Development of Commercial Insurance in the Slovak Republic, Poland and Ukraine in the Period 2004 – 2012[1]

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Abstract

The insurance market belongs to the dynamically developing branches of the national economy even in the period of the debt crises. Vast damages, which arise as a consequence of natural catastrophes, object risks or as a result of subject risks are stimuli for the growing interest of all economic subjects operating not only in insurance market but also in the national economy. The insurance industry performs its basic functions – accumulation, redistribution, stimulation and control functions – in complex economic conditions. The significance of the control function increases in direct proportion to a complicated economic-social situation since the level of insurance fraud also occurs in that period. This paper addresses the development of the insurance market in the Slovak Republic, Poland and Ukraine. We focused our attention on selected important indicators, namely: concentration index, written premium, penetration, insurance density, technical reserves and investment activity of commercial insurance companies.

Keywords: *insurance market, concentration, technical reserves and investment activity*

JEL Classification: G22

Introduction

The insurance sector is a very important segment of the financial system in each country. In a commercial economy it fulfils, first of all, the functions: delivering tools securing businesses as well as individuals against any kinds of risk, the accumulation and allocation of capital as well as collecting and processing

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information. This sector fulfils a very important role in any country's economy and in the stability of people's lives. It constitutes material security against the results of unfavourable, random incidents. The risk of such incidents occurring always accompanies people's lives, and an action within risk is a characteristic of any economy. The problem of developing insurance is, therefore, an important topic, particularly during an increase in the mutual dependence between the economies of different countries, as well as the increasingly differentiated conditions in the functioning of the international financial system.

The insurance business as a holistic system is under the influence of constant changes in price and inflation policies, legislative changes, and also currently under the influence of the external environment – the global and economic world crisis. In accordance with the increase in enormous and various damages, interest in insurance has also increased not only amongst theoretical workers, but also between all experts in the insurance, financial and entrepreneurial markets. The interest of experts results from the function of insurance, which has a specific position in live-cycle of all economic subjects in national economy.

At present, an increasing number of domestic and foreign authors are focusing their attention on the issue of insurance and the insurance industry, and this fact corresponds to the recognition that insurance has become an integral part of the business and financial activities of individuals.

Author Wehrhahn (2012, p. 300) provides a fairly comprehensive view of the importance and development of insurance and the insurance industry in times of globalisation and the economic liberalisation of the financial markets. The main aspects of insurance affecting economic development are:

- Insurance, by pooling risks together, lowers the cost of risk, reducing volatility.
- Households and enterprises have a mechanism to transfer risk at an efficient cost, and to release both financial and human resources to focus on the core of their production activities.
- The long term nature of life insurance pension promotes long-term internal savings, a key element in any economy in boosting development.
- Insurance supports trade and other activities by incorporating risk-averse individuals and enterprises into the production chain.
- The government's fiscal budget is relieved from the social security and retirement programmes to the extent that these are covered by the insurance sector.
- Catastrophic insurance allows governments to reduce the fiscal impact, especially when international reinsurance is available to spread the risk outside the country.

The author provides an insight into the complexity, importance and functions such as micro-insurance, as well as at the macro level of individual economies through the means of the multi-dimensional aspects of insurance. He also emphasised the need for insurance support from government organisations, especially in tax policy, education, mandatory insurance programmes, and effective regulation by the state which could significantly affect the overall development of insurance and its positive effects on economic growth.

The insurance market, as an individual market, is an integrated part of the financial market in every developed and developing economy. In their definitions, individual authors give lesser or more complex definitions. Holyoake and Weipers (1999, p. 64), define an insurance market as a market which includes:

1. Sellers – the insurance company and underwriting members,
2. Buyers – the general public, industry and commerce,
3. Intermediaries – the insurance brokers and agents.

Rejda (2005, p. 69), focuses upon the transfer of risk and decisions by economic subjects, which part of risk they accept and which part they will transfer to the insurance market. They also stated three important factors influencing the insurance market:

1. The underwriting cycle,
2. Consolidation in the insurance cycle, and
3. Securitisation of risk.

Atkins and Bates (2008, p. 21), describe the insurance market via the basic characteristics of individual activities carried out therein:

1. The proposer offers a risk to the insurer, either directly or via an intermediary.
2. The insurance company underwriter calculates a premium to cover the expected cost of claims, expenses and profit.
3. If the quotation is accepted, cover commences and the proposer becomes the insured (or policyholder).
4. Any commission due to the intermediary is paid, as are claims occurring during the period. A proportion is also placed in various reserves for claims that may be payable in the future. All money held in reserves is invested in order to provide investment income, which may contribute significantly to the profitability of the business.

Bazilevič (2008, p. 614) describes the insurance market as a system of economic relationships forming the demand and requirements for insurance products, where the subject of purchase and sale is insurance protection as a form of relationship between insurance parties.

Majtánová et al. (2009, p. 70), define the insurance market as a market in which the supply of and demand for insurance protection meet. It includes all relationships between sellers and buyers who use insurance as the subject of exchange. In terms of the diverse activities as well as insurance subjects and the nature of insurance, the insurance market is divided into general and investment. The general market is characterised as an area of insurance and the conditions arising there from when signing an insurance contract for everything which may be insured. The investment insurance market links the principle of creating reserves for eliminating the negative results of randomness for insured parties. Insurance companies use the reserves to implement their own investment policy.

Vovčak (2011, p. 98) stresses that the insurance market is a separate sphere of the financial market, where a specific service is the subject of purchase and sale – insurance protection, the market on which supply and demand is formed to be satisfied.

