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# THE IMPACT OF THE INSURANCE MARKET ON THE FINANCIAL SECURITY OF UKRAINE

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## ABSTRACT

The need to ensure the state's financial security in the conditions of the growing number of global challenges, risks, dangers and threats as a prerequisite for restoring and preserving the stability of the national economic system was substantiated. The purpose of the article is to assess the impact of the insurance market and key indicators of its development on the level of Ukrainian financial security in order to determine the priority areas of its provision. The dependence of the state financial security level on a set of factors that have a close connection and mutual influence was studied. War is a massive structural shock to the Ukrainian economy since the total losses of the Ukrainian economy because of war, according to the general estimates of the Ministry of Economy and KSE, considering both direct losses and indirect losses (decrease in GDP, cessation of investment, the outflow of labour, additional spending on defence and social support, etc.) range from \$564 billion to \$600 billion. It was established that the growing number of negative security factors determine the impact of the insurance market on the financial, economic and social stability of society because an effectively functioning insurance market enables minimizing threats to individuals, society and the state as a whole. The mutual influence of the insurance market on the state's financial security is studied, which is manifested in the possibility of maintaining financial stability and stimulating economic development at the macro level through the accumulation of a significant amount of investment resources. The study of methodological and practical aspects of the impact of the insurance market on the state's financial security in the context of global hybrid threats was updated. The identification and assessment of the impact of threats associated with the state and trends in the insurance market of Ukraine were carried out using an indicator approach based on the Guidelines for assessing the Ukrainian economic security level. The limitation of the range of indicators used in it to assess the impact of insurance development on the level of financial security is proved. It is proposed to expand the list of indicators of the development of the insurance market, taking into account international experience. On the basis of correlation and regression analysis, the most significant factors of financial security in the field of insurance were identified. The results obtained can be used to substantiate the priorities for the insurance market development in the formation of the concept of Ukrainian financial security.

**Keywords:** insurance market, financial system, financial security of the state, security of the non-banking financial sector, threat, insurance penetration, insurance density

**JEL Classification:** G22, E66, H56

## INTRODUCTION

In the context of Ukraine's European integration, ensuring national security and all its components, the implementation of national economic interests, including in the financial sector, is of particular relevance. The current economic crisis and numerous hybrid threats caused by the military aggression of the Russian Federation have determined the need for the formation and implementation at the macro level of a set of measures to protect financial interests at different levels of the social hierarchy (state, region, business, individual, society), thus, the problem of financial security and the prerequisites for its formation in a fundamentally new business environment needs an in-depth study.

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State financial security is an important characteristic that reflects the state of its financial system, and is the fundamental basis for the economic and national security of the country as a whole. Ensuring a sufficient level of state financial security is one of the main tasks in formulating strategic goals for the financial system development in the face of challenges and threats. It depends on many factors, which may differ depending on the economic development of the country.

The financial system of each country has its own characteristics, determined by the formulated channels for the movement of financial resources of all economic agents, the predominance of various financial intermediaries, which is manifested in the concentration of financial flows on stock exchanges, or, conversely, the situation in which banks act as the main financial intermediaries. At the same time, insurance organizations play an important role, the impact of which on economic development in each country can vary from quite high to low.

As one of the key elements of the financial services market, the insurance sector is central to the trade and development system. It is the effective functioning insurance sector that plays a decisive role in economic development and the formation of financial security, not only at the macroeconomic level but also from the point of view of the activities of individuals and enterprises, because it provides insurance protection for legal entities and individuals from the consequences of insured events, significantly reduces public spending. budget for compensation for damage caused by emergencies and/or natural disasters. Also, it enables to protect businesses from unforeseen risks, and provide social support to the population. In addition, the insurance sector reduces uncertainty and the impact of large losses by encouraging new investment, innovation and competition. As international experience shows, the impact of the insurance market development on the financial security of the state is especially important in the face of a growing number of risks and numerous hybrid threats.

## LITERATURE REVIEW

Theoretical concepts of state financial security, its components, factors and prerequisites for ensuring are researched in the works of both foreign and Ukrainian scientists [1; 2; 3; 4]. The methodological foundations for assessing the level of state financial security are formed in the works [3; 5; 6; 7] and approved at the state level in Ukraine in the current regulations [8; 9]. However, considering the changes in the national and global economy, the emergence of global hybrid threats, there is a need to review the system of indicators of state financial security, in particular, in the direction of introducing additional indicators and replacing unrepresentative ones. Thus, in [10], rating, comparative and structural indicators are proposed, considering structural changes in the state's external and internal environment, which ensures the complexity of the assessment, considering complex hierarchical relationships in the field of state financial security.

In works [11; 12] the relationship between individual components of the state financial security has been analysed, and the most problematic indicators have been identified. Despite the fact that this approach does not enable to determine the risk zone to which each of the financial security indicators belongs, since each of them has limits on its acceptable values, it enables to assess the impact of the insurance market indicators as part of the security indicators of the non-banking financial sector on the level of state financial security.

An analysis of the level of scientific interest in financial security issues on a global scale carried out using the Google Trends program has shown that it is the problems of the insurance market development as a component of the financial sector that are the subject of increased attention of scientists. Thus, in works [13; 14; 15; 16] the theoretical and methodological aspects of ensuring the insurance market security and the importance of insurance development for economic growth have been discussed, but the study of the impact of insurance market security indicators on the financial security of the state has not been carried out. Therefore, it is extremely necessary to assess the impact of the state and trends of the insurance market on the level of Ukrainian financial security, considering the lack of solid scientific research on this issue and the strengthening of global threats.

## AIMS AND OBJECTIVES

The aim of the work is to develop methodological and practical recommendations for assessing the impact of the insurance market and the level of state financial security. Achieving the set goals involves solving problems of studying the theoretical foundations of the functioning and influence of the insurance market on the state financial security; analysis of trends in the Ukrainian insurance market; interpretation of the results obtained to assess the impact of the insurance market development on the integral indicator of the Ukrainian financial security using the method of correlation and regression analysis; determination of priorities for the Ukrainian insurance market development to increase the level of the state financial security.

