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WAYS OF PRESERVING INVESTMENT ACTIVITY OF INSURANCE COMPANIES DURING WARTIME

The article analyzes the key indicators of domestic insurance companies and assesses the state of the insurance market in Ukraine in the pre-war period. An analysis of innovations in the insurance market regulation system of Ukraine was carried out, namely the adoption of the Law of Ukraine "On Amendments to Certain Legislative Acts to Improve Functions on State Regulation of Financial Services Markets" and the Law of Ukraine "On Insurance". The dynamics of insurance companies' activity in the insurance market of Ukraine in the pre-war period and during the war is studied. The analysis of directions of placement of assets and reserves of insurance companies is carried out. The interaction of the insurance market with the regulator of the non-banking services market by the National Bank of Ukraine during the imposition of martial law in the country is analyzed.

The risk standards for the placement of insurance assets and reserves by insurance companies in Ukraine in the pre-war period have been studied and recommendations for regulatory changes during martial law have been developed. The mechanism of state regulation of investment activity of insurance companies by the Solvency II directive is analyzed, the problems of the Ukrainian approach are outlined and the methods of regulation of investment activity during martial law are offered. Measures to stabilize the national insurance market and preserve the investment activity of Ukrainian insurance companies are proposed. It is concluded that the use of SCR (Solvency Capital Requirement) for investment

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activities of insurers in Ukraine, in particular, when calculating investment risks on several models, the main of which is the so-called “Standard formula” given the correlation between investments types.

Keywords: *investment activity, insurance company, insurance reserves, functions of investment management during martial law, state regulation of investment activities of the insurance market in wartime*

Introduction. In the modern transformational process of world economic development, the main task of the state is to ensure the economic stability of institutions to shocks as the basis of the national development of each country and economic and trade associations. One of the most important in the process of redistribution of funds is the financial sector, the activity of whose institutions is significantly influenced by macroeconomic imbalances and internal economic changes. An integral part of the financial sector is the market of insurance services, the activity of which in the period of martial law deserves special attention.

The Ukrainian market of insurance services remains one of the most capitalized among non-banking financial markets and ranks second in the market of non-banking services. Thus, the amount of assets of the insurance market in 2021 amounted to UAH 64.21 billion, compared to UAH 190.71 billion of assets of financial companies, the insurance market accounts for 25% of the assets of the non-banking services market (73% - financial companies) and 3% of total assets in the financial sector (88% - bank assets, 8.7% - financial companies). As of January 31, 2022, 146 insurance companies were operating in Ukraine: 133 provided non-life insurance and 13 provided life insurance. Since February 24, 2022, the beginning of the full-scale invasion of the Russian Federation on the territory of Ukraine and the introduction of martial law, the composition of the insurance market has practically not changed: as of April 30, 2022, the number of market participants was 132 non-life insurers and 13 life insurers (145 in total).

At the same time, significant changes in the economy and in general in the life of the Ukrainian people, which occurred with the beginning of the full-scale military aggression of the Russian Federation, naturally affect the activity, in particular, the investment activity of insurance companies. Therefore, it seems appropriate to study the state of the insurance market in the pre-war period, analyze its resistance to crisis phenomena, as well as the possibilities of further functioning in wartime, which is the main **goal** of this article.

Presenting main material. Characterizing the pre-war state of the insurance market, it is worth noting that its activity was influenced by several powerful factors. The first of them is the COVID-19 pandemic, which has had a significant negative impact on the activities of insurance companies. The main problem that arose due to the pandemic at the international level was the refusal of insurers to compensate policyholders for losses, because in insurance contracts that fully comply with all regulatory acts of regulators (in particular, regulators of the insurance market in the USA, Great Britain, countries of the European Union, Japan, China and other leading countries of the world) and Solvency II norms, the condition of coverage is clearly stated - material damage. The risks of the pandemic and the government's application of restrictions on the activities of economic entities did not fall under the category of "material damage" referred to in insurance contracts, so both insurers and reinsurers did not consider them a reason for making payments. This saved insurance companies' money, but significantly undermined the confidence of policyholders in the insurance industry [1].

Against the background of significant difficulties in the activities that insurance companies experienced during the pandemic, the transformation of the relevant legislation that took place during this period further increased the tension in the market. In particular, with the adoption of the Law of Ukraine "On Amendments to Certain Legislative Acts Regarding the Improvement of Functions of the State Regulation of Financial Services Markets" [2], the so-called "split" took place - the liquidation of the National Commission for the Regulation of Financial Services Markets and the distribution of powers for the regulation of the financial market between by the National Bank and the National Securities and Stock Market Commission. Decentralization of powers regarding regulation of the insurance market, although it is the right step from the point of view of improving the activity of the industry, at the same time, in the short term, it brought some instability to the activity of insurance companies, related to adaptation to the new administration and regulation.

