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FINANCIAL AND INSTITUTIONAL ASPECTS OF INSURANCE MARKET DEVELOPMENT UNDER CONDITIONS OF PANDEMIC 2020-2021 AND WAR 2022-2023: CASE OF UKRAINIAN INSURANCE COMPANIES

ABSTRACT

The article is devoted to the analysis of the insurance market of Ukraine under the conditions of a pandemic and military operations in 2021-2023. The insurance market of Ukraine is characterized by a moderate pace of development - 128 insurance companies operate on it with a total amount of assets of UAH 70,338 million, but for the period of 2017-2022, the number of companies on the market decreased by 2.3 times. The study examines the key factors contributing to the negative trend in the development of the financial market in Ukraine in general and the insurance market in particular. The work uses methods of correlation-regression analysis, generalization, grouping, as well as tabular and graphic methods of presenting results. A positive aspect of the development of the insurance market of Ukraine, which ensures a high level of trust in insurers, is the annual increase in the volume of insurance reserves for both life insurance and non-life insurance. Characteristic of the insurance market of Ukraine is the prioritization of insurance contracts regarding CASCO insurance, medical insurance, and life insurance.

In developed countries, an extremely close relationship has been established between the purchasing power of the population and the density of insurance coverage, but the dependence of the degree of insurance penetration on the purchasing power of the population is much lower. With a reliability level of more than 80%, it was established that in European countries, with an increase in the purchasing power of the population by 10,000 euros, there will be an increase in the density of insurance up to 7,000 euros per person for non-life insurance and up to 105,000 euros for life insurance. Regarding Ukraine, the insurance market will develop according to the growing trend and in the future, provided the purchasing power of the population increases by UAH 20,000, insurance premiums will be increased by UAH 100. The insurance market of Ukraine is currently in a state of gradual recovery from a state of shock due to military aggression, at the same time it is developing a number of tools and has powerful prospects that can positively affect the development of the insurance market itself and the economy of the country in general.

Keywords: insurance, financial market, forecasting, regression analysis

JEL Classification: C10, G22

INTRODUCTION

The global development of the economy, the aggravation of political, climatic, economic, social, environmental, military and other problems, the rapid development of certain branches of the economy and the service sector lead to an extraordinary activation of insurance processes under new conditions using various technological approaches. Insurance is considered one of the effective tools for guaranteeing the development of the state's economy, promoting its active integration with the European and global economic space.

Despite the difficult political situation in Ukraine, associated with a full-scale military invasion of Russia in 2022, the National Bank of Ukraine is working on the implementation of a new model of the development of the insurance market and new principles of its regulation, which allows to ensure the following goals: 1) increasing the level of capitalization of insurance companies, insurance and financial markets; 2) ensuring a sufficient level of liquidity and sustainability of insurers; 3) formation of diversified portfolios of insurance products; 4) increased competition in the insurance market; 5) compliance with high standards of service quality and protection of consumer rights; 6) increasing the transparency of the functioning of the insurance market and its investment attractiveness. The specified benchmarks make it possible to increase the level of insurance culture and the trust of consumers of insurance services in insurers, which will contribute to a deeper penetration of insurance into the economy of Ukraine, despite the state of war in 2022-2023.

LITERATURE REVIEW

The etymology of the term "insurance market" is widely discussed in economic literature. According to the classical interpretation, "the insurance market is a part of the financial market, where the object of purchase and sale is insurance protection, the demand and supply for it is formed" [1; 2; 3]. In work [4] it is stated that "the insurance market is a component of both the financial market (the money market and the capital market, since insurance companies place their capital on these markets using certain financial instruments), and the market of financial services, since insurance companies both financial intermediaries attract funds from policyholders by selling insurance services". However, in [5] the authors understand the definition of "insurance market" as "a set of economic relations regarding the purchase and sale of insurance services".

In [6] it is emphasized that the insurance market should be considered as "an economic space in which policyholders interact (form the demand for insurance services), insurance companies of various forms of organization (insurers who satisfy the demand for services), insurance intermediaries (agents and brokers), as well as insurance infrastructure organizations – associations and unions operating in the market". In the article [7], the author insists on the importance of the institutional nature of the insurance market and proposes to define it through "a set of various institutions and mechanisms aimed at reducing losses and risks of insurance market participants". In [8] it is noted that "the insurance market is a system of stable economic relations between buyers, intermediaries and sellers, as well as insurers and regulatory authorities, related to the formation of demand, supply and prices for direct insurance protection and reinsurance, which materialize in insurance, reinsurance and related services in a specific country, group of countries or on an international scale subject to regulation".

Many scientists [9; 10; 11; 12] note that "modern state regulation of insurance activity is a system of means and methods that are implemented on a legal basis in order to determine the framework and rules for the functioning of the insurance market and the activities of insurance companies on it". At the same time, it should be noted that state regulation of the insurance market covers a set of certain actions by state bodies or special state institutions aimed at creating favorable conditions for the functioning of the insurance market, maintaining healthy competition, protecting the interests of market participants and its effective development. The key task of state regulation of the insurance market and supervision of the behavior of its subjects is defined as fair treatment of financial institutions to policyholders, as well as increasing public trust in the insurance sector [13; 14].

Among the financial markets of Ukraine, the insurance market has long remained one of the most problematic, primarily due to the low level of insurance penetration and density. However, in developed countries, the insurance market activates investment processes in various areas of the economy, since, by mobilizing significant resources, it is able to cover significant capital needs for long periods of time. During the last pre-war years, the development of the Ukrainian insurance market was held back by a number of unfavorable factors of a domestic and global nature: political instability in the country, the occupation of the eastern territories and Crimea with the corresponding loss of market share, the COVID-19 pandemic, instability in the global capital market, etc. The full-scale invasion of Russia on the territory of Ukraine at the beginning of 2022 significantly deepened the problematic situation and caused new challenges that left an impression on the activities of insurance companies and the efficiency of the entire insurance market.

AIMS AND OBJECTIVES

The purpose of the study is to form a strategy for the development of the insurance market in Ukraine based on a study of its current state and identification of development problems. Based on the set goal, the tasks of the research are the following:

- to justify theoretical approaches to regulation and stimulation of the development of the insurance market;
- to analyze the regulatory environment and the state of the insurance market in Ukraine;
- to consider the peculiarities of the development of the insurance market in the countries of the world and to form opportunities for the application of best practices;
- to form models of influence of key factors of insurance on the development of the insurance market of Ukraine.

METHODS

The research was carried out on the basis of a systematic approach to studying the basic principles of the insurance market development strategy in Ukraine. For the theoretical justification of the essence, structure, regulation and stimulation of the insurance market, the methods of analysis, synthesis, analogies and generalization are applied. Analytical studies of the state of the insurance market and its regulatory environment were carried out using calculation-constructive and statistical-economic methods: selective observation, structural and situational analysis. The methods of analysis and synthesis, correlation analysis was used in building models of the influence of key insurance factors on the development of the insurance market. In addition, comparison techniques, tabular and graphic methods were used throughout the study.