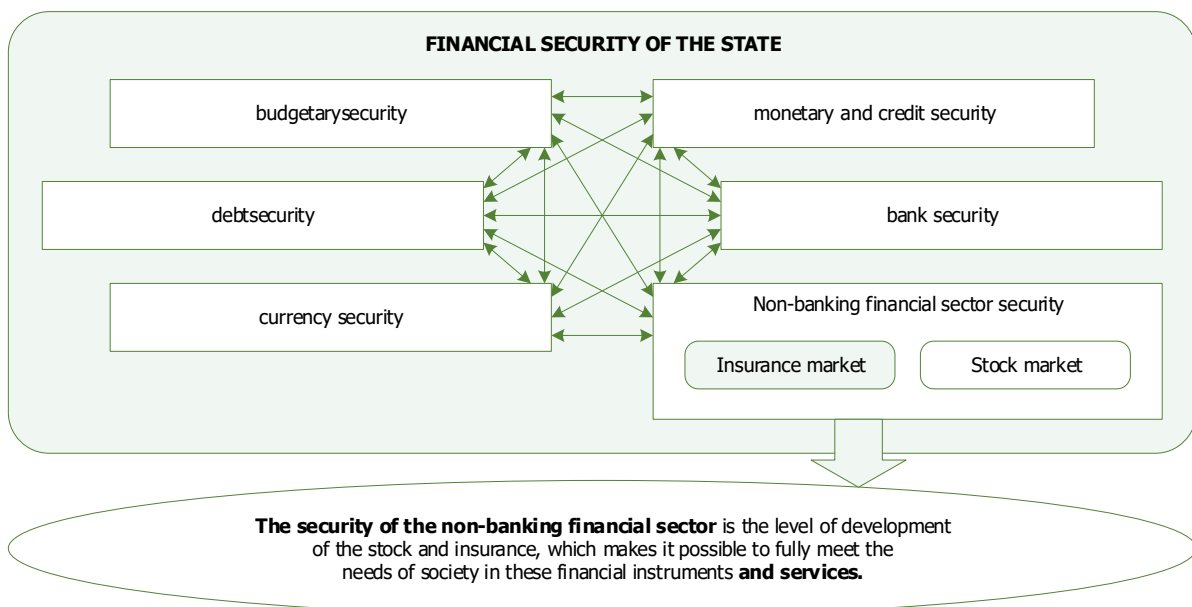
## METHODS

In the process of solving the tasks set in the work, the methods of time series analysis, comparative analysis and graphical analysis have been used to study the current state and trends in the insurance market of Ukraine. To calculate the level of state financial security, the method of quantitative integral assessment has been used. To assess the relationship between indicators of the insurance market development and the level of Ukrainian financial security, the method of correlation-regression analysis and modelling has been applied.

## RESULTS

The economic realities of today very strongly reflect the urgency of the problem of ensuring sustainable and effective socio-economic development, creating a system for effectively countering internal and external challenges and threats, overcoming economic crises, raising living standards and evolving the system of international economic interaction. The totality of these priority areas of Ukrainian economic modernization is closely related to economic security, the fundamental basis of which is financial security. It is the main criterion for the state's ability to pursue an independent financial and economic policy in accordance with its national interest, and it is due to the ability of state institutions to take counter-measures in response to the consequences of global financial crises, deliberate actions of the subjects of global financial and economic relations (states, transnational corporations, etc.), the influence of shadow structures on the economic and socio-political system of the country, the spread of crime and offences in the financial sector, the massive outflow of funds outside the real sector of the economy.

Financial security as a component of the state economic security according to the Methodological recommendations for calculating the level of Ukrainian economic security, approved by the order of the Ministry of Economic Development and Trade of Ukraine dated October 29, 2013 No. 1277 [8] includes, in turn, six structural components: budgetary, debt, monetary, foreign exchange, banking security and the security of the non-banking financial sector (financial security of the insurance and stock markets) (Figure 1). It means that, according to the current regulatory legal acts, the insurance market and indicators of its development determine the level of security of the non-banking financial sector in the structure of the state financial security.



**Figure 1. The insurance market in the system of the state financial security.**

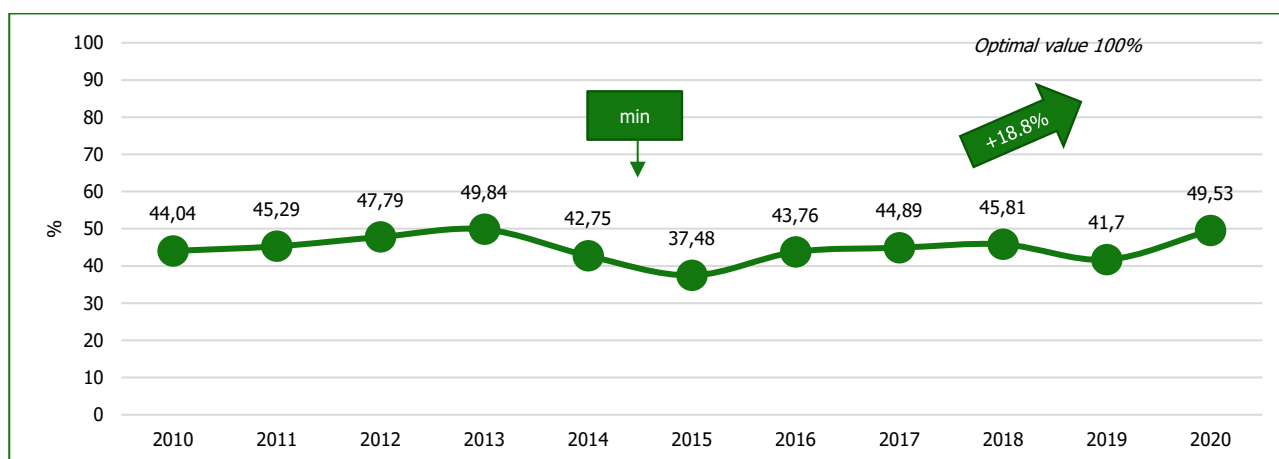
The insurance services market is inherently a very important element of the market infrastructure and the state financial system as a whole. When assessing the level of economic development of the world countries according to international ratings, in many cases, a significant percentage of influence is given precisely to the level of an insurance organization, since in most countries the functioning of this sphere is characterized by high profitability (sometimes exceeding the results of the industrial and banking sectors). In addition to this, insurers in the course of their activities stimulate the accumulation of capital and the establishment of mechanisms for attracting it and turning it into investment resources that can be

invested in the national economy, thus activating the real sector of the economy and contributing to socio-economic growth [14].