The adoption of the Law of Ukraine "On Insurance" No. 5315 on November 18, 2021 also had a destabilizing effect on the activities of insurance companies in the short term. The law takes into account the key requirements of the legislation of the European Union, which Ukraine is obliged to fulfill in accordance with the Association Agreement with the EU, as well as the principles of the International Association of Insurance Supervisory Authorities (IAIS). It normalizes the regulation of relations in the field of insurance, defines the general legal principles for the implementation of insurance activities, the provision of intermediary services and is aimed at strengthening the protection of the rights and legitimate interests of clients, including consumers, by establishing requirements for the management system, the solvency of insurers, and branches of insurers- non-residents on the territory of Ukraine and their disclosure of information, establishes requirements for the procedure for conclusion, service and execution of insurance and reinsurance contracts, regulates the issue of information provision of insurance and reinsurance contracts and actions preceding their conclusion, as well as issues of state regulation and supervision in the field of insurance. Despite the fact that the expediency of adopting such a law in Ukraine has been ripe for a long time, the very adoption caused the need for internal reorganization and adaptation of regulations for insurance companies, which caused an ambiguous reaction of some representatives of the insurance market.

Let's highlight the main problems of the specified law, which cause concern in the insurance market.

1. The law contains various indirect provisions, namely, instead of clear requirements for insurance business entities, it is noted that "specific requirements are established by regulatory acts of the regulator." The absence of a clear definition of rules in the law creates prerequisites for further manipulations by the relevant regulator and the possibility of their repeated changes.

2. The method of reserving and capital requirements remains unchanged in the law, the norms of which do not meet the modern needs of the insurance market. According to the current reserving methodology, almost all insurers are in a situation where the calculation according to the formulas in the methodology leads to a significant over-reserving of funds.

3. For small and medium-sized insurance companies, it no longer makes economic sense to operate according to the new requirements stipulated by the said law. Because according to the new norms of the law, the owners (ultimate beneficiaries, shareholders) need to create cash reserves that exceed not only their annual payments, but also the annual receipts of payments.

To analyze the impact of destabilizing factors on the activity of the insurance market in the pre-war period, it is advisable to study the dynamics of changes in the number of insurance companies over the past six years (Fig. 1). In the period 2017-2021, Ukraine observed a trend towards a significant reduction in the number of participants in the insurance market. In our opinion, it is appropriate to consider this trend in terms of two sub-periods: from 2017 to 2018 - when the number of companies decreased due to the economic situation of the insurance market, and from 2019 to February 23, 2022 - when changes began in the regulation of the insurance market, stricter regulatory and legal norms have started to work. As for the mechanism of exit from the insurance market of Ukraine, until 2020, insurance companies left the market exclusively on their own initiative, and from 2021 - mainly due to NBU influence measures due to non-compliance with new regulatory norms.

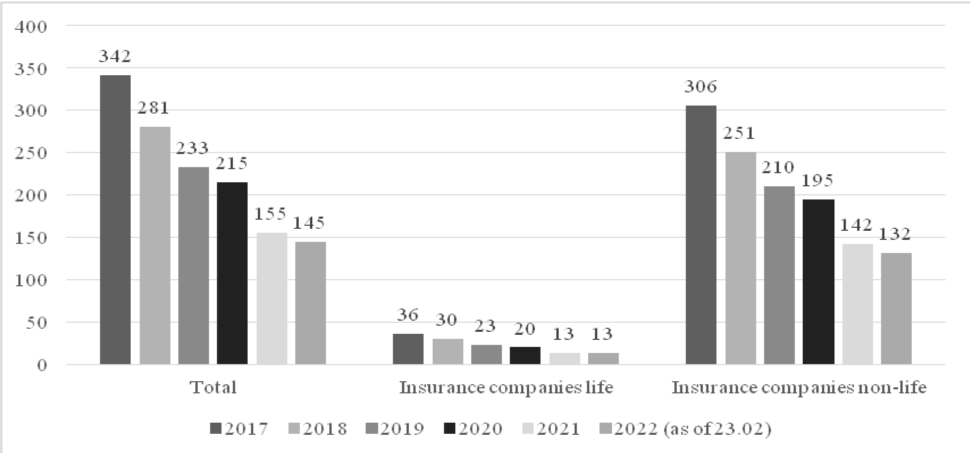

Figure 1. Dynamics of changes in the number of insurance companies over time, 2017-2022, units

Source: compiled by author based on data from the National Financial Service Commission and the NBU for relevant periods.

Since the declaration of martial law in Ukraine, the number of participants in its insurance market has remained unchanged - 145. And, given the relaxation of the NBU's legal norms and regulatory standards of the insurance market during martial law, it can be assumed that in the near future this number will not will decrease.

On April 8, 2022, the National Bank of Ukraine held a meeting with participants in the insurance market, where they discussed their most pressing issues during martial law and worked out ways to resolve problems, in particular, by improving the regulatory framework. The Board of the NBU has already approved changes to the Rules for the organization of statistical reporting submitted to the NBU under the conditions of a special period, approved by the Resolution of the Board of the NBU dated December 18, 2018 No. 140 (as amended). The National Bank of Ukraine postponed the deadline for non-banking financial institutions to provide information and documents.

The National Bank continues its work on solving the painful problems of insurers during martial law. Currently, the main directions are:

- reduce the tax burden on insurance companies;
- to ensure the possibility of transferring insurance payments abroad in foreign currency;
- additionally, relax regulatory requirements for insurers and postpone implementation, in particular IFRS 17 "Insurance Contracts", for the duration of martial law;
- to extend the deadlines for implementing part of the provisions of the laws "On Insurance" and "On Financial Services and Financial Companies";
- to increase the limit according to the European protocol and provide opportunities to issue insurance cases not only based on originals, but also based on copies of documents [3].