RESULTS

In 2021, the national regulator of the insurance market – the National Bank of Ukraine developed and started the implementation of a new model of state regulation, and therefore new foundations for the development of the insurance market, which meet international standards and are able to ensure a qualitative renewal of the domestic financial system and the economy in general.

Today, the insurance market of Ukraine is characterized by a moderate rate of development: 128 insurance companies operate on the market with total assets of UAH 70,338 million. During the period 2017-2022, the number of companies on the market decreased by 2.3 times (Figure 1), which indicates increased supervision by the regulator (from 2019 - NBU) and high competition. The largest number of companies left the market in 2019 (48 companies) and 2021 (55 companies) due to increased requirements for conducting business or at the company's own request. It should be noted that from 30 (in 2017) to 13 (in 2022) companies operating in the insurance market of Ukraine during 2017-2022 specialized in life insurance - this is about 10% of the total number of insurers on the market.

Table 1. The number of insurance companies of Ukraine and the size of their assets in 2017-2022. (Source: based on [15; 16])

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Amount of assets | 57381 | 63493 | 63866 | 64920 | 63622 | 70338 |
| Number of companies, units | 294 | 281 | 233 | 210 | 155 | 128 |

Despite the reduction in the number of insurance companies, those market operators who continue their activities significantly increase market capitalization. In 2017, one company accounted for UAH 195.2 million of assets, in 2019 – UAH 274.1 million, in 2021 – UAH 410.5 million, and in 2022 – already UAH 549.5 million. However, more detailed indicators of the development of the insurance market for the period 2017-2022 demonstrate unstable and contradictory dynamics (Table 2).

Against the background of the general increase in the number of concluded contracts for the period 2017-2021 (by 17,444 thousand contracts), the cost of 1 contract decreased by almost a third (from UAH 615 to UAH 450). A similar trend is inherent in the volume of gross insurance payments: with the growth of their total volume in the pre-war period to UAH 17,958 million, 1 contract in 2021 amounted to UAH 137,000, which is UAH 12,000 less than in 2017. It is noticeable that until 2019, the total volume of gross insurance premiums grew annually by 7-13%, but since 2020, their reduction has been observed.

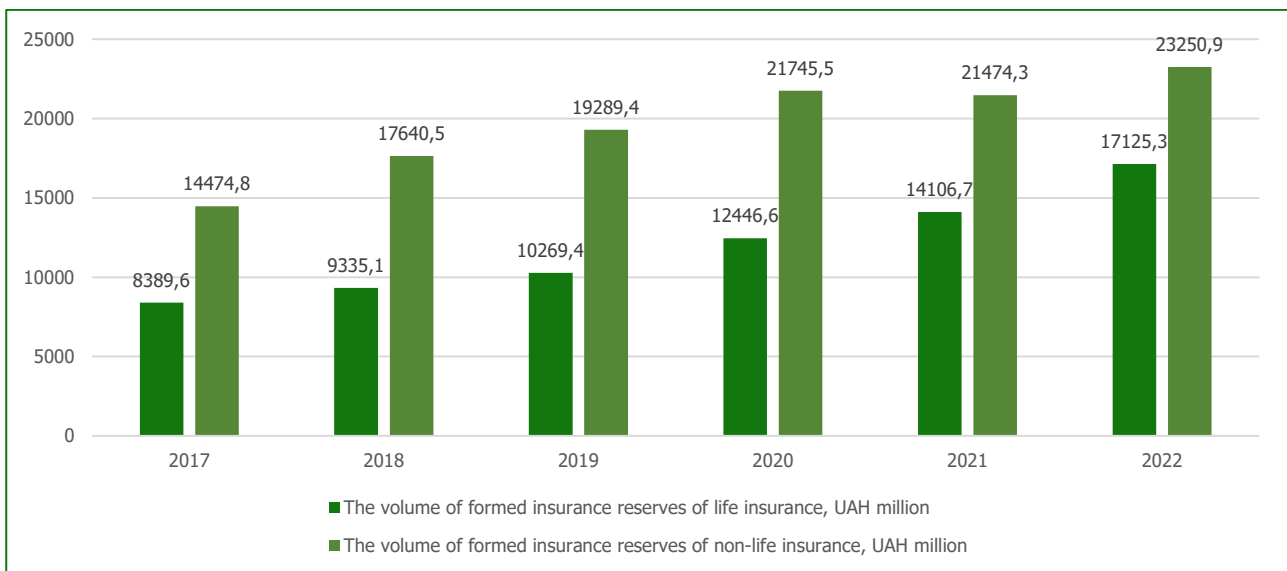
In 2022, in connection with the state of war in Ukraine, the general trends of the development of the insurance market were disrupted: the number of concluded insurance contracts fell by 1.5 times compared to 2021, and the amount of gross insurance premiums decreased by UAH 10.1 billion, as a result, the volume of insurance premiums for 1 insurance contract increased by UAH 78 and amounted to UAH 450.

Table 2. The main indicators of the development of the insurance market of Ukraine in 2017-2022. (Source: based on [15])

| Indicator | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Change in 2017-2022 |
|---|-------|-------|-------|--------|--------|-------|---------------------|
| Number of concluded insurance contracts (thousand units) | 70658 | 77495 | 80271 | 120577 | 131562 | 88102 | 17444 |
| Gross insurance premiums, UAH million | 43432 | 49367 | 53001 | 45176 | 49708 | 39616 | -3816 |
| Gross insurance premiums for 1 insurance contract, UAH | 615 | 637 | 660 | 375 | 378 | 450 | -165 |
| Gross insurance payments, UAH million | 10537 | 12863 | 14338 | 14854 | 17958 | 13001 | 2464 |
| Gross insurance payments for 1 insurance contract, UAH thousand | 149 | 166 | 179 | 123 | 137 | 148 | -1 |
| Level of gross payments, % | 24.26 | 26.06 | 27.05 | 32.88 | 36.13 | 32.82 | 8,56 |
| Penetration rate, % | 1.45 | 1.39 | 1.33 | 1.08 | 0.91 | n/d | - |
| Insurance density index, UAH per person | 1025 | 1171 | 1265 | 1086 | 1207 | n/d | - |

The penetration rate and insurance density rate for the period 2017-2021 reflect the extremely low level of development of the insurance market of Ukraine compared to other countries of the world (on average 6.1% and 34 USD, respectively [14]). In particular, the penetration rate, which shows the ratio of gross insurance premiums to the country's GDP in %, is at an extremely low level (1.45-0.91% against the world average of 6.1%, obviously due to the reduction of insurance premiums at the same time as GDP increases. The density of insurance, which reflects the amount of insurance premiums per person, also shows unstable dynamics due to the changing conditions of economic growth in the country and the unstable solvency of the population – UAH 1,025-1,265 per person (USD 36.6-45.1) compared to the world average is 34 US dollars.