In addition, transformation processes in most cases are accompanied by economic risks, and internal and external threats for both individual companies and enterprises, and the state as a whole [21]. This is the key element that determines the impact of the insurance market on the financial, economic and social stability of society and, accordingly, directly on the financial security of Ukraine.

Today, the conditions for the functioning of the Ukrainian financial and economic sector, which have developed under the influence of global threats, and economic and social challenges of martial law, determine the urgent need to ensure the state's financial security at the proper level. The level of financial security directly depends on the national economy state; it is extremely sensitive to its recession and diverse crisis phenomena, and, at the same time, is actively stimulated by positive changes. For example, the crisis of 2014-2015 led to the maximum decline in the level of Ukrainian financial security over the past decade, and further economic and social recovery was reflected in a record increase in the security of the Ukrainian financial sector (Figure 2).

As can be seen from the calculations, the average level of financial security during 2010-2020. was unsatisfactory and amounted to 45% of the optimal value. This is due to the existence of a large number of threats with the maximum level of influence, in particular, in the field of debt security. In addition, the constant deficit of the state budget, and the insufficient development of long-term investment lending to the economy and the stock market have become the reasons for such low values. As a result of the presence of structural problems, the financial system of Ukraine was not able to adequately withstand the challenges of the armed aggression of the russian federation and the temporary occupation of a part of the Ukrainian territory and found itself in a state of crisis for several years.



**Figure 2. Dynamics of the level of financial security of Ukraine during 2010-2020.**

At the end of 2020, the level of Ukrainian financial security amounted to 49.53% of the optimal value and was in a dangerous state, however, the information provided by the NBU in the financial stability report confirmed that the level of financial security was sufficient to ensure that the financial sector performs its functions properly and successfully passes the coronavirus crisis [18]. At the same time, this value was almost the highest since 2010, and a significant improvement in the index occurred in 2020 (an increase of 18.8% compared to 2019).

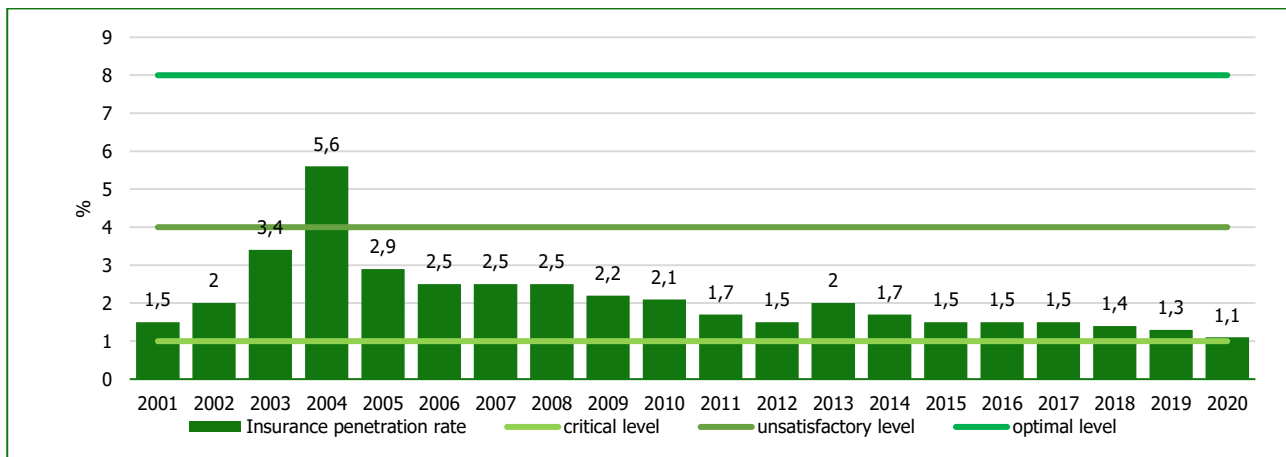
Due to the lack of necessary data, it is impossible to calculate the level of financial security of Ukraine in 2021-2022. However, in our opinion, its level increases by the end of 2021, but not as much as expected, because according to the preliminary estimate of the NBU [18], the Ukrainian economy grew by 3.2% in 2021, but this indicator is not able to cover the decline, recorded in the crisis year of 2020. This increase is explained by the fact that most of the economic activities after the peak of the pandemic resumed their full work and increased the volume of production.

Considering the emergence of a number of negative factors caused by the full-scale war of russia against Ukraine, such a situation in the state certainly leads to a rapid decline in the level of economic, and hence financial security in 2022. According to IMF forecasts, the Ukrainian economy shrinks by more than a third (-35%) this year, which is perhaps the deepest drop in its history. According to government forecasts, Ukraine's losses incurred as a result of the russian invasion (direct infrastructure losses, GDP decline and losses due to its reduction) reach trillions of USD [19].

In general, it should be noted that the values of financial security indicators close to their maximum permissible value may indicate an increased threat to the socioeconomic stability of society, and exceeding the limit value indicates that the society has entered a zone of instability and social conflict, that is a real threat to the state economic and financial security.

At the same time, indicators of the non-banking system, in particular, indicators of the development of the insurance market, show a negative trend. Therefore, it is advisable to carry out a comprehensive analysis of security indicators of the Ukrainian insurance market, which are used not only by the current methodology of 2013 but also defined in the methodology of 2007 and are widely used in international comparisons. To obtain reliable results, a long period of time is covered, namely 20 years - for the period 2001-2020. The results obtained characterize the level of the Ukrainian insurance market security as part of the state financial security as critically low since most of the indicators are in the danger zone. A detailed analysis of indicators of the state financial security, related to the development of the country's insurance market, is appropriate.

One of the key indicators that evaluate the impact of insurance on the state's socio-economic development is the indicator of insurance penetration (the ratio of the volume of attracted insurance premiums to GDP). Its value at the end of 2020 is only 1.1% and has approached the critical limit of 1% (Figure 3). At the same time, in European countries, it is 5.0%, on average in the world - 6.1%, and in Ukraine during the study period, it never reached the optimal value (8%), being at the level of 1-3% with unstable dynamics. Only in 2004, its value moved into the category of "satisfactory level" and amounted to 5.63%. It should be noted that this situation has developed despite the fact that for most of the analyzed period, growth was observed in the main indicators of the insurance market (gross premiums, formed reserves, total assets, etc.). The program of Comprehensive Program for the Development of the Financial Sector until 2020 [20] provided for an increase in this indicator to 7%, but to date, this task has not been completed.



