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PECULIARITIES OF INSURANCE OF AGRARIAN ENTERPRISES' ACTIVITY

Purpose. *The purpose of this research is to identify the specifics, condition and problems of the development of insurance activities of Ukrainian agrarian enterprises.*

Methodology / approach. *The methods of analysis and synthesis, due to which the diagnostics of the insurance segment in agriculture was conducted, were the basis of the methodological approaches in studying the state and dynamics of the agricultural insurance market. Abstraction for clarification of the essence and content of the concept of «agricultural insurance»; correlation and regression analysis for studying the factors of influence on the total volume agricultural insurance premiums; induction and deduction, generalization and formalization for the definition of the characteristics of insurance activities of agricultural enterprises.*

Results. *The essence, forms and types of insurance of activity of agrarian enterprises are considered. The problems and specifics of insurance business development of enterprises of agrarian sector of economy of Ukraine are revealed. The basic insurance products for agrarian enterprises are determined.*

Originality / scientific novelty. *Further development of identification of peculiarities and problems of development of insurance of activity of agricultural enterprises in the part of identification of basic insurance products and possibilities of their use was investigated.*

Practical value / implications. *The main results of the research can be applied in the practical activity of agricultural enterprises in order to minimize the risks of their functioning.*

Key words: *agriculture, insurance, agricultural insurance, agribusiness market, agrarian enterprises, insurance contract, insurance sum, insurance programs, insurance products.*

Introduction and review of literature. It is said that today, that most companies are looking for effective ways to alleviate the risks of economic activity, especially as agricultural enterprises that operate under risky agriculture, which depends on weather and other unpredictable conditions [1]. At the same time, climate risks pose a threat to the function of the global food system and therefore also a hazard to the global financial sector, the stability of governments, and the food security and health of the world's population [2].

Moreover, in the conditions of protracted political and economic crisis, devaluation of the national currency, groundless state policy and a number of other factors caused the violation of effective work of the economic system of Ukraine. Under these conditions, stabilization of the situation can be achieved through the development and quality functioning of agriculture, which will provide solutions to the issues of improving its food and financial security [1]. Futhermore, agriculture is a promising branch of the country's economic development. But at the same time it is

one of the most risky one, because the success of the industry depends largely on weather conditions. Prices for agrarian products are constantly increasing, so the loss or lack of harvest leads to significant material losses for producers and leads to the loss of benefits. Ukraine's accession to the WTO in 2008, the launch of the free trade zone with the European Union in 2016 sets new requirements for agricultural products, requires the creation of more competitive environment in the country. Reliable protection of producers of agricultural products from risks is provided by insurance.

Modern aspects of insurance business development of agrarian enterprises are covered in the works of many Ukrainian and foreign scientists, in particular E. Augeraud-Véron, G. Fabbri, K. Schubert [3], V. D. Bazilevich [4], T. Lunt, A. W. Jones, W. S. Mulhern, D. P. M. Lezaks, M. M. Jahn, [2], N. S. Tanklevska [1] and others. However, taking into account the constant economic changes and turbulence in the development of the agrarian economy, the question of identifying the characteristics of insurance activities of agrarian enterprises remains relevant.

V. D. Bazylevych analyzes the actual problems of the theory and practice of insurance in the market conditions of economy, reveals the peculiarities of the development of the insurance business in Ukraine. Attention is focused on new types of insurance for our country [3]. T. Mieno, C. G. Walters, L. E. Fulginiti considered that the impact of crop insurance on changes in input use has attracted much attention by economists, while there are a number of studies on this topic, they frame moral hazard in inputs use in a static model. However, when agricultural producers are forward-looking, they would make input allocation decisions realizing that their decisions would affect their future actual production history [5].

Agroinsurance, according to Yu. V. Samoylyk, is a «kind of civil law relationship in protecting the property interests of individuals and legal entities involved in agricultural production in the case of certain events (insurance cases) identified by the insurance contract or current legislation». According to her, the essence of «agri-insurance» consists in «compensation of losses of an agricultural producer caused by the influence of foreign economic instruments and adverse natural and climatic conditions responsible for this person» [6, p. 345–354].

The purpose of the article. The purpose of this research is to identify the specifics, condition and problems of the development of insurance activities of Ukrainian agrarian enterprises.