As work on the adaptation and functioning of the insurance industry continues, it can be assumed that insurance companies will be able to carry out their activities and, accordingly, finance investment projects, fully continuing their activities during martial law.

Due to active hostilities on the territory of Ukraine, the preparation and submission of NBU reports was delayed and as of June 4, 2022, statistical data for the I and II quarters of 2022 are not available. Accordingly, we propose to consider the indicators of the insurance industry according to the latest available statistical data and make calculations relative to the pre-war indicators. Total insurance premiums collected by 133 companies for 2021 amount to UAH 49.71 billion (Fig. 2).

Gross insurance premiums received by insurers for insurance and reinsurance of risks from policyholders and reinsurers in 2020 amounted to UAH 45.18 billion, which is UAH 7.82 billion less compared to 2019 and UAH 4.18 billion less compared to 2018 (Fig. 2). In our opinion, the trend of decreasing insurance premiums is due to the impact of the COVID-19 pandemic and the uncertainty of regulatory and legal acts. The COVID-19 pandemic has significantly reduced the insurance market during lockdown periods, which in turn has led to a reduction in insurance payments. The change in regulatory acts and regulators caused a shock to the insurance market due to the uncertainty of clear requirements for the insurance market. In particular, the insurance market felt mistrust of the NBU as a result of the previous reform of the banking sector of Ukraine and its subsequent "cleansing".

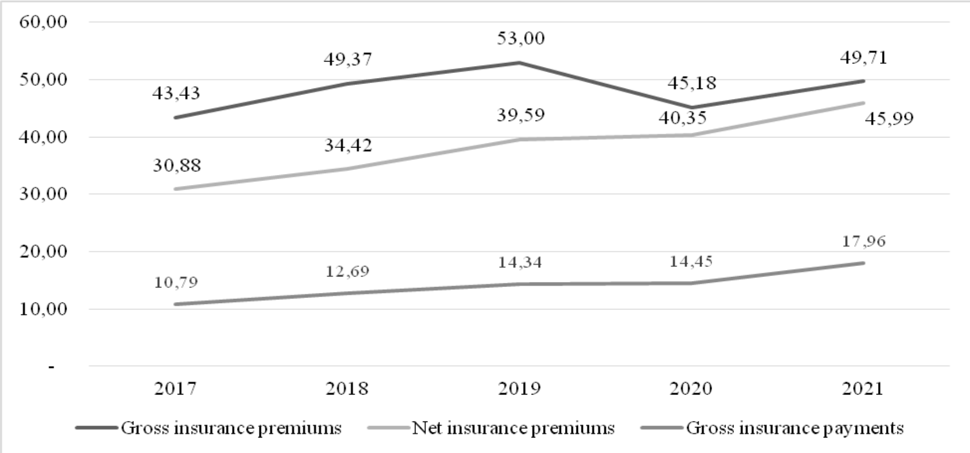

Figure 2. Financial indicators of insurance business activities, billion UAH

Source: constructed by the author based on data from the National Financial Service Commission and the NBU for relevant periods.

The main financial indicators of insurance companies during 2017-2021 are characterized as follows (Fig. 2):

- a noticeable decrease in gross insurance premiums;
- increased insurance payments;
- by increased net insurance premiums.

Thus, for 2021, net insurance premiums (gross insurance premiums minus the share of insurance premiums paid to resident reinsurers) amount to UAH 45.99 billion, which is UAH 5.64 billion more than in 2020. Net insurance premiums for 2020 amounted to UAH 40.4 billion, or 89.3% of gross insurance premiums. Net insurance premiums for 2019 amounted to UAH 39.6 billion, or 74.7% of gross insurance premiums. The volume of gross insurance premiums for 2020 decreased by 14.75% compared to 2019, and compared to 2018, the decrease was 8.47%. Net insurance premiums in 2020 increased by 1.93% compared to 2019 and by 17.21% compared to 2018.

Gross insurance payments for 2021 amounted to UAH 14.45 billion, which is UAH 3.22 billion more than in 2020. The amount of gross insurance payments for 2020 was UAH 14.5 billion, the level of net payments - 35.8%. Gross insurance payments for 2020 increased by 0.79% (113.57 million UAH), compared to the same period of 2019, they increased by 17.6 billion UAH, or by 13.89%.

Insurance reserves for 2021 (Fig. 3) amount to UAH 36.56 billion, which is UAH 2.63 billion more than in 2020. From 2017 to 2021, the reserves of insurance companies, despite the changes noted in the pre-war period, are constantly are increasing, which indicates the growth of capitalization of the insurance industry, in particular: for the period of 2017-2018 - by UAH 4.11 billion; during 2018-2019 - by UAH 2.58 billion, or 9.58%; for the period 2019-2020 - by UAH 4.63 billion, or by 16.67%.