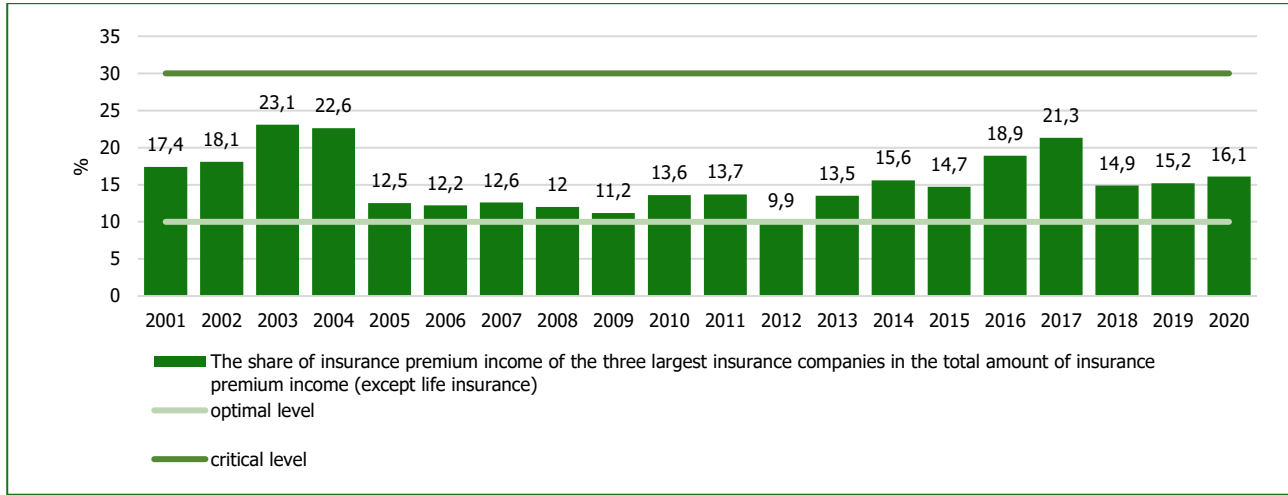
**Figure 3. Dynamics of the insurance penetration rate in 2001-2020.**

It is obvious that an increase in the share of insurance premiums in GDP entails an increase in the level of development of the insurance services market due to a larger redistribution of GDP through the mechanism of insurance relations [14]. Thus, the situation in which the values of the insurance penetration indicator are at such a low level poses a threat to the activity and security of not only the insurance market but also the state economic system as a whole, since under such conditions the insurance sector loses the ability to stimulate economic development. and its role in the socioeconomic relations of the state becomes minimal [16, p. 28].

The share of insurance premiums received by the three largest insurance companies in the total volume of insurance premiums (except for life insurance) also does not correspond to the optimal value of 10%, amounting to 16.1% by the end of 2020 and approaching the danger zone, which indicates a significant concentration in the insurance market. It, on the one hand, can contribute to a more dynamic development of the market in the context of globalization, ensure its stability in a crisis period, stimulate the attraction of significant investments, and, on the other hand, lead to an uneven distribution of the insurance segment among a small group of insurers, which in turn leads to a situation in which each of them becomes an absolute monopolist in a particular direction.

As can be seen from Figure 4, during 2003-2004, as well as in 2017, the studied indicator crossed the limit of the danger zone and reached 21-23%, and further dynamics increased during 2018-2020. was unfavourable and pointed to the monopolization of the market, which certainly had a negative impact on the level of Ukrainian financial security. In this case, there is a real threat of unfair competition in the insurance market, the manifestation of destabilizing factors influencing

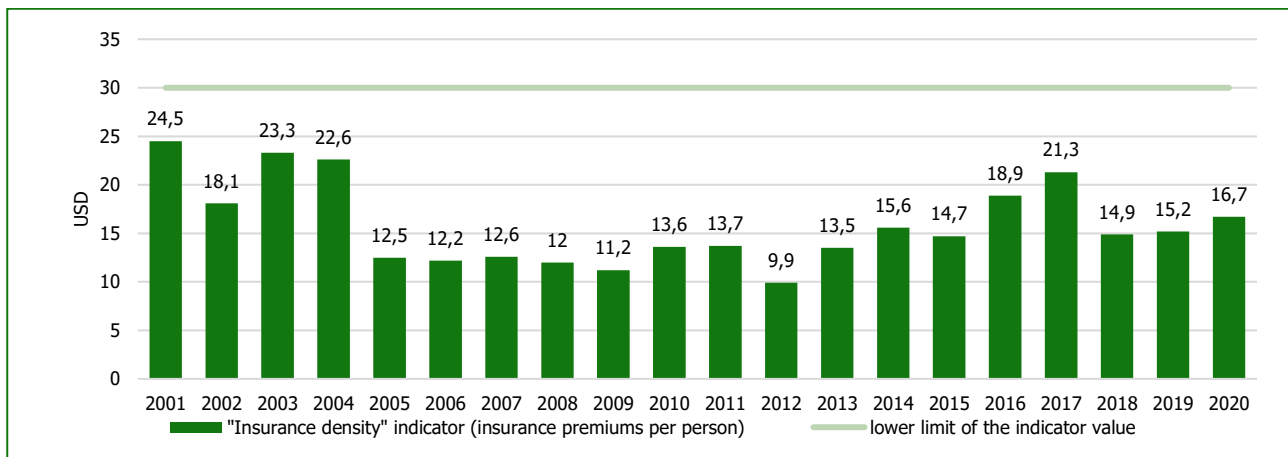
its development and further growth in the level of monopoly. Due to the potential for monopolists to set their own “rules” and their desire to provide only those services that are the most profitable and bring the least costs, the lack of free competition can provoke the establishment of unreasonable tariff rates and the appearance of a shortage for certain types of insurance services, as well as an uneven distribution of insurance services and premiums among existing insurers. In addition, such conditions for the functioning of the insurance market prevent the emergence of new business entities, and then slow down the development of a transparent insurance market and negatively affect its financial security and the efficiency of the market economy mechanism as a whole [17, p. 79].