Based on a comparison of selected definitions of an insurance market, accepting the most important entities, their attributes as well as their multi-faceted and diverse internal and external system links between individual subjects in the insurance market, we formulate a definition of an insurance market as follows:

Based on general market theory, we may characterise an insurance market as an entrepreneurial area in which the supply of insurance products meets the demand for insurance protection whilst, via a price creation mechanism, its level is influenced depending upon individual factors by which it is influenced. The insurance market is formed of several specialised institutions whose main subject of business is insurance, securing and intermediating activities. These institutions are on the supply side of insurance protection. The demand for insurance protection is formed by all economic subjects, not only on the domestic market but also abroad, which need to insure their property, interests and health. The demand side therefore includes citizens, towns and villages, business subjects, organisations, institutions as well as the state itself. Apart from the main actors, the insurance market also includes institutions which complete the complexity of the insurance market in terms of legislation and regulation (supervisory body for the insurance industry).

The insurance market, as one of many individual markets in an aggregated market, is influenced by all basic factors which affect supply, demand and the creation of price. Due to the specific attributes of insurance products and insurance services, on the demand side there are also others, to which Meheš (2010, p. 66) added state policy, stance on risk, claims record and, for business subjects, it is also necessary to evaluate company size, the structure of capital and available resources.

On the supply side there are also other specific factors which are mainly government policy, the capacity of insurance companies, the quality, scope and plausibility of information available to insurers, using which they can calculate such a level of premium based on which they will secure balanced tariff policy and also therefore long-term competitiveness in the insurance market.

1. Data and Methodology

The entry of the Slovak Republic and Poland into the EU and the resulting changes in the insurance markets provide the opportunity for analysis of their insurance markets, which compare well with the development of the insurance market in Ukraine, a country which is not yet part of the EU but which is gradually implementing the harmonisation of various sectors of the national economy, with an ambition of becoming a full member of the EU. Currently, specialists in insurance theory and practice are preparing an amendment to the Insurance Act of 2002, which is already largely harmonised with EU insurance law, particularly in the principal activities of commercial insurance. The necessary changes will particularly concern the business of insurance, the classification of insurance products, the provision of technical reserves to ensure their allocation, solvency, reinsurance, as well as consumer protection, which is currently receiving special attention due to the unprecedented volatility in the financial markets.

The aim of this paper is to assess and compare the development of commercial insurance business in these countries – Slovak Republic, Poland and Ukraine via standard ratio indicators enabling such comparison despite different economic and political conditions, as well as find out similarities, respectively differences in development of selected financial indicators.

Data for analysing and comparing the dynamics of development and the development of the insurance market in the Slovak Republic (SR), Poland and Ukraine originates from the annual reports of insurance associations, as well as the analysis of supervisory bodies of the insurance market. The National Bank of Slovakia (NBS) in SR is carrying out supervision of the insurance market; in Poland it is the Polish Financial Supervision Authority (PFSA), such as the institution of the Central State Administration supervising the financial market in Poland. The supervisory bodies of the insurance market in Ukraine implemented The State Commission for Regulation of Financial Services Markets of Ukraine.

This indicator is not sufficient to evaluate the performance of the insurance industry in a variety of large countries. For a more detailed view of the status and dynamics of development of the insurance industry, a further indicator of insurance density is used, defined as per capita insurance premium. By constructing these indicators, the result is that insurance penetration is a good indicator of the significance of industry in a country but fails when we want to greatly compare several countries. In order for more complex evaluation of the development of the three varying insurance markets, we also used other, mainly ratio-based, indicators and correlation coefficients.

The Herfindahl-Hirschman index is the most often used to measure the concentration of the segment in economic practice; it expresses the position of companies operating in the market. Due to the large difference in the number of commercial insurers in the monitored markets (21 insurance companies acted on Slovak market to 31 December 2012, 59 insurance companies in the Polish market and 414 in the Ukrainian insurance market), we used the indicator concentration CR1 and CR4, which are those most commonly used to assess the concentrations in the U.S. and Germany.

From the other indicators used by reputable rating agencies Standard&Poor's, A. M. Best and Moody's for the assessment of the financial situation of the insurance market, we chose those that permit more comprehensive assessment of the insurance business – from business activities through the establishment of technical provisions, recovery to insurance claims processing and the fulfilment of obligations to policyholders. In particular, they are technical reserves whose volume must be adequate for the current insurance portfolio, as well as the volume of investments funds of technical reserves. The rate of recovery of funds in the financial market in accordance with applicable legislation in the Slovak Republic, the Ukraine and Poland will identify with another variable – investment activity (*investment/technical reserves x 100* in %). This indicator reflects not only the ability of investment management to allocate temporarily free funds to market conditions, but largely reflects the quality of the implementation of the basic functions of the financial markets – accumulation, allocation and distribution in the different phases of the economic cycle.

Through the written premium volume, claims (in absolute units of measurement) and the loss ratio we find the adequacy of insurance premiums. These indicators are a set of selected indicators by which we know more details and compare the development of specific insurance markets. Insurance markets, as integral parts of financial markets, the importance of which is increasing, impact positively on maintaining the attainment status of all economic subjects in national economies.

2. Selected Indicators of the Insurance Market

2.1. Concentration Indicator

Concentration trends on the market influence numerous processes occurring there. They strengthen the position of large insurance groups or specialised insurance companies at the expense of companies which do not possess enough capital and have an unstable market position. To analyse the market we can use the concentration indicator *CR*, which means the share of the largest insurance companies on a given market. This indicator, calculated by Mihalčová and Hintošová (2006, p. 990), using the formula presented below, firstly shows the domination of the largest market participants. However, it does show changes on lower levels of the company size.

$$CR_m = \frac{100}{Q} \sum_{i=1}^{m} q_i$$

where

q_i – the value of production,

Q – the value of production of the branch.