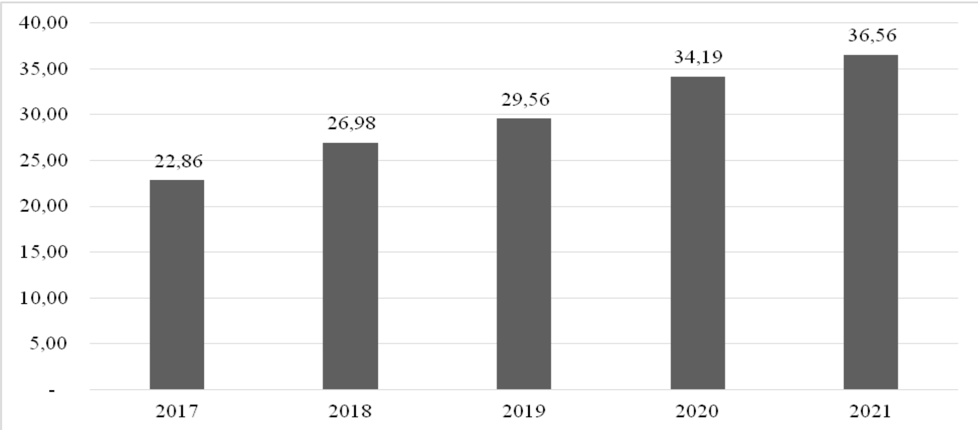

Figure 3. Insurance reserves of insurance companies, *billion UAH*

Source: compiled by author based on data from the National Financial Service Commission and the NBU for relevant periods.

From the given data, it can be concluded that at the beginning of the war, the domestic insurance market had a sufficiently strong safety margin of insurance reserves. However, fluctuations in the exchange rate and loss of property by citizens due to military operations, which are subject to insurance payments, as well as restrictions on the activities of insurers will lead to a significant decrease in these reserves. In particular, in dollar terms, insurance reserves of companies for 2021 amounted to 1,339.53 million dollars. USA. At the same time, taking into account the bank (commercial) exchange rate of the dollar established on June 1, 2022 (36.10 UAH for 1 US dollar), the amount of insurance reserves (equivalent for 2021) will amount to 1,012.62 million dollars. USA, which is 326.9 million dollars. The USA is less (Fig. 4).

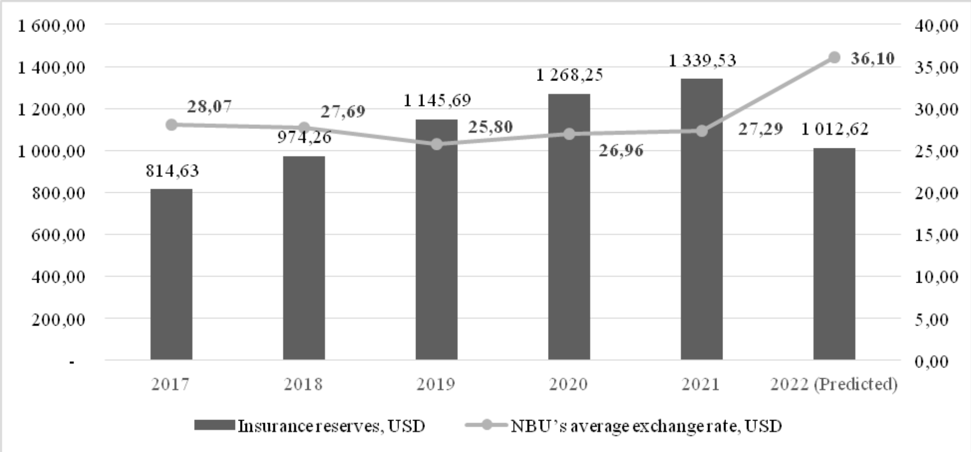

Figure 4. Insurance reserves of insurance companies of Ukraine, *million USD*
Source: compiled by author based on data from the National Financial Service Commission and the NBU for relevant periods.

At the same time, for a clearer understanding of the margin of safety of insurance reserves, it is advisable to study the structure of their placement by insurance companies.

In the pre-war period, assets and reserves of insurance companies were allocated in the following main directions: cash on current accounts; bank deposits (deposits); Real Estate; shares; bonds; securities issued by the state; rights of claims to reinsurers, including to non-resident reinsurers (Table 1). During 2017 - 9 months. In 2021, the average ratio in these areas was: cash on current accounts - 7.63%, bank deposits (deposits) - 32.45%, real estate - 42.84%, shares - 10.05%, bonds - 2.29%, securities issued by the state - 23.65%, claims against reinsurers - 12.99%, including non-resident reinsurers - 8.83%.

Effective placement of assets of insurance companies is the basis of investment activity and a significant factor of successful insurance business and provision of target parameters of activity. A feature of the investment policy of insurance companies is that the accumulated capital of reserves from insurance payments actually belongs to the policyholders until the insurance contract expires and is conditionally temporarily free for use by the insurance company during this period of time. Due to hostilities, the profit-making paradigm of companies has been reoriented to the preservation of capital and insurance reserves. Therefore, their investment portfolio must first meet the requirements of reliability, and then profitability.