**Figure 4. Dynamics of the share of insurance premiums received by the three largest insurance companies in the total volume of insurance premiums (except for life insurance) in 2001-2020.**

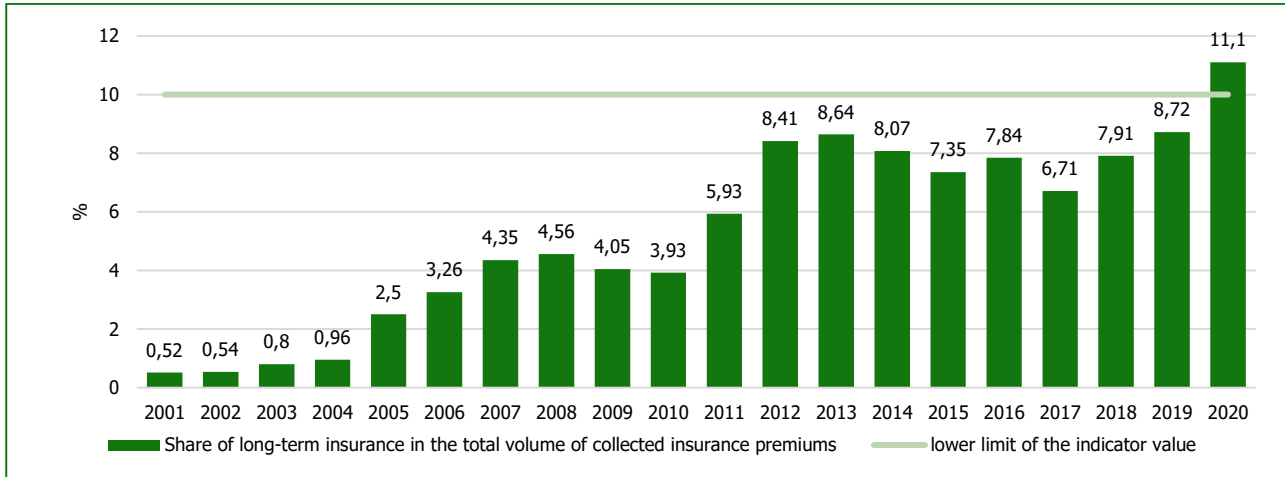
In order to get a more complete picture of the current situation in the insurance market, the assessment of only these two indicators is not sufficient, therefore, it is advisable to analyze the indicators, the calculation of which was provided for by the preliminary version of the Methodological recommendations for calculating the level of economic security of Ukraine (2007).

The “insurance density” indicator during 2001-2020 was in the zone of critically low values (Figure 5), approaching the lower limit only in 2001, 2003-2004, and 2017 (\$21-24), thereby characterizing the demand for insurance services. The highest indicator was in 2001 (USD 24.5), the lowest one was in 2012 (USD 9.9). This situation may be caused by the low solvency of the population, its ignorance in the field of insurance, insufficient level of market development and it carries the threat of a decrease in the efficiency of the insurance market in Ukraine, since it directly depends on the insurance behaviour of individuals and legal entities and their confidence in insurance, because it is they are the source of the formation of most of the capital of insurers, ensuring the flow of insurance premiums. The situation with confidence in insurance in Ukraine is complex [22], so this factor can be considered one of the main factors in the study of the impact on the level of insurance market development and the sources of threats to its financial security.



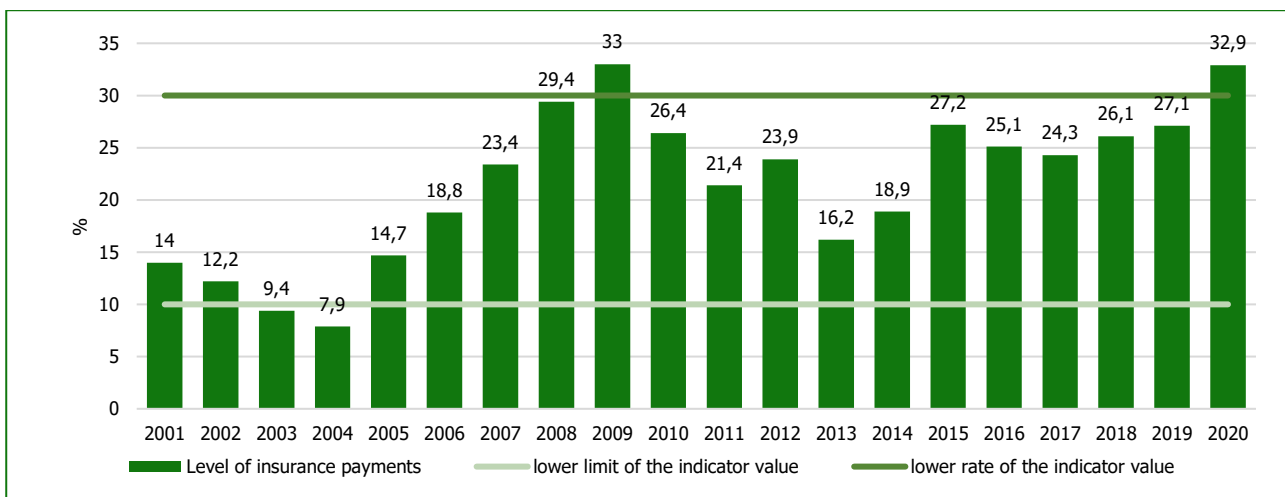
**Figure 5. Dynamics of the “insurance density” indicator in 2001–2020.**

An equally important indicator is the share of long-term insurance in the total volume of collected insurance premiums. In the study period, it is 1-11% (Figure 6) with a standard of 30%, which is in an absolutely dangerous zone. Its value confirmed the fact of the slow pace of insurance investment capital formation, low social protection of citizens, and the presence of distrust in the activities of insurers. Such trends may be caused by the insufficient income of the population (due to inflationary processes, a crisis period for the state economy or the general standard of living), and then its insolvency and lack of desire to make a long-term investment in insurance protection.



**Figure 6. Dynamics of the share of long-term insurance in the total volume of collected insurance premiums, 2001-2020.**

In terms of the level of insurance payments, it should be noted that the situation is better compared to previous indicators (Figure 7). So, in 2009 and 2020, it exceeded the limit value (30%) and amounted to 33% and 32.9%, respectively. And in the intervals of 2007-2008, 2010-2012, and 2015-2019, it was at a satisfactory level (21-29%). This situation indicates that insurance companies are effectively fulfilling their functions of covering risks. However, an imperfection in the process of assessing losses, frequent cases of denial of payments negatively affect consumer confidence. This situation affects the loss of significant amounts of financial resources due to the outflow of customers, the weakening of the reputation of both individual business entities and the market as a whole and, accordingly, has a negative impact on financial security.



