOB has been a full member of IFAC since 1994. On May 14, 2004, TURMOB and The Association of Chartered Certified Accountants (ACCA) have signed an agreement. Based on this agreement, there might be some exemptions in the application to professional qualification exams and might be organized some joint certificate programs.

The Issuance of Uniform Chart of Accounts and Financial Reports in 1992

The Ministry of Finance published a communiqué regulating the accounting practice effective from January 1, 1994. The communiqué regulates the preparation and presentation of the financial statements of the companies except for banks, insurance and brokerage firms. Apart from the regulation of the preparation and presentation of financial statements, the communiqué envisages a *Uniform Chart of Accounts* that should be used by the above-mentioned companies.

Establishment of Capital Markets Board and its accounting regulations

Capital Markets Board of Turkey (CMB) is the regulatory and supervisory authority in charge of the securities markets in Turkey. Empowered by the Capital Markets Law (CML), which was enacted in 1981, the CMB has been making detailed regulations for organizing the markets and developing capital market instruments and institutions for the past 23 years in Turkey. Based on the main objectives of fair and orderly functioning of the markets and protecting the rights of investors, the CMB has a wide range of responsibilities. Depending upon the development stages of the markets and the state of the country's economy, the list of priorities changes from time to time. However the major objective remains the same: to take the necessary measures for fostering the development of capital markets, and hence to contribute to the efficient allocation of financial resources in the country while ensuring investor protection. The mission of the CMB is to make innovative regulations, and perform supervision with the aim of ensuring fairness, efficiency and transparency in Turkish capital markets, and

¹⁸) Mustafa A.AYSAN, "Maintaining Ethical Standards in Today's Highly Competitive Business Environment: A Contradiction? - The Turkish Case", The 6th Jerusalem Conference on Accountancy Jerusalem, Israel, Nov. 10-14, 1996.

improving their international competitiveness. Within the scope of its mission the CMB has established its main strategic objectives as to:

- enhance investor protection,
- adopt the norms of the international capital markets and fully integrate them into regulations,
- promote and enhance the effectiveness of both the supply and the demand side of the markets,
- promote transparency and fairness in the capital markets,
- facilitate modernization of the market structure,
- enhance the infrastructure of the capital markets,
- enhance the quality of the work products and staff members of the Board.

Through its mission and objectives, CMB has been performed following activities related to in the area of accountancy:

- Set accounting and reporting standards for listed companies in the Istanbul Stock Exchange (ISE).
- Issued a communiqué on inflation accounting for listed companies in ISE¹⁹. This regulation is the first compulsory inflation accounting application in Turkey. This regulation is also fully compatible with International Accounting Standard – 29. The first financial statements that were restated according to this communiqué were published as of December 31, 2003.
- Issued a revised communiqué on consolidation of financial statements for listed companies in ISE²⁰. By this revision, consolidation became compulsory for listed companies. This regulation is also fully compatible with International Accounting Standards – 27 & 28. The first financial statements that were restated according to this communiqué were published as of December 31, 2003.
- Issued a broad set of financial reporting standards²¹ that are fully compatible with all International Financial Reporting Standards. These standards become operative for the

¹⁹⁾ Capital Markets Board, Communiqué on Inflation Accounting, Serial:XI, No:20, 2001.

²⁰⁾ Capital Markets Board, Communiqué on Consolidation of Financial Statements, Serial:XI, No:21, 2001.

²¹⁾ Capital Markets Board, Communiqué on Accounting Standards, Serial:XI, No:25, 2003.

financial statement of listed companies in ISE covering periods beginning on or after January 1, 2005.

Above current regulations are the vital challenges for global harmonization in the area of accounting that done by CMB in Turkey. The last regulation that will be operative in 2005 is as a result of decisions of IOSCO and EU. Additionally, CMB has been done some regulations in the area of auditing of financial statement. After the some global accounting standards in USA and EU, CMB take some precautions. There are some similarities between CMB regulations and Sarbanes-Oxley Act. The underlined changes are as follows:

- Restrictions for other services from auditing activities. There for, an audit firm can't serve audit service and other services together at the same time.
- Compulsory rotation period for audit firms is defined as 5 years.
- Internal audit committee is required.

Banking Regulating and Supervising Agency and its accounting regulations

The Banking Regulation and Supervising Agency (BDDK) was established in June 20, 2000 after the banking crisis in Turkey. The mission of the BDDK is to safeguard the rights and benefits of depositors and to create the proper environment, in which, banks and financial institutions can operate with market discipline, in a healthy, efficient and globally competitive manner, thus, contributing to the achievement of long-run economic growth and stability of the country. The main goals of the organization are:

- **To enhance banking sector efficiency and competitiveness** - elimination of distortions created by the state banks; strengthening of the banks' capital base; reduction of the banks' intermediation costs; minimization of group banking and non-financial activities.
- **To maintain confidence in the banking sector** - in accordance with market discipline and "self responsibility" principle, to design the proper regulation for public awareness; making adequate, understandable and accurate information accessible to the markets in a timely manner; promoting international best standards in accounting and reporting systems; providing a transparent environment in which information on risks is clear and accessible for all parties.

- **To minimize the potential risks to the economy from the banking sector** - prevention of all kinds of transactions and practices that can jeopardize the smooth and safe operation of the banks; developing early warning and prompt correction systems to prevent individual problems from causing systemic risk.
- **To enhance the soundness of the banking sector** - enhancing the flexibility of the sector against risks; giving importance to the improvement of corporate governance; developing internal control and risk management systems; taking market risk into account in calculation of capital adequacy; improving the BDDK's capacity for risk-focused and consolidated supervision and control.
- **To protect the rights of the depositors** - establishing a balance between the adverse effects of deposit insurance, such as erosion in market discipline and increase in moral hazard, and the need to protect the rights of depositors.

BDDK issued “*regulation on accounting principles*” on June 22, 2002. The purpose of this regulation is to determine the basis, principles and procedures regarding to provide transparency and uniformity in accounting and record order of banks, preventing their transactions not to be booked, booking their activities in a sound and reliable manner in compliance with their real natures, preparing their financial statements including the information regarding their financial status on a consolidated and non-consolidated basis, financial performances and management efficiency in time and in a correct manner, reporting and publishing thereof. In cases where there is not clarity in this Regulation and in communiqués to enter into force regarding accounting standards pursuant to this Regulation, principles adopted on national and international accounting standards, the norms brought by the European Union regulations, principles widely used in financial markets given that they are not contradictory to the legislation are applied respectively.

Turkish Accounting and Auditing Standards Board (TMUDESK)

The Turkish Accounting and Auditing Standards Board (TMUDESK) was established on February 9, 1994. Their membership is limited at 60 members. These members are the people appointed by Union of Chambers of Certified Public Accountants of Turkey (TURMOB) and the representatives of the related institutions. TMUDESK is an institution that continues its existence with the support of TURMOB. The aim of TMUDESK is to take the regulation of the financial statements of the countrywide operating cooperation and other

institutions as the basis. In addition, the other important mission of TМУDESK is to determine the auditing standards that will be used by professionals in independent auditing of financial statements. The board accepted the following principles to determine the national accounting standards.

- a) The determined accounting standards should be in conformity with the international accounting standards.
- b) Turkish economy, companies' structures and the needs should be taken into consideration.

During the first working period of TМУDESK, between 9 February 1994 - 17 August 1999, 30 accounting standards committee and 1 auditing standard committee studied by considering "The Accounting and Auditing Standards Directive". In the 14 April 1996 dated meeting, The Board accepted 11 outline standards as "The Turkish Accounting Standards". Board studied on the other accounting standards and auditing standard between 14 April 1996 – 17 August 1999. The Board accepted 5 new Turkish Accounting Standards on 17 June 1999 and 4 new Turkish Accounting Standards on 25 September 2001. Therefore, TМУDESK has published 19 Turkish Accounting Standards since 1994.

Turkish Accounting Standards Board

Although 19 Turkish Accounting Standards have been issued by TМУDESK²² since 1994, these standards could not be applied by corporations and institutions due to lack of sanction. For this reason, Turkish Accounting Standards Board was established in 2002 by a legal regulation. This new Board has legal power for setting Turkish Accounting Standards and sanction for all corporations in Turkey. As a first step, the Board has been revising 19 Turkish Accounting Standards, which were issued by TМУDESK. In addition, this board issued exposure drafts. But they are still under reviewing process.

²²) TМУDESK is Turkish Accounting and Auditing Standards Board. It has been established by The Union of Chambers of CPA's of Turkey (TURMOB).

Conclusion

Differences in financial reporting practices are not avoidable from country to country because of both internal and external factors' that influence on the accounting system. Nevertheless, there is a need for global harmonization (or/and standardization) for financial reporting practices. To achieve this goal, some institutions such as IASB, IFAC, EU, UN, and OECD performed some attempts and brought up some regulations. Some times those regulations are not fully compatible with each other in nature of different organizational scope.

In Turkey, there are different accounting regulators. Even though there are some minor differences among each other, they choose the international standards as an object (or benchmarking) in order to provide global harmonization. Currently, accounting developments in Turkey focused on achieving adaptation of international accounting and auditing practice. This does not mean that national practices should fully compatible with international accounting and auditing practices in nature of both internal and external factors peculiar to country that influence accounting system. Hence, there should be global harmonization with international accounting and auditing practices with Turkish practices instead of global standardization. Every accounting body in each country should do the best effort for harmonization in order to create a global market.

Abstract

Nárůst počtu nadnárodních společností, růst světového obchodu a globalizace kapitálových trhů tlačí jednotlivé země k harmonizaci národních účetních a auditorských standardů se světovými praktikami. Instituce jako IASB, IFAC, EU, OSN a OECD již v tomto směru učinily jisté pokusy a vydaly několik norem. V Turecku existuje několik místních institucí, jež také stanovily některé lokální předpisy a normy usilující o naplnění stejného cíle. V příspěvku je analyzován dosavadní vývoj v této oblasti a pokrok dosažený jak aktivitami mezinárodních organizací, tak zejména národními institucemi v Turecku. Podle našeho názoru by v Turecku měla proběhnout spíše harmonizace s mezinárodními účetními a auditorskými normami než globální standardizace. Kromě toho je nezbytné, aby zodpovědná účetní autorita každé země učinila maximum v oblasti mezinárodní harmonizace účetních předpisů.

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Appendix – 1: Accounting in Turkey: External Influences (Case Study)²³

Legal requirements that affected accounting entered Turkish business life for the first time with the adoption of the Commercial Code (Law on Commerce) in 1850, which was a translation of the first and third books of the French Commercial Code. By 1864, translation of the whole of the French Commercial Code had been completed.

From 1850 until about 1925, the impact of French accounting on Turkish accounting practice was significant. This was because most of the instructors or authors on accounting and tax in Turkey had received their accounting education in France. Since Italian accounting principles were largely adopted by the French, the so-called Italian System of Accounting practiced in Turkey was first introduced through French publications.

In 1926 a new Commercial Code was introduced based mainly on the Commercial Codes of Italy and Germany. However, sections of the new code were taken from the Commercial Codes of Belgium, France, Austria, Hungary, Chile, Argentina, Spain, Romania, Britain and Japan as well as Italy and Germany. The copying of elements of foreign law led to the Turkish Code being piecemeal, and it was therefore not as effective as planned.

During the period 1926-60, Turkish accounting practice was considerably influenced by Germany accounting. This influence became more pronounced after several well-known German management and accounting professionals immigrated to Turkey in the early 1930s, fleeing the Nazi regime in Germany. In this period, most of the students going abroad went to Germany for accounting education and many Turkish state economic enterprises employed German consultants for the reorganization of their accounting systems. Another German influence on the Turkish accounting system was the introduction of income tax based on the 1950 German model.

After the defeat of Germany in the Second World War the USA emerged as the main influence. Of particular importance was the Marshall Plan of economic help which marked the beginning of US business involvement on Turkey. More and more students were sent to the USA for business education and special institutions and programmes were established in

²³) Clare Roberts, Pauline Weetman, and Paul Gordon; International Financial Accounting, A Comparative Approach, Second Edition, Pearson Education Limited, England, 2002, p.29-30.

Turkey to introduce American management theories and practice. The impact of American accounting practice has been even more pronounced over the last three decades.[Source: Cooke, T.E. and Curuk, T. (1996) 'Accounting in Turkey with reference to the particular problems of lease transactions', European Accounting Review, 5(2), 339-59]”

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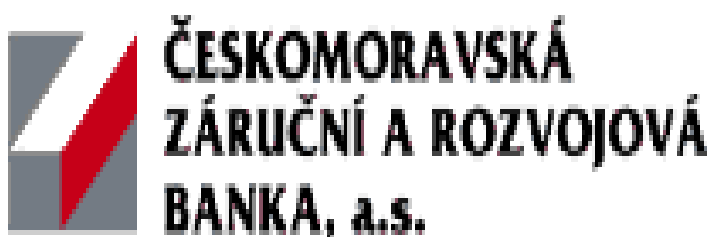
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