A positive aspect of the development of the insurance market of Ukraine, which ensures a high level of trust in insurers, is the annual increase in the volume of insurance reserves for both life insurance and non-life insurance (Figure 1). The noted dynamics indicate sufficient accumulation by insurers of the necessary assets to ensure due or probable insurance payments. The rates of annual growth of insurance reserves under life insurance are stable and vary from 10.0 to 21.3%, on the other hand, reserves under non-life insurance have a more variable nature: in 2021, a 2% reduction was observed, and in the remaining years – an increase of 9.3-21.9%.


Figure 1. Dynamics of insurance reserve volumes of insurance companies of Ukraine. (Source: based on [15])

The results of the functioning of the insurance market reflect the financial performance of insurance companies, which in turn are closely related to the socio-economic situation in the country. It is this regularity that can be traced by the dynamics of indicators of insurers' activity, which is shown in the Table 3.

Table 3. Main financial indicators of the activity of insurance companies of Ukraine, UAH million. (Source: based on [15])

| Indicator | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Change, 2022-2017, % |
|--|---------|---------|---------|---------|---------|---------|----------------------|
| Assets | 52230.1 | 63493.3 | 63866.0 | 64925.0 | 61024.9 | 70338.1 | 134.67 |
| Equity | 26424.6 | 27083.9 | 21797.0 | 24666.0 | 19594.1 | 22777.5 | 86.20 |
| The average amount of equity capital of 1 insurance company | 89.88 | 96.38 | 93.55 | 117.46 | 126.41 | 177.95 | 197.99 |
| Income from the provision of services from types of insurance, other than life insurance (earned insurance payments) | 21388.5 | 25166.6 | 30564.7 | 30417.0 | 33003.7 | 31129.8 | 145.54 |
| Income from life insurance services | 3029.6 | 4209.2 | 5186.2 | 3242.0 | 4248.4 | 3087.1 | 101.90 |
| Income from providing services for other insurers and other services (performance of works) | 66.7 | 94.6 | 0.0 | 134.0 | 147.4 | 0.0 | 0.00 |
| The result of the main activity | 128.6 | -81.0 | 1139.8 | 1349.0 | 1476.2 | 1454.6 | 1130.83 |
| The result of financial transactions | 1839.9 | 2250.1 | 2925.9 | 2956.0 | 2779.3 | 3736.9 | 203.10 |
| The result of another normal activity | -682.8 | -746.2 | -1455.6 | 96.8 | -579.8 | 157.2 | -23.03 |
| Profit | 2403.9 | 2992.2 | 3432.0 | 2869.0 | 1949.3 | 0.0 | 0.00 |
| Loss | -2169.1 | -2740.2 | -2211.1 | -714.0 | -412.1 | -666.2 | -30.72 |

In particular, the assets of insurers in 2022 amounted to UAH 70,338.1 million, which is 34.67% higher than in 2017, however, with the gradual increase of assets during 2017-2020, in 2021 there was a slight decrease in them, which was restored and increased in 2022. The amounts of equity capital of insurance companies of Ukraine in 2017-2022 were unstable and ranged from UAH 19.6 billion to UAH 27.08 billion. However, the investigated period ended with the amount of equity capital of insurance companies of UAH 22.8 billion, which is about UAH 177.95 million for 1 company, which fully meets the regulatory requirements of the NBU. Therefore, the reduction of assets and equity of insurers took place in parallel with the structural cleansing of the insurance market from unstable and problematic companies, so the reduction of the indicated indicators in certain years does not indicate a deterioration in the activity of insurance companies, but a decrease in their number.

The final financial result of the activity of insurance companies is formed at the expense of their income from the implementation of life insurance services, the implementation of services from types of insurance other than life insurance (earned insurance payments) and from the provision of services for other insurers and other services (execution of works). During the studied period, insurers' incomes from the sale of services from types of insurance, other than life insurance, increased significantly (by 97.99%) and with a smaller increase – incomes from the sale of life insurance services (by 45.54%). The rest of the income did not change significantly, so the final result depended significantly on these two groups of income. As a result of their economic activity and under the influence of external factors, insurance companies managed to achieve the largest profits in 2019 (UAH 3,432 million), however, they ended 2022 mostly at a loss.

During the studied period, the insurance market of Ukraine is characterized by the priority of concluding insurance contracts for CASCO insurance, medical insurance, and life insurance. Each of the mentioned types of insurance occupies more than 10% of the share of the insurance market of Ukraine, in addition, such a type of non-life insurance as "Green Card" increased its volumes by 76%. It should be noted that in absolute terms, the volume of all types of insurance decreased, except for the "Green Card", while the share of certain types of insurance increased due to the reduction in the importance of other types of insurance. This situation is explained by the complexity of financial operations in the front-line and de-occupied territories, as well as the lack of the possibility of providing financial services in the temporarily occupied territories of Ukraine.

It is important that the concentration of Ukrainian insurance companies in the market according to the key indicators of their development indicates the emergence of healthy competition: only the 20 largest companies occupy half of the market according to the indicated indicators (Table 4).

Table 4. Concentration of insurance companies of Ukraine in 2022. (Source: based on [17])

| The first (Top) | Receipt of premiums, UAH million | Market share, % | Insurance payments, UAH million | Market share, % | Assets, UAH million | Market share, % | Own capital, UAH million | Market share, % |
|---------------------|----------------------------------|-----------------|---------------------------------|-----------------|---------------------|-----------------|--------------------------|-----------------|
| Top-3 | 6 151.53 | 15.53 | 2 431.89 | 18.71 | 12 119.81 | 17.23 | 3 697.00 | 16.23 |
| Top-5 | 9 091.12 | 22.95 | 3 499.66 | 26.92 | 17 702.91 | 25.17 | 5 363.80 | 23.55 |
| Top-10 | 14 161.58 | 35.75 | 5 504.2 | 42.34 | 26 944.75 | 38.31 | 8 057.42 | 35.37 |
| Top-20 | 19 034.72 | 48.05 | 7 212.07 | 55.47 | 35 077.92 | 49.87 | 11 013.62 | 48.35 |
| Total on the market | 39 616.0 | 100.0 | 13 001.0 | 100.0 | 70338.1 | 100.0 | 22777.5 | 100.0 |

Of all the insurance companies of Ukraine, the share of the largest three is only 15-20% of the entire insurance market. According to all the above indicators, Top-3 includes ARKS, which is part of the Canadian insurance group Fairfax Financial Holding, and UNIKA, which belongs to UNIQA Insurance Group – one of the leading insurance groups operating on the territory of Austria, the Central and Eastern Europe.

