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CALCULATION OF THE INDEX OF PREREQUISITES FOR THE FUNCTIONING OF THE EUROPEAN INSURANCE SPACE IN THE CONTEXT OF INTEGRATION DIRECTIONS OF UKRAINE

Об'єктом дослідження є європейське страхове середовище, яке об'єднує національні страхові ринки країн Європи, у тому числі й України та має значну регіональну диференціацію розвитку. Одним з найбільш проблемних місць розвитку європейського страхового середовища є зниження впливу країн на свою фінансову систему та непостійний характер розвитку, де проявляє свою дію закон нерівномірності економічного розвитку через різні передумови функціонування національних страхових ринків.

В ході дослідження проведено аналіз сучасного стану українського страхового ринку через кількісні показники (кількість страхових компаній, динаміка страхових премій, структура чистих страхових премій за видами страхування). А також через якісні показники (політичні, економічні, соціальні та технологічні складові зовнішнього середовища). За допомогою класичних загальнонаукових методів дослідження, методів статистичної обробки, PEST-аналізу, індексного методу та принципу Парето отримано, що функціонування страхового ринку України на сучасному етапі не має сталої динаміки зростання. Це пов'язано з низкою політичних, економічних, соціальних та технологічних чинників впливу зовнішнього середовища.

Завдяки виокремленим індикаторам розраховано індекс передумов функціонування європейського страхового середовища з метою подальшої розробки механізму залучення України до глобального страхового середовища. Проведено ранжування країн Європейського Союзу та України за станом розвитку страхового середовища та виявлено його диференціацію. Це пов'язано з тим, що всі складові страхового середовища перебувають у тісному взаємозв'язку. Збільшення обсягів грошових заощаджень населення і вільних коштів підприємств сприяє розширенню та активізації кредитного ринку і ринку цінних паперів. А випуск цінних паперів знижує потребу у фінансуванні економіки за рахунок кредитів та акумулює тимчасово вільні грошові кошти інвесторів.

Ключові слова: *страховий ринок України, європейський страховий простір, індекс розвитку людського потенціалу, методика розрахунку індексу.*

1. Introduction

In world practice, the insurance market is a catalyst for significant financial resources, which helps countries provide protection for the population, reduces the burden on the state budget in the event of natural disasters, and stimulates entrepreneurial activity by insuring commercial risks. However, in Ukraine, the insurance market does not fulfill these functions due to its underdevelopment and the lag behind the insurance markets of more developed countries. The functioning of a high-quality and full-fledged insurance market is an important condition for increasing the country's sustainable economic and social growth; therefore, the features and prerequisites for its development should be prioritized in government policy, given its European integration guidelines. Given this, the study of the prerequisites for the functioning of the European insurance environment, the identification of its regional differences is highly relevant.

2. The object of research and its technological audit

The object of research is the European insurance environment, which unites the national insurance markets of European countries, including Ukraine, and has significant regional development differentiation. In particular, the main feature of the insurance services market at the present stage can be defined financial integration, which involves the process:

– unification of financial services, banking operations;
– liberalization of customs procedures;
– unification of the coordination system through international financial institutions, electronic means of payment.

The insurance markets of developed countries are combined into a regional system, which allows to direct more and more capital not only to your own development, but also to the economies of developing countries, for example, in Ukraine.

One of the most problematic places for the development of the European insurance environment is reducing the influence of countries on their own financial system, while increasing the influence on national economies of supranational entities and international companies.

3. The aim and objectives of research

The aim of research is calculation of the index of the prerequisites for the functioning of the European insurance environment in the context of the gradual integration of the insurance market of Ukraine into it. To achieve this aim it is necessary to perform the following tasks:

1. To analyze the insurance market of Ukraine at the present stage of development.

2. To determine the indicators for assessing the prerequisites for the functioning of the European insurance environment.

3. On the basis of the calculated index of the prerequisites for the functioning of the European insurance environment, conduct a ranking of the EU countries and Ukraine according to the state of development of the insurance environment.

4. Research of existing solutions of the problem

Among the main areas of research in the global insurance market, first of all, let's highlight the fundamental studies of the development of the market [1, 2], but they do not consider current development trends. In [3, 4], an analysis of the development of the world financial market in the conditions of cyclical development of the world economy is carried out; however, dynamic transformations are indicated only for certain countries of the world without taking into account regional entities.

