

ECONOMIC ANALYSIS OF ACTIVITIES OF COMPANIES OF UKRAINE AND POLAND AND CLUSTERIZATION OF THE INSURANCE MARKET OF THE NATIONAL ECONOMY

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Abstract

The article examines the financial and economic analysis of the activities of insurance companies of Ukraine and Poland in the context of integration and cooperation and exchange of experience in the insurance industry of the economy. The market for insurance services and its dynamic development is particularly relevant for the national economy, as insurance companies also act as providers of insurance services and which is extremely relevant for both Ukraine and Poland to investment entities that can invest specific investment projects, and cooperation with several easier than with banking institutions. Accumulation of money capital by insurance companies will allow to stabilize the financial and money market of both the national economy and the economy of Poland. Scientific developments in the field through the use of clustering tools of economic objects are relevant and can be used in practical implementation.

Keywords: insurance companies, insurance payments, cluster analysis, matrix of normalized values, construction of dendrogram, distance matrix.

INTRODUCTION

Each country's economy will be financially dynamic if there is sufficient circulation of financial capital in economic and economic activity, as an additional source of investment in the national economy and the economies of European countries, including we consider investments from insurance companies, and support the dynamic development of the insurance market of the national economy. Ukraine's insurance market has been developing at a good pace in recent years, but it is necessary to restore clients' trust in insurance companies and change the legislation of Ukraine in order to better protect the rights of clients of insurance companies, to receive full insurance payments, and in our opinion we should raise public awareness of insurance companies, which will allow the application of European standards for the provision of insurance services in the national economy

Both domestic and foreign scientists were engaged in studying the scientific aspects of the financial and economic activity of Ukrainian insurance companies. From the domestic it: L. Kotrsrach [3], Yu. Romanovskaya, I. Malinkov [2] and others. Problems of clustering of economic objects were addressed by such national scientists as: O. Zhabinets [1], V. Ilchenko, I. Homenko, B. Mrozowska-Bartkiewicz [7], A. Ostroscka-Dancevisz [8] and others.

Dynamic functioning of the insurance market of the national economy, and reasonable control by the central structures in our opinion, should be created by the Ministry of Finance or the National Bank of Ukraine will allow through synergetic influences on the relevant markets of services and production to significantly improve

the development of industries such as tourism, medical, hotel business, car and machinery market and many other areas.

In addition, stimulating the development of insurance business in Ukraine and other European or world economies will significantly improve the financial and credit portfolio, both regionally and in terms of the economy as a whole.

Incentives to exercise in addition to the primary function of insurance companies and reinsurance of services licensed by financial and investment activities can significantly improve the financial and investment climate of a particular region, where insurance companies and macroeconomic indicators of the country's economy as a whole operate. That is, in some of their functions, insurance companies are investors and a source of additional funds for the promotion of innovative business projects.

PREVIOUS RELATED RESEARCH

Domestic scientist L. Kostach researched the tendencies of development of insurance companies in Ukraine, and noted the positive dynamics of both the creation of the most insurance companies in Ukraine and the increase of insurance payments to clients of companies. Also, Ukrainian scientists in their midst: V. Ichenko and I. Homenko emphasized the urgency of creating cluster structures in shaping the potential of enterprises in the real sector of the economy. Also interesting are the studies of Polish and European scientists on the analysis and legal activity of the insurance market of the economy. Polish scientist B. Mrozowska-Bartkiewicz [7] examines the legal field of activity of the Polish insurance market and states: "In accordance with the Law of 14 December 2017 amending the Law on Insurance and Reinsurance and certain other acts (the "Amendment"), new provisions were adopted to create the possibility of creating their own insurance and reinsurance companies. The provisions of Article 13 (2) and (5) of the Solvency Directive II4, which constitute a glossary, which defines internal insurance and internal reinsurance undertakings. supplemented by the provisions of article 3, paragraph 1, paragraphs 53 a and 53 b". The Polish scientist also explains the new type of co-insurance as: "The glossary has been supplemented with the definition of a leading co-insurer. According to the new definition, the leading co-insurance provider should be understood as an "insurance company selected from among participants in the co-insurance agreement to carry out activities specified in this contract on behalf of itself and other insurance companies co-insurance". The amendment to the Act provides for the use of leading co-insurance institutions in the case of co-insurance contracts for large risks, as well as for co-insurance agreements of risks other than large risks. The new regulations provide for the conclusion by domestic insurance companies of large-risk co-insurance agreements located in the territories of other European Union countries and the conclusion of foreign-type co-insurance contracts by foreign insurance companies located on the territory of Poland". A. Ostrowska Dankiewicz [8] states, describes trends observable on the Polish life insurance market.