The total amount of premiums received by all insurance companies of Ukraine in 2022 amounted to UAH 39,616 million, of which UAH 4,854.2 million was for life insurance and UAH 34,761.5 million was for non-life insurance. Top-5 largest insurance companies for life insurance provide premiums in the amount of UAH 2,701.6 million, which is 55.65%, and for non-life insurance – in the amount of UAH 9,091.12 million or 26.15%. The largest volumes of life insurance premiums were provided by Metlife (31.14% of the total volume of insurance premiums), and from risk insurance – USG. Among the life insurance companies, the most powerful is Metlife, which stands out from the rest of the Top-5. On the other hand, all the listed non-life insurance companies differ from each other by not significant differences. The following insurance companies belong to the five insurance companies that in 2022 provided the largest volume of insurance premiums for non-life insurance: USG, ARKS, UNIKA, TAS, VUSO.

If we analyze the European insurance market, then in 2022, 4,909 companies from 30 countries were represented on it. The concentration of insurance companies on the insurance markets of European countries is quite different. Figure 2 shows that there are countries in the European insurance market where the concentration of the 3 largest companies reaches 100% of the entire market, or thereabouts. In particular, for life insurance in Latvia and Estonia, only 3 companies serve the entire market, and for non-life insurance in Latvia, 94.9% of the market is covered by 3 companies, and in Lithuania – 93.8%. The greatest competition between insurance companies is observed in the life insurance market in Germany (concentration 24.3%) and Ireland (concentration 31.4%), and in the non-life insurance market in France (14.4%) and Cyprus (28.4 %). In the vast majority of cases, a high concentration of insurance companies in one group of insurance has a similar situation in another group. However, there are countries where this pattern is not observed: Malta has a high concentration of life insurance (86.6%) and moderate non-life insurance (89.2%).

Along with this, the largest volumes of insurance premiums on the European insurance market are formed by insurance companies of Germany (volume of insurance premiums EUR 81,173 million), France (EUR 79,548 million), the Netherlands (EUR 65,210 million), Italy (EUR 39,424 million), Spain (EUR 20,646 million) (Figure 3).

Considering the uneven distribution of insurance in European countries, the highest value of the insurance penetration indicator is the Netherlands – 7.58%, Malta – 6.42%, Luxembourg – 4.58% and Ireland – 4.58%.

On a global scale, trends in the insurance market depend on the characteristics of global processes in the economy, society, climate change or political risks. In Brazil in particular, COVID-19 has boosted the demand for life insurance products [18] and the emergence of new insurance products closely linked to investments has contributed to the growth of the number of premium policies sold in the life sector in several countries. For example, significant increases in gross life premiums in 2021 in Portugal (69.4%) and Luxembourg (22.8%) were due to increased premiums charged for unit-linked products [18; 19; 20].

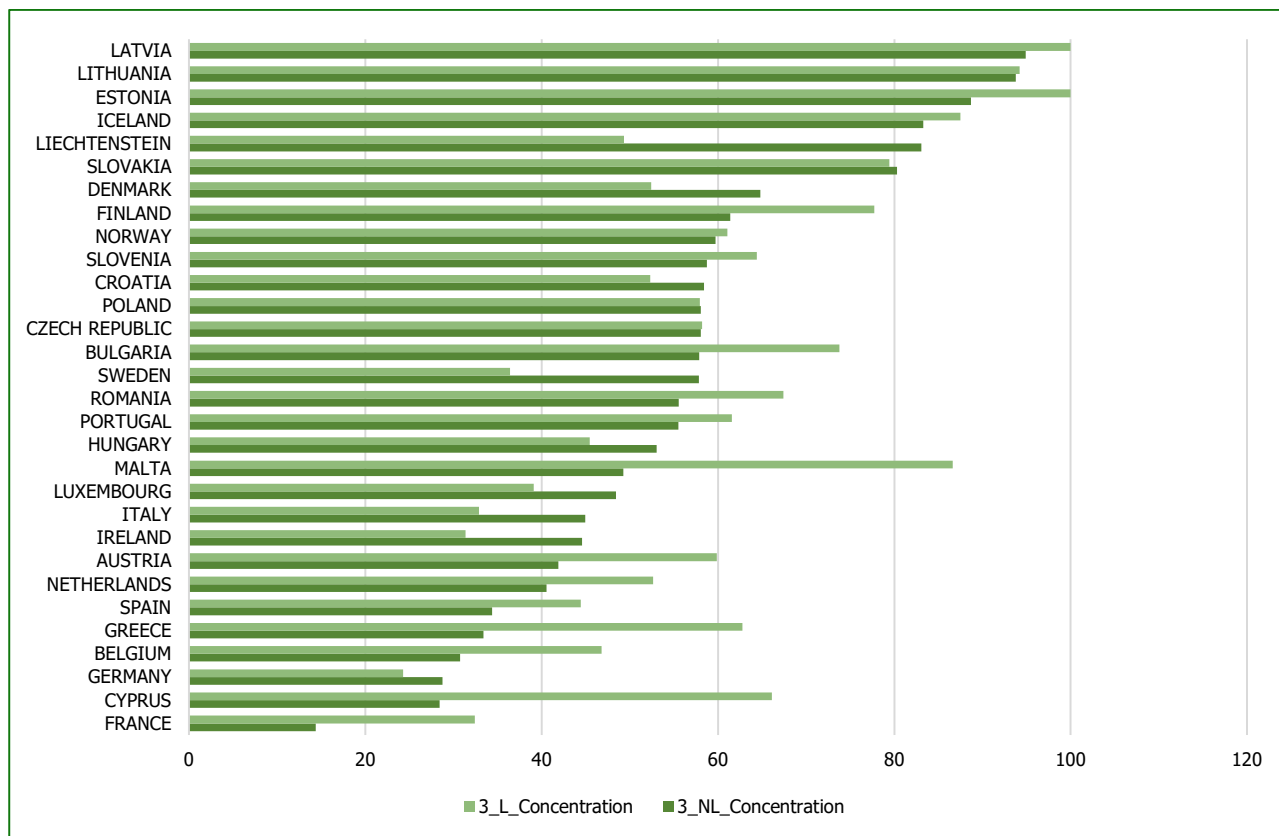


Figure 2. Concentration of insurance companies in European countries in 2022. (Source: based on [18])

In the non-life insurance sector, insurers benefited from the lifting of some restrictions related to COVID-19 and the economic recovery in 2021. Insurers in some countries attribute the increase in premiums for non-life insurance to the recovery economies, for example, in Colombia, Finland, and Iceland, premiums increased by 10.1%, 1.1%, and 2.2%, respectively [18]. The lifting of restrictions on movement also contributed to the growth of premiums in motor vehicle insurance (e.g. in Lithuania, Peru) and travel insurance (e.g., in Bulgaria).