Many scientists have considered the influence of globalization transformations on the development of the insurance market. Thus, in [5], the influence of European integration on the functioning of the insurance market in Poland is noted, and the study [6] shows the features of the insurance services index through the calculation of the index of insurance associations and governing bodies in Canada. Sources and instruments of insurance regulation in the European Union are considered in [7].

In particular, in [8] market institutions and possible post-crisis risks of financial, including insurance, markets are investigated, however, using only developed countries of the world as an example, and similar problems of developing countries remained outside the study. In the works [9, 10], interesting results of a study of the insurance markets of Sweden and the USA are given, however, the rest of the countries and regions of the world also remained outside the attention of the authors. The work [11] is devoted to the differentiation of market levels and the levers of their regulation. However, the author's opinion is not sufficiently supported by statistical data.

Thus, the results of the analysis allow to conclude that, despite the considerable amount of theoretical and practical research in the field of the global and insurance market, it is necessary to expand the analytical base of the study. This base should reflect the methodology of quantitative analysis and prerequisites for the development of the global and insurance market.

5. Methods of research

The following scientific methods are used:
– cluster general scientific research methods (analysis, systematization, comparison) – when studying the insurance market of Ukraine at the present stage of development and identifying indicators to assess the prerequisites for the functioning of the European insurance environment;
– PEST analysis – in determining the factors influencing the external environment on the insurance market of Ukraine through political, economic, social and technological components;
– index method – when calculating the index of prerequisites for the functioning of the European insurance environment;
– Pareto principle – when ranking the EU countries and Ukraine according to the state of development of the insurance environment.

6. Research results

The insurance market is the second in terms of capitalization among other non-banking financial markets in Ukraine. The total number of insurance companies (IC) in 2017 amounted to 294 units, including IC «Life» – 33 companies, IC «non-Life» – 271 companies. In general, the number of insurance companies tends to decrease – in 2017 compared to 2016. The number of companies decreased by 16 units, and in comparison with 2015 – by 67 units (Table 1).

Table 1

Number of insurance companies in Ukraine, 2015–2017

Number of insurance companies	Year		
	2015	2016	2017
Total amount	361	310	294
«non-Life» IC	312	271	261
«Life» IC	49	39	33

Note: built on the basis of data [12]

Gross insurance premiums received by insurers for insuring and reinsuring risks from insurers and reinsurers for 2017 amounted to 1447.72 million USD, of which (Fig. 1):
– 35.8 % came from individuals;
– 64.2 % came from legal entities.

In 2016, the total amount of insurance premiums received by insurers was 882.13 million USD, of which: 37.6 % came from individuals, 62.4 % from legal entities.
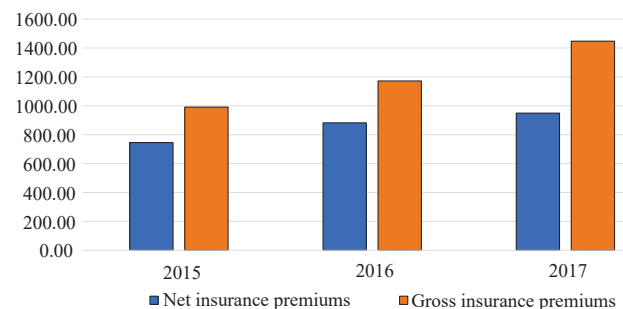

Fig. 1. Dynamics of insurance premiums in Ukraine, 2015–2017 (million USD) [12]

Net insurance premiums in 2017 amounted to 991.20 million USD, which accounted for 65.6 % of gross insurance premiums. Net insurance premiums for 2016 amounted to 1172.34 million USD, or 75.2 % of gross insurance premiums. The volume of insurance premiums in 2017 compared to 2016 increased by 23.5 %, compared to 2015 – 46.1 %. Net insurance premiums increased in 2017 at 7.7 % compared with 2016 and by 27.5 % compared with 2015.