RESEARCH RESULTS AND DISCUSSION

The market structure analysis leads to the presentation of tendencies and directions of growth, with particular emphasis placed on the demand for investment-type life insurance products, which have superseded traditional insurance policies and have given rise to numerous risks continued market development. The article identifies the causes of clients' negative attitude our opinion, it is expedient for Ukrainian managers of insurance companies on blacksmiths, who are researching the problems of activity of the insurance market of Ukraine, to learn from Polish and European colleagues the experience in this field. Overall, the Ukrainian insurance market has completed 2018 on the rise. According to the National Commission for Regulation of Financial Services Markets, total gross premiums written for 2018 amounted to UAH 49.4 billion, which is 13.7% more than in 2017.

If last year's rating update was a key opinion of "unprofitable" most insurance companies, then in 2018, many market leaders have learned to make money. Problems remain with OSCE, where the share of underwriting (policy value and / or brokerage) can be as high as 40%, and LCA, which by itself remains a loss-making product for most companies.

At the same time, premiums were growing for virtually all key types of insurance. In motor insurance (CASCO*- car insurance policy; OSCPV**- compulsory insurance of civil property of car owners in the territory of Ukraine; Green Card contracts), insurers collected 18.9% more net premiums in 2018, 25% more property insurance, 21.5% fire and natural hazards insurance % more than in 2017.

For health insurance, net premiums grew by 21.3%, medical expenses by 31.9%, and accident insurance by 32.5%.

Cargo and baggage insurance premiums, financial risk insurance and third party liability insurance decreased.

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The volume of payments to insurers is also increasing. Gross compensation in 2018 compared to 2017 increased by 22.1%, net payments – by 21.2%. The largest increase in net payments was recorded in cargo and luggage insurance (+ 86.7%), fire and natural hazards (+ 51.2%), health insurance (+ 25.3%), auto insurance (+ 17.1%) and especially property insurance (four times).

In the past year, insurers have also significantly increased their assets and reserves by 10.7% and 18%, respectively. Interestingly, in 2018, the volume of reinsurance premiums decreased by 2.1%, although in 2017 the volume of outgoing reinsurance, on the contrary, increased by almost 45%.

The Ukrainian insurance market is still heterogeneous. The top 10 largest insurance companies in 2018 generated more than 39% of insurance premiums, the top 20 insurers – 62% of insurance premiums and the top 50 insurers collected more than 88% of premiums. The total number of risk insurance companies in Ukraine by the beginning of 2019 exceeded 280.

"Business consolidation remains a global trend in the insurance market in Ukraine. Already, the Pareto principle is in line with the first 20 players accumulating

most of the insurance market,” – said Alexey Alexashin, director of direct sales at Arsenal Insurance.

The portfolio of insurers’ portfolios also has "biases" toward some types of insurance. According to the National Financial Services Commission, the market is dominated by CASCO, OSCPV and Green Card, medical insurance and property insurance.

“Motor” species continue to move the market. They occupy a significant place in the portfolios of virtually all leading companies, as OSCPV is bought by clients because of its obligation, and CASCO is sold to them by “trailer”. Medical insurance is also growing. But medical insurance is difficult to make profitable, and earn a little on it”, said Svyatoslav Yaroshevych, CEO of insurance company Colonnade Ukraine.