Results and discussion. Planning of various types of entrepreneurial activity, including agricultural production, is associated with risk. Risks arise at each stage of the enterprise's activity: during the preparation and execution of production plans, supply, sales, in assessing the market situation, in violation of terms of supply of raw materials and sales of products, etc [7]. Risk is a phenomenon that can not be avoided, therefore, each enterprise should develop a risk management system that arises or may arise and plan possible ways to minimize the negative impact of risk on their activities [8].

Insurance is one of the most effective methods of reducing the risk of impact on

the results of the operation of the enterprise. Today, the insurance segment of the market in Ukraine is relatively young and is at the stage of formation. However, we can already state that insurance is one of the most important segments of market economic relations. It is insurance that is able to ensure not only security, stability, social guarantees in society through the mechanism of insurance protection, but in the long term can become an important mechanism for redistribution of investment resources and a mechanism for resolving the issue of employment for the population [4].

At the present stage of economic development of the country, insurance is one of the few branches of the economy of Ukraine, which in recent years has a significant stable annual increase in the volume of services rendered. In Ukrainian, the term «insurance» comes from the word «fear», in some ways echoing with European languages, in which the term comes from the words «confidence», «security», «prudence», etc. [9]. In today's insurance literature, in dictionaries and encyclopedias there are more than 20 different definitions of the notion «insurance». However, most scholars tend to make such a determination that insurance is a means of reimbursing damages to a natural or legal person through the distribution of payments between many individuals. Losses are compensated from the insurance fund that is at the disposal of the insurance company.

The content of insurance is a system of closed redistributive relations between its participants, the object of which is the formation at the expense of monetary contributions of the target insurance fund to cover from it the possible extraordinary and other losses of the insured or to pay cash to citizens in case of loss of their ability to work [10]. Obviously, V. D. Bazilevich believes that the economic content of insurance is that this type of human activity is aimed at protecting the property interests of legal and natural persons who have suffered in connection with the occurrence of insurance cases defined by the contract or insurance law at the expense of insurance funds formed by the participants insurance [4]. All these definitions confirm the diversity of the manifestation of insurance and the complexity of its unambiguous definition.

The notion of «classification» comes from the Latin classis – rank, class. The Latin root defines the «quintessence» of this concept, its most significant meaning: the division of objects of a certain set of common features with the formation of a system of classes in this set. Consequently, the classification is understood as the system of the subsystems of certain terms (classes) in a particular field of knowledge or human activity, used as a means for establishing interrelationships between these concepts (classes) [4]. Classification of insurance is carried out on various grounds. Often, insurance is classified according to historical, legal and economic characteristics. Classification of insurance on a historical basis is associated with the allocation of stages of development of certain types of insurance.

Insurance creates for all participants the level of rights, the opportunity to gain profit, the desire to take risks, gives confidence in the development of entrepreneurial activity, creates new incentives for increasing productivity and ensuring economic

development. The importance of insurance continues to grow, as with the development of socio-economic relations both within and outside the country, scientific and technological progress is facing increasing risks, which can not be resisted without compensation guarantees. Due to a wide range of insurance, after the occurrence of an insured event, insurance payments are a reliable guarantee of economic security of legal entities and individuals [11].

The necessity of insurance of activity of enterprises is conditioned by the fact that losses occur more often from the actions of destructive phenomena which can not be controlled by a person. Given the risk nature of the functioning of any enterprise and the less risky people, there is a need to prevent the elimination and compensation of losses as a result of adverse events or risks [12].

Famous Ukrainian scientists V. D. Bazilevich and K. S. Bazilevich explain the need for insurance protection from the standpoint of the following aspects [4]:

1) natural – explains the need for insurance as a means of preserving material goods in the event of accidental, unpredictable, as well as predictable, but undesirable and unforeseen cases, for the purpose of distributing damages caused to individual citizens among many other members of society in order to reduce losses of victims;

2) economic – the creation of such a kind of human activity that would be based on the accumulation of financial means for the reimbursement of losses caused by the occurrence of harmful to health and (or) material well-being of events, both physical and legal persons, which creates favorable conditions for the uninterrupted process of social reproduction;

3) social insurance is a form (mode) of the participation of the state, employers and citizens in protecting the personal interests of citizens and thus creating conditions for ensuring social and political stability in society;

4) legal insurance is a kind of civil-law relations for the protection of property interests of citizens and legal entities in case of certain events (insurance cases) defined by the insurance contract or current legislation at the expense of money funds, which are formed from insurance payments of citizens and legal entities;

5) international – the elimination of national differences in the laws of different countries and the unification of ways to protect the interests of economic entities, on the one hand, and the development of such legal rules that would provide insurers with sufficient financial guarantees – on the other hand.