Insurance premiums by type of insurance for 2016–2017 are shown in Fig. 2. In the structure of insurance premiums in Fig. 2 the largest share belongs to such types of insurance as:
– auto insurance;
– life insurance;
– medical insurance (continuous health insurance);
– property insurance;
– insurance of financial risks;
– third party liability insurance;
– insurance against fire risks and risks of natural phenomena;
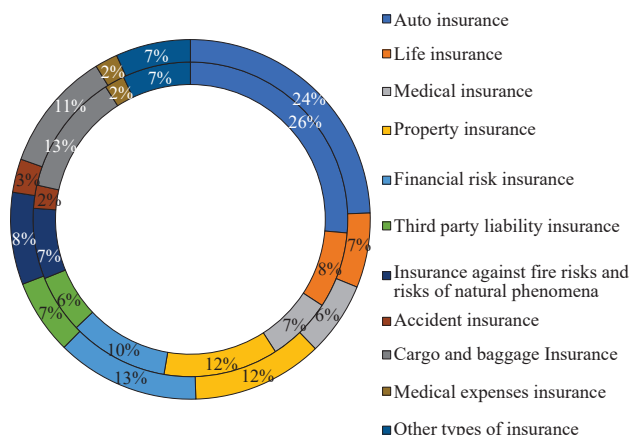– accident insurance;
– insurance of cargo and baggage.

Fig. 2. Structure of net insurance premiums by type of insurance in 2016 (inner diameter) and in 2017 (outer diameter), million USD [12]

The redistribution in the structure of net insurance premiums in 2017 compared to the same period of 2016 was in favor of such types of insurance as:
– insurance of financial risks;
– third party liability insurance;
– insurance against fire risks and risks of natural phenomena.
So the development of the insurance market reflects the overall economic, political, social and technological position of Ukraine. This is due to the fact that the insurance market is influenced by a significant number of environmental factors, the study of which is proposed to be carried out using the PEST analysis. This allows to systematize exogenous factors, combining them into four groups: political, economic, social and technological (Fig. 3).

The first group of factors – political, characterizes the government stability and the intentions of the government in relation to the development of society in general and the insurance industry in particular. The main aim of research of political factors in the insurance industry is an understanding of state influence on the industry, as well as the position of the government in relation to

foreign capital. The current political situation is a source of significant risks for the insurance business.
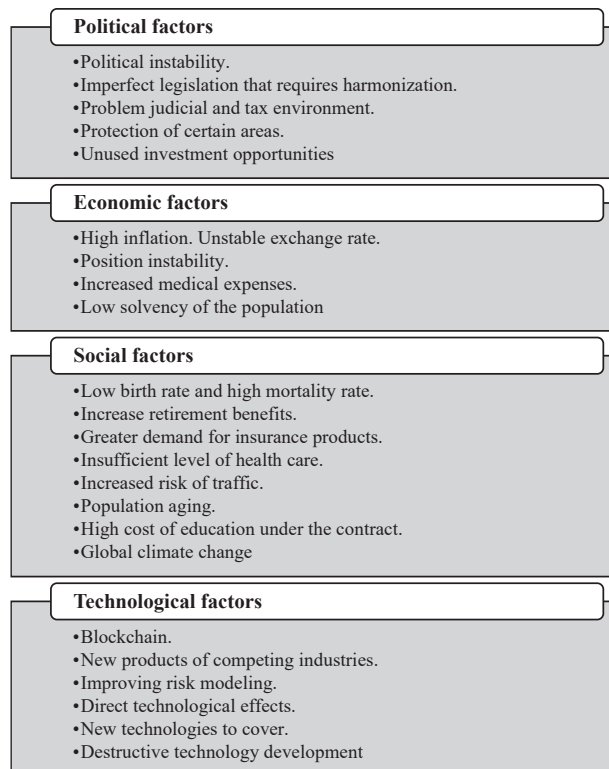

Fig. 3. PEST analysis of the current state of the insurance market of Ukraine

The second group is formed by economic factors. The redistribution of cash flows through the insurance system determines the place and importance of this sector in the country's economic system. Insurance reserves and temporarily free funds of insurers should be considered as internal financial flows that can stimulate the economy and the social sphere. The funds of insurers are formed at the expense of insurance premiums of legal entities and individuals, and therefore, inseparably connected with the formation and use of working capital of enterprises and incomes of citizens. The lack of working capital of organizations and low incomes of the population are the main factors limiting the development of the insurance market.