Experts and insurers predict that in 2019 the insurance market will be kept “positive”. The Hull segment is promised to grow up to 15-20%, OSCPV – up to 30-40%, and VMS, according to various estimates, can grow one and a half times. “In the first quarter of 2019 alone, the market for voluntary health insurance grew by 54%”, said Irina Hevel, chairman of the board of Alfa Insurance IC.

Participants forget to add that the main reason for such growth rates is still a low base: in the previous five years, insurance has decreased to a minimum.

The big challenge for insurers in the next year or two will be the fight for customer loyalty. And it is not only price competition, but also improving the quality of service, simplifying and speeding up procedures for loss settlement, as well as personalizing insurance products. In other words, insurers will be ready to cover the ever-narrowing needs of customers by offering programs to their liking.

Another trend is digitization. Insurance services and services will increasingly migrate to the Internet. It is a convenience for the client, for the insurance company it is an opportunity to reduce costs and cover a wider range of insurers. First of all, who prefers to shop online. As an example of “digitization” – OSCPV. “Almost a year after the launch of the e-policy, about 10% of the autolayer policies are issued electronically”, said Andriy Peretyazhko, chairman of Akha Strakhuvannya.

But the global “clearing” of the insurance market in the near future is unlikely to happen. Although the National Financial Services Commission is taking steps in this direction. “A new commission regulation has come into force, which has strengthened solvency requirements, capital adequacy standards, asset quality and insurers' liquidity. This is a really important change, but now it is extremely necessary for it to work and for the regulator to actively withdraw from the market those insurance companies that do not meet these requirements”, Andrey Peretyazhko thinks.

However, a major market reboot also requires serious legislative changes. First, the adoption of a new version of the Law “On Insurance”, which has been elaborated and discussed for over 10 years. Second, the adoption of the law on “split”, which will give the National Bank the powers to regulate the insurance market from Natcomfin Services.

One of the requirements in the memorandum with the IMF was the adoption of the split law by the end of March 2019.

Analyzing the dynamic development of the Ukrainian insurance market, we will carry out a cluster analysis of major companies in the national economy insurance market.

Using the Statistica software environment, a cluster analysis of insurance companies' activities in the Ukrainian market was conducted.

The input database is characterized by the following values:

VAR1 – Casco insurance payments, million UAH;

VAR2 – insurance payments of OSCPV, million UAH;

VAR3 – insurance payments for health insurance, million UAH;

VAR4 – the level of payments,%.

Table 1. Cluster analysis input database

No.	Insurance company (IC)	Casco insurance payments, mln UAH	Insurance payments of OSCPV, mln UAH	Health insurance payments, mln UAH	The level of payments, %
1	UNIQA	740,6	181,3	387,2	83,84
2	PZU Ukraine	338,4	203,8	131,5	37,09
3	Group TAC	255	481,2	85,3	39,30
4	Providna	93,9	185,1	400,1	65,70
5	USI	2,7	240,3	0,16	11,10
6	Oranta	35,9	477,7	9,9	34,40
7	Akha Strakhuvannya	1131	140,4	224,7	46,90
8	KNIAZA	132,9	207,4	44,9	44,25
9	Hlobus (Vienna Insurance Group)	11,3	51,8	0,22	18,80
10	VUSO	183,6	159,4	45,7	27,30

Each company is assigned an ordinal number according to the placement in Table 1. The result of entering data into the Statistica software environment is shown in Figure 1.

	1 Var1	2 Var2	3 Var3	4 Var4
1	740,6	181,3	387,2	83,84
2	338,4	203,8	131,5	37,09
3	255	481,2	85,3	39,3
4	93,9	185,1	400,1	65,7
5	2,7	240,3	0,16	11,1
6	35,9	477,7	9,9	34,4
7	1131	140,4	224,7	46,9
8	132,9	207,4	44,9	44,25
9	11,3	51,8	0,22	18,8
10	183,6	159,4	45,7	27,3

Figure 1. Entering data into Statistica environment

Since the data is presented in different formats, their normalization was performed using the built-in standardization function (Figure 2).