The agribusiness market in Ukraine began to develop actively in the early 2000 s. During these 17 years, Ukraine has twice attempted to introduce a system of state support, which directly affected the increase of agricultural insurance market indicators. Having analyzed the trends of the agrarian risk insurance market development in the period from 2005 to 2017, we can conclude that 2016 was the first year of recovery after prolonged stagnation. In 2017, the growing dynamics spread on more indicators [13]. Trends in the development of the market of agri-insurance can be seen from the data in Table 1 and in figures 1–2.

Thus, compared to 2016, the number of contracts increased by 164 contracts, which is 21 %. In 2017, 427 agreements were concluded – for the winter and 530 for

the spring-summer period. The volume of collected insurance premiums in the hryvnia has increased for the third year in a row, in particular, in 2017, it grew by 30 % and amounted to 204.4 mln UAH. Also, in 2017, the volume of insurance premiums increased in dollar terms. In 2017 it amounted to 7.7 mln USD, which is 28 % more than in 2016. The total insured amount in 2016 was higher by 327 billion UAH than in 2017 [14].

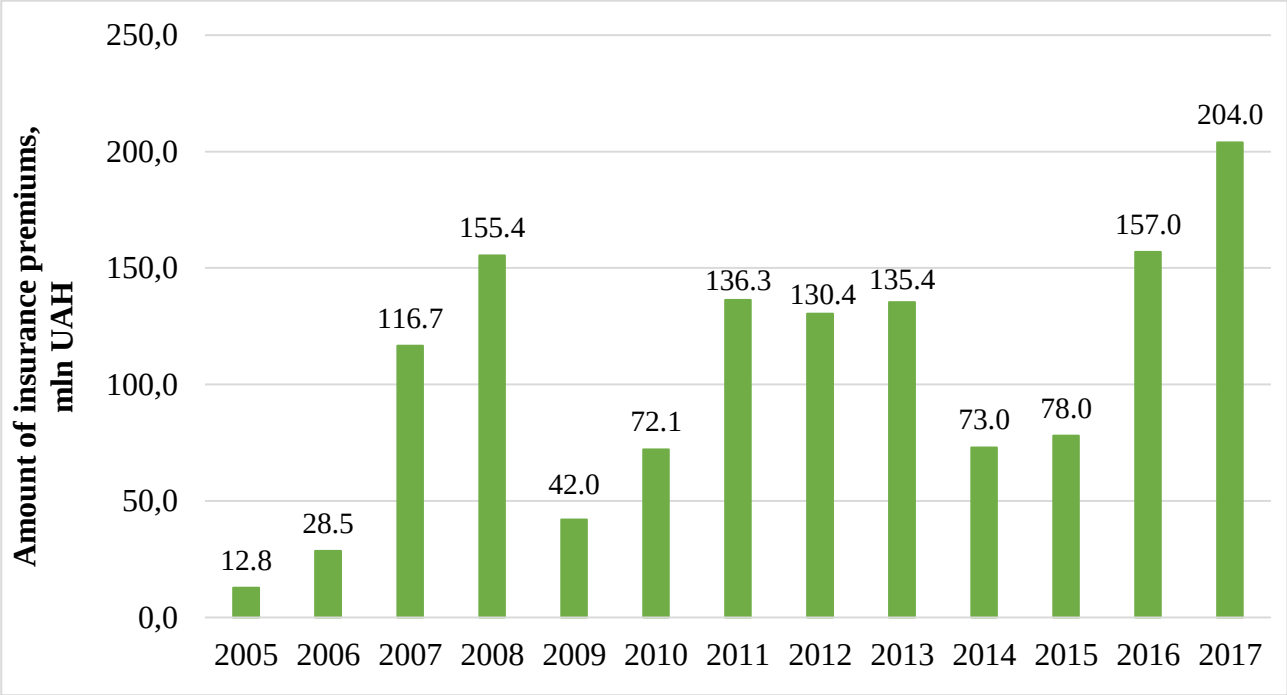

Fig. 1. Dynamics of Ukrainian agricultural insurance market development

Sourse: formed by author according to [14].