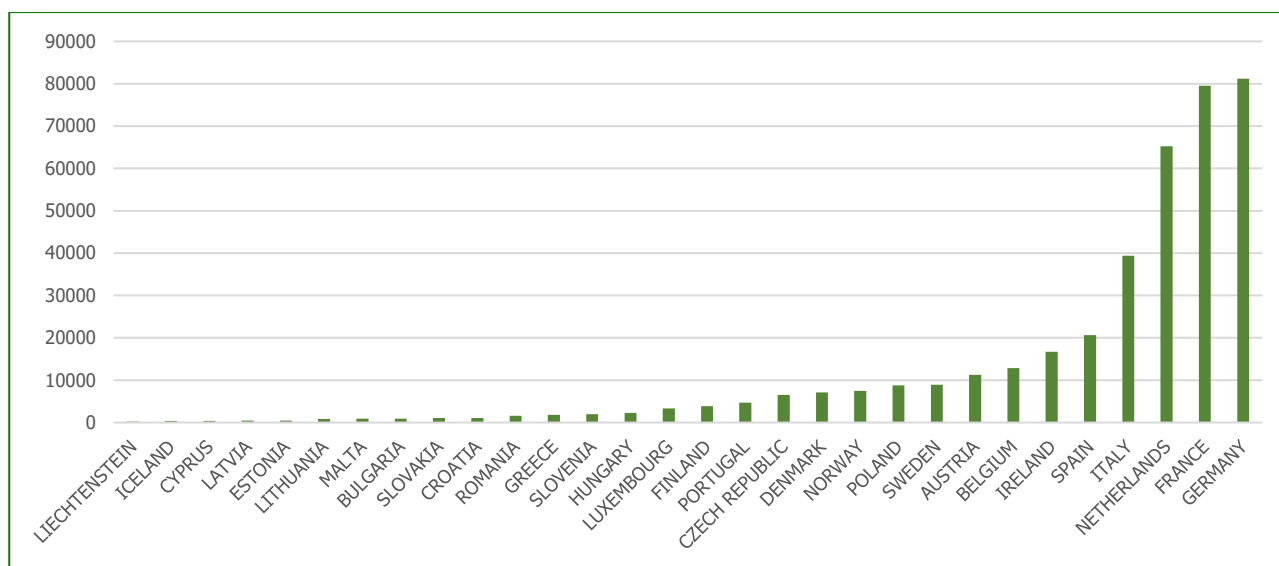


Figure 3. Volumes of insurance premiums on the insurance market of European countries in 2022, million EUR. (Source: based on [18])

Some changes, both in the life insurance sector and in the non-life insurance sector, may be due to regulatory measures or changes in supervisory authorities. Thus, in Latvia, the 10.5% decrease in insurance contributions in 2021 was due to the opportunity given to participants of the state pension system to postpone the choice of payment option (between a

life annuity or a state pension) until the end of the year. In Norway, the 22.9% increase in life insurance premiums is partly due to the adjustment of premiums in line with wage growth. In Brazil, agricultural insurance recorded significant growth due to increased insurance subsidies following a change in government policy. In Hong Kong (China), the maximum property value under the mortgage insurance program was adjusted upward also due to regulatory changes.

Thus, the general dynamics of the development of insurance on the European and world market demonstrates stability and indicates the highly organized activity of all market participants. All types of insurance are widely developed in almost all European countries: medical, property, personal, other types of life insurance (different from life insurance) (Figure 4). However, some countries have certain unique features in the structure of their insurance market, which are not characteristic of other European countries. In particular, in the Swedish insurance market, 81.86% of the entire market belongs to personal insurance (universal life insurance), while health insurance occupies only 1.2%. This situation is related to the features of insurance products that combine both medical and personal risks in one insurance policy.

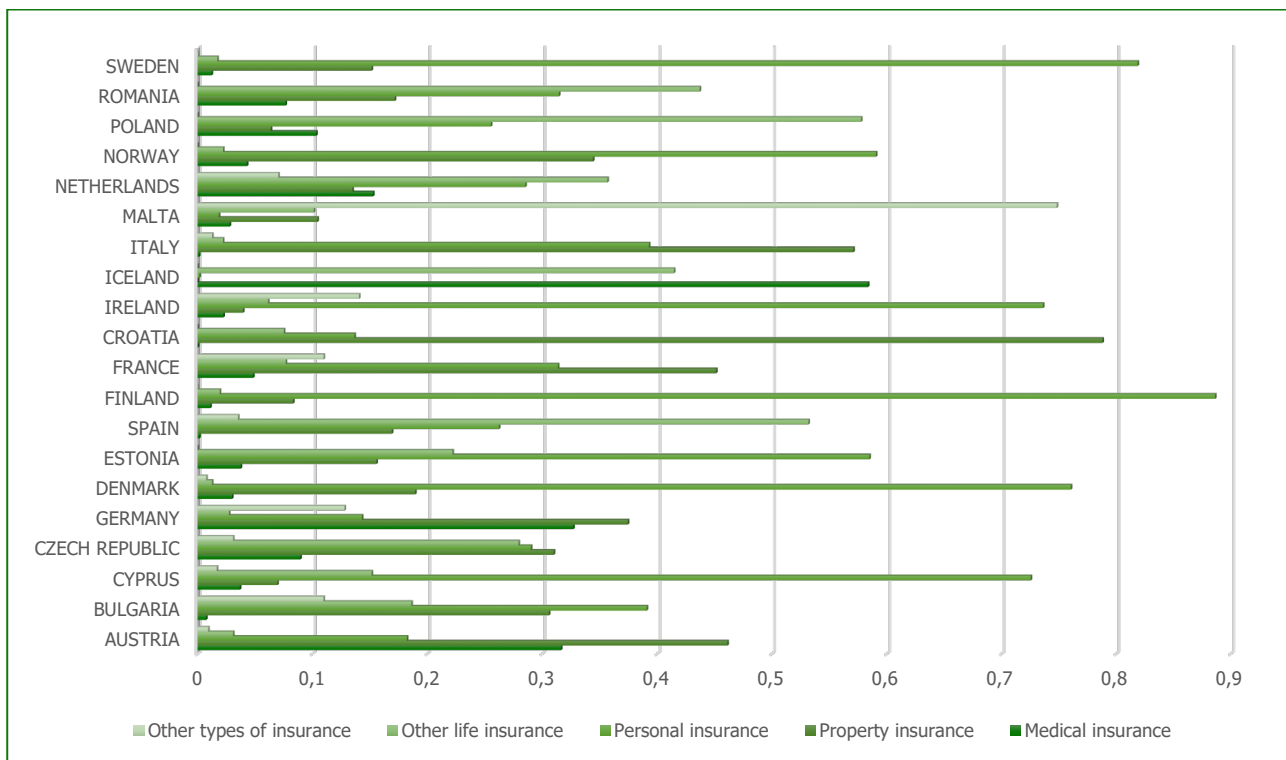


Figure 4. The structure of types of insurance in European countries in 2022. (Source: based on [18])

The insurance market of Malta deserves special attention, where the share of medical and personal insurance is extremely low, on the other hand, other types of insurance (medical and life risks) occupy 74.8% of the market, which is due to their national specificity of distinguishing types of protection due to risk, and not object of protection. Croatia should also be noted, where property insurance occupies 78.8% of the country's entire insurance market. A special emphasis on medical insurance was made in Iceland, Germany and Austria, these are countries where medical insurance is predominant and it is organized at a high level, which encourages citizens to conclude appropriate insurance contracts.