The third group of factors – social, determines the dynamics of consumer preferences, population structure, religious preferences, cultural traditions, national characteristics, developed market mentality, social status, etc. Urbanization seriously affects the insurance market, since it is the citizens who are the main consumers of insurance services. The concentration of capital and potential consumers in cities, developed infrastructure, specific risks and other factors stimulate the development of insurance.

The fourth group of factors is devoted to the technological component. Research and analysis of the technological component of the external environment make it possible to identify existing trends in technological development in the region and to restructure in a timely manner, avoiding the loss of customers. The most widespread in the insurance industry received information technology. This is due to the fact that this field of activity is one of the

most informationally saturated, and therefore information-dependent. Large amounts of information, high requirements for accuracy and reliability, the need for effective analysis of the financial condition of customers and firms are the main reasons for the rapid growth of modern information technologies in the insurance industry. Companies are actively introducing various information products that are designed to reduce costs, allow for more promptly entering into contracts, assessing and settling insurance claims. The expected innovations in the insurance industry are the development of online insurance and the introduction of electronic sales of insurance policies for compulsory insurance classes.

The factors of the external environment are significantly influenced by the state and development prospects of the national insurance market. However, in the global development environment, it is important not only to analyze the Ukrainian insurance market, but its place in the global insurance market.

The author proposes a methodology for assessing the prerequisites for the functioning of the European insurance market for services, including Ukrainian, according to the method for determining the human development index. However, in contrast to the definition of human development potential it is proposed to use only the economic and social component. Since global indicators are used in calculations, the political component is already taken into account. This concerns the technological component – the global competitiveness rating also contains data on the technological development of countries. Thus, the economic dimension is determined on the basis of two global indicators:

The first is the Competitiveness Index. The countries of the European Union (EU) and Ukraine have different levels of competitiveness, which is reflected in Table 2.

Table 2

Global Competitiveness Index (GCI) of the European Union and Ukraine

No.	Country	Total GCI	Country's place on the GCI	No.	Country	Total GCI	Country's place on the GCI
8	Austria	5.2	19	17	Malta	4.5	40
7	Belgium	5.3	17	1	Netherlands	5.6	4
21	Bulgaria	4.4	50	2	Germany	5.6	5
4	Great Britain	5.5	7	16	Poland	4.6	36
28	Greece	4	86	19	Portugal	4.5	46
6	Denmark	5.3	12	23	Romania	4.3	62
12	Estonia	4.8	30	24	Slovakia	4.3	65
11	Ireland	5.2	23	22	Slovenia	4.4	56
14	Spain	4.7	32	25	Hungary	4.2	69
18	Italy	4.5	44	89	Ukraine	4	85
27	Cyprus	4	83	5	Finland	5.4	10
20	Latvia	4.4	49	10	France	5.2	21
15	Lithuania	4.6	35	26	Croatia	4.1	74
9	Luxembourg	5.2	20	13	Czech Republic	4.7	31
–	–	–	–	3	Sweden	5.5	6

Note: built on the basis of data [13]

As can be seen from the data in Table 2, all EU countries, despite certain diversity, are in the first half of the

rating (Greece has the worst competitiveness, eighty-sixth place, and Ukraine ranks one position higher in the rating).

Despite the economic and political instability in many areas of life, the EU countries are the most competitive in the world – the average level of competitiveness is higher than the world average (4.78 in the EU countries compared to the average 4.11).

The second is the Index of Economic Freedom (IEF). Economic freedom is a fundamental human right to manage one's work and property. In economically free societies, individuals are free to choose work, produce goods, expenditures and investments in any way they wish. All these freedoms are supported and protected by the state. Table 3 shows the EU countries and Ukraine, their index of economic freedom.