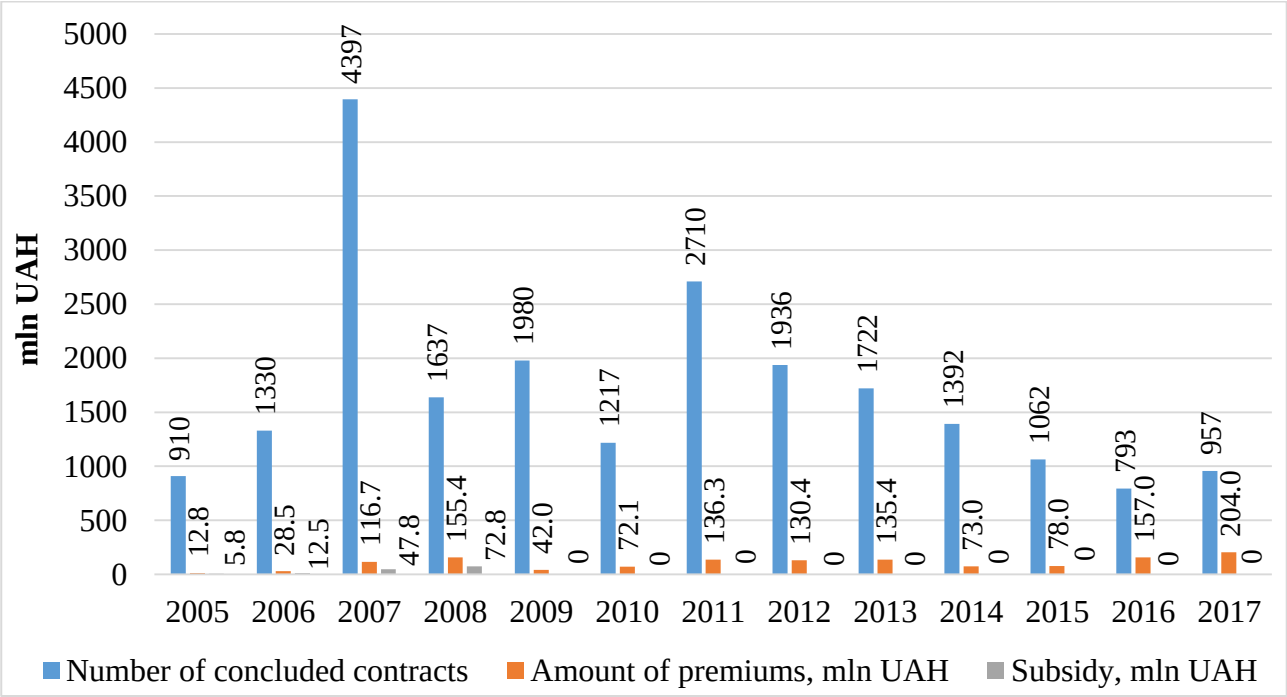

Fig. 2. Trends in the Ukrainian agricultural insurance market for 2005–2017

Sourse: formed by author according to [14].

Table 1

Dynamics of insurance of agricultural crops in 2005–2017

Indexes	Year												
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insured area, thousand hectares	390	670	2360	1171	510	553	786	727	869	732	689	700	657
Number of concluded contracts	910	1330	4397	1637	1980	1217	2710	1936	1722	1392	1062	793	957
Share of the insured area, %	2.12	3.63	12.65	6.02	2.66	2.91	4.03	3.73	4.43	3.89	3.68	3.11	3.01
The number of insurers that carry out agroinsurance	33	37	62	59	16	13	14	14	8	11	12	11	18
Insurance premiums, mln UAH	12.8	28.5	116.7	155.4	42.2	72.1	136.3	130.4	135.4	72.8	77.7	157.0	204.4
Insurance premiums, mln USD	2.5	5.6	23.1	29.8	5.3	9.1	17.1	16.3	16.9	5.6	3.4	6.0	7.7
Total insurance amount for contracts, mln UAH	375	620	2189	3153	1300	2455	3640	3463	4394	3055	3969	6240	5913
Total insured amount, mln USD	74.3	122.7	433.5	648.7	162.9	308.1	455.1	425.4	535.8	235.9	173.3	239.8	222.8
Payout level, %	-	-	-	-	36.5	50.9	28.0	41.0	9.7	7.6	12.9	44.2	3.72
Average rate, %	3.8	4.6	4.5	4.9	3.2	3.8	3.7	3.8	3.1	2.4	2.0	2.5	3.5
Other data of the agrarian market													
Production of plant growing in the actual prices, billion UAH	114.5	116.6	106.0	136.3	129.9	171.5	172.7	171.8	207.3	262.4	397.6	487.1	522.6
Cost-effectiveness of plant growing, %	7.9	11.3	32.7	19.6	16.9	26.7	32.3	22.3	11.1	29.2	50.6	44.3	25.3

Sourse: formed by author according to [14; 15].