The experience of foreign insurance companies in investing accumulated funds for the purpose of preserving and increasing clients' capital and increasing their own resources deserves special attention. According to the International Association of Insurance Supervisory Authorities, the total value of the investment portfolio of insurers in 2022 was more than 830 trillion USA dollars [19]. In European countries, government bonds, corporate bonds, and securities of joint investment institutions together account for 73% of investments, and shares – another 15% [18].

Thanks to insurance, the amount of working capital of companies and institutions is reduced, unproductive savings of individuals are reduced; insurance contributes to the expansion of investments and innovations by creating attractive projects with high profitability for capital investments; policyholders act as reliable partners in the process of developing an effective, additional to the state, social protection system, primarily in the field of pension and medical care; as institutional investors, insurance companies contribute to the modernization of financial markets. What is particularly important is that the growth in premiums paid by policyholders is extremely closely related to GDP growth. It is possible to prove

such a relationship thanks to the correlation, assessing the trends of GDP per capita as an indicator of purchasing power, and the level of development of the insurance market, which is expressed through the volume of insurance premiums per capita.

The first stage of establishing the close relationship between the outlined indicators was the correlation analysis of data for 2022 by EU countries (Table 5). Since all the correlation coefficients indicated in Table 4 are close to 1, there are reasons to assert that there is an extremely close relationship between the purchasing power of the population (the volume of GDP per 1 person of the country's population) and the density of insurance coverage (the volume of gross insurance premiums per 1 person of the country's population) – R^2 from 0.8662 to 0.9047.

Table 5. Correlation matrix of the closeness of the influence of the GDP volumes of European countries on their insurance density.
 (Source: based on [18])

| Indicator | GDP volumes, million euros per 1 person | Gross premiums for non-life insurance per 1 euro of GDP | Gross life insurance premiums per EUR 1 of GDP |
|---|---|---|--|
| GDP volume, million euros per 1 person | 1 | 0.90475 | 0.86621 |
| Gross premiums for non-life insurance per 1 euro of GDP | 0.90475 | 1 | 0.88364 |
| Gross life insurance premiums per EUR 1 of GDP | 0.86621 | 0.88364 | 1 |

This result suggests a dependence on the level of purchasing power as well as the level of insurance penetration. The calculated correlation coefficients (Table 6) indicate a much lower degree of dependence of the degree of insurance penetration on the purchasing power of the population.

Table 6. Correlation matrix of the closeness of the influence of the GDP volumes of European countries on their degree of insurance penetration.
 (Source: based on [18])

| Indicator | GDP volumes, million euros per 1 person | Gross premiums for non-life insurance per 1 euro of GDP | Gross life insurance premiums per EUR 1 of GDP |
|---|---|---|--|
| GDP volume, million euros per 1 person | 1 | 0.48588 | 0.68216 |
| Gross premiums for non-life insurance per 1 euro of GDP | 0.48588 | 1 | 0.57695 |
| Gross life insurance premiums per EUR 1 of GDP | 0.682161 | 0.576955 | 1 |

The results of the analysis show that the level of economic development, measured as a ratio of GDP per capita, affects the level of demand for insurance, which is particularly noticeable, as European researchers claim [18; 19; 20; 21], in new EU member states. An explanation for this can be found in the recent history of these former socialist countries, where before the transition to a market economy, only one (or a few) state-owned insurance companies worked on the market, the insurance industries in these countries were poorly developed in terms of the number of insurance companies, types of activities and number insured persons.

Some areas of insurance were not developed or were underdeveloped, such as life insurance, while the market was dominated by non-life insurance, mainly compulsory motor vehicle owners' liability insurance. The population was not oriented to voluntary insurance due to the low standard of living, lack of information about it and bad experience related to the payment of insurance cases. The process of submitting claims took place, and the payment of claims took a long time and led to their depreciation due to high rates of inflation. As a result, these countries are characterized by a lack of insurance culture compared to the EU-15, and this is exactly the situation observed in Ukraine.

Focusing on the proven close connection between the level of economic development in the state and the level of insurance density, it is possible to build a trend, according to which insurance in European countries will likely develop in the future (Figure 5). According to the obtained results, in European countries, with an increase in the purchasing power of the population by 10,000 euros, the density of insurance will increase to 7,000 euros per person for non-life insurance and to 105,000 euros for life insurance. Such a regularity in both cases is established with a level of approximation (reliability) of more than 80%.

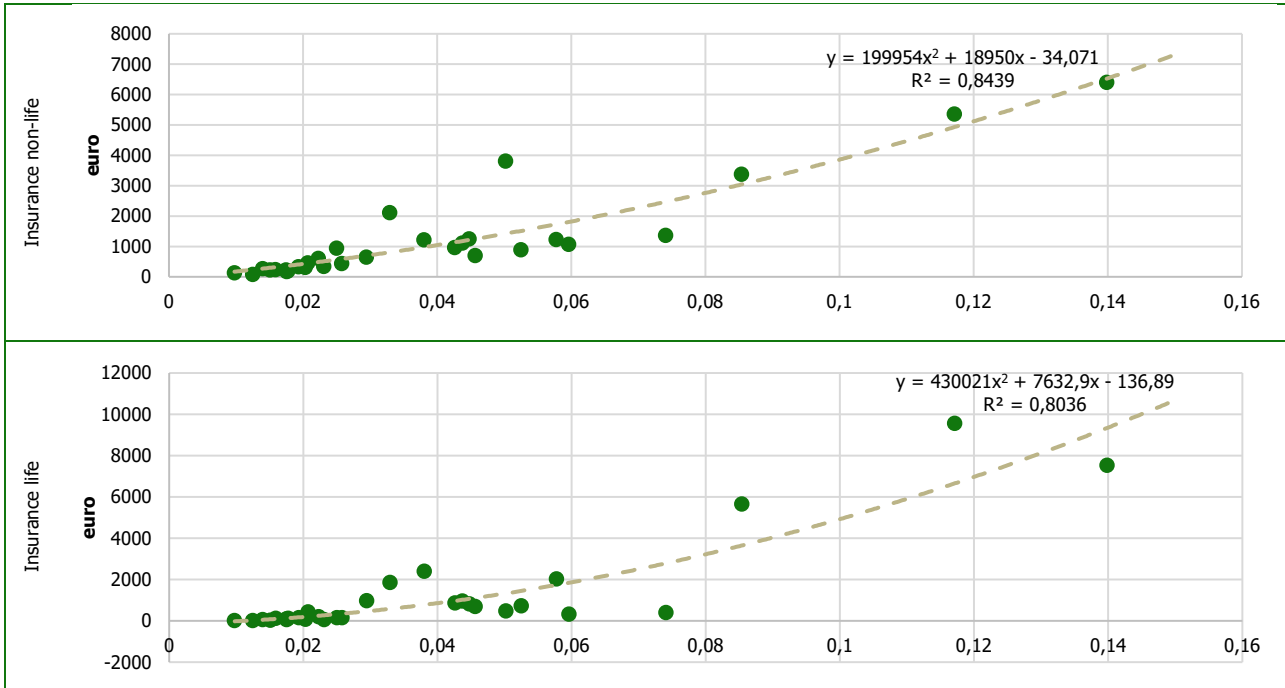


Figure 5. Trends in increasing the density of insurance (life and non-life) depending on the purchasing power of the population in European countries. (Source: based on [18; 19])