The interpretation of this formula is the following:

a) Concentration branch if the four biggest enterprises have more than 50% of the production of branches.

b) Weak-Concentration branch if the four biggest enterprises have 25 – 49% of the production of branches.

c) Non-Concentration branch if the four biggest enterprises have less 25% of the production of branches.

From the Table 1, we see that the Slovak insurance market is a concentrated branch because four insurance companies have a higher value than recommended, which is 50%. In the first three years, the Concentration Ratio value decreased in the period 2004 – 2006, an increase was noted in the period 2008 – 2009, namely for the four insurance companies. From 2010 to 2011 concentration decreased again, but in 2012 it increased and its value was 67.2% in the cases of the first four insurance companies.

Table 1

Concentration in Insurance Markets

Concentration (in %)	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
CR 1_SK	40.57	36.39	33.32	32.53	31.35	30.39	28.94	25.03	27.58
CR 4_SK	62.80	69.62	65.87	66.57	69.46	71.29	68.45	64.74	67.20
CR 1_PL	27.90	24.70	20.45	18.25	22.06	19.29	17.17	17.60	14.87
CR 4_PL	60.37	56.29	52.11	48.41	49.20	44.77	43.42	41.15	39.76
CR 1_UA	6.78	6.36	6.27	6.18	6.12	5.67	5.24	5.51	5.43
CR 4_UA	21.12	20.23	19.56	19.49	18.34	18.26	17.56	18.65	17.68

Notes: In all of the Tables, the Slovak Republic is indicated by SK, Poland by PL and Ukraine by UA.

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

The level of the Polish insurance market (measured as the one of four largest insurance companies in the market) is a derivative of two opposing forces. On one hand, there is growing competitive pressure resulting from the emergence of new players on the market, reducing the share of the largest insurer in the market, i.e. PZU. CR 1 reached a value of 14.87% in 2012, which is also greatly lower than the concentration in the Slovak insurance market.

The other opposing force determining the CR4 index is linked to the activity of foreign investors on the Polish market. After the initial organic penetration of the Polish market (consisting of establishing new insurance institutions by foreign entities), characteristic for the 1990s, a period of intensified activity on the corporate mergers market took place at the beginning of the 21st Century.

Compared to the Slovak Republic and Poland insurance markets, the concentration index of the Ukrainian market is visibly lower. This is due to the high dispersion of insurers operating on the market, caused by historical factors and the weakness of the existing law. When Ukraine regained independence, the insurance market was subject to many factors that stimulated the establishment of new insurance companies. Author Pukala (2012a, p. 247) said the main factors which stimulated the establishment other insurance companies included:

- Establishing daughter companies by Russian insurance companies in Ukraine. The main aim of Russian investors was to take a "comfortable seat" in a very attractive financial sector under construction and to establish their own financial backup for investments in other sectors of the economy.
- Organising of insurance companies owned by the directors of local departments of "Ukrdierzstrah" (a former state monopolist operating in the entire area of the Soviet Union). Working in a state institution, a legal successor of "Gosstrah" operating on the territory of Ukraine, they had access to all information related to the most attractive insurance agreements and by using local influence, they transferred insurance portfolios to newly established, companies owned by the mentioned directors.
- Organisation of insurance companies by industrial and financial groups, social organisations and other public institutions.

All above mentioned elements resulted in the establishment of hundreds of insurance companies which, by taking their market positions, contributed to market fragmentation.

2.2. Insurance Penetration and Density

Most countries use a total premium income when evaluating the development of the insurance sector. This indicator describes the total value of the insurance industry, but it is not sufficient to characterise the development in the country, as it does not take into account the population factor. Therefore, two of the most commonly used indicators are insurance penetration and insurance density. Insurance penetration evaluates the total volume of written premium and insurance density expressed as written premium per capita. The development of these basic indicators of the insurance industry is shown in Tables 2 and 3.

Table 2

Premiums Written in the Slovak Republic, Poland and Ukraine

Indicator (in EUR mil)	2004	2005	2006	2007	2008	2009	2010	2011	2012	$I_{2012/04}$
Total_SK	1.596	1.719	1.784	1.915	2.108	1985	2.067	2.109	2.040	127.8
Life_SK	641	731	847	956	1.106	1029	1.126	1.145	1.110	173.2
Non-life_SK	955	988	938	959	1.002	956	941	964	930	97.4
Life/Total (%) SK	40.16	42.54	47.44	49.93	52.47	52.37	54.49	54.28	54.41	–
Non-life/Total (%) SK	59.84	57.46	52.56	50.07	47.53	47.61	45.51	45.72	45.59	–
Total_PL	6.094	7.698	9.636	11.564	16.661	11.865	13.559	13.872	15.322	251.4
Life_PL	2.809	3.810	5.419	6.744	11.086	6.998	7.866	7.731	8.899	316.8
Non-life_PL	3.285	3.888	4.217	4.820	5.774	4.867	5.692	6.141	6.423	195.5
Life/Total (%) PL	46.09	49.49	56.24	58.32	66.54	58.98	58.01	55.73	58.08	–
Non-life/Total (%) PL	53.91	50.51	43.76	41.68	34.66	41.02	41.98	44.27	41.92	–
Total_UA	2.939	2.028	2.174	2.427	2.211	1.785	2.184	2.203	2048	69.7
Life_UA	28	51	73	106	101	72	86	131	172	614.3
Non-life_UA	2.911	1.977	2.101	2.321	2.110	1.713	2.098	2.072	1876	64.4
Life/Total (%) UA	0.96	2.50	3.37	4.35	4.56	4.05	3.93	5.93	8.40	–
Non-life/Total (%) UA	99.04	97.50	96.63	95.65	95.44	95.95	96.07	94.52	91.60	–