According to the index of the insured area, the championship belongs to Poltava (75.6 thousand hectares, or 11.5 %) and Khmelnytsky (75.3 thousand hectares, or 11.5 %), regions. According to them, there are Dnipropetrovsk (67.3 thousand hectares, or 10.2 %), Kharkiv (57.5 thousand hectares, or 8.7 %), Chernihiv (48.0 thousand hectares, or 7.3 %), Sumy (46.9 thousand hectares, or 7.1 %) and Ternopil (39.4 thousand hectares, or 6.0 %). The volume of collected awards in the oblast of Ukraine was in the following order: Poltava (33.7 mln UAH, or 16.5 %), Dnipropetrovsk (18.1 mln UAH, or 8.8 %), Sumy (17.8 mln UAH, or 8.7 %), Kherson (15.9 mln UAH, or 7.8 %), Khmelnytsky (15.6 mln UAH, or 7.6 %), Rivne (14.8 mln UAH, or 7.2 %), Mykolayivska (12.5 mln UAH, or 6.1 %) and Cherkassy (11.5 mln UAH, or 5.6 %) [14].

The analysis above gives grounds for forming a list of the main factors influencing the formation and development of agri-insurance. To key factors include:

1) factors directly related to agrarians (volume of plant production, profitability of plant growing), with sown areas (share of the insured area);

2) factors related to insurance companies (insurance premiums, the number of active agri-insurers, the number of agri-insurance contracts, level of payments, average tariff rate).

We have studied the influence of factors on the total volume agricultural insurance premiums and methods of regression analysis are applied – at the study of the relationship between the random values of the target Y (insurance premiums) and non-random values of 6 factors of influence X.

Initial data for constructing an economic-mathematical model served as Table 1 data for the years 2005–2017, where we selected the target indicator of insurance premiums for agri-insurance (Y, mln UAH), and factors served by relevant market indicators, namely: production of crop production in actual prices (X_1, billion UAH), the level of profitability of plant growing (X_2, %), share the insured area (X_3, %), the number of suppliers of agri-insurance (X_4), the number of agro-insurance contracts (X_5), the level of payments (X_6, %) and average tariff rate (X_7, %).

With the appropriate approach, we investigated the distribution of these factors and we constructed a matrix of pair coefficients of correlation, which makes it possible to exclude its duplicating indicators that have a tight direct (or inverse) relationship with high values of Pearson correlation coefficients over r = 0.8 (and less than r = -0.8). The result of the correlation analysis is presented in Table 2. Similarly, we removed factors that had a weak link with the resulting index Y. As a result, there are only two relative Independent factors X, which can affect the resultant trait Y: X_1 – production of crop production in actual prices, X_5 – the number of agro-insurance contracts.

Table 2

Correlation analysis of the factors of influence

	Y	X_1	X_2	X_3	X_4	X_5
Y		0.548	0.327	0.223	-0.027	0.109
X_1			0.603	-0.295	-0.470	-0.495
X_2				0.169	-0.220	0.052
X_3					0.707	0.855
X_4						0.496
X_5						

Sourse: author's calculations.

After determining the two most influential factors, a regression analysis was performed. The level of the multiple linear regression has the formula:

$$Y = b_0 + b_1 \cdot X_1 + b_2 \cdot X_2 + \ldots + b_n \cdot X_n, \quad (1)$$

where b_0, b_2, b_n – parameters of the equation of multiple regression;

X_1, X_2, X_n – factor signs.

The considered model can be specified in linear formula:

$$Y = -19{,}076 + 0{,}313\ X_1 + 0{,}029\ X_5 \quad (2)$$

After constructing the linear multiple regression equation, the possible insurance premiums for insurance of agricultural products were calculated on the basis of the factors X_1 and X_5 (Table 3 and Figure 3).

A detailed analysis reveals that the coefficient of multiple regression is R = 0.70; determination coefficient R^2 = 0,49; standard error – 44.51. Coefficient multiple regression indicates a slight correlation between the resultant one indicator and

factors. Given the moderate values of the coefficients multiple regression and determination, dependence (2) can not be considered logical.