Table 1

Directions for placement of company reserves	Years									
	2017		2018		2019		2020		2021 (9 months)	
	million UAH	%	*million UAH*	%	*million UAH*	%	*million UAH*	%	*million UAH*	%
Total assets on the balance sheet	**57381.00**	**X**	**63493.3**	**X**	**63866.8**	**X**	**64925.0**	**X**	**65635.62**	**X**
Assets defined by Art. 31 of the Law of Ukraine "On Insurance", including:	**36084.6**	**100%**	**40666.5**	**100%**	**44609.9**	**100%**	**46113.6**	**100%**	**46898.7**	**100%**
1) Cash on current accounts	2757.4	7.6%	2968.5	7.3%	3167.6	7.1%	2812.93	6.1%	4723.27	10.07%
including 1.1) in foreign currency	520.4	1.4%	466.9	1.1%	470.8	1.1%	599.48	1.3%	n/d	-
2) Bank deposits (deposits)	12238.2	33.9%	14101.8	34.7%	15884.0	35.6%	15586.4	33.8%	11361.24	24.26%
including 2.1) in foreign currency	1793.3	5.0%	1526.2	3.8%	1367.5	3.1%	1567.86	3.4%	n/d	-
3) Bank metals	39.9	0.1%	32.2	0.1%	39.2	0.1%	46.11	0.1%	n/d	-
4) Real estate	2655.1	7.4%	3014.0	7.4%	4083.6	9.20%	4104.11	8.9%	4662.36	9.94%
5) Shares	6653.6	18.4%	5077.3	12.5%	3734.7	8.4%	3458.52	7.5%	1627.99	3.47%
6) Bonds	898.3	2.5%	908.2	2.2%	944.1	2.1%	1060.61	2.3%	1111.39	2.37%
7) Mortgage certificates	88.2	0.2%	87.3	0.2%	64.8	0.1%	13.83	0.03%	n/d	-
8) Securities issued by the state	6572.1	18.2%	7895.9	19.4%	9643.4	21.6%	10218.77	22.16%	17299.72	36.89%
9) Rights and claims to reinsurers	4054.5	11.2%	5418.1	13.3%	5326.2	11.9%	7147.61	15.5%	6110.62	13.03%
including 9.1) to non-resident reinsurers	2429.4	6.7%	3365.3	8.3%	3541.3	7.9%	5718.09	12.4%	n/d	-
10) Investments in the economy of Ukraine in the areas determined by the Cabinet of Ministers of Ukraine	99.0	0.3%	1131.8	2.8%	1687.9	3.8%	1613.98	3.5%	n/d	-
11) loans to citizen policyholders issued in accordance with the procedure determined by the Authorized Body and agreed with the National Bank of Ukraine	13.8	0.04%	17.5	0.04%	24.5	0.05%	32.28	0.07%	n/d	-
12) long-term loans for housing construction, including individual developers, used in accordance with the procedure determined by the Cabinet of Ministers of Ukraine	0.1	0.0003%	0.2	0.001%	0.2	0.0004%	0.23	0.0005%	n/d	-
13) cash in the cash register	14.4	0.04%	13.7	0.03%	9.7	0.02%	18.45	0.04%	2.12	0.0045%

The objective necessity of state regulation of the investment activities of insurance companies is due to the fact that insurance reserves as the main investment resource are liabilities, not assets of insurers, and their arbitrary use can lead to potential non-payment of insurance indemnities to policyholders.

However, the main principles of state regulation of the investment activities of insurers in Ukraine, in accordance with part 20 of Art. 31 of the Law of Ukraine "On Insurance", there are such that funds of insurance reserves must be placed taking into account safety, profitability, liquidity, diversification [4]. In addition, a special regulatory act that regulates this type of activity of insurers is the "Regulation on Mandatory Criteria and Standards of Capital Adequacy and Solvency, Liquidity, Profitability, Asset Quality and Riskiness of Insurer Operations", approved by Order of the National Financial Services Committee No. 850 of June 7, 2018 p. The basis for our research is the standard of riskiness of operations, which, according to Clause 2 of Chapter V of the Regulations, provides for the establishment of limits for the placement of insurance reserves depending on specialization. However, the above resolutions do not take into account the risks of hostilities and martial law, which in our conditions calls them into question.

In our opinion, the obvious disadvantages of this approach are: 1) failure to take into account the size of the insurance company, its level of development and the quality of investment management; 2) force majeure events are not taken into account (in our study, these are hostilities on the territory of Ukraine); 3) no change in the country's economic processes is foreseen. Separately, the process of devaluation of the national currency should be highlighted, which, according to the current regulated documents of the insurance market, significantly affects the capitalization of companies and the amount of their assets, which in turn affects the solvency of insurance companies and the fulfillment of the regulator's regulations.

In this regard, we consider it expedient to change the standards of the riskiness of the placement of insurance reserves by insurance companies in Ukraine during hostilities to the following (Table 2).

1. Bank deposits (deposits), including in foreign currency – to reduce insurance reserves to ≤50% (at the same time, in each bank ≤10% of insurance reserves), since reducing these assets will reduce the impact of currency fluctuations of the national currency.

2. Cash on current accounts and bank deposits on demand - increase to ≤30% of insurance reserves of life and ≤40% of insurance reserves of non-life companies, since such placement is highly liquid and the insurance company will be able to quickly make decisions in accordance with the economic situation and conjuncture market.

3. Real estate - to increase to ≤30% of insurance reserves (at the same time, ≤10% of insurance reserves in one object) with the exception of regions of Ukraine where hostilities take place and areas close to them, since real estate allows you to preserve capital from the depreciation of the national currency and inflation.

4.1. Shares of Ukrainian issuers and 4.2. Bonds of enterprises of Ukrainian issuers - to increase to ≤20% of insurance reserves (with one object ≤5% of insurance reserves), since insurance companies will be able to increase investment activity and invest in enterprises that suffered losses in connection with hostilities.

4.3. Shares, bonds of foreign issuers and securities of foreign countries - increase to ≤40% of insurance reserves for life and up to ≤30% of insurance reserves for non-life companies, as such investments will allow insurance companies to place assets in securities of foreign companies and foreign government bonds, reducing the impact of negative economic processes on their capital in Ukraine.