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

From Table 2 it is clear that the fastest growth has been recorded in Ukraine, where life insurance premiums written increased by 614.3% and reached EUR 131 million. The second highest growth rate was in Poland, in life insurance by 316.8%, where its value in 2012 was EUR 8 899 million. In the Slovak Republic, written premiums in life insurance grew the fastest – by 173.2%, which was a total of EUR 1 110 million.

Insurance penetration is a good indicator of the significance of the insurance industry in a country, but it is not an appropriate indicator to compare the development of insurance among several economies. Zheng, Liu and Deng (2010, p. 4) state: "A benchmark of insurance penetration ratio is suggested as a better measurement for the development of the insurance sector for comparison purposes. Insurance density, defined as insurance prize money per capita, better measures the development of the insurance industry, because it takes into account the number of people in the country." The development of insurance density evaluated in the three countries is shown in Table 3.

Table 3

Premium Written per capita

Premium per capita EUR	2004	2005	2006	2007	2008	2009	2010	2011	2012	$I_{2012/04}$
Life_SK	175	175	174	178	185	179	174	179	205	117.1
Non – life_SK	119	135	157	177	205	197	209	212	175	147.1
Total_SK	294	310	331	355	390	376	383	391	380	129.3
Life_PL	74	100	142	177	291	188	206	202	232	313.5
Non – life_PL	86	102	111	126	151	129	149	161	167	194.2
Total_PL	160	202	253	303	442	318	355	363	399	249.4
Life_UA	1	1	2	2	2	2	2	2	3	293.7
Non – life_UA	61	44	45	51	46	37	45	46	45	73.8
Total_UA	62	45	47	53	48	39	47	48	48	77.4

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

Table 3 provides a more accurate view of the development of the insurance industry in each country. There is a significant difference in the written per capita premium. This indicator reached the lowest value in Ukraine, where in 2012 it was only EUR 3 per 1 inhabitant in life insurance, in non-life insurance it was EUR 45 and the total written premium volume reached EUR 48.

The highest growth rate indicator density – up to 313.5% was recorded in Poland, while the lowest growth rate – 73.8% – was recorded in Ukraine in non-life insurance.

The growth in interest in insurance among Poles, particularly life insurance, should be viewed from the point of view of the economic situation improvement in Poland. Wage increases and the fall in unemployment observed from 2004 to 2012 caused an increase in household incomes. This increase resulted in larger savings, which caused an increase in demand for insurance products. There was a similar situation in that period in the Slovak Republic where the highest premium written per capita in non-life insurance was EUR 175.

The per capita life insurance premium is very, very small in Ukraine; in 2012 it was just EUR 3. Hamankova (2012, p. 9), said that it is 1 000 times lower than in the G7 countries and 24 to 25 times lower than the average in Central and Eastern European countries. She also stressed that there is no life insurance market in Ukraine because more than 90% of premiums written in life insurance is created by investment insurance products.

The insurance penetration ratio as an indicator of the commercial insurance share of GDP is shown in Table 4. Simultaneously, it is an indicator of economic development, of the increasing insurance awareness of all economic subjects operating in the supply of insurance protection.

T a b l e 4

Penetration in the Slovak Republic, Poland and Ukraine

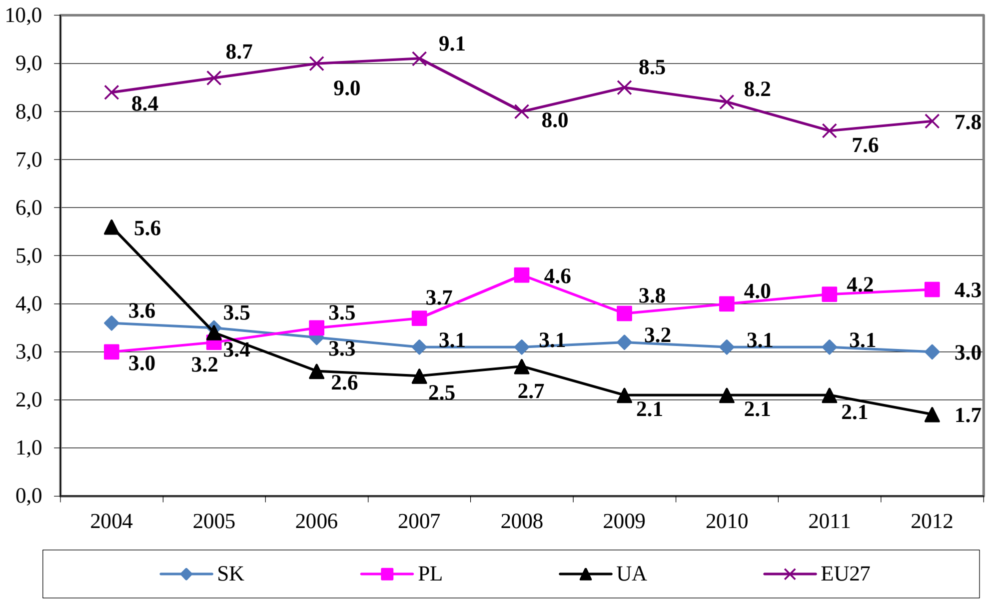
Indicator (in %)	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total_SK	3.6	3.5	3.3	3.1	3.1	3.2	3.1	3.1	3.0
Life_SK	1.4	1.5	1.5	1.6	1.7	1.7	1.7	1.7	1.6
Non-life_SK	2.1	1.9	1.5	1.6	1.5	1.5	1.4	1.4	1.4
Total_PL	3.0	3.2	3.5	3.7	4.6	3.8	4.0	4.2	4.3
Life_PL	1.4	1.6	2.0	2.2	3.0	2.2	2.3	2.5	2.6
Non-life_PL	1.6	1.6	1.5	1.5	1.6	1.6	1.7	1.7	1.7
Total_UA	5.6	3.1	2.6	2.5	2.7	2.1	2.1	2.1	1.7
Life_UA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Non-life_UA	5.5	3.0	2.5	2.4	2.6	2.0	2.0	2.0	1.6