Table 3

Possible insurance premiums for insurance of agricultural products taking into account factors X_1 and X_5

Insurance premiums (У)	Production of plant growing in the actual prices (X_1)	Number of concluded contracts (X_5)	У calculations
12.8	114.5	910	43.67
28.5	116.6	1330	56.73
116.7	106.0	4397	143.99
155.4	136.3	1637	71.97
42.2	129.9	1980	80.09
72.1	171.5	1217	70.59
136.3	172.7	2710	115.06
130.4	171.8	1936	91.92
135.4	207.3	1722	96.72
72.8	262.4	1392	104.24
77.7	397.6	1062	136.85
157.0	487.1	793	156.94
204.4	522.6	957	172.91

Sourse: author's calculations.

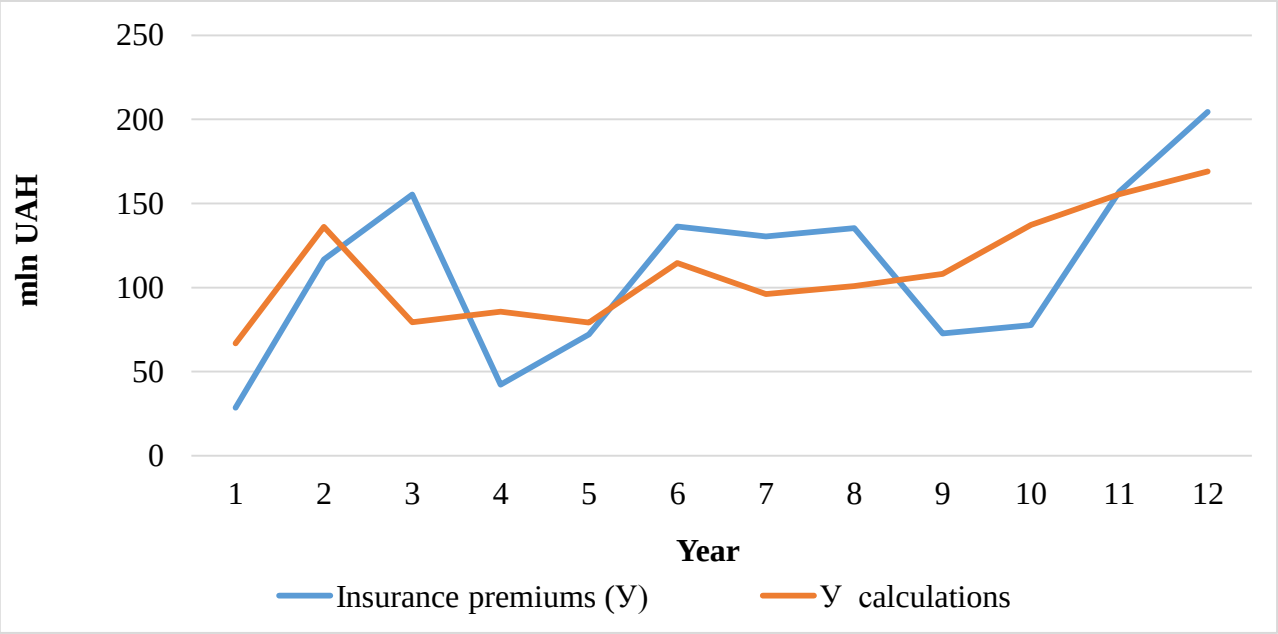

Fig. 3. Graphic match of the sum insured

Sourse: author's calculations.

A significant part in agri-insuring is animal insurance. In the year 2017, 23 animal insurance agreements (13 – cattle, 9 – pig insurance and 1 – poultry insurance) were concluded (Table 4). The total insured amount was 316 mln UAH, and the insurance premium paid was 2.4 mln UAH. Claims for insurance indemnity and, consequently, insurance payments are not recorded.

Table 4

Consolidated animal insurance data in Ukraine, 2017

Kind of animals	Number of contracts	Insurance amount, mln UAH	Amount of insurance premiums, thsd. UAH	Average bonus rate, %
Pigs	9	190.4	1867.2	1.0
TOP	13	111.5	486.1	0.4
Poultry	1	14.0	73.1	0.5
Total	23	316.0	2426.3	0.8

Sourse: analytical study «Ukrainian Agribusiness Market in 2017 Underwriting Year».

The average rate of the insurance premium for the concluded contracts is 0.8 %. The low rate of insurance premium under animal insurance contracts indicates that these contracts do not cover the main risks of livestock production. Probably, based on the contracts, the animals were used as collateral for obtaining a loan [16].

