

LJUBLJANA SCHOOL OF BUSINESS

Proceedings of the 2nd International Scientific Conference

EASTERN EUROPEAN CONFERENCE OF MANAGEMENT AND ECONOMICS

Environmental Management and Sustainable Economic Development

May 29, 2020

**EECME 2020
Ljubljana 2020**

LJUBLJANA SCHOOL OF BUSINESS
(Slovenia)

**ODESSA INSTITUTE OF TRADE
AND ECONOMICS OF KYIV
NATIONAL UNIVERSITY OF
TRADE AND ECONOMICS**
(Ukraine)

**COLLEGE OF COMPUTER
SCIENCE AND BUSINESS
COMMUNICATIONS
EMPIRICA**
(Bosnia and Herzegovina)

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Katalogni zapis o publikaciji (CIP) pripravili v Narodni in univerzitetni knjižnici v Ljubljani

COBISS.SI-ID=18665219

ISBN 978-961-91021-9-0 (pdf)

INTERNATIONAL Scientific Conference Eastern European Conference of Management and Economics (2; 2020; Ljubljana)

Proceedings of the 2nd International Scientific Conference Eastern European Conference of Management and Economics: Environmental Management and Sustainable Economic Development, May 29, 2020 / [organizer] Ljubljana School of Business, [co-organizers] Odesa Institute of Trade and Economics of Kyiv National University of Trade and Economics (Odesa, Ukraine) and College of Computer Science and Business Communications EMPIRICA (Bosnia and Herzegovina); editors Lidija Weis, Viktor Koval, Katarina Aškerc. – Ljubljana: Ljubljana School of Business, 2020.

Publisher: Ljubljana School of Business

Tržaška cesta 42, 1000 Ljubljana

info@vspv.si

ISSN 2712-2522

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THE STATE AND THREATS OF THE FINANCIAL SECURITY OF THE INSURANCE MARKET OF UKRAINE

Abstract. *The article defines the concept of "financial security of the insurance market". The factors that influence the level of financial security, among which are: organizational, economic, personnel, political and legal. The analysis of the level of financial security of the insurance market of Ukraine during 2014-2018 was conducted by the degree of penetration and the share of insurance premiums of the three largest insurance companies. It is established that the financial security of the Ukrainian insurance market is at a dangerous level. Factor analysis of the factors affecting the profitability of the insurance market is conducted. On the basis of the conducted analysis, measures aimed at improving the level of financial security of the insurance market were proposed, namely: improvement of monitoring of the activity of insurers and the system of legal support, regulation, supervision and control over the activity of participants of the insurance market; amending legislative acts; development of requirements for the functioning of the system of internal control over the activity of insurers; improving the licensing procedure for insurers and enhancing the requirements for assessing their goodwill with a view to preventing the use of the insurance market to legalize proceeds of crime.*

Keywords: *financial security, insurance market, factor analysis, monitoring.*

Introduction.

The state of the insurance market is an important indicator that characterizes the economic development of any country. Insurance has a significant impact on the socio-economic development of society. The insurance market is a mechanism for protecting the tangible and intangible goods of society. Given the importance of insurance in the socio-economic development of the state, in the activities of economic entities and citizens, it is advisable to study in detail the status and problems of the development of the insurance market.

The current conditions of the insurance market are characterized by the following negative phenomena: lack of resources, capital outflow, accumulation of risks. In such circumstances, the study of the problems of ensuring the financial security of the insurance market is particularly relevant. The condition and problems of insurance market functioning have been investigated before. Determination of the level of financial security of the insurance market, its external and internal threats is devoted to the works of many domestic scientists, among which the works of I. Babets [1], O. Baranovsky [2], T. Hovorushko [3], O. Zhabinets [1], Y. Folders [6], O. Ruban [8] and others.

The purpose of the article is to investigate the concept of «financial security of the insurance market», to determine the level of financial security of the Ukrainian insurance market and to develop measures to ensure it.

The financial security of the insurance market and the factors that determine it.

The insurance market is an integral part of the financial market of Ukraine. Its successful development depends on expansion of insurance services, increase of their competitiveness, increase of requirements to the order of formation of activity of insurance companies, greater integration of the country in international structures, participation of the insurance market in solving the most important problems of economic development. Emerging financial crises adversely affect the financial security level of the Ukrainian insurance market.

Monetary policy also has a significant impact on the state of the Ukrainian insurance market. Its impact is manifested in the growth of loss of insurers, the reduction in the number of contracts on classic insurance, a sharp decrease in the solvency of insurance companies. Financial security of the insurance market is an important component of the economic security of the state. The state of insurance market safety is the main criterion for evaluating the performance of insurance companies and state regulatory bodies. Consider the existing approaches to the concept of «financial security of the insurance market» (Table1).

Table 1. Approaches to interpretation of the definition «financial security of the insurance market»

Author	Definition of «financial security of the insurance market»
Baranovsky O [2]	The financial security of the insurance market as a whole and of the specific insurance organization, in particular, should be understood as providing the insurance companies with financial resources that would allow them, if necessary, to compensate for losses caused by the contracts of their clients and to ensure the effective functioning
Babets I, Zhabinets O [1]	Security of the insurance market is a state of the insurance system, which ensures the formation of stable demand for insurance services, financial reliability of insurance organizations and their guarantee of payments under concluded insurance contracts.
Ruban O [7]	Financial security is an integral characteristic of the successful functioning of an insurance company. It is based on liquidity, solvency, financial soundness and characterizes the financial position of an insurance company in the long term
Govorushko T [3]	The financial security of the insurance market as a whole and of the specific insurance organization, in particular, is such a level of provision of insurance companies with financial resources that would allow them, if necessary, to compensate for the losses caused by the contracts of their clients and ensure the effective functioning
Papka O [6]	The financial security of the insurer considers the state (conditions) of operation in which access to financial resources and markets is available, provides himself and the insurer with a certain level of protection against internal and external financial threats and the proper efficiency of financial indicators.

The financial security of the insurance market is its financial condition, which is determined by stability at all stages of financial relations and contributes to its continued development.

Security market threats are most often viewed from the point of view of their occurrence - external and internal. Internal threats arise from the imperfect financial policies of insurance companies. This leads to inefficiencies in financial management and weakens the financial reliability of insurers and the safety of their operations.

External threats are caused by external factors to insurance companies. These include: rapid development of the globalization process; high degree of concentration of financial resources in international insurance markets and integration in the reinsurance sector; the interpenetration of the domestic and foreign policies of states that are increasingly dependent on the world's insurance finances; increased competition and conflict between states in the insurance industry [1].

The financial security level of the insurance market is influenced by many objective and subjective, internal and external factors, including:

- organizational and legal – lack of a clear state policy in the sphere of insurance; incomplete and inconsistent regulatory framework; inadequate level of state regulation and control over the insurance market;
- economic – low solvency of individuals and legal entities; high inflation;
- personnel – insufficient skills of employees;
- political and legal – the creation of the insurance market occurred in parallel with the development of regulatory support [8].

It is advisable to point out the low efficiency of the insurance market and therefore its financial security. For the national economy, insurance is not yet a fundamental instrument of regulation. As the place and role of the insurance complex in the national economy are not defined, the insurance market in Ukraine does not play an appropriate role in providing insurance protection to the subjects of the national economy.

The insurance market is one of the essential elements of the market infrastructure and financial system of advanced market economies. Quite often, according to international ratings, the level of economic development of a country is determined by the level of insurance business organization, which in many countries is ahead of the industrial and banking sectors. In addition, in the course of their activities, insurance companies ensure the formation of effective market mechanisms for attracting investment resources into the national economy. In the current dynamic conditions of globalization and integration of Ukraine into the European and world community, there is an objective need to deepen the research of problems of ensuring the financial security of the insurance market in Ukraine and to find ways for their perspective directions of functioning.

Assessment of the financial security level of the Ukrainian insurance market.

The financial security of the insurance market according to methodological recommendations is determined by two indicators:

- the level of penetration of insurance - characterizes the ratio of total gross premiums to GDP;
- the share of premiums received by the three largest insurance companies in the total amount of premiums written (excluding life insurance). This is an indicator of the concentration of the insurance market in premiums.

Let's calculate the indicators of the financial security level of the Ukrainian insurance market according to the specified method (Table 2).

Table 2. Financial security indicators of the Ukrainian insurance market during 2014-2018 years

Indication	Standard	Normative value	Years				
			2014	2015	2016	2017	2018
1. The level of penetration of insurance, %	critical	1	1,69	1,50	1,48	1,46	1,39
	dangerous	2					
	unsatisfactory	4					
	satisfactory	6					
	optimal	8					
2. Share of premiums written by the three largest insurance companies in total premiums written (excluding life insurance), %	critical	30	15,6	14,7	18,9	21,33	15,03
	dangerous	20					
	unsatisfactory	15					
	satisfactory	12					
	optimal	10					
3. The level of security of the insurance market by the degree of penetration			dangerous	dangerous	dangerous	dangerous	dangerous
4. The level of security of the insurance market is the share of the premiums of the three largest insurance companies			dangerous	unsatisfactory	unsatisfactory	dangerous	unsatisfactory

Source: made by data [4,5]

The results obtained indicate a dangerous level of financial security for the Ukrainian insurance market. The main reasons for this level of financial security of the insurance market are its dependence on global economic events, political arrangements, state subsidy programs, political instability, population demographic structure, its income and other factors. The key to achieving the safe development of the insurance market is the state supervision of the activities of insurance organizations.

Conducting factor analysis of the profitability of the insurance market.

Correlation-regression analysis reveals factors that influence the level of financial security of the insurance market. When constructing a regression model, it is first necessary to determine the resultant index. The result of the insurance company is determined by the profit margin. The main purpose of the insurer's activity is to achieve the company's profitability and to search for reserves for improving the level of financial security. One of the most widely used methods of modeling the profit of an insurance company is the construction of multifactor regression models of the profit of the insurer. The use of correlation-regression analysis is the optimal method of modeling profit. It allows us to simulate the process of formation of any kind of profit, taking into account a set of the most significant factors of influence of the researcher, to analytically investigate the quality of the obtained model, the significance of the factors included in the model, to obtain an interval forecast of the level of profitability for the next period. The method allows to correct the number of factors included in the model depending on the amount of available actual data without losing the model of adequacy. This is a substantial argument for this simulation method.

The purpose of regression analysis is to determine the quantitative relationship between the dependent random variables. A correlation coefficient is used to determine the relationship between the variables and the resulting value. If the correlation coefficient in absolute value is close to 1,

then the linear model is used for the constructed dependence. In other cases, more complex nonlinear models (polynomial and exponential) are used. The correlation coefficient is close to 1. It is advisable to build a linear model.

Taking into account the results obtained, seven independent factors were selected for further consideration and inclusion in the model: payments reimbursed by reinsurers; assets of insurance companies; insurance reserves; net insurance premiums; level of net payments; the amount of reinsurance premiums and the amount of paid-up share capital.

Based on the actual data on the dynamics of the selected factors and the resulting indicator, a linear multivariate regression model was constructed using the built-in Regression tool of the MS Excel analysis package. The model was evaluated based on the results of the insurance market for 10 years – 2009-2018.

Correlation analysis is the degree of determination of the relationship between two random variables X and Y. A correlation coefficient is used as a measure of such a relationship. The correlation coefficient is estimated by sampling the volume of n related observation pairs (xi, yi) from the total set X and Y. Linear correlation coefficient is a parameter that characterizes the degree of linear relationship between two samples.

Table 3. Dynamics of factors of influence on profit of insurers of Ukraine during 2009-2018 years

Years	Profit of insurance companies, mln. UAH	Payments offset by reinsurers, mln UAH	Assets of insurance companies, mln UAH	Insurance reserves, mln. UAH	Net insurance Premiums, mln UAH	Net payout rate, %	Amount of paid-up share capital, mln. UAH	The amount of reinsurance premium, UAH million
	Y	X 1	X 2	X 3	X 4	X 5	X 6	X 7
2009	-957,1	967,9	41970,10	10141,30	12658,00	50	14876,00	242,1
2010	1235,4	508,6	45234,60	11371,80	1 327,70	44,2	14429,20	192,3
2011	4287,7	731,6	48122,70	11179,30	17970,00	26,2	14091,80	429,1
2012	6049,6	537,8	56224,70	12577,60	20277,50	24,5	14579,00	279,8
2013	5718,6	486,7	66387,50	14435,70	21551,40	21,2	15232,50	324
2014	3215	640,9	70261,20	15828,00	18592,80	26,3	15120,90	12,9
2015	-452,7	1345,80	60729,10	18376,30	22354,90	34	14474,80	38,1
2016	689,2	1233,20	56075,60	20936,70	26463,80	32,3	12 662	40,1
2017	234,7	1208,20	57381,00	22864,40	28494,40	36	12 831	46,1
2018	251	2 459,00	63 493,30	26 975,60	34 424,30	36,1	12 637	48,4

Source: made by data [4]

The correlation coefficient changes from -1 to 1. If the calculations yield a value greater than +1 or less than -1, therefore, there is an error in the calculations. When the correlation coefficient is 0, there is no linear relationship between the variables.

The correlation matrix reveals the relationship between different data (Table 4). As can see from Table 4, the largest relationship is observed between Y and X5 – 0,82. Minor impact on insurers' profits is X4 (-0,18). The relation between these quantities is inversely proportional (as evidenced by the negative value of the coefficient), but strong. Concerns about pairwise correlation between variables X4, X3 are of concern.

Table 4. Correlation matrix of the relationship of profits of insurance companies with the main indicators of its performance

	<i>Y</i>	<i>X1</i>	<i>X2</i>	<i>X3</i>	<i>X4</i>	<i>X5</i>	<i>X6</i>	<i>X7</i>
<i>Y</i>	1,00							
<i>X1</i>	-0,60	1,00						
<i>X2</i>	0,29	0,20	1,00					
<i>X3</i>	-0,41	0,83	0,54	1,00				
<i>X4</i>	-0,18	0,78	0,55	0,95	1,00			
<i>X5</i>	-0,82	0,27	-0,66	-0,04	-0,24	1,00		
<i>X6</i>	0,45	-0,72	0,01	-0,79	-0,78	-0,17	1,00	
<i>X7</i>	0,61	-0,54	-0,46	-0,73	-0,51	-0,23	0,44	1,00

Source: designed by the author

This indicates that the values have a correlation dependence. In our case, this multicollinearity will also have an effect on the variable *Y*. The dependence of the profits of insurance companies on the factors studied is represented as a formula:

$$Y = a_1 + a_2X_1 + a_3X_2 + a_4X_3 + a_5X_4 + a_6X_5 + a_7X_6 + a_8X_7, \quad (1)$$

Y – profit of insurance companies;

*X*₁ – payments are offset by reinsurers;

*X*₂ – insurance companies assets,

*X*₃ – insurance reserves;

*X*₄ – net insurance premiums,

*X*₅ – the level of net payments;

*X*₆ – the value of paid-up share capital;

*X*₇ – the amount of reinsurance premiums.

The econometric model of the net profit's dependence on gross profit and administrative expenses will look like this:

$$Y = 23768,18 - 1,17 \cdot X_1 + 0,49 \cdot X_2 - 1,77 \cdot X_3 + 0,8 \cdot X_4 + 167,59 \cdot X_5 - 3,0 \cdot X_6 + 2,87 \cdot X_7 \quad (2)$$

Model analysis showed that *Y*'s increase by 1.17 points is due to a decrease of *X*₁ by 1 point. Also, the *Y*'s increase by 0.49 points occurs as *X*₂ grows by 1 point. Also, the *Y*'s decrease by 1.77 points *Y* occurs when *X*₃ increases by 1 point.

The dependence of *Y* on *X*₁ is resistant and characterized by high density (plural correlation coefficient – 0,82). The model's adequacy assessment was evaluated on the basis of the Fisher test (table 5). Fisher's calculated criterion is greater than the tabulated value at given significance levels, which indicates the model's adequacy.

Table 5. Adequacy assessment of the model of dependence of insurance companies' profit

The source of variation	The number of degrees of freedom	The sum of squares	The average sum of squares	Fisher's F-criterion	The significance of Fisher's F-criterion
Regression	7	58313921	8330560	8,98	0,10
Remainder	2	1854028	927013,9		
The total	9	60167949			

The above calculation confirms the model's adequacy, which emphasizes the obtained significance level of the Fisher's criterion (approaching zero). The constructed model is statistically reliable, important both overall and by individual regression coefficients. Indeed, the calculated value of the Fisher's F-criterion $F = 8.98$ exceeds the critical value found for the significance level $\alpha = 0.05$ and the number of degrees of freedom $k_1 = 6$, $k_2 = 38$ ($F_{kr} = 0.123041571$). Therefore, with 90% confidence ($((1 - \alpha = 1 - 0,10) \times 100)$) it can be stated that the found dependencies between Y and all factors of the equation are significant, important, reliable.

The step-by-step correlation and regression analysis made it possible to choose from the whole variety of candidate factors the ones that have the most significant impact on the absolute rate of profit of insurance companies – Y. The results of the statistical research and the constructed regression model made it possible to conclude that the obtained equation can be used for the purposes of factor economic analysis and forecasting.

The conducted analysis of the Ukraine's insurance market functioning showed a downward trend in the number of insurance companies, an increase in gross and net premiums and payments during the 2014-2018, which can be considered a positive phenomenon. It is found that the reduction in the number of insurance companies is related to the implementation of requirements to increase insurance reserves. Not all insurers can provide savings the foreseen amounts and, therefore, are forced to leave the market. However, this fact can be considered positive, since reliable, competitive, solvent insurers, capable of providing quality services and making payments remain on the market.

Recommendations for improving the financial security of the insurance market.

Despite of the positive trends in the functioning of the insurance market, its financial security level causes concern. The assessment of the security level of the insurance market by the share of insurance premiums of the three largest insurance companies and by the degree of penetration showed a low security level. This requires the development of measures to ensure it. To improve the financial security of insurers, the following measures should be taken:

- to improve monitoring of insurers' activities and strengthen control over insurers' compliance with solvency requirements, financial stability, the amount of net assets, share capital and persons holding a significant proportion of insurers' capital;
- to amend the legislative acts in order to satisfy the claims of insurers among other creditors and to exclude from the liquidation mass of the insurance company insurance reserves for all types of insurance;
- to develop requirements for the functioning of the internal control system over the activities of insurers and improve the analysis of statistical information on insurance and reporting of insurers and insurance intermediaries; to guarantee the protection of the legal rights of citizens who own insurance policies to receive insurance payments;
- to promote concentration of the insurance market by amending the legislation on the procedure for the formation and raising of requirements for the size of authorized capital, guarantee fund and free reserves of insurance companies.

In addition, it is necessary to improve the procedure for licensing the activities of insurers, to increase the requirements for formation sources of authorized capital and financial position of the founders (participants) insurers and persons having a significant part of the authorized capital of

insurers, as well as to assess their business reputation. These measures are necessary to prevent the use of the insurance market for the legalization of proceeds of crime.

Increasing the level of financial security of insurance companies will be the development and implementation of appropriate compensation schemes. In this connection, it is necessary to clearly define the procedure for making compensation payments, in particular to determine the day on which the policyholder is entitled to receive such payments.

Another direction that will contribute to improving the financial security of the insurance sector is to ameliorate the system of legal support, regulation, supervision and control over the activity of insurance market participants. First of all, it is necessary to ensure the formation of effective state regulation and supervision in the field of insurance, taking into account the principles and standards recommended by the International Association of Insurance Supervisors and to ensure the further adaptation of the Ukrainian legislation in the field of insurance to the legislation of the European Union.

To do this, it is necessary to introduce in the insurance market a system of supervision, which provides the maximum accounting in the activities of insurers such parameters as the level of risk, the adequacy of assessment by the insurer of the real level of risk, the quality of the internal management and control system for risks, appropriate accounting and financial reporting of deficiencies in the activities of insurers in the early stages of their development.

Conclusions.

According to the results of the study of the current state of financial security of the Ukrainian insurance market, the following conclusions can be drawn:

- the financial security of the insurance market should be understood to be its financial condition, which is determined by the stability at all stages of financial relations and contributes to its continued development.
- the financial security threats to the insurance market are mainly classified into internal and external. Internal threats are mainly caused by weak financial and economic policies of insurance market participants; errors, wrongful actions of structural units and individual specialists; lack of control over the storage of financial information; mistakes in financial management. External threats caused by insurance companies' external factors: rapid development of the globalization process; high degree of financial resources concentration in international insurance markets; increased competition and conflict between states in the insurance market.
- analysis of the insurance market security level can show that its level is low. The growth rate of insurance penetration is a positive trend, because the more its meaning, the higher level of insurance market financial security. The growth rate of the three largest insurance companies' insurance premiums share in the total amount of insurance premiums (excluding life insurance) contrary suggests reducing of the insurance financial security level.
- the analysis of the insurance companies' profits relationship with the main indicators of its activity: payments, offset by reinsurers; assets of insurance companies; insurance reserves; net insurance premiums; level of net payments; the amount of reinsurance premiums and the amount of paid-up share capital. It is found that the greatest inverse relation of insurers profit exists with the level of net payments.

- the positive trends in the development of the insurance market are an increase in the amount of insurance premiums and insurance payments, an increase in the level of capitalization of the insurance market by increasing the size and others.

- insurance companies take the following measures to ensure financial security against internal threats, namely: ensuring their own information security, establishing a clear scheme of action of insurance units and chief specialists and monitoring their keeping; deepening the financial analysis of clients before concluding an insurance contract and fraud preventing using the latest technologies (use of anti-ratings information, publications on financial frauds, etc.); creation, maintenance and use of «black lists» of unscrupulous clients; carrying out work in the direction of increasing the insurance culture of the population; development of a general strategy of insurance organization activity and establishment of financial management priorities aimed at achieving a secure level of its activity; constant forecasting of possible threats to an insurance company activity; ensuring the balance of the insurance bag, the tariff, investment and reinsurance policies of the insurer; substantiation and realization of the most rational forms, methods and ways of creation, improvement and development of the financial security system of an insurance organization; ensuring continuous control and management of financial security; compliance with the appropriate level of an employees training of the insurance company in compliance with all established rules aimed at ensuring financial security.

- in order to increase the insurers productive activity and to ensure the financial security of the insurance market, it is advisable to: restore confidence in the insurance industry among the general public; develop an effective system for protecting the rights of consumers of insurance services; to bring the provisions of current legislation in line with the requirements of the European Union.

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