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

Due to the significance of the penetration index which is considered to be a synthetic index of the share of the insurance industry in gross domestic product, on Chart 1 we give a comparison of the total share in GDP, as well as a comparison of the average values reached in EU-27 countries.

C h a r t 1

Share of Insurance in the GDP of SR, Poland and Ukraine and EU Average (27)



Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; <http://www.insuranceeurope.eu/uploads/Modules/Publications/european-insurance-in-figures-2011.pdf>.

As we said above, the relation of premiums to GDP defines the role and significance of insurance in a country's economy. The data showing this share in the Slovak Republic, Poland and Ukraine are presented in Table 4 and compared in Chart 1. The highest penetration was in Poland in 2008 and the lowest was in Ukraine.

The highest expenditure of Polish citizens on insurance, complementing the public social system, also contributes to the premium growth on the market. Penetration of the Ukraine insurance market is very, very low. One of the greatest problems is the lack of confidence in the insurance market because of corruption in all financial subjects (Ukraine has the third highest rate of corruption in the world).

From the development of penetration values, it is clear that the average value in EU-27 countries is significantly higher than in the three evaluated countries, where the highest levels were reached in 2004 – 2007, i.e. in the pre-crisis period. The ongoing crisis, macroeconomic problems, ecological problems as well as actual problems accompanying the globalisation process, do not provide space for early elimination of the differences, not only in penetration but also in other important indicators of the development of the insurance market.

2.3. Claims and Loss Ratio

Pastoráková (2006b, p. 40) defines loss ratio as the ratio of cost of claims and premiums written, while the key factor of the correct calculation of loss ratio (LR) 60% is the correct determination of the time horizon of both factors.

T a b l e 5

Claim in mil EUR and Loss Ratio in %

Indicator	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total_SK	521.5	578.2	708.7	791.0	945.0	1 031.7	1 133.0	1 181.8	1 202.0
Life_SK	198.5	241.3	312.7	352.8	444.5	548.7	609.0	660.0	677.9
Non-life_SK	329.9	336.9	395.9	438.2	500.7	483.2	523.9	521.8	24.2
LR_life_ SK	36.8	33.0	36.8	37.2	38.4	40.1	54.0	57.6	61.1
LR_non-life_SK	45.8	35.6	45.8	41.4	51.5	56.5	55.7	54.1	56.3
Total_PL	3 158.4	3 936.2	4 321.3	5 191.6	8 415.2	9 288.1	9 204.7	9 662.7	9 770.1
Life_PL	1 356.8	1 875.3	2 172.6	2 757.6	5 505.2	6 405.0	5 658.4	6 327.7	6 337.2
Non-life_PL	1 801.6	2 060.9	2 148.7	2 434.0	2 910.0	2 883.1	3 546.3	3 335.0	3 432.9
LR_life_PL	43.0	47.6	50.3	53.1	65.4	69.0	61.5	65.5	71.2
LR_non-life_PL	57.0	52.4	49.7	46.9	34.6	31.0	38.5	34.5	53.4
Total_UA	233.0	298.8	408.7	567.3	649.3	588.4	577.6	472.2	490.6
Life_UA	1.8	1.5	2.5	3.2	3.5	5.5	5.0	6.9	7.8
Non-life_UA	231.2	297.3	406.2	564.1	645.8	582.9	572.6	465.3	482.8
LR_life_UA	6.4	2.9	3.4	3.0	3.5	7.6	5.8	5.3	4.5
LR_non-life_UA	7.9	15.0	19.3	24.3	30.6	34.0	27.3	22.5	25.7

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

Recommended values of loss ratio have been 60% in the long term, which was achieved during the whole period in the Slovak Republic, in Poland the loss ratio, was higher in the years 2008 – 2012. The development of loss ratio was atypical in Ukraine, where in life insurance it was 0.5 – 4.5 which also confirms the underdevelopment of life insurance. In non-life and life insurance simple loss ratio showed values substantially lower than recommended values, the highest loss ratio was in the year 2009 when it reached the value only of 7,9%, after the period values of the rate indicators decreased again. Such low values are characteristic of all insurance markets forming on market principles and for which a small and therefore economically and financially imbalanced, managed insurance stock is characteristic.

The current level of premiums will not be sufficient to cover claims in the near future, not only for the high loss ratio, but also for the expected increase in costs related to the application of the forthcoming Solvency II.