4.4. Local loan bonds - to be left unchanged, because due to hostilities in a large part of Ukraine, the increase may lead to a significant transfer of capital to regions where hostilities were not carried out or their intensity was insignificant.

4.5. Mortgage bonds issued by financial institutions, the majority owner of which is the state, should be left unchanged, as the indicator of ≤20% of insurance reserves is sufficient in the current conditions.

4.6. Bonds of international financial organizations - increase to 60% of insurance reserves for life and up to ≤50% of insurance reserves for non-life companies, as such investments will allow insurance companies to diversify their assets and reduce the impact of negative economic processes on their capital in Ukraine.

5. Ukrainian government bonds – to reduce to ≤60% of insurance reserves for life and to ≤50% of insurance reserves for non-life companies, since the previously established indicator actually allows insurance companies to keep an investment portfolio in one investment instrument, in connection with which insurance portfolios are not diversified. If the

permissible placement in government bonds of Ukraine is reduced, the insurance market will start investing its portfolio in other assets.

6. Long-term financing (lending) of residential construction should be left unchanged, as the indicator is significantly risky in the current conditions.

7. Investments in the economy of Ukraine in the areas defined by the Cabinet of Ministers of Ukraine should be left unchanged, as the indicator is sufficient in the current conditions.

8. Bank metals - increase to ≤30% of insurance reserves, as this type of investment has relatively constant stability and significant liquidity.

9. Loans to policyholders - individuals - should be left unchanged, as the indicator is sufficient in the current conditions.

Table 2

Riskiness standards in the placement of insurance reserves by insurance companies in Ukraine before martial law and proposed changes during hostilities

Asset groups in accordance with Part 20 of Article 31 of the Law of Ukraine "On Insurance"	Provisions in force before marital law		Proposed change during hostilities	
	Life insurance companies	Risk insurance companies	Life insurance companies	Risk insurance companies
1. Bank deposits, incl. in foreign currency	≤70% insurance reserves (with ≤20% insurance reserves in one insurance object)		≤50% insurance reserves (with ≤10% insurance reserves in one insurance object)	
2. Cash on current accounts and bank deposits on demand	≤20% insurance reserves	≤30% insurance reserves	≤30% insurance reserves	≤40% insurance reserves
3. Real estate	≤20% insurance reserves (with ≤10% insurance reserves in one insurance object)		≤30% insurance reserves (with ≤10% insurance reserves in one insurance object) less regions of hostilities and adjacent oblasts'	
4. Securities				
4.1. Shares of Ukrainian issuers	≤10% insurance reserves (with ≤3% insurance reserves in one insurance object)		≤20% insurance reserves (with ≤5% insurance reserves in one insurance object)	
4.2. Bonds issued by companies of Ukrainian issuers	≤40% insurance reserves (with ≤10% insurance reserves in one insurance object)	≤30% insurance reserves (with ≤10% insurance reserves in one insurance object)	≤50% insurance reserves (with ≤15% insurance reserves in one insurance object)	≤40% insurance reserves (with ≤10% insurance reserves in one insurance object)

Table 2 (continued)

4.3. Shares and bonds of foreign issuers and foreign securities	≤20% insurance reserves	≤10% insurance reserves	≤40% insurance reserves	≤30% insurance reserves
4.4. Domestic bonds	≤10% insurance reserves		No change proposed	
4.5. Mortgage bonds issued by financial institutions, the majority owner of which is the government	≤20% insurance reserves		No change proposed	
4.6. Bonds of international financial organizations	≤50% insurance reserves	≤40% insurance reserves	≤60% insurance reserves	≤50% insurance reserves
5. Government bonds of Ukraine	≤95% insurance reserves	≤80% insurance reserves	≤60% insurance reserves	≤50% insurance reserves
6. Long-term financing (lending) of housing construction	≤10% insurance reserves (life insurance)	-	No change proposed	No change proposed
7. Investments in Ukraine's economy according to Cabinet of Ministers' guidelines	≤10% insurance reserves (with ≤10% insurance reserves in one insurance object)		No change proposed	
8. Bank metals	≤15% insurance reserves		≤30% insurance reserves	
9. Loans to individual policyholders	≤20% insurance reserves (life insurance)	-	No change proposed	No change proposed

Notes: Provisions in force before marital law are based on available sources, Proposed change during hostilities are proposed by author.
Source: compiled by author based on [4, 5].

Since Ukraine is currently adapting the legislative field in accordance with EU regulations, it is appropriate to change the regulation of the riskiness of asset placement and insurance reserves by insurance companies in Ukraine during hostilities and the post-war recovery period, taking into account European practice. Insurance activity in the EU is regulated by the Solvency II directive. Accordingly, it is necessary to consider the risks envisaged by the Solvency II Directive, which is designed to ensure the solvency of insurers. Its main feature is the determination of capital requirements based on a risk-based approach, the key of which are:

1) MCR (Minimum Capital Requirement) is the minimum requirement for the insurer's capital, the non-compliance of which is incompatible with the continuation of insurance activity and requires the intervention of the regulator (regulatory action). Calculated as VaR (Value at Risk) with 85% confidence interval. The MCR value should be in the range of 25–45% of the calculated SCR value;

2) SCR (Solvency Capital Requirement) is a requirement for an insurer's capital, compliance with which guarantees a 99.5% probability of fulfilling its obligations during the year. Calculated as VaR with a confidence interval of 99.5%. The calculation consists of different types of risks. It can be calculated both by a standard formula and by an internal or partially internal model [6].