	1 Var1	2 Var2	3 Var3	4 Var4
1	1,22046518	-0,3697871	1,65467577	2,00677383
2	0,12494195	-0,208355	-0,0095545	-0,176431
3	-0,1022252	1,78192301	-0,3102485	-0,0732249
4	-0,5410338	-0,342523	1,73863576	1,15964367
5	-0,7894468	0,0535237	-0,8643844	-1,3901527
6	-0,6990157	1,75681135	-0,8009914	-0,3020528
7	2,28384725	-0,6632347	0,59704017	0,28169179
8	-0,4348045	-0,1825259	-0,5731929	0,15793794
9	-0,7660219	-1,2989183	-0,8639939	-1,0305661
10	-0,2967065	-0,5269143	-0,5679861	-0,6336197

Figure 2. Array of normalized values

Joining (tree clustering) method was used for cluster analysis. The result of the calculation is to obtain a distance matrix and a dendrogram.

Case No.	Euclidean distances (Spreadsheet45)									
	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10
C 1	0,00	2,96	3,82	1,96	4,70	4,42	2,30	3,34	4,51	3,77
C 2	2,96	0,00	2,03	2,30	1,76	2,28	2,33	0,86	1,86	0,89
C 3	3,82	2,03	0,00	3,23	2,35	0,81	3,55	2,02	3,34	2,40
C 4	1,96	2,30	3,23	0,00	3,67	3,61	3,19	2,53	3,54	2,94
C 5	4,70	1,76	2,35	3,67	0,00	2,02	3,86	1,63	1,40	1,11
C 6	4,42	2,28	0,81	3,61	2,02	0,00	4,13	2,02	3,14	2,35
C 7	2,30	2,33	3,55	3,19	3,86	4,13	0,00	3,00	3,68	2,98
C 8	3,34	0,86	2,02	2,53	1,63	2,02	3,00	0,00	1,69	0,87
C 9	4,51	1,86	3,34	3,54	1,40	3,14	3,68	1,69	0,00	1,03
C 10	3,77	0,89	2,40	2,94	1,11	2,35	2,98	0,87	1,03	0,00

Figure 3. Matrix of distances in the clustering of insurance companies of the national economy

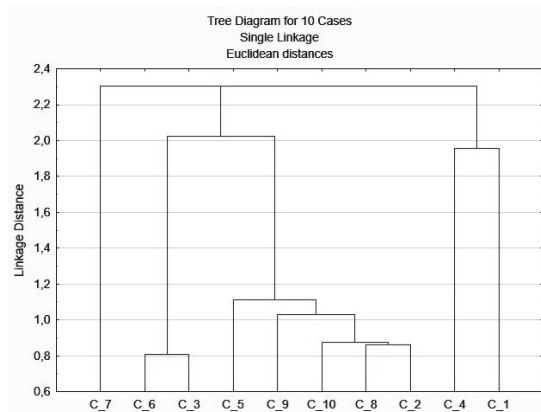


Figure 4. Dendrogram of formation of clusters of insurance companies of Ukraine implemented in the Statistica program

Analyzing the obtained dendrogram, we concluded that there are 3 clusters among the studied insurance companies.

Cluster 1 includes:

1. IC “Providna”.
2. IC “Uniqa”.
3. IC “Akha Stranuvannya”.
4. Insurance Group “TAC”.

Cluster 3 includes:

1. PZU Ukraine.
2. IC “USI”.
3. IC “Hlobus (Vienna Insurance Group)”.
4. IC “VUSO”.

To test the hypothesis of dividing objects into 3 clusters, we use the K-means method, during the calculation of which we specify the number of clusters we need. The results of the calculations are shown in Figure 5.