2.4. Technical Reserves and Investment Activity

Daňhel at al. (2005, p. 52) understand technical reserves primarily as the reserve system laid down by a legislative and economic framework in order to eliminate the time disparity between the income of premiums and the delayed payment of insurance claims, and to cover contingent swings in the damage process (fluctuation of a random variable around an average), plus a so-called insurance reserve in respect of life and pension insurance policies designed to recover the future liabilities of an insurance company when policies mature. The volume of technical reserves total, in life and non-life insurance are presented in Table 6.

T a b l e 6

Volumes of the Technical Reserves

Indicator (in EUR bil.)	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total_SK	2.42	3.05	3.56	3.76	3.93	4.26	4.57	4.64	4.86
Life_SK	1.86	2.20	2.51	2.81	3.04	3.33	3.58	3.63	3.89
Non-life_SK	0.57	0.85	1.05	0.96	0.89	0.93	0.99	1.01	0.97
Total_PL	12.60	16.20	20.00	23.80	27.80	23.10	27.50	26.50	29.50
Life_PL	8.20	11.00	14.30	17.40	20.20	16.50	19.30	17.70	19.70
Non-life_PL	4.40	5.20	5.70	6.40	7.60	6.60	8.20	8.80	9.80
Total_UA	1.30	0.80	0.90	1.10	1.00	0.90	1.10	1.10	1.20
Life_UA	0.00	0.10	0.10	0.10	0.10	0.20	0.20	0.20	0.30
Non-life_UA	1.30	0.70	0.80	1.00	0.90	0.70	0.90	0.90	0.90

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

The volume of technical reserves of commercial insurance companies collectively, in life and non-life insurance, grew in the whole monitored period on Slovak and Poland insurance markets. A different situation was seen on the Ukraine insurance market.

In 2012, technical reserves in the Slovak insurance market grew by 209.14% in life insurance in comparison with 2004, and in non-life insurance by 140.17%. The high share of technical reserves in life insurance – in 2012, 80.04% of the total technical reserves – is created as a result of the very nature of technical reserves, which is creating provisions, and which reserves are created in the long run (depending on the insurance period of the life insurance product which is at least 10 years, but quite often the insurance period is 30 – 40 years).

Similarly, in the Poland insurance market the value of technical reserves increased, apart from in 2009 and 2011 when a relatively substantial decrease in technical reserves was recorded, caused by the PLN to EUR exchange rate (for example in 2008 it was 3.2 and in 2009 4.43).

The insufficient development of the insurance market in Ukraine, underlines author I. M. Hordjenko (2012, p. 124), is also seen in the creation, use and placement of technical reserves. He said that the main problems of quality assets in model control insurance companies are:

1. The lower of level real solvency and liquidity of assets of many insurance companies.
2. The deficiency in personnel and technological arrangements, the need for investment into information technology, and the education of personnel.
3. The lack of liability of the stakeholders of insurance companies for their activities, which has caused the bankruptcy of many insurance companies.
4. The high level of the refusal of claims.
5. The low quality of insurance products and insurance services.

The share of investment activities and technical reserves is not only an indicator of the quality of controlled and managed investment but also depends on the measurement of domestic and foreign financial markets, where temporarily free funds from technical reserves are evaluated. The activity of investment managers and their results depend on other important factors. Davidson and Herron (2012, p. 11) mainly described the state insurance laws, tax laws, financial position, liquidity requirements and market condition, the quality of which created an important environment for the investment activities (IA) of all insurance companies. Investment activity in single countries is show in Table 7.

In this period, 2004 – 2012, investment activity in the Slovak insurance market reached the recommended rate. The largest of the technical reserves evaluated was in 2012 which reached 119%. The average evaluation in the period was 9.05%.

T a b l e 7

Investment Activities

Indicator (in %)	2004	2005	2006	2007	2008	2009	2010	2011	2012
IA_SR	102.1	109.0	105.3	107.8	107.9	112.0	103.6	114.7	119.0
IA_PL	118.3	120.4	123.0	120.6	121.2	111.3	113.5	113.2	134.6
IA_UA	200.0	237.5	311.1	236.4	220.0	233.3	236.4	254.6	242.7

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association; Financial Analyses of NBS, years 2004 – 2012; calculation of the authors.

This undesirable situation was partly the consequence of failure by several insurance companies to comply with the new forms applied, limits and rules for the investment of technical reserves in the financial market, the absence of complex management of assets and liabilities and an underdeveloped capital market in the Slovak Republic. The level of investment activities was also influenced by the destructuralisation of portfolio investment in insurance companies where there was foreign capital and a deficiency in the volume of technical reserves in automobile third party liability insurance which is currently supplied by 13 insurance companies on the Slovak insurance market.

The situation on the Polish insurance market is very good because in all periods of insurance, companies use these assets as a security to financially guarantee their financial safety. The values of the indicator, recommended by Standard&Poor's rating agency, were 100 higher than the minimal recommended value in all periods. The highest value – 134.6% – was reached in 2012; in the period of financial crises the value decreased to 111.26%. The average evaluation of technical reserves on the financial market was 19.57%.

3. Discussion

In this paper we evaluated and compared the development of insurance markets in three countries: two members of the European Union – the Slovak Republic and Poland – and Ukraine, which has been in the complex and mutually challenging accession process. The development of all sub-markets has been influenced by some macroeconomic and microeconomic factors, and other factors with an impact on the growth dynamics or, more precisely, a decrease in the development process. In particular, these include legislation, social security systems, traditions, culture and ultimately the education of the people and raising their insurance awareness, which affect attitudes towards insurance protection, and ultimately they will be reflected in the level of demand for insurance products in life and non-life insurance.