**Figure 7. The level of insurance payments in Ukraine during 2001-2020.**

The most satisfactory values among indicators for assessing the level of financial security were demonstrated by the share of premiums owned by non-resident reinsurers, which, with a standard of 25% or less, has been consistently low since 2004, fluctuating within 4-11%. It indicates a low dependence of the national insurance market on the foreign one. According to the values of this indicator, the insurance market's financial security is at a fairly high level. However, with the activation of foreign reinsurance companies, problems with the solvency of domestic insurers may arise, which, of course, has a negative impact on the processes of insurance payouts. Thus, as mentioned above, it reduces the financial security level.

In general, the main indicators of the insurance market did not change significantly, despite the decrease in a travel insurance activity, and positive dynamics were revealed in some areas due to the diversification of insurance products and the introduction of new methods for promoting insurance services. However, the value of insurance market security indicators shows a low level of its development, which is a source of a number of threats and has a negative impact on the level of financial security in Ukraine.

Today, the main source of threats to the security of the Ukrainian economic system is the war unleashed by the Russian Federation, which led to a humanitarian, economic, demographic, and infrastructural crisis and harm from which contributes to a significant slowdown in the economic growth not only of Ukraine but also of other participants in the world market.

The threats to the economic and financial security of Ukraine posed by the current military conflict include a reduction in GDP due to a decrease in exports, taxes paid, the profitability of economic entities on the domestic market, restrictions on the activities of customs control, a sharp outflow of the population abroad and the risk of its non-return, shortage of funds to the budgets of all levels, lack of financial resources in the banking system, etc.

It is extremely important in the study of state financial security to identify the main factors affecting its level. Since, as evidenced by international experience, the insurance market development has a significant impact on economic growth and ensuring the state's financial security, it is advisable to study the relationship between the level of financial security in Ukraine and the main indicators of the insurance services market development.

To accomplish this task, the method of correlation and regression analysis has been used, the main purpose of which is to identify the relationship between phenomena and processes (dependent variable and one or more independent variables) by measuring the degree of dependence between two variables (correlation) and demonstrating how one variable affects another (regression). This particular type of analysis helps to get a quick and easy result of the direction and strength of the relationship between two or more numerical variables, to foresee, optimize or explain the numerical reactions between them (how x affects y).

In the first stage, indicators have been selected that sufficiently characterize the degree of the insurance market development and enable it to really demonstrate its impact on financial security. These indicators include insurance market security indicators, namely: the insurance penetration rate, the "insurance density" indicator, the share of long-term insurance in the total volume of collected insurance premiums, the level of insurance payments, the share of premiums related to non-resident reinsurers and the share of insurance premiums received by three the largest insurance companies in the total volume of insurance premiums (except for life insurance), characterizing the level of competition in the insurance market.

The next step is to develop a correlation-regression model, for which the Statistica program has been used. The selected study period is 11 years, from 2010 to 2020. The initial data for the analysis are presented in Table 1.

**Table 1. Initial data for conducting a correlation-regression analysis of indicators of the development of the insurance market and the level of financial security of Ukraine during 2010-2020.**

Year/Index	Level of financial security of Ukraine, %	Insurance penetration rate (insurance premiums to GDP), %	Index of "insurance density" (insurance premiums per person), USD	The share of long-term insurance in the total amount of collected insurance premiums, %	The level of insurance payments, %	The share of premiums belonging to non-resident reinsurers, %	The share of insurance premium income of the three largest insurance companies in the total amount of insurance premium income (except life insurance), %
	Y	X1	X2	X3	X4	X5	X6
2010	44,04	2,13	13,6	3,93	26,4	4,3	13,6
2011	45,29	1,74	13,7	5,93	21,4	5,2	13,7
2012	47,79	1,52	9,91	8,41	23,9	5,7	9,9
2013	49,84	1,97	13,5	8,64	16,2	5,7	13,5
2014	42,75	1,69	15,6	8,07	18,9	5,7	15,6
2015	37,48	1,5	14,7	7,35	27,2	8,5	14,7
2016	43,76	1,48	18,9	7,84	25,1	11,3	18,9
2017	44,89	1,45	21,3	6,71	24,3	7,8	21,3
2018	45,81	1,39	14,9	7,91	26,1	6,1	14,9
2019	41,70	1,33	15,2	8,72	27,1	6,2	15,2
2020	49,53	1,08	16,7	11,1	32,9	8,1	16,1

It is formed a correlation matrix considering all the factors indicated in Table 1. As can be seen, the results shown in Table 2 demonstrate the occurrence of multicollinearity due to such factors as the "insurance density" indicator and the share of insurance premiums received by the three largest insurance companies in the total volume of received insurance premiums (except for life insurance) - the correlation coefficient is more than 0.7.

**Table 2. Correlation matrix based on the values of insurance market security indicators.**

Variable	Correlations (identifiers)						
	Insurance penetration rate (insurance premiums to GDP), %	Index of "insurance density" (insurance premiums per person), USD	The share of long-term insurance in the total amount of collected insurance premiums, %	The level of insurance payments, %	The share of premiums belonging to non-resident reinsurers, %	The share of insurance premium income of the three largest insurance companies in the total amount of insurance premium income (except life insurance), %	Level of financial security of Ukraine, %
	X1	X2	X3	X4	X5	X6	Y
X1	1,000000	-0,365088	-0,718745	-0,652554	-0,546353	-0,334141	0,011164
X2	-0,365088	1,000000	0,058890	0,211979	0,638369	0,998185	-0,165050
X3	-0,718745	0,058890	1,000000	0,233232	0,356548	0,021023	0,365898
X4	-0,652554	0,211979	0,233232	1,000000	0,354784	0,175699	-0,138959
X5	-0,546353	0,638369	0,356548	0,354784	1,000000	0,629692	-0,215520
X6	-0,334141	0,998185	0,021023	0,175699	0,629692	1,000000	-0,193328
Y	0,011164	-0,165050	0,365898	-0,138959	-0,215520	-0,193328	1,000000

This situation means that there is a linear relationship between these variables, which does not enable us to fully assess the impact of each factor on the performance indicator. Accordingly, there is a need to exclude one of them in order to free from multicollinearity. It can be done by building a table with standardized beta coefficients -  $b^*$  (Table 3).