Experts give forecasts of the growth of the insurance market for agriculture in 2019. This is due to an increase in the risks associated with weather conditions. Previously, they were mostly insured by winter frost damage, and today there is a threat from spring frosts. Meteorologists predict more stringent farming conditions for farmers, so the need for protection in insurance is growing. However, there are problems that hamper agricultural insurance. One of the main reasons is the mutual distrust of agrarian commodity producers and financial companies involved in agricultural risk insurance.

Agrarians do not believe that they will receive compensation in the event of an insured event, and insurance companies, in turn, do not know how to work with the agrarian sector, they are not sure that they can assess all possible risks. The use of transparent, affordable insurance products can simplify communication between the parties [13].

In 2016, the International Finance Corporation (IFC) project, together with its partner companies – Syngenta, Credit Agricole Bank, AXA Insurance, introduced a comprehensive program for agribusiness «Your harvest is our concern». This program is designed for three years. As part of this program, an innovative insurance product was introduced for crop insurance and future winter wheat harvest. It is designed primarily for small and medium-sized agricultural producers, which are limited in funding. This product is tied to financing by Credit Agricole Bank and obtaining trade credits from Syngenta. Thus, the product is oriented on the current and potential customers of these companies.

Winter wheat insurance for the entire period of cultivation is included beginning from the moment when the insurance company's representatives left the fields, fixed the quality of the stairs and the farmer paid his part of the insurance payment. The insurance product provides an insurance cover consisting of two phases with an appropriate repayment after each phase. The first phase is winter risks, and the second one is spring-summer risks. The main advantage of the first phase is that the coverage level of the area under the culture is 95 %. This is the highest figure

available on the market today. Insurance companies typically offer insurance coverage at 70 % of the sum insured. The second advantage is the settlement of insured events and the payment for each perished hectare of cultivated area. The second phase (after the restoration of the vegetation) involves the insurance of the future harvest. The level of insurance cover in this case is equal to 70 % of the average yield of winter wheat in the household for the last three years. The innovation of this product lies in the fact that insurance covers not only the costs incurred for sowing, but also part of the planned costs of growing and harvesting [13].

Nowadays, not only in Ukraine, but also in the whole world, index insurance is gaining popularity. It does not require the departure of an inspector to establish an insured event. The benefits of this approach are evident: simplicity, cheapness and fast payout. This is a transparent and understandable method of insurance. There are many varieties of index insurance products. In particular, weather and «crop» can be distinguished [17]. Index insurance provides the right of the policyholder for compensation in the event that the yield of the insured crop will fall below the guaranteed level. Index insurance is performed on those weather risks that are measured by certain parameters. Therefore, they are limited by temperature, precipitation, wind force, snow cover thickness, and so on. But hail is not in this list. The index can insure autumn drought, the inability to start sowing due to the absence of precipitation or their redundancy. Unlike traditional insurance, the index does not require mandatory pre-insurance survey of crops and the assessment of losses incurred by the economy [18].

Conclusions. Consequently, insurance is a special type of economic activity, in the process of which an insurance fund is created, from which, in the event of an insured event provided for by law or contract, payments to policyholders are made. In a market economy, insurance is, on the one hand, a means of protecting business and the well-being of people, and on the other – a kind of entrepreneurial activity that generates profit. At the same time, agriculture is highly risky, the issue of using crop insurance as a method of reducing future loss of benefits is relevant and timely. The main tendencies of the development of insurance of agricultural crops in recent years are an increase of 21 % of the concluded contracts and 30 % increase of insurance premiums in mln UAH. Insured area and insured amount in mln UAH decreased by 6 % and 5 % respectively. After the crisis in 2014, the average rate of premiums began to increase by an average of 42 % per year and in 2017 it is 3.5 %. One of the most productive years on the level of insurance payments was 2016 (44.2 %). In addition, the activity of international companies regarding the introduction of insurance programs for agrarians is followed. Thus, today the agricultural insurance market is actively developing and requires the improvement of the insurance mechanism for the functioning of agrarian enterprises. Insurance companies offer new beneficial insurance programs for farmers, taking into account all the wider range of risks.

The scientific novelty of this study is determined by further development of

identification of peculiarities and problems of development of insurance of activity of agricultural enterprises in the part of identification of basic insurance products and possibilities of their use was developed.

Prospects for future research are the need to make forecasts for further insurance of crops, as well as identify the most effective insurance products for agribusinesses.

References

1. Tanklevska, N. S. (2015), Financial safety of functioning agricultural sector basis as the economic development of the country. *Naukovyy visnyk NUBIP Ukrayiny. Seriya: ekonomika, ahrarnyy menedzhment, biznes*, no. 222, pp. 15–20.