Table 3

Index of economic freedom of the countries of the European Union and Ukraine

No.	Country	Total index	Country's place on the IEF	No.	Country	Total index	Country's place on the IEF
13	Austria	72.3	30	19	Malta	67.7	50
18	Belgium	67.8	49	5	Netherlands	75.8	15
16	Bulgaria	67.9	47	11	Germany	73.8	26
3	Great Britain	76.4	12	15	Poland	68.3	45
28	Greece	55	127	24	Portugal	62.6	77
7	Denmark	75.1	18	14	Romania	69.7	39
1	Estonia	79.1	6	21	Slovakia	65.7	57
2	Ireland	76.7	9	27	Slovenia	59.2	97
22	Spain	63.6	69	20	Hungary	65.8	56
25	Italy	62.5	79	162	Ukraine	46.8	162
17	Cyprus	67.9	48	10	Finland	74	24
9	Latvia	74.8	20	23	France	63.3	72
6	Lithuania	75.8	16	26	Croatia	59.4	95
4	Luxembourg	75.9	14	12	Czech Republic	73.3	28
–	–	–	–	8	Sweden	74.9	19

Note: built on the basis of data [14]

All countries studied by this index are divided into the following groups (Table 3):
– mostly free, with indicator 70–79.9 (Estonia, Ireland, Great Britain, Luxembourg, Netherlands, Lithuania, Denmark, Sweden, Latvia, Finland, Germany, Czech Republic, Austria);
– moderately free, with an indicator of 60–69.9 (Romania, Poland, Bulgaria, Cyprus, Belgium, Malta, Hungary, Slovakia, Spain, France, Portugal, Italy);
– mostly not free, with indicator 50–59.9 (Croatia, Slovenia, Greece);
– despotic, with an indicator of 0–49.9 (Ukraine, however, none of the EU countries belongs to this group).
The social dimension of the development of European insurance space can be formed on the basis of such indicators:
1. QLI (Quality-of-Life Index) [15].
2. HDI (Human Development Index) [16].
The distribution of EU countries according to the quality and safety of life index is given in Table 4.

Table 4

Quality-of-Life Index in the countries of the European Union and Ukraine

No.	Country	Quality-of-Life Index	Place in the region	No.	Country	Quality-of-Life Index	Place in the region
1	Austria	190.37	1	15	Malta	–	25
2	Belgium	160.52	15	16	Netherlands	175.23	8
3	Bulgaria	138.2	23	17	Germany	189.74	2
4	Great Britain	172.87	9	18	Poland	150.21	18
5	Greece	148.32	19	19	Portugal	178.43	6
6	Denmark	184.92	3	20	Romania	143.04	20
7	Estonia	171.09	11	21	Slovakia	152.55	17
8	Ireland	166.9	13	22	Slovenia	175.45	7
9	Spain	183.65	4	23	Hungary	138.82	22
10	Italy	142.52	21		Ukraine	102.34	62
11	Cyprus	–	25	24	Finland	182.93	5
12	Latvia	–	25	25	France	160.25	16
13	Lithuania	130.28	24	26	Croatia	170.63	12
14	Luxembourg	–	25	27	Czech Republic	165.41	14
–	–	–	–	28	Sweden	172.74	10

Note: built on the basis of data [15]

Austria, Germany, Denmark, Spain and Finland have the highest level of quality and safety of life; the worst is Ukraine.

According to the human development index, all EU countries belong to countries with a very high level of human development (only Bulgaria belongs to the group of countries with a high level of human development), Table 5.

Table 5

Human Development Index of the European Union and Ukraine

No.	Country	Human Development Index	No.	Country	Human Development Index
24	Austria	0.893	33	Malta	0.856
22	Belgium	0.896	7	Netherlands	0.924
56	Bulgaria	0.794	4	Germany	0.926
16	Great Britain	0.909	36	Poland	0.855
29	Greece	0.866	41	Portugal	0.843
5	Denmark	0.925	50	Romania	0.802
30	Estonia	0.865	40	Slovakia	0.845
8	Ireland	0.923	25	Slovenia	0.89
27	Spain	0.884	43	Hungary	0.836
26	Italy	0.887	84	Ukraine	0.743
33	Cyprus	0.856	23	Finland	0.895
44	Latvia	0.83	21	France	0.897
37	Lithuania	0.848	45	Croatia	0.827
20	Luxembourg	0.898	28	Czech Republic	0.878
–	–	–	14	Sweden	0.913

Note: built on the basis of data [16]

Thus, the study of the prerequisites for the functioning of the European insurance environment in the EU countries and Ukraine allows to calculate for each country the ratio of economic and social components. 4 indicators were chosen for calculation:

1. Global Competitiveness Index.
2. Index of Economic Freedom.
3. Quality-of-Life Index.
4. Human Development Index (Table 6).

