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Архітекtonіка комплексної модернізації агрострахового ринку України в умовах трансформаційних процесів

Анотація. Створення потужного агрострахового ринку в Україні, як дієвого ресурсу та інструменту посилення аграрного сектора економіки з позиції мінімізації ризиків, що впливають на прибутковість виробництва, – один з ключових етапів у розвитку української системи страхового захисту в аграрному секторі економіки. Однак вітчизняний агростраховий ринок все ще перебуває на етапі становлення і розвивається безсистемно, без чітко окресленої стратегії розвитку та належної державної підтримки. Мета статті полягає у розробці пропозицій щодо архітекtonіки комплексної модернізації вітчизняного агрострахового ринку в умовах трансформаційних процесів з векторною інтерпретацією напрямів його розвитку. Запропоновано архітекtonіку комплексної модернізації українського агрострахового ринку в умовах трансформаційних процесів та доведено доцільність її стратегування в розрізі п'яти ключових векторів, що, в свою чергу, компонують по векторну сукупність напрямів стратегічного характеру. Авторське бачення стратегічних векторів комплексної модернізації агрострахового ринку України сфокусовано на: форматних обрисах ринку (ключових формах його подальшого розвитку); композиційній структурній будові ринку (форматування в межах секторної конