

DEVELOPMENT OF INSURANCE MARKETS AND INFLUENCE OF GLOBALIZATION ON THEIR CONCENTRATION¹

Petra Růčková

Silesian University in Opava
School of Business Administration in Karviná
Department of Finance
Univerzitní nám. 1934/3
733 40 Karviná
Czech Republic
e-mail: ruckova@opf.slu.cz
telephone: +420 596 398 271

Abstract

Within the European Union there may be observed various developments of insurance markets although we consider it a single European insurance market. Therefore, the paper focuses on market shares at insurance markets of countries of the Visegrad Group and concentration ratio of these insurance markets. There is an analysis and comparison of selected markets of the European Union. The aim of the paper based on the analysis is to emphasize the dissimilarities and similarities of development tendencies of insurance markets in these countries, and thus to confirm or disprove the theory that globalization tendency in the insurance field does not lead to increase in concentration at selected markets.

Keywords: insurance market, market share, concentration ratio, Herfindahl-Hirshman index

JEL codes: G22

1 Introduction

According to the Financial Times, this year is going to be difficult for the insurance industry. Due to the falling demand of small consumers for insurance products, there may be expected more fusions and acquisitions. There are mainly fears of smaller activities of insurance companies and fears of insufficient evaluation of insurance reserves (a great share in investments are government securities where a smaller rate of evaluation may be assumed). If this really happens then we may expect that this will project into the group of indicators assessing division of the market between individual business subjects. It is often said that globalization increases a market share of biggest corporations in individual “globalizing” sectors. “This statement is criticised by the economist Pankaj Ghemawat in his paper in

¹ Research behind this paper was supported by the Czech Science Foundation within the project GAČR 402/08/0067 “Financial Integration of the New EU Member States with Eurozone”.

magazine Foreign Policy. In his paper *The World's Biggest Myth* he considers the concentration ratio of individual sectors by means of an indicator how big market share is taken by 5 biggest companies. Ghemawat proves on a sample of 16 “globalizing” sectors that the average concentration ratio did not increase but rather decreased in the 80s and 90s. In some sectors the market share of five biggest companies slightly increased, in others it decreased.”²

In the financial sector of the Czech Republic there is an uneven division of market power not only between banks but also between insurance companies. The insurance business is an area of business where is a rather high concentration. Due to the uneven distribution of market power it is interesting to define how the relevant sector is concentrated as the market power also differs depending on the size of the insurance company. It is common that the bigger insurance company, the greater market share it usually has. However, this rule may not be generalized especially with regard to market particularities of individual countries as well as with regard to worldwide globalization tendencies.

2 Methods Used

Assessing the concentration and quantifying it may be performed by many procedures and methods. Generally, the most common methods for assessing the concentration are absolute and relative methods. **Absolute methods** consider all subjects of the given sector. They may be measured by a *concentration ratio* or *Herfindahl-Hirshman Index*. **Relative methods** focus on a subset of specific characteristics. These methods draw the attention to the level of various sizes of companies. Their graphical representation is known as Lorenz curve. Lorenz curve expresses a share of cumulative percentage of market shares and cumulative percentage of number of companies, starting from the smallest ones. Other methods in this category are dispersion index and coefficient of variation. Appropriateness of usage of individual indexes of concentration depends on the character of the sector so as the index could match the given market situation as much as possible. Generally, there is no one answer to the appropriateness of usage of individual approaches to measuring the concentration as there is no ideal way of quantification of scale of concentration at the market. This paper focuses on the absolute methods as these prefer companies with bigger market shares, which matches the insurance business better.

² Šuster, M. Globalizace: Je růst koncentrace mýtem? Online <http://www.libinst.cz/komentare.php?id=423> [downloaded 10 Oct 2009]

2.1 Market Share

Market share is represented by the most common index that is essential for some calculations of concentration. It is calculated on the basis of share of production of the given company.

The relation may be expressed by this formula:

$$r = \frac{q^k}{Q} = \frac{q^k}{\sum_{k=1}^N q^k}$$

Q.....total production of the sector,

q^k production of the company, $k = 1, 2, \dots, N$.

2.2 Concentration Ratio

Concentration ratio means a share of certain number of companies that show the greatest share of the selected product in the given sector. Predicative value of the index is high.

The relation is expressed in the following formula³:

$$CR_{\psi} = \frac{100}{Q} * \sum_{k=1}^{\psi} q_k$$

where: ψ (1,n),

Q Production of the sector for production of each company q^k , $q^k > q^{k+1}$, $k = 1, 2, \dots, n-1$.

2.3 Herfindahl-Hirshman Index

Another absolute indicator is Herfindahl-Hirshman Index which considers the number of subjects in the given sector as well as their share at the market. A characteristic feature of the index is the fact that it puts emphasis on the influence of subjects at the top and eliminates influence of the weaker ones. By means of this index we may find out concentration in any sector of the economy. Calculation is rather complex only from the view of input data. Predicative value is high then, mainly from the view of emphasis of position of the dominant company.

³ POLOUČEK, S. *Bankovníctví*. 1.vyd. Karviná: OPF, 2005, p.289 ISBN 80-7248-287-4.

$$H = \sum_{k=1}^n \left(\frac{q_k}{Q}\right)^2 = \sum_{k=1}^n r_k^2$$

nnumber of subjects in the selected sector,

q_k volume of production of k-company; $k=1, 2, \dots, n$;

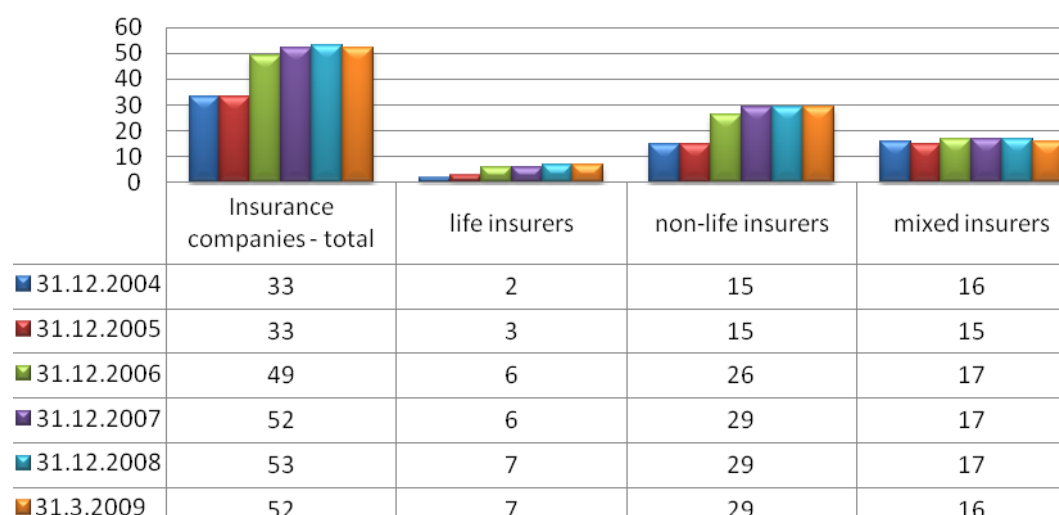
Qvolume of production of the selected sector;

r_k share of k-subject to volume of production of the selected sector.

Evaluation of results of the index is performed in four basic zones in which the concentration is evaluated. The first zone is within the range from 0 to 1,000 – in this case we talk about *non-concentrated area*. The second zone is defined from 1,001 to 1,800 – which is a *slightly concentrated sector*. The values from 1,801 to 9,999 are typical of *highly concentrated sector*. And the limit of 10,000 is the limit for monopoly. From the values stated above it results that the concentration of the sector grows with growing values of the index.

3 Analysis of Concentrations of Selected Insurance Markets on the Basis of Selected Methods

The level of insurance markets of Slovakia, Poland, Czech Republic and Hungary does not show any great differences. The structure of our insurance market is characteristic by its relatively small number of insurance companies. This fact is mainly given by historic development as well as legislation conditions. The smallest numbers in all categories were in 1994. The reason for this was the separation of Czechoslovakia and constitution of the independent Czech Republic as of 1 January 1993. Since 1994 the number of life and non-life insurance companies has predominantly tended to grow. Only in 2004 there was a slight decrease of numbers, caused by entering the European Union. By entering the EU there came stricter regulations and it was necessary to take some time to adjust to new conditions of the EU. After 2004 there has been new increasing tendency topped in 2008 when the number of insurance companies grew up to 55. Graph 1 shows numbers of life and non-life insurance companies and total number of insurance companies working at the Czech insurance market from 2004 to 2009.

Graph 1 Number and division of insurance companies in the Czech Republic 2004-2009

Source: Czech National Bank, www.cnb.cz

It is obvious from the graph that the breakpoint from the view of structure of the insurance market came in 2006 when the number of non-life insurance companies significantly increased and the life insurance companies doubled. The reason for growth is the expansion of business activities of insurance companies from other countries of the European Union. Constant number of mixed insurance companies is understandable as the law orders to establish insurance companies with a clearly specified activity. Remnants of mixed insurance companies are also evident in other countries of the Visegrad Group from the Table 1.

Table 1 Number of insurance companies in selected countries in 2008

	<i>Life</i>	<i>Non-life</i>	<i>Mixed</i>	<i>Total</i>
<i>Czech Republic</i>	7	29	17	53
<i>Slovakia</i>	5	4	16	25
<i>Poland</i> ^{*4}	30	36	0	60
<i>Hungary</i>	7	13	11	31
<i>EU</i>				4 741

Source: ČAP, SAP, MABISZ, PUI, CEA

If we evaluate the European market as a whole, then the greatest number of insurance companies is in the insurance market of Great Britain where 1,096 insurance companies were registered in 2008. The second greatest market from the view of number of insurance companies is the German insurance market with 660 insurance companies. This only proves

⁴ *Polish Association of Insurance Companies divides the insurance market into groups of life and non-life subjects. Therefore, the number of life and non-life insurance companies already includes the mixed insurance companies.

the fact that the insurance business in developed countries is typical of great number of insurance companies. The insurance business in Great Britain has long history and it is much more stabilized than the insurance markets in less developed countries. The British insurance business surely belongs to the greatest ones in Europe which may be documented for example by the fact that from the point of size of total prescribed premium, the British one is 31.3 per cent. If we compare numbers in above-stated countries with numbers of insurance companies working at markets in East and Central European countries, the difference will be significant. In the Czech Republic, Poland and Hungary non-life insurance companies outnumber the life ones, only in Slovakia the situation was opposite in 2005. However, it is necessary to state that, with the exception of Poland, the other three countries show a great number of mixed insurance companies. That means that under one roof they offer products of life as well as non-life insurance. "At the Czech market there are insurance companies from the EU/EEC on the basis of freedom to temporarily provide services. According to the Czech National Bank, at the end of 2008 554 companies expressed their interest by means of relevant notification. Latest data of performance of these insurance companies are not known, they may be estimated to units of milliards Czech crowns."⁵ A similar situation is also at other markets; however, it will be apparent from the following text that their market share is minute. The significance of position of the British and German insurance markets at the European insurance market is documented by the following table.

Table 2 The biggest insurance companies at the European insurance market

Rank	Group		Direct premiums written (€m)		
			2007	2006	Growth 07/06
1	Allianz	DE	93 656	91 095	2,8%
2	Axa	FR	88 400	77 966	13,4%
3	Prudential	UK	84 803	74 536	13,8%
4	Generali	IT	66 217	64 526	2,6%
5	Aviva	UK	57 998	55 625	4,3%
6 (+1)	Aegon	NL	56 305	49 523	13,7%
7 (+1)	Legal & General	UK	54 472	48 710	11,8%
8 (-2)	ING	NL	53 963	55 267	-2,4%
9	Zurich	CH	39 393	43 235	-8,9%
10	CNP	FR	31 530	31 990	-1,4%

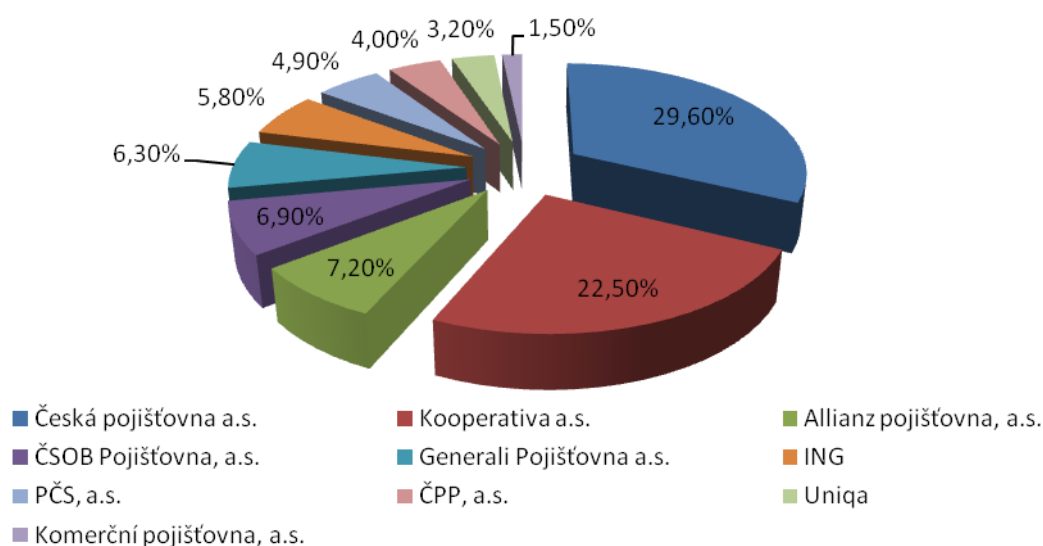
Source: CEA

⁵ Annual report of the Czech Association of Insurance Companies, p.9

Although the German insurance market is represented by one and only insurance company, in the long term it is an insurance company with the greatest market share. The first five positions are taken by two British insurance companies, one Italian and one French. Although these insurance companies have stable positions at the European insurance market, they do not show the same pace of growth of the prescribed premium. A rather distinct pace was shown only by AXA and Prudential. Changes happened only in the second half where ING insurance company markedly weakened its position, which was used by Aegon and Legal & General insurance companies.

3.1 Market Share

Graph 2 Market share of 10 biggest insurance companies in the Czech Republic in 2008



Source: ČAP, ČNB

The graph shows a market share of ten insurance companies with the biggest representation at the Czech insurance market. During the whole monitored period the leading position is taken by Česká pojišťovna, a.s. /Czech Insurance Company/. In 2004 its market share was almost 36 per cent, which proves its important role at the insurance market. However, Česká pojišťovna has been reporting permanent decrease of market share for the last ten monitored years and last year its market share was approximately 25 per cent. It may be explained for example by great diversification of products offered at our market and mainly by various offers of individual insurance companies. The other nine subjects experienced only slight fluctuations of prescribed premium shares for the last four years. Change of their market shares in individual years was 2 to 3 per cent at the most. In the last

three years ING insurance company significantly strengthened its position – in 2004 and 2005 it was not in top ten of biggest insurance companies from the view of prescribed premium but it reported the sixth biggest share in 2008.

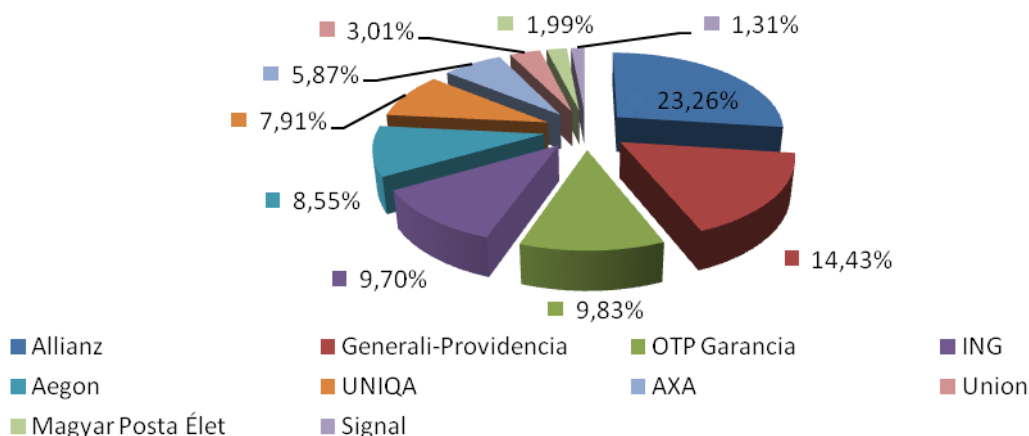
Table 3 Market shares of 10 biggest insurance companies in Slovakia and Poland in 2007

Insurance Company	Market share	Insurance Company	Market share
Allianz - Slovenská poisťovňa, a. s.	27.65%	PZU S.A.	18.22%
KOOPERATIVA poisťovňa, a. s.	16.30%	PZU ŻYCIE S.A.	16.58%
AMSLICO AIG Life poisťovňa a. s.	12.33%	COMMERCIAL UNION - ŻYCIE S.A.	7.16%
ING Životná poisťovňa, a. s.	9.29%	AEGON S.A.	6.36%
KONTINUITA poisťovňa, a. s.,	8.38%	AMPLICO LIFE S.A.	4.31%
Česká poisťovňa - Slovensko, a. s.	4.77%	WARTA S.A.	4.22%
ČSOB Poisťovňa, a. s.	4.37%	ALLIANZ ŻYCIE POLSKA S.A.	3.74%
Generali Poisťovňa, a. s.	3.88%	ERGO HESTIA S.A.	3.39%
Poisťovňa Slovenskej sporiteľne, a. s.	2.91%	ING NATIONALE NEDERLANDEN S.A.	3.15%
UNIQA poisťovňa, a. s.	2.50%	NORDEA TUnŽ S.A.	3.10%

Source: own calculations based on annual reports of SAP, PUI

Market shares of the biggest insurance companies in the Czech Republic as well as in Slovakia exceed the point of 25 per cent. That means that they take up more than one quarter of the whole market with insurance. Therefore, they have a privileged position and great influence at these markets. However, with increasing competition and diversification of products their market shares tend to fall. The best example in the Czech Republic is Česká pojišťovna a.s. which controlled almost 35 per cent of life insurance market in 2004 and three years later it had only 25 per cent. Thus Česká pojišťovna lost ten percent. The privileged position in the Czech Republic is taken by Česká pojišťovna, in Poland by PZU, in Slovakia by Allianz and in Great Britain by AIG. Generally, it may be stated that the longer existence of an insurance company, the greater market share it has. However, this is not always so. The Polish market share shows a slightly different tendency. The biggest insurance company at the Polish insurance market got a market share of 18.22 per cent but is has a slightly falling tendency. But distribution of market shares is not steady here either, there are two big insurance companies at this market and the others take from 7 to 3 per cent. This distribution shows that the Polish market will report a different concentration ratio. Distribution of market shares at the Czech and Slovak markets is similar to Hungarian insurance companies, which is documented by the following graph that shows ten insurance companies having the greatest market share at the Hungarian insurance market.

Graph 3 Shares of ten biggest insurance companies at the Hungarian insurance market



Source: own calculations based on an annual report of Hungarian Insurance Association

<http://www.mabisz.hu/english/publication/quarterly/MABISZ20081QInternetAngol.pdf>

3.2 Concentration Ratio

The level of development and maturity of a market is shown by concentration ratio that is measured by share of on prescribed premium. For evaluation of concentration ratio of a market, a market share of 5, 10, 15 or 20 insurers are examined. Generally, the less developed insurance markets report a great concentration ratio. In such case, a great part of a market is in hands of one insurer.

Table 4 Concentration ratio in the single European insurance market and in EU

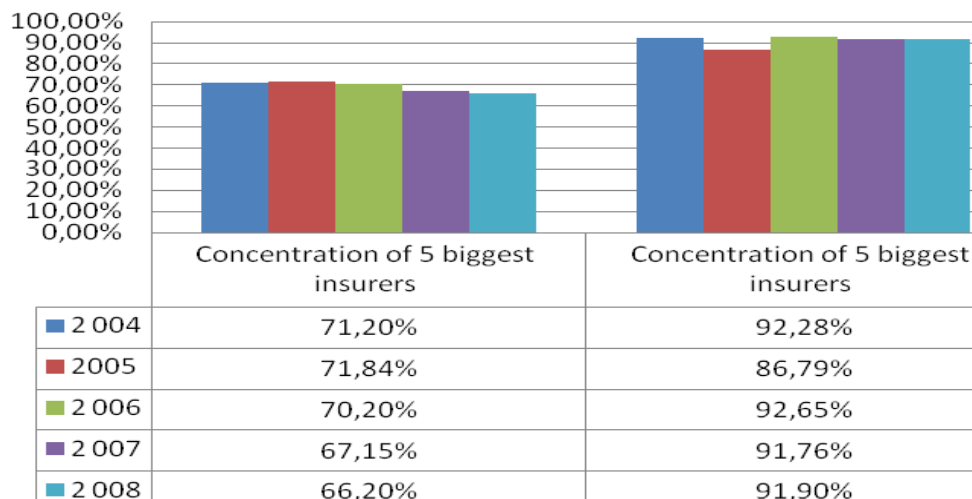
	Total premiums at the national market (€m)		First 5			First 10		
Country	1997	2007	1997	2007	Change	1997	2007	Change
non-life								
CEA	246 784	408 104	37.7%	56.0%	18.2%	53.9%	71.6%	17.7%
EU (27)	233 925	388 809	36.0%	56.2%	20.2%	52.2%	71.6%	19.4%
Life								
CEA	325 972	465 604	46.0%	61.4%	15.4%	63.6%	80.9%	17.3%
EU (27)	303 750	438 638	43.5%	60.0%	16.5%	61.3%	79.8%	18.5%

Source: CEA

From the table it is apparent that the European insurance market have reported an increasing tendency of influence of biggest insurers in the area of life as well as non-life insurance for the last ten years and it signals a growth of concentration ratio in both sectors of the insurance market. However, it may be stated that in this regard the European insurance market has a contrary tendency of development than in countries of the Visegrad Group, for as a whole

these markets rather tend to decrease the influence of the biggest insurer. This is shown in Graph 4 and Table 5.

Graph 3 Concentration of 5 and 10 biggest insurance companies in the Czech Republic 2004-2008



Source: own calculations based on data from ČAP, annual reports of individual insurance companies

To calculate the concentration of insurance there were chosen 5 biggest subjects providing insurance in the first case. Among these insurance companies are Česká pojišťovna a.s., ING Životní pojišťovna, Kooperativa pojišťovna a.s., PČS, a.s., and ČSOB Pojišťovna, a.s.

These five insurance companies took 71.20 per cent at our market in 2004. It means that they controlled three quarters of the insurance market with life insurance. However, this trend was slightly falling for three years and got to 73.43 per cent. Thus the decrease is approximately by two per cent. It was mainly caused by loss of a great number of clients of Česká pojišťovna. The other insurance companies do not have a great influence on this development.

Concentration ratio of 10 biggest insurance companies also tends to fall, but compared to the above-mentioned decrease it is completely insignificant. The difference between 2004 and 2007 is some 0.5 per cent. The ten biggest insurance companies take 92.6 per cent of the market, which is almost the whole market with life insurance. The concentration of the Czech insurance market is relatively high. It is mainly caused by historic development when there was only one insurance company at the Czech insurance market in 1990.

Table 5 Concentration ratio of 5 and 10 biggest insurance companies in selected countries in 2008

	Concentration ratio of 5 biggest insurance companies	Concentration ratio of 10 biggest insurance companies
Czech Republic	73.43%	92.56%
Poland	65.54%	85.54%
Slovakia	73.95%	92.37%
Hungary	65.77%	85.86%

Source: own calculations based on data from ČAP, SAP, MABISZ, PUI

The concentration ratio in the Czech and Slovak Republics report almost identical results. At the Slovak market, there is apparent high concentration caused by similar historic development as in the Czech Republic. There was also only one insurance company here till 1990. Five biggest insurers control almost 74 per cent of the insurance market and majority of the market— 92 per cent — is controlled by ten biggest insurers. The highest concentration in postcommunitic countries was in 2007 by 10 biggest insurers in the Czech Republic. The Polish insurance market reports slightly lower numbers, five insurers control 65 per cent of the market and ten insurers control approximately 86 per cent of the market. The Hungarian insurance market reports a similar concentration as the insurance market in Poland. Ten biggest insurers control 78.73 per cent, which is a number comparable to the market share of only five insurers in the Czech and Slovak Republics. It may be assumed, that concentration of the Czech and Slovak insurance markets will probably decrease. However, in all monitored countries there is a completely different tendency from the European market as a whole. The concentration ratio of the European insurance market reached 48.15 per cent with five biggest insurers in 2007, which is one percent more than the previous year. Ten biggest insurers report concentration ratio 77 per cent. The annual development tendency is much slower here, but it still increases.

3.3 *Herfindahl-Hirshman Index*

As stated earlier, a characteristic feature of this index is the fact that it puts emphasis on the influence of subjects at the top and eliminates influence of the weaker ones. From calculations of the index it is possible to evaluate the position of the biggest insurers of the given market from the view of their influence on concentration of the relevant sector.

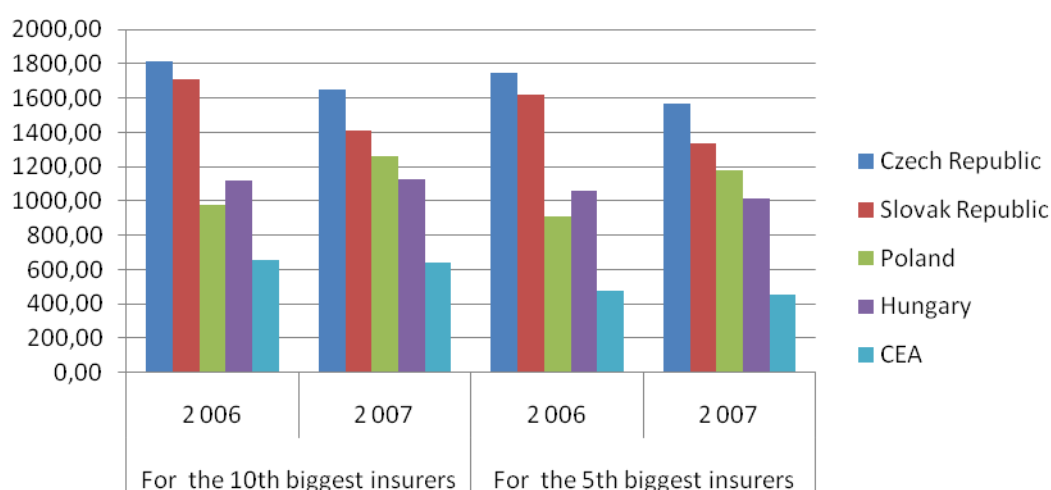
Graph 5 Herfindahl-Hirshman Index for the Czech insurance market



Source: own calculations according to the national annual reports

From Graph 5 it is apparent that there is a gradual decrease of HH Index at the Czech insurance market in both monitored categories. Thus, we may state based on this index the influence of the biggest insurers falls at this market but in spite of this, the Czech insurance market reports high concentration ratio in 2004 and 2005. According to this index, in later years the Czech insurance market is ranked in the slightly concentrated sector. A similar situation may be seen at other markets of the Visegrad Group countries.

Graph 6 Herfindahl-Hirshman Index for selected insurance markets



Source: own calculations according to the national annual reports

An identical situation is apparent at the Slovak insurance market where the Herfindahl-Hirshman Index values for ten insurers as well for five of them are ranked in the slightly

concentrated sector. The Hungarian market develops in a similar way but there is evident inclination to non-concentrated sector, as the values for five biggest insurers got below 1,000 points. While these markets report a falling tendency of influence of the biggest insurers, the Polish market reports contrary values. From the values of non-concentrated sector in 2006 it came into the values of slightly concentrated sector in 2007. As completely non-concentrated sector of the insurance business may be regarded the European insurance market where the Herfindahl-Hirshman Index values are below 500 points. The influence of the biggest insurers according to this index has a slightly falling tendency in both cases.

4 Conclusion

The theory that was stated in the Abstract of the paper—that the globalization tendency in the insurance sector does not lead to increase in concentration at selected markets—was not unambiguously verified, as indicators of the three monitored markets show decrease of influence of the biggest insurers at relevant markets. The only exception is the Polish insurance market where there was a slight increase in influence of the biggest insurers. There are slightly different predicative abilities of individual indicators – the concentration ratio and Herfindahl-Hirshman Index. While the concentration ratio indicator implies increase in share of the biggest insurers at the global European insurance market, Herfindahl-Hirshman Index shows that their influence on the market as a whole decreases. Because not all the information for 2008 is available (there are no statistics of some countries), we may not even clearly confirm the fact that the crisis affected a bigger wave of fusions. There were several significant fusions at the European insurance market; however, these will only potentially strengthen positions of the biggest European insurers in the future. If the prognoses regarding the fusions become reality then the above stated theory would have to be disproven by increase in concentration of the European insurance market. For regional markets of the Visegrad Group countries, in my opinion, the situation will not change and the influence of the biggest insurers will still be slightly falling.

References

- [1] DUCHÁČKOVÁ, E. Světový pojistný trh v roce 2007. Server *O Pojištění*. [online] Url: <http://www.opojisteni.cz/rizika/svetovy-pojistny-trh-v-roce-2007/> [downloaded 8 May 2009]
- [2] POLOUČEK, S. *Bankovníctví*. 1.vyd. Karviná: OPF, 2005, ISBN 80-7248-287-4.
- [3] ŠUSTER, M. Globalizace: Je růst koncentrace mýtem? Server Liberální institut. [online] Url: <http://www.libinst.cz/komentare.php?id=423> [downloaded 20 October 2009]
- [4] European Insurance in Figures (2007 Data) dataset. CEA, 2008. [online] Url: <http://www.cea.eu/index.php?mact=DocumentsLibrary,cntnt01,details,0&cntnt01documentid=575&cntnt01returnid=185> [downloaded 8 May 2009]
- [5] The Annual Report. CEA 2008. Server CEA [online] Url: http://www.cea.eu/uploads/DocumentsLibrary/documents/1245396718_annual-report-2009-web.pdf [downloaded 8 May 2009]
- [6] The Annual Report CAP 2007. Server České asociace pojišťoven. [online] Url: http://www.cap.cz/Zpravy.aspx?list=DOKUMENTY_01&zobrazeni=pro+web+V%C3%BDro%C4%8Dn%C3%AD+zpr%C3%A1vy [downloaded 8 May 2009]
- [7] The Annual Report MABISZ 2007. Server Maďarské asociace pojišťoven. [online] Url: <http://www.mabisz.hu/english/publication/quarterly/MABISZ20081QInternetAngol.pdf> [downloaded 10 October 2009]
- [8] The Annual Report SAP 2007. Server Slovenské asociace pojišťoven. [online] Url: <http://www.slaspo.sk/en/12448> [downloaded 10 October 2009]
- [9] The Annual Report PIU 2007. Server Polska izba ubezpieczeń. [online] Url: http://www.piu.org.pl/pl/publikacje_piu/raport_roczny/ [downloaded 10 October 2009]