Members of Cluster Number 1 (Spreadsheet45) and Distances from Respective Cluster Center Cluster contains 3 cases			
Case No.	Distance		
C_1	0,475001		
C_4	0,793356		
C_7	0,867759		

Members of Cluster Number 2 (Spreadsheet45) and Distances from Respective Cluster Center Cluster contains 2 cases			
Case No.	Distance		
C_3	0,201553		
C_6	0,201553		

Members of Cluster Number 3 (Spreadsheet45) and Distances from Respective Cluster Center Cluster contains 5 cases			
Case No.	Distance		
C_2	0,467323		
C_5	0,512014		
C_8	0,405996		
C_9	0,528640		
C_10	0,083258		

Figure 5. Members of each cluster and distance

As a result, we will analyze each of the clusters.

Table 2. Cluster 1

No.	Insurance company	Casco insurance payments, mln UAH	Insurance payments of OSCPV, mln UAH	Health insurance payments, mln UAH	The level of payments, %
1	UNIQA	740,6	181,3	387,2	83,84
4	Providna	93,9	185,1	400,1	65,70
7	Akha Stranuvannya	1131	140,4	224,7	46,90

Cluster 1 companies have the highest payout rates among all companies and are the leaders in health insurance payments.

Table 3. Cluster 2

№	Insurance companies	Casco insurance payments, mln UAH	Insurance payments of OSCPV, mln UAH	Health insurance payments, mln UAH	The level of payments, %
3	Group TAC	255	481,2	85,3	39,30
6	Nask Oranta	35,9	477,7	9,9	34,40

Cluster 2 companies are the leaders in terms of insurance payments for OSCPV.

Table 4. Cluster 3

No.	Insurance company	Casco insurance payments, mln UAH	Insurance payments of OSCPV, mln UAH	Health insurance payments, mln UAH	The level of payments, %
2	PZU Ukraine	338,4	203,8	131,5	37,09
5	USI	2,7	240,3	0,16	11,10
8	KNIAZA	132,9	207,4	44,9	44,25
9	Hlobus (Vienna Insurance Group)	11,3	51,8	0,22	18,80
10	VUSO	183,6	159,4	45,7	27,30

Cluster 3 companies are mid-cap companies, they are not industry leaders, so they can be combined into a so-called “general” cluster of companies.

Carrying out a cluster analysis of companies actually operating in the insurance market of the national economy will allow to clearly identify the companies with the highest financial indices for payments to customers and other factors that characterize the activity of insurance companies. For the insurance companies themselves, this is an opportunity to compare financial indicators and negotiate with one another, on cooperation on customer experience, the possibility of increased netization and thereby reducing the cost of their services to clients and the convenience of clients to make insurance poles and services electronically.

CONCLUSION

The activities of insurance companies of both the national economy and the economies of European countries, including Poland, are the subject of scientific research in the context of the entry of Ukrainian companies into cooperation in the European and world zones with mandatory insurance conditions for almost all types of services, with Ukrainian clients only starting to consider all aspects of the provision of services or the purchase of goods with a particular type of insurance purchase. In another aspect, insurance companies for the economies of any European and world state are an additional source of accumulation and provision of investment funds, which in turn improves the financial and investment portfolio of activity both in the regional aspect of the country and in general macroeconomic indicators of the country.

Applying the tools of economic and mathematical apparatus for clustering of insurance companies on the example of the Ukrainian insurance market is a roadmap for further analysis and decision-making by both the relevant authorities on the regulation of the insurance market, in our opinion it should be the National Bank and investors planning to make investments. into the insurance company, in the course of the cluster analysis, we have divided all the insurance companies of the national economy into three main clusters in the main areas of ment insurance, insurance, medical services and avtograzhdanki. Also in our article we emphasized on the relevance of the digitization of the insurance market of both the national economy and the economy of the European state, which will significantly reduce the price of insurance services and significantly expand the client base of insurance companies.

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