One of the important factors affecting the supply of insurance products is the organisation of the insurance market, the extent of which affects not only the pricing of insurance products, but also the quality and quantity of current demand for insurance protection of all economic entities. Therefore, we monitored the levels of concentration in the selected insurance market.

The concentration of insurance markets was established by an index ratio of concentration – concentration ratio (CR), which was calculated for four commercial insurance companies via the often used CR index. In the given period, the Slovak insurance market reached values higher than 49%, meaning that it was concentrated. In Poland, the insurance market was concentrated from 2004 to 2007, but from 2005 to 2012 it showed values ower than 49%, so it can be included among the markets with low concentration. The Ukrainian insurance market is one of the non-concentrated insurance industries with CR4 values lower than 25%, which is the limit set for non-concentrated industries. One of the most important indicators of the position of the insurance industry observed in all economies – the number of insured was the highest in Poland, the second highest in the SR and the lowest values were recorded in Ukraine. We also identify the differences between each types of Concentration for each country which are shown in Table 9.

T a b l e 8

Correlation Coefficient of Concentration of each Country

	CR 1_SK	**CR 1_PL**	**CR 4_PL**	**CR 1_UA**
CR 1_PL	0.898 0.001			
CR 4_PL	0.969 0.000	0.946 0.000		
CR 1_UA	0.907 0.001	0.874 0.002	0.943 0.000	
CR 4_UA	0.867 0.002	0.843 0.004	0.909 0.001	0.922 0.000

Source: Own calculation.

T a b l e 9

Share of Premium Written on Average Payment/1 hab. (in %)

Country	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
SK	2.78	2.54	2.33	2.22	2.14	2.00	1.89	1.90	2.08
PL	1.11	1.36	1.83	1.96	3.43	2.08	2.11	2.10	2.25
UA	0.10	0.06	0.11	0.09	0.10	0.10	0.08	0.07	0.09

Source: Polish Financial Authority; The State Commission for regulation of Financial Services Markets of Ukraine; Annual Report of the Slovak Insurance Association, years 2004 – 2012; calculation of the authors.

A more meaningful indicator is the density indicator (premiums written per one inhabitant) which is calculated from the whole population in the country. This indicator reached the highest value in Poland in 2012 which was EUR 399 per capita, in the SR EUR 380 per capita and in Ukraine only EUR 48 per capita.

On the demand side, the income of the population acts as one of the most important factors, which largely determines the volume of demand for insurance protection expressed by written premiums. An indicator of development, as well as citizen's attitudes towards insurance protection in life insurance premiums, is the share of the average wage in the national economy. The value of premiums written in life reached from 1.89 to 2.78%, while the lowest value was reached in 2010, the highest – 2.78% in 2004 – in the Slovak Republic.

The Polish insurance market is characterised by a dynamic increase in life insurance premiums, which is a result of an increase in salaries (an increase of 155% from 2004 to 2012), followed by an increase in expenditure related to life insurance. The observed increase is also due to a shifting of the burden of security protection in the public pensions and health systems, the cost of which is becoming more and more expensive, towards individual security offered by commercial insurers in individual life insurance policies. A factor stimulating the increased spending on life insurance is also the aggressive activities of banks, bancassurance, which saw sources of additional income and risk reduction business via the sale of insurance policies underlying the banking risks.

Indicator premiums and its share of the average salary in Ukraine reached extremely low values, at an interval from a 0.09% to 0.11% share, confirming the inadequate level of development of macroeconomics, but also microeconomics in the early stages of development of commercial insurance based on market principles.

We identify a strong relationship between CR 1 for Poland and CR 1 for Slovakia. For Poland and Ukraine we identify the relationship between CR 1 and CR 4 of each country, but this relationship was not identified for Slovak Republic.

Table 10

Correlation Coefficient of Premium Written per capita of each Country

	PW PCap L_SK	**PW PCap L_PL**
PW PCap L_PL	0.542 0.132	
PW PCap L_UA	0.748 0.020	0.742 0.022
	PW PCap T_SK	
PW PCap T_PL	0.951 0.000	

Source: Own calculation.

When we analyse the *Premium written per capita – Life insurance* in each country, we found interesting results. We found positive correlations between Premium written per capita of Ukraine to SR and Poland, but the relationship between SR and Poland is not statistically significant. However, the situation for Total amount of Premium written per capita is different from Life insurance. We found a strong correlation between Poland and the Slovak Republic, but not between these countries to Ukraine.

The values of other indicators – the loss ratio and investment activity – had positive development in Poland. Investment activity, as an indicator of the recovery of technical reserves, was above the recommended value of 100 in Poland throughout the period. The highest appreciation was in 2012, while the lowest value was recorded in the evaluation of post-crisis year of 2009, when its value was only 111.26%. Investment activity in Ukraine reached the highest values, but it should be noted that they were achieved as a result of an unbalanced investment portfolio. A significant proportion, almost 32% of the investment portfolio, are bank deposits, while the rate of recovery of deposits in money market in Ukraine in 2012 stood at a range of 10% to 20%, which is significantly higher than in EU countries.

Table 11

Correlation Coefficient of Technical Reserves of each Country

	TR Total_SK
TR Total_PL	0.934 0.000

Source: Calculation of the authors.

We identify a positive correlation between the volume of technical reserves in the Slovak Republic and Poland during the selected time series, which is shown in Table 8. However, the volume of technical reserves in Ukraine is not correlated with the volume of technical reserves in other two countries (Slovak Republic, Poland). We can say that the progress of the volume of Technical Reserves in the Slovak Republic and Poland is similar, but not in Ukraine, whose progress is not similar to the Slovak Republic and Poland.