Table 6

Components of the index of the prerequisites for the functioning of the European insurance environment

No.	Country	Global Competitiveness Index	Index of Economic Freedom	Quality-of-Life Index	Human Development Index
1	Austria	5.2	72.3	190.37	0.893
2	Belgium	5.3	67.8	160.52	0.896
3	Bulgaria	4.4	67.9	138.20	0.794
4	Great Britain	5.5	76.4	172.87	0.909
5	Greece	4.0	55.0	148.32	0.866
6	Denmark	5.3	75.1	184.92	0.925
7	Estonia	4.8	79.1	171.09	0.865
8	Ireland	5.2	76.7	166.90	0.923
9	Spain	4.7	63.6	183.65	0.884
10	Italy	4.5	62.5	142.52	0.887
11	Cyprus	4.0	67.9	0	0.856
12	Latvia	4.4	74.8	0	0.830
13	Lithuania	4.6	75.8	130.28	0.848
14	Luxembourg	5.2	75.9	0	0.898
15	Malta	4.5	67.7	0	0.856
16	Netherlands	5.6	75.8	175.23	0.924
17	Germany	5.6	73.8	189.74	0.926
18	Poland	4.6	68.3	150.21	0.855
19	Portugal	4.5	62.6	178.43	0.843
20	Romania	4.3	69.7	143.04	0.802
21	Slovakia	4.3	65.7	152.55	0.845
22	Slovenia	4.4	59.2	175.45	0.890
23	Hungary	4.2	65.8	138.82	0.836
24	Finland	5.4	74.0	182.93	0.895
25	France	5.2	63.3	160.25	0.897
26	Croatia	4.1	59.4	170.63	0.827
27	Czech Republic	4.7	73.3	165.41	0.878
28	Sweden	5.5	74.9	172.74	0.913
29	Ukraine	4	46.8	102.34	0.743

Note: compiled by the author on [13–16]

To stabilize the data of each of the indices, an arithmetic average is used for each indicator into which divides each indicator for each country. The results of the calculation of the index of the prerequisites for the functioning of the European insurance environment are shown in Fig. 4.

Using the Pareto histogram, let's determine the cumulative dependences of the distribution of European countries according to the calculated index (Fig. 5).
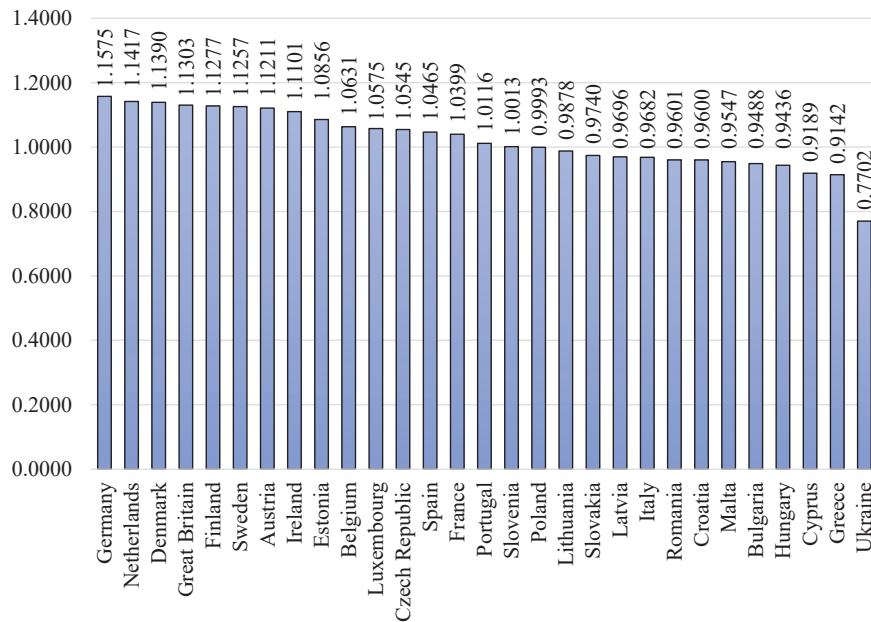
Fig. 4. Index of prerequisites for the functioning of the European insurance environment
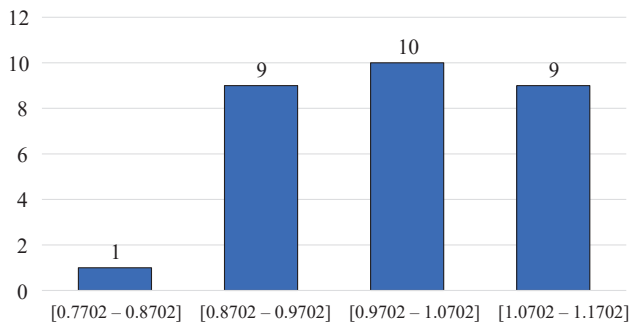

Fig. 5. Distribution of the countries of the European Union and Ukraine by the index of prerequisites for the functioning of the European insurance environment (according to the Pareto principle)

As can be seen from Fig. 4, 5, such countries as Germany (1.1575), Netherlands (1.1417), Denmark (1.1390), Great Britain (1.1303), Finland (1.1277) Sweden have the index of prerequisites for the functioning of the insurance environment (1.1257), Austria (1.1211), Ireland (1.1101), Estonia (1.0856).

The average index of prerequisites for the functioning of the insurance environment are in Belgium (1.0631), Luxembourg (1.0575), Czech Republic (1.0545), Spain (1.0465), France (1.0399), Portugal (1.0166), Slovenia (1.0013), Poland (0.9993), Lithuania (0.9878), Slovakia (0.9740).

Latvia (0.9696), Italy (0.9682), Romania (0.9601), Croatia (0.9600), Malta (0.9547), Bulgaria (0.9488), Hungary have a sufficient index of the prerequisites for the functioning of the insurance environment (0.9436), Cyprus (0.9189), Greece (0.9142).

Low index of prerequisites for the functioning of the insurance environment is in Ukraine (0.7701).

7. SWOT analysis of research results

Strengths. Since the European insurance environment, such as the global one, functions on the basis of a harmonious combination of many development factors, this

made it possible to carry out studies in the context of countries with the definition of leaders and outsiders of the European insurance environment.

Weaknesses. The weak point of the research object is that countries are becoming more dependent on each other, which reduces the ability of national governments to regulate processes in local markets for services. However, it is precisely this feature that made it possible to quantify the dependence of countries on many economic, political, technological and social factors through an index of prerequisites for the formation of the insurance environment.

Opportunities. A promising area of research for the global insurance market is to expand the base of indicators describing the state of its development and the prerequisites for its operation. As well as further multivariate assessment using cluster, factor and regression-correlation analysis. This will allow for a regional differentiation of the development of the insurance market at a higher scientific level.

Threats. The threats to the object of research include the constantly recurring relationship between the structural elements of the global (or regional) insurance market. This development is not constant, and its dynamics has periods of growth and decline. Such a situation does not always allow to assess the development trend and requires the use of more complex methods for assessing the insurance services market.

8. Conclusions

1. The features of the functioning of the insurance market of Ukraine at the present stage are analyzed and the conclusion is drawn that there is no dynamics of growth in its volumes for the period from 2015–2017.

2. Indicators for assessing the prerequisites for the functioning of the European insurance environment are defined, namely:
   – Global Competitiveness Index;
   – Index of Economic Freedom;
   – Quality-of-Life Index;
   – Human Development Index.

3. The index of prerequisites for the functioning of the European insurance environment is calculated with the aim of further developing a mechanism for attracting Ukraine to the global insurance environment. The ranking of the EU countries and Ukraine according to the state of development of the insurance environment was carried out:

– The highest index of prerequisites for the functioning of the insurance environment are Germany, Netherlands, Denmark, the United Kingdom, Finland, Sweden, Austria, Ireland, Estonia;

– Belgium, Luxembourg, the Czech Republic, Spain, France, Portugal, Slovenia, Poland, Lithuania, Slovakia have an average index of prerequisites for the functioning of the insurance environment;

– Latvia, Italy, Romania, Croatia, Malta, Bulgaria, Hungary, Cyprus, Greece have a sufficient index of the prerequisites for the functioning of the insurance environment;

– Ukraine has a low index of prerequisites for the functioning of the insurance environment.

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