2. Lunt, T., Jones, A. W., Mulhern, W. S., Lezaks, D. P. M. and Jahn, M. M. (2016), Vulnerabilities to agricultural production shocks: An extreme, plausible scenario for as sessment of risk for the insurance sector. *Climate Risk Management*, vol. 13, pp. 1–9. https://doi.org/10.1016/j.crm.2016.05.001.

3. Augeraud-Véron, E., Fabbri, G. and Schubert, K. (2019), The Value of Biodiversity as an Insurance Device. *American Journal of Agricultural Economics*, aaz002. https://doi.org/10.1093/ajae/aaz002.

4. Bazylevych, V. D. ed. (2008), *Strakhuvannia* [Insurance], Znannia, Kyiv, Ukraine.

5. Mieno, T., Walters, C. G. and Fulginiti, L. E. (2018), Input Use under Crop Insurance: The Role of Actual Production History. *American Journal of Agricultural Economics*, vol. 100, is. 5, pp. 1469–1485. https://doi.org/10.1093/ajae/aay040.

6. Ostapenko, O. M. (2012), Purposefulness category «Agricultural Insurance». *Suchasni problemy ta shliakhy yikh vyrishennia v nautsi, transporti, vyrobnytstvi ta osviti* [Modern problems and ways of their solution in science, transport, production and education]. Naukovo-praktychna konferentsia [Scientific-practical conference], December 18–27, available at: http: //www.sworld. com.ua/konfer29/826.pdf.

7. Claassen, R. Langpap, C. and Wu, J. J. (2017), Impacts of Federal Crop Insurance on Land Use and Environmental Quality. *American Journal of Agricultural Economics*, vol. 99, is. 3, pp. 592–613. https://doi.org/10.1093/ajae/aaw075.

8. Ker, A. P., Tolhurst, T. N. and Liu, Y. (2016), Bayesian Estimation of Possibly Similar Yield Densities: Implications for Rating Crop Insurance Contracts. *American Journal of Agricultural Economics*, vol. 98, is. 2, pp. 360–382. https://doi.org/10.1093/ajae/aav065.

9. Navrots′kyy, S. A. (2006), Insurance as an independent economic playback category. *Ekonomika APK*, no. 9, pp. 37–44.

10. Vovchak, O. D. (2011), *Strakhova sprava* [Insurance business], Znannya, Kyiv, Ukraine.

11. Tanklevskaya, N. and Yarmolenko, V. (2017), Methodical approaches to determination of essenceand classification of insurance. *Agricultural and Resource Economics: International Scientific E-Journal*, [Online], vol. 3, no. 4, pp. 147–159, available at: http://are-journal.com.

12. Tanklevska, N. and Suprun, O. (2018), *Rozvytok finansuvannya diyal'nosti ahrarnykh pidpryyemstv* [Development of financing activities of agrarian

enterprises], Aylant, Kherson, Ukraine.

13. Tanklevska, N. and Yarmolenko, V. (2018), Trends in development of agricultural crop insurance in Ukraine. *Naukovyy visnyk Uzhhorods'koho universytetu. Seriya «Ekonomika»*, vol. 1(51), pp. 381–386. https://doi.org/10.24144/2409-6857.2018.1(51).381-386.

14. Market of agrarian insurance of Ukraine in 2017 andreating year (2017), Analytical study, available at: https://forinsurer.com/files/file00624.pdf.

15. Martsenyuk-Rozaronova, O. V., Chornopischuk, O. M. and Yakubovska, Ya. R. (2018), Features of insurance in the agricultural sector. *Derzhavne upravlinnya: udoskonalennya ta rozvytok*, no. 4, available at: http://www.dy.nayka.com.ua/?op=1&z=1215.

16. State Statistics Service of Ukraine (2012), *Valova produktsiia silskoho hospodarstva Ukrainy 1990–2010 rr (u postiinykh tsinakh u 2010 roku). Statystychnyj zbirnyk* [Gross agricultural output of Ukraine 1990–2010 (at constant prices in 2010). Statistical collection], State Statistics Service of Ukraine, Kyiv, Ukraine.

17. Tanklevska, N. S. (2008), Foreign experience of financial and credit support for the development of agrarian enterprises. *Visnyk Aharnoyi nauky Prychornomorya*, no. 1(44), pp. 81–87.

18. Kindurys, V. (2011), Insurance business and its development tendencies and manifestations in Lithuania: theoretical and practical aspects. Vilnius University, Vilnius, Riga.

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