Conclusion

We have identified some significant differences in comparison of the insurance markets of the three chosen countries. The Polish insurance market, which started to develop from market principles seven years before the Slovak insurance market and fifteen years before the Ukraine insurance market, has been developing positively in all rated indicators. The entry of Poland's third largest commercial insurance company, PZU – Powszechny Zaklad Ubezpieczen, on the Polish Stock Exchange in 2010 proves the stable development of the Polish insurance market. Taking into consideration the amount of EUR 2 billion which was allocated on the Polish Stock Exchange, this operation was considered as the largest financial operation in the history of the Polish Stock Exchange (the value of stock rose from 312.5 PLN in 2010 to 437 PLN on 31st December 2012).

A specialised Ombudsman, who represents and protects the rights of consumers, has been operating in the Polish insurance market since 1995. The extensive activities of the Ombudsman contributes to the sound development of the insurance market, in which protecting the rights of the insured and resolving of disputes arising between insurers and insured in accordance with applicable insurance regulations has a dominant position. The specific position of Ombudsman, the activities of whom not only contribute towards the dynamic development of an insurance market but also to its correct development, currently only exists in the Polish insurance market.

The development of the Slovak insurance market was also quite positive. Compared to the Polish insurance market, the biggest difference was in the loss ratio of life insurance. In Poland, values of the loss ratio were achieved above the recommended level of 60% in 2008 – 2012 and the highest value was achieved in 2012. The higher loss ratio was caused by an increase in the purchase of insurance contracts, but also by an increased number of cases of insurance fraud, which is an accompaniment to a worsened social-economic situation, excluding the natural expiry of insurance contracts. (Insurance fraud is not just typical for developing economies, but also for developed economies. Experts estimate that because of insurance fraud, premiums increased from 3% to 5%.)

Throughout the whole period, investment activity in SR reached the recommended levels over 100%, but the average evaluation of technical reserves at 9.05% indicates several problems in the investment activities of commercial insurance companies. The factors which largely influenced the results of investment activity mainly include low development of the financial market in SR, possibilities for evaluating funds up to 2006 only in the domestic financial market, regulation of the technical interest rate as well as the ECB base interest rate which influences profit from investment, and is currently one of the most abhorred risks for commercial insurance companies as important investors co-influencing the tempo of the growth of an economy.

The Ukrainian insurance market showed negative results in almost all measured parameters, except for the concentration of the insurance market and losses in life insurance. Written premiums is 2 Euros per capita which is 1 000 times less than the average in OECD countries, and 24 to 25 times less than in the countries of Central and Eastern Europe. There was also a high loss ratio in non--life insurance which is, in terms of ability to pay, an unsustainable situation during the whole period. In life insurance, the loss ratio is extremely low, which also confirms the underdevelopment of life insurance which, according to Osadec (2012, p. 15), indicates the distrust of citizens in the insurance market, unprofessional business activities of insurance entities and financial markets, high levels of corruption, as well as high interest rates in the banking market, which are currently still in the range of 10 – 20%.

Based on the above data, we can clearly say that the accession of the Slovak Republic and Poland to the EU positively influenced the development of national insurance markets, which have become a full part of the single European insurance market. The stable development of these two insurance markets may affect the application of Gender, on the basis of which the principle of non-discrimination by gender must be applied in the calculation of premiums, as well as the application of Solvency II, which will require additional resources to implement the activities of insurance companies, which can ultimately affect the price of insurance in both sectors.

The ambitions of the Ukrainian insurance market to reach an insurance rate of 5% in 2021 are almost unreal due to problems in legislation, institutional facilities, lack of money and distrust in the insurance market. Since 1984, when the insurance rate was 0.83%, it grew to 1.36% in 2011. An extremely difficult economic and social situation, malfunction of several important financial entities and all insurance markets, the third highest rate of corruption in the world, the loss of public confidence in the insurance market, as well as considerable social tension in society do not create the conditions necessary for the required growth of the insurance market in Ukraine.

The development of the commercial insurance industry will be influenced by several factors whose synergic effect may also cause unwanted negative development. Due to the nature of the insurance industry (taking risks and creating technical reserves), it will be influenced by the increased frequency of natural catastrophes as well as by the growth in the level of damage they cause. An exceptionally high risk which was recorded in the past five years is macroeconomic trends, not only around the world but also in the evaluated countries. Decreases in the European Central Bank's base interest rate, with the value of 0.25% as a historic minimum, also negative influences the dynamic development of the insurance industry. In the Slovak Republic, the technical interest rate will decrease from 2.5% to 1.9%, effective from 1 January 2014, which may result in a decrease in interest in classic capital insurance (in Poland the technical interest rate decreased from 4.26% in 2005 to 3.54% with effectiveness from 1 May 2012, and in Ukraine it is not yet regulated).

A serious problem may be caused by the continued decrease in the rate of inflation (some predictors are not even ruling out deflation) which will mainly influence the balance in life insurance which is a source of the 'long term finances' necessary for increasing investment activity in all economies. The risk of regulation has an exceptionally high impact and its negative influence is expected after the application of the long awaited Solvency II project. The co-influence of the mentioned risks, as well as other risks (investment performance, the quality of risk management, the growth in insurance fraud, the correctness of insurance mathematical estimates) will cause increased purchase of insurance contracts in life insurance and an increased number of cancellations of insurance contracts in non-life insurance which may result in disruption of the economical and financial stability of commercial insurance companies and, therefore, the entire commercial insurance industry as the most important stabilising factor of economic subjects, including states.

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