The indicators used can illustrate the level of development of the insurance market not only in European countries, but also in Ukraine. They are useful indicators because the population of a country is usually considered a constant indicator over a short period of time, and relative indicators are able to reflect changes in the economy in relation to 1 person. Analytical data on the economic development of Ukraine (volume of GDP per 1 person of the population) and the density of insurance coverage (volume of insurance premiums per 1 person) for the period 2011-2021 were used to extrapolate the trend by logarithmic and polynomial functions (Figure 6). It should be noted that in 2022 Ukraine has a difficult economic situation due to military actions, this year cannot be used for forecasting (trend building) as its indicators will significantly distort the situation.

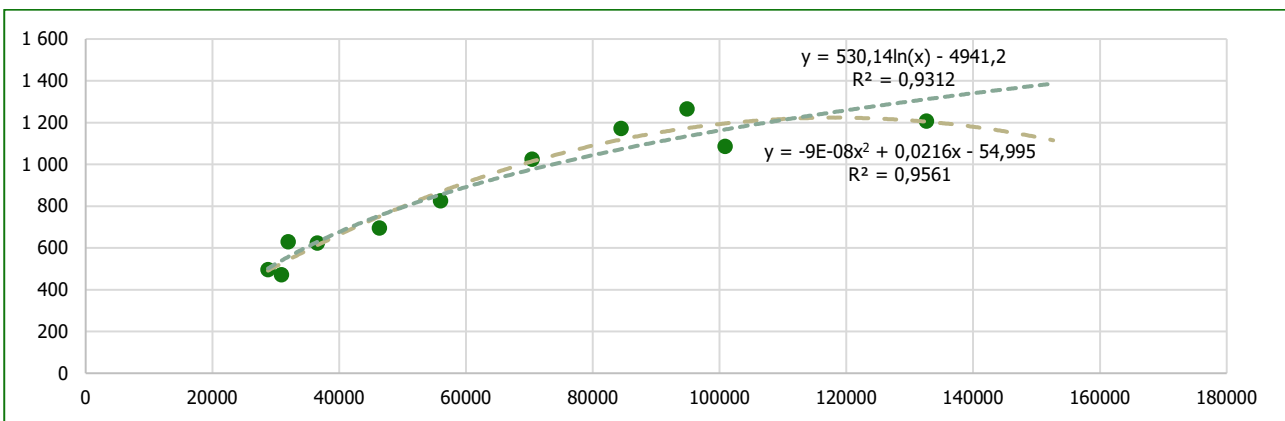


Figure 6. Trends in increasing the density of insurance depending on the purchasing power of the population in Ukraine. (Source: based on [18; 19])

As a result of the analysis, a logarithmic trend with an approximation level of 0.9312 and a 2nd degree polynomial with an approximation level of 0.9561 was obtained. The theory of economic science proves that the higher the level of approximation, the higher the probability of making a forecast based on the constructed equation. However, the polynomial equation with a high level of approximation (0.9561) shows a bell-shaped relationship between the selected indicators: purchasing power up to UAH 100,000 causes an increase in insurance volumes per person, and purchasing power over UAH 120,000 leads to a reduction in insurance volumes. The polynomial equation $y = -9E-08x^2 + 0.0216x - 54.995$ allows us to assume that if the purchasing power of the population increases by UAH 20,000, there will be a decrease in insurance

premiums by UAH 100. On the other hand, the logarithmic equation with a slightly lower level of approximation (0.9312) allows us to assume that the insurance market of Ukraine will develop according to the growing trend according to the following equation: $y = 530.14\ln(x) - 4941.2$ and in the future, provided that the purchasing power increases population by UAH 20,000, insurance premiums will be increased by UAH 100.

However, it should be noted that, at present, there are no stable conditions for building any of the formed models, since the Ukrainian economy has high risks in political, economic, social, technological and other spheres. Such challenges can significantly complicate the situation regarding the development of the insurance market (increasing the density of insurance and the level of coverage), as well as create a crisis situation in the financial market in general. However, to date, the balanced and balanced regulation of the NBU has ensured stable progressive development even in such uniquely difficult conditions that Ukraine is in today.

The European integration direction of development, which our country has chosen and is currently deepening, gives reasons to project the prospects for the development of the domestic insurance market according to the trends of the European one (calculated by the equation of the polynomial trend of the development of EU partner countries (Figure 7).

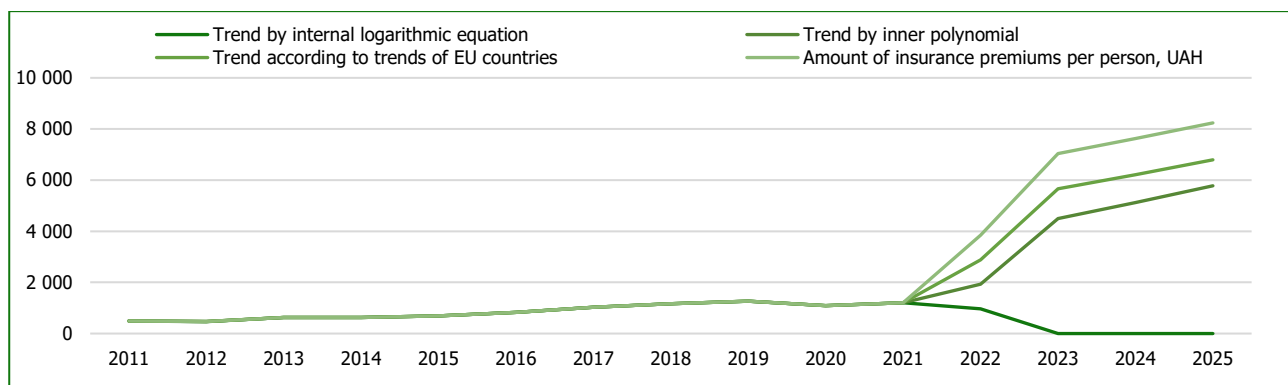


Figure 7. Forecasts of the development of the insurance market of Ukraine under various scenarios. (Source: based on [19; 20; 21])

The results of forecasting according to three scenarios provide different options for the development of events in the insurance market of Ukraine. However, a set of balanced, economically and technologically justified management decisions will allow building an effective and attractive insurance market in Ukraine, which will contribute to the further development of the country's economy in general.

DISCUSSION

Thus, based on the experience of foreign countries, it is possible to form a number of important aspects that deserve attention, can be adapted to domestic conditions and successfully put into practice (Table 7).

| Table 7. Attractive aspects of foreign experience for the development of the insurance market of Ukraine. | |
|--|---|
| Aspect | Characteristics of the aspect |
| A small number of insurance companies | Simplified regulation of the insurance market due to the limited number of operators |
| Competition in the market | Contributes to the improvement of the quality of services and objective pricing |
| Growth of incomes of the population and business entities | The increase in the solvency of the population and business entities makes it possible to purchase a wider list of insurance protection programs and cover more risks |
| Economic growth | The recovery of the economy will contribute to the growth of incomes of all insurance market subjects and will ensure the constant expansion of insurance objects |
| Reform in the health care financing | Health care reform is related to the sources of financing costs for treatment, rehabilitation, recovery, etc., where insurance can occupy its important niche |
| Regulations regarding certain types of insurance | Establishing certain norms and standards for individual insurance objects, for example, agricultural insurance |
| State insurance subsidies | Government subsidies can be applied to certain types of insurance, such as agricultural insurance, health insurance, etc. |
| Investment projects | The presence of real and attractive investment projects contributes to the development of accumulative insurance |

A small number of insurance companies in the insurance market of Ukraine can be a beneficial aspect for its development, as some of the existing insurers remain problematic, even despite the NBU's decisive measures to clean the market of non-bank financial institutions from unreliable and unstable ones. Unprofitable and critically unprofitable insurance companies slow down the development of the domestic insurance market. By leaving only strong insurers on the market, it will be easier for the state regulator to achieve the outlined prospects for the formation of sustainable development of the insurance market [16; 22]. In addition, reducing the number of insurance companies (primarily with a dubious reputation) will help reduce the level of economic exploitation due to the elimination of illegal interactions between insurers and policyholders. However, with a small number of market participants, there is a threat of establishing a monopoly or oligopoly, which will cause unfair tariffs and deterioration of the quality of services. Thus, the number of insurers and insurance intermediaries must be balanced in relation to the needs of the market and compliance with the principles of healthy competition.

The expansion of insurance volumes in the insurance market of Ukraine can be achieved by increasing the number of policyholders and the volume of their services (insurance premiums), however, the crisis situation in Ukraine, which has developed since the beginning of 2022, has caused large-scale problems in reducing the solvency of the population and business entities. In this regard, measures should be developed to restore the country's economic growth with a corresponding increase in the welfare of citizens. As world experience shows, higher activity in insurance services is observed in countries with higher incomes. Many countries in Europe and the world have insurance medicine and are successfully developing it, so their experience can become a solid basis for introducing the best practice of medical insurance in Ukraine in any of the acceptable forms: on the basis of private medical insurance or public-partnership conditions.

For a long time there have been areas of insurance in Ukraine, the level of development of which should be considered unsatisfactory. Such areas include agricultural insurance, property insurance, cyber insurance, etc. Protection in these areas is absolutely necessary, but due to a number of reasons of cultural, economic, social and psychological nature, the volumes of such types of insurance remain minimal. The establishment by the state regulator and the government of the country of certain standards for each of these types of insurance could disrupt the active process of their development. An attractive aspect of global experience is the formation of attractive investment projects in which insurance companies can become reliable investors: increase their profitability and ensure the growth of their clients' capital.

CONCLUSIONS

During military operations in Ukraine in the conditions of an unstable financial, economic and political situation, the following are the priority directions of the regulator's supervision of the activities of market participants: compliance with the requirements of business transparency (disclosure of information about the financial condition and key aspects of activity); strict compliance with mandatory regulations; fulfilment of obligations assumed by the insurer; operational monitoring of cash flows. The specified areas of regulation and supervision are able to ensure the maintenance of an appropriate level of trust in insurance companies and the insurance market in general. In foreign practice, there are many different tools that can create conditions for the sustainable development of the insurance market of Ukraine. The insurance market of Ukraine is currently in a state of gradual recovery from a state of shock due to military aggression, at the same time it is developing a number of tools and has powerful prospects that can positively affect the development of the insurance market itself and the economy of the state in general.

The polynomial equation $y = -9E-08x^2 + 0.0216x - 54.995$ allows us to assume that if the purchasing power of the population increases by UAH 20,000, there will be a decrease in insurance premiums by UAH 100. On the other hand, the logarithmic equation with a slightly lower level of approximation (0.9312) allows us to assume that the insurance market of Ukraine will develop according to the growing trend according to the following equation: $y = 530.14\ln(x) - 4941.2$ and in the future, provided that the purchasing power increases population by UAH 20,000, insurance premiums will be increased by UAH 100.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally

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ФІНАНСОВІ ТА ІНСТИТУЦІЙНІ АСПЕКТИ РОЗВИТКУ СТРАХОВОГО РИНКУ ЗА УМОВ ПАНДЕМІЇ 2020-2021 І ВІЙНИ 2022-2023: НА ПРИКЛАДІ СТРАХОВИХ КОМПАНІЙ УКРАЇНИ

Стаття присвячена аналізу страхового ринку України за умов пандемії та воєнних дій у 2021-2023 рр. Страховий ринок України характеризується помірними темпами розвитку: на ньому функціонують 128 страхових компаній із загальним обсягом активів 70338 млн грн, проте за період 2017-2022 рр. кількість компаній на ринку зменшилась у 2,3 раза. У дослідженні розглядаються ключові фактори, що сприяють негативному трендові розвитку фінансового ринку в Україні загалом та страхового зокрема. У роботі використані методи кореляційно-регресійного аналізу, узагальнення, групування, а також табличний та графічний методи представлення результатів.

Позитивним аспектом розвитку страхового ринку України, який забезпечує високий рівень довіри до страховиків, є щорічне нарощення обсягів страхових резервів і зі страхування life, і зі страхування non-life. Характерною для страхового ринку України є пріоритетність укладання договорів страхування щодо страхування КАСКО, медичного страхування, ОСЦПВ та страхування життя.

У розвинутих країнах встановлено надзвичайно тісний зв'язок між купівельною спроможністю населення й щільністю страхового покриття, однак залежність ступеня проникнення страхування від купівельної платоспроможності населення є значно нижчою. Із рівнем достовірності в понад 80% встановлено, що в європейських країнах при нарощенні купівельної спроможності населення на 10 тис. євро відбудеться зростання щільності страхування до 7000 євро на 1 особу за страхуванням non-life і до 105 тис. євро за страхуванням life. Стосовно України, то страховий ринок розвиватиметься за зростаючим трендом і в перспективі, за умови збільшення купівельної спроможності населення на 20000 грн, буде прирощено страхових премій на 100 грн. Страховий ринок України наразі перебуває в стані поступового відновлення від шокового стану у зв'язку зі збройною агресією, водночас він напрацьовує низку інструментів та має потужні перспективи, які здатні позитивно вплинути на розвиток самого страхового ринку й економіки держави загалом.

Ключові слова: страхування, фінансовий ринок, прогнозування, регресійний аналіз

JEL Класифікація: C10, G22