In the context of this article, the SCR indicator deserves detailed attention, since it is precisely this that concerns the investment activity of the insurer. In particular, SCR is calculated according to several models, the main one of which is the Standard formula:

$$SCR = BSCR + Adj + SCR_{oper},$$

where BSCR is basic SCR, Adj is Adjustments, and SCR_{oper} is Payment for operational risks [7, 8].

This type of SCR calculation will allow to significantly simplify the regulation of investment activities of the insurance market and will enable it to obtain an assessment of investment projects during hostilities on the territory of Ukraine and take into account all existing risks of existing and future investments.

BSCR (Basic Solvency Capital Requirement) is represented by defined risk components (Life underwriting risk, Non Life underwriting risk, Market risk, Health risk, Default risk, Intangible risk), the main one of which for our study is Market risk, but in the current situation we should also take into account Default risk [7, 8]. Market risk for the insurance industry is calculated as a set of factor risks and risks determined on a basic basis, which makes it possible to conditionally determine the impact of military risk during hostilities on the territory of Ukraine for each region of Ukraine separately.

The subcomponents established by Solvency II (Table 3) include: the risk of investments in equity capital, the risk of real estate investments, the risk of exchange rate changes, the risk of interest rate changes, the risk of low bond liquidity due to a decrease in its rate (as a result of a low spread between the yield of such bonds and government securities), the risk of default due to the holding of securities of issuers with a low rating. Taking into account the data in the Table 1, the sub-components take into account all available investment directions of assets and reserves of insurance companies of Ukraine. Note that the SCR for investment risks is calculated taking into account the correlation between investments of different types, which may additionally take into account other areas of investment established by state authorities for the insurance market [9].

Table 3

Components of market risk under the Solvency II Directive

№	Risk sub-modules	Essence	SCR
1	Equity risk	The risk of investment in equity capital	1) 39% of the market value of type I investments; 2) 49% of the market value of type II investments; 3) 30% of the market value of infrastructure investments; 4) 22% of the market value of investments specified by the regulator as strategic ones
2	Property risk	The risk of investment in real estate	25% of the market value of the real estate
3	Currency risk	The risk of change in exchange rate	25% of variation of change in exchange rate
4	Interest rate risk	The risk of investment in interest rate	Calculated according to special formulas defined by the regulator
5	Spread risk	The risk of low liquidity of the bond due to a decrease in its rate (as a result of the low spread between the yield of such a bond and that of government securities)	
6	Concentration risk	Risk of default due to issuers holding low-rated securities	

Source: compiled by author based on [6, 10, 11].

In turn, the total SCR for market risk is calculated as the sum of premiums for the relevant risk components and is included in the basic SCR (BSCR). However, market risk is correlated with other risks. That is why the Solvency II directive provides for the calculation of BSCR as follows [8]:

$$BSCR = \sqrt{\sum_{i,j} Corr_{i,j} \times SCR_i \times SCR_j \times SCR_{intangible}}$$

where $Corr_{i,j}$ – pairwise correlation coefficients i – rows of the correlation matrix, j – columns of the correlation matrix. The sum $Corr_{i,j} \times SCR_i \times SCR_j$ defines risk modules as specified in point (1) of Annex IV to Directive 2009/138/EC; and $SCR_{intangible}$ – intangible assets, means the capital requirement for intangible asset risk referred to in Article 203 of the Directive.

The calculation is carried out by compiling a correlation matrix, which calculates the relationship between each of the risk components (except for the risk of intangible assets) for Ukrainian realities, it is possible to add the risk of hostilities (military). Thus, the Solvency II directive directs insurers to carry out investment activities by observing the principle of "prudent person rule": the insurer himself determines in what proportions to invest in certain objects. The riskier the insurer's investment policy is, the greater the amount of its SCR, but the rule must always be followed [11]:

$$SCR_{ratio} = \frac{EOF(Eligible\ Own\ Funds)}{SCR} > 100\%,$$

where EOF is equity capital of the insurer

In connection with the martial law in Ukraine and due to the complexity of assessment of the risk from hostilities, the investment model for insurance companies "the insurer himself determines in what proportions to invest in certain objects" in the conditions of war conditions is better both for the insurance market and for state regulation.

Having analyzed the mechanism of state regulation of the investment activities of insurance companies in the EU, we can note that it is promising for implementation in Ukraine, because it contributes to solving the current problems on the insurance market. However, it should be taken into account that the calculation of all risk components is a rather complex process that requires highly qualified personnel. Besides, the state should establish guarantees of reliable and impartial calculation of insurers' capital requirements to ensure their solvency, taking into account the significant drop in insurance payments on the insurance market, and the growing reserves for undeclared and declared losses.

Conclusions

The implementation of stabilizing measures by the NBU and the government and their close interaction with representatives of the insurance market in conditions of martial law and economic instability in Ukraine helped avoid prevent bankruptcies and the exit of insurance companies from the Ukrainian market. In particular, stabilization was achieved due to such steps as reduction of regulatory requirements and prolongation of previously adopted laws. At the same time, the regulatory activities of insurance companies as to their investment during the current martial law requires certain adaptation. As a result of the conducted research, a series of proposals were developed to preserve investment activities of insurance companies during the martial law in Ukraine.