**Table 3. Results of the regression analysis of the first (initial) correlation matrix.**

N=11	Regression Summary for Dependent Variable: The level of financial security of Ukraine, % (identifiers) $R=0,71656071$ $R^2=0,51345926$ Adjusted $R^2=$ $F(6,4) = 0,70355$ $p<0,66704$ Std. Error of estimate: 3,9309					
	$b^*$	Std. Err. Of $b^*$	b	Std. Err. of b	t (4)	p-value
Intercept			57,2716	51,38745	1,11451	0,327508
Insurance penetration rate (insurance premiums to GDP) (X1)	0,0133	1,00118	0,1600	12,05041	0,01328	0,990040
Index of "insurance density" (insurance premiums per person) (X2)	13,6035	12,27539	16,2275	14,64320	1,10819	0,329923
The share of long-term insurance in the total amount of collected insurance premiums (X3)	0,0543	1,00469	0,1072	1,98220	0,05406	0,959481
The level of insurance payments (X4)	-0,5856	0,86410	-0,4651	0,68628	-0,67774	0,535113
The share of premiums belonging to non-resident reinsurers (X5)	-0,1633	0,55615	-0,2943	1,00225	-0,29367	0,783620
The share of insurance premium income of the three largest insurance companies in the total amount of insurance premium income (except life insurance) (X6)	-13,5631	12,44632	-16,2964	14,95453	-1,08973	0,337084

It is chosen as an indicator with a lower beta coefficient - the share of insurance premiums received by the three largest insurance companies in the total volume of received insurance premiums (except for life insurance). Multicollinearity was eliminated and the result of the regression analysis is in Table 4.

**Table 4. Regression analysis results of the insurance market security indicators impact on the financial security in Ukraine after multicollinearity elimination.**

N=11	Regression Summary for Dependent Variable: The level of financial security of Ukraine, % (identifiers) R=0,60746713 R <sup>2</sup> =0,36901632 Adjusted R <sup>2</sup> = F (5,5) = 0,58483 p<0,71481 Std. Error of estimate: 4,0039					
	b*	Std. Err. of b*	b	Std. Err. of b	t (5)	p-value
Intercept			16,09963	35,47818	0,453789	0,668998
Insurance penetration rate (insurance premiums to GDP) (X1)	0,645144	0,831351	7,76512	10,00635	0,776020	0,472828
Index of "insurance density" (insurance premiums per person) (X2)	0,237551	0,504453	0,28337	0,60176	0,470909	0,657535
The share of long-term insurance in the total amount of collected insurance premiums (X3)	0,921001	0,625298	1,81708	1,23367	1,472899	0,200767
The level of insurance payments (X4)	0,158541	0,539283	0,12591	0,42830	0,293986	0,780582
The share of premiums belonging to non-resident reinsurers (X5)	-0,399317	0,521766	-0,71962	0,94029	-0,765319	0,478630

Summing up the results, the equation of the obtained regression model is formed using the obtained program Statistics:

$$Y = 16,1 - 0,645X_1 + 0,238X_2 + 0,921X_3 + 0,159X_4 - 0,399X_5 \quad (1)$$

Thus, it has been found that the level of financial security in Ukraine as a performance indicator is more dependent on such indicators of the insurance market financial security as the indicator of insurance penetration and the share of long-term insurance in the total volume of collected insurance premiums.

To determine the degree of influence of the two most significant indicators, it is calculated the Student's t-test for each of them using the formula 2.

$$t_i = \sqrt{\frac{(r(j_1 * j_2))^2 * (PT - 2)}{1 - (r(j_1 * j_2))^2}}, \quad (2)$$

where  $t_i$  – Student's t-test;  $(r(j_1 * j_2))^2$  – correlation coefficient;  $PT$  – degrees of freedom.

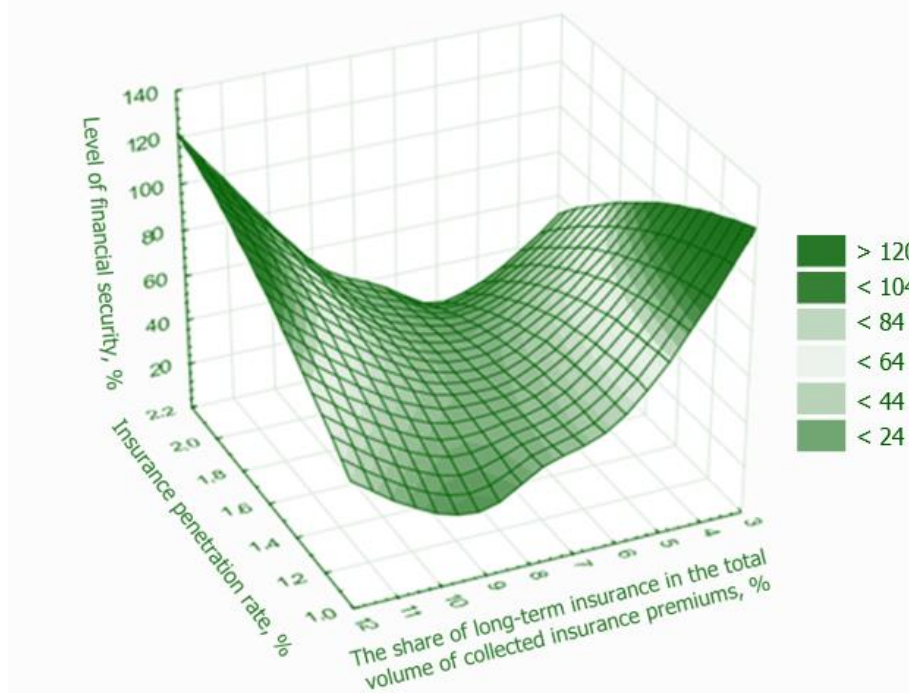
Having determined that the correlation coefficients for the insurance penetration rate and the share of long-term insurance in the total volume of collected insurance premiums are 0.011 and 0.366, respectively, Student's t- tests for each of these indicators can be calculated:

$$t_1 = \sqrt{\frac{(0,011)^2 * 23}{1 - (0,011)^2}} = 0,053$$

$$t_2 = \sqrt{\frac{(0,366)^2 * 23}{1 - (0,366)^2}} = 1,886$$

As it can be seen, according to the calculations, with an increase in the value of the insurance penetration indicator as the most important criterion in assessing the insurance market activities by 1%, the level of financial security in Ukraine increases by 0.05 percentage points.

To understand the method and degree of influence, a graph of the dependence of the level of financial security on the two most significant indicators has been modelled (Figure 8).



**Figure 8. Dependence of the level of financial security on the insurance penetration rate and the share of long-term insurance in the total volume of collected insurance premiums.**

It has been established that the assessment of Ukrainian financial security is significantly related to the assessment of the level of penetration and the share of long-term insurance in its structure. A graphic representation of the dependence of the integral assessment of the Ukrainian financial security on the most significant indicators that are indicators of the insurance market development suggests that ensuring the state financial security requires focusing on increasing the level of insurance penetration, as well as increasing the share of long-term insurance.

## DISCUSSION

The growing influence of global risks and threats makes it necessary to increase the level of the state's financial security in order to ensure the stability of the national economy against the destructive influence of destabilizing factors. In order to maintain the appropriate level of state financial security, the development of the insurance market is of great importance, which contributes to the preservation of social stability, the accumulation of financial resources for investment in the real sector of the economy, the stabilization of the national economic system in crisis conditions. The list of the non-banking financial sector safety indicators in the subsystem of financial safety indicators used in the Methodological recommendations for calculating the level of economic security of Ukraine is limited and needs revision, but even their in-depth analysis makes it possible to determine the priorities of ensuring the financial security of Ukraine in the direction of the insurance market development. In contrast to existing studies, a quantitative assessment of the influence of the main indicators of the Ukrainian insurance market development on the state's financial security was provided using the method of correlation-regression analysis and modelling. It has been proved that the priority direction for increasing the level of Ukrainian financial security is the growth of the insurance penetration rate and the share of long-term insurance in the total volume of collected insurance premiums, while an increase in the level of the insurance market concentration can lead to a significant deterioration in the level of the state financial security.

Before the introduction of martial law, the insurance market of Ukraine functioned in the conditions of constantly emerging challenges and threats, however, with greater adaptation and focus on maintaining stability, and the processes of regulating its activities, unfortunately, did not fully meet international standards. And in a state of war, an increase in the insurance penetration rate and the share of long-term insurance becomes an extremely problematic issue, since the forced restrictions introduced with the start of a full-scale invasion, material losses incurred due to the physical destruction of part of the insurers' property, loss of personnel of individual companies, reduced demand for insurance services and the general undermining of the Ukrainian economic system provoked a significant slowdown in the insurance market development, and also led to a situation in which the most urgent task was to keep insurance companies afloat, maintaining their

ability to make insurance payments under insurance contracts as the main activity, therefore such actions as increasing the values of indicators of the insurance market financial security, although they do not lose their extremely important significance, however, temporarily fade into the background.

## CONCLUSIONS

All this indicates that in the conditions of war and the post-war period, the role and importance of studying the imperatives of effectively strengthening financial security, and protecting Ukrainian financial interests from internal and external, real and potential threats, is increasing. Based on the study, the state of insurance market development has a significant impact on financial security. The successful development of the insurance market in modern conditions directly depends on the level of diversification of insurance services, increasing their competitiveness, and popularization among the population, as well as creating conditions under which as many insurance companies as possible could fully meet the requirements of the regulator: changing legislation, implementing programs to stimulating the development of insurers or clearing the market of "weak" units.

The existence of a highly developed insurance market and an effective system of state regulation on it is the key to providing financial guarantees to individuals and business entities, which has a positive impact on social stability in society and the growth of investment opportunities for insurers and therefore contributes to the formation of the financial and economic security of the state in a global environment. challenges and threats and further integration of Ukraine into international structures.

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## УПЛИВ СТРАХОВОГО РИНКУ НА ФІНАНСОВУ БЕЗПЕКУ УКРАЇНИ

Обґрунтовано необхідність забезпечення фінансової безпеки держави в умовах зростаючої кількості глобальних викликів, ризиків, небезпек і загроз як передумови відновлення та збереження стійкості національної економічної системи. Метою статті є оцінка впливу страхового ринку та ключових показників його розвитку на рівень фінансової безпеки України задля визначення пріоритетних напрямів її забезпечення. Досліджено залежність рівня фінансової безпеки на макrorівні від комплексу чинників, що мають тісний зв'язок та взаємовплив. Війна є масштабним структурним шоком для економіки України, оскільки загальні втрати економіки України через війну, за спільними оцінками Мінекономіки та KSE, ураховуючи й прямі втрати, і непрямі втрати (зниження ВВП, припинення інвестицій, відтік робочої сили, додаткові витрати на оборону та соціальну підтримку тощо), коливаються від \$564 млрд до \$600 млрд. Установлено, що зростаюча кількість негативних чинників безпеки детермінує вплив страхового ринку на фінансову, економічну й соціальну стабільність суспільства, адже саме ефективно функціонуючий страховий ринок дозволяє мінімізувати загрози для окремих осіб, суспільства та держави в цілому. Досліджено взаємний вплив страхового ринку на фінансову безпеку держави, що проявляється в можливості підтримки фінансової стабільності та стимулювання економічного розвитку на макrorівні через акумулювання значного обсягу інвестиційних ресурсів.

Актуалізовано дослідження методичних та практичних аспектів впливу страхового ринку на фінансову безпеку держави в умовах глобальних гібридних загроз. Проведено ідентифікацію та оцінювання впливу загроз, пов'язаних зі станом і тенденціями на страховому ринку України з використанням індикаторного підходу на основі Методичних рекомендацій щодо оцінювання рівня економічної безпеки України. Доведено обмеженість кола показників, які використовуються в ній для оцінки впливу розвитку страхування на рівень фінансової безпеки. Запропоновано розширити перелік показників-індикаторів розвитку страхового ринку з урахуванням міжнародного досвіду. На основі кореляційно-регресійного аналізу виявлено найвагоміші за впливом чинники фінансової безпеки у сфері страхування. Отримані результати можуть бути використані для обґрунтування пріоритетів розвитку страхового ринку при формуванні концепції фінансової безпеки України.

**Ключові слова:** страховий ринок, фінансова система, фінансова безпека держави, безпека небанківського фінансового сектора, загроза, проникнення страхування, щільність страхування

**JEL Класифікація:** G22, E66, H56