In particular, the expediency of the revision of investment requirements with a change in the standards of the riskiness of placement of insurance assets and reserves by insurance companies in Ukraine for the state regulator is substantiated, and indicative normative values for insurance companies under a diversified model of capital preservation during hostilities are given. In particular, the following structure of allocation of assets and reserves of insurance companies was proposed: bank deposits (deposits), incl. in foreign currency to reduce to ≤50% of insurance reserves (at the same time, in each bank ≤10% of insurance reserves); money in current accounts and bank deposits on demand to increase to ≤30% of insurance reserves of life and ≤40% of insurance reserves of non-life companies; real estate to increase to ≤30% of insurance reserves (at the same time, one object has ≤10% of insurance reserves); to increase shares of Ukrainian issuers and bonds of enterprises of Ukrainian issuers to ≤20% of insurance reserves (at the same time, one object has ≤5% of insurance reserves); shares, bonds of foreign issuers and securities of foreign countries to increase to ≤40% of insurance reserves for life and to ≤30% of insurance reserves for non-life companies; bonds of international financial organizations to increase to 60% of insurance reserves for life and to ≤50% of insurance reserves for non-life companies; reduce government bonds of Ukraine to ≤60% of insurance reserves for life and to ≤50% of insurance reserves for non-life companies; increase bank metals to ≤30% of insurance reserves.

At the same time, it is proposed to use the SCR (Solvency Capital Requirement) tool for the investment activity of insurers in Ukraine, in particular, to calculate investment risks using several models, the main one of which is the Standard formula, taking into account the correlation between investments of different types. This type of SCR calculation will significantly simplify the regulation of investment activities of the insurance market and will enable insurers to evaluate investment projects in the conditions of hostilities on the territory of Ukraine and take into account all the risks of existing and future investments. Additionally, BSCR is represented by defined components of risks, the main one for our study is market risk, which will allow to calculate both a set of factor risks and risks determined on a basis, and thus conditionally determine the impact of military risk during hostilities on the territory of Ukraine for each region of the country separately. In particular, the sub-components established by Solvency II include: the risk of investments in equity capital, the risk of real estate investments, the risk of exchange rate changes, the risk of interest rate changes, the risk of low bond liquidity due to a decrease in its rate (due to a low spread between the yield of such a bond and government securities), the risk of default due to the holding of securities of issuers with a low rating, which allows taking into account all available areas of investment of assets and reserves of insurance companies of Ukraine. Thus, the best way for insurance companies to conduct investment activities in Ukraine presently appears to be the compliance with the "prudent person rule" principle, when insurer himself determines in what proportions to invest in certain objects.

The above mentioned principle will have a positive effect on the insurance market and contribute to better state regulation, and – taking into account our proposals – it will enable insurance companies to determine as clearly as possible the directions and norms of investment distribution during martial law and maintain investment activity.

The above principle will have a positive effect on the insurance market and contribute to better state regulation, and – considering our proposals - it will enable the insurance companies to shape as clearly as possible the directions and proportions of investment distribution during martial law and maintain investment activities.

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ШЛЯХИ ЗБЕРЕЖЕННЯ ІНВЕСТИЦІЙНОЇ АКТИВНОСТІ СТРАХОВИХ КОМПАНІЙ ПІД ЧАС ВОЄННОГО СТАНУ

У статті проаналізовано ключові показники вітчизняних страхових компаній та оцінено стан страхового ринку в Україні у довоєнний період. Здійснено аналіз нововведень у системі регулювання страхового ринку України, а саме ухвалення Закону України "Про

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внесення змін до деяких законодавчих актів щодо удосконалення функцій із державного регулювання ринків фінансових послуг" та Закону України "Про страхування", норми якого набирають чинності з початку 2024 р. Досліджено динаміку діяльності страхових компаній на страховому ринку України у довоєнний період та під час воєнного стану. Розглянуто напрями розміщення активів та резервів страхових компаній. Проаналізовано, як страховий ринок взаємодіє з регулятором ринку небанківських послуг – Національним банком України під час запровадження воєнного стану в країні.

Досліджено нормативи ризиковості розміщення страхових активів та резервів страховими компаніями в Україні у довоєнний період та розроблено рекомендації щодо регуляторних змін на час воєнного стану. Проаналізовано механізм державного регулювання інвестиційної діяльності страхових компаній директивою Solvency II, окреслено проблеми українського підходу та надано пропозиції щодо методик регулювання інвестиційної діяльності під час воєнного стану. Запропоновано ряд заходів щодо стабілізації національного страхового ринку та збереження інвестиційної активності страхових компаній України. Зроблено висновок про доцільність використання інструменту SCR (Solvency Capital Requirement – необхідного платоспроможного капіталу) для інвестиційної діяльності страховиків в Україні, зокрема, при здійсненні розрахунків ризиків інвестицій за декількома моделями, основною з яких є так звана Standard formula, враховуючи кореляцію між інвестиціями різних типів.

Ключові слова: *інвестиційна діяльність; страхова компанія; страхові резерви; функції управління інвестиційною діяльністю під час воєнного стану; державне регулювання інвестиційної діяльності страхового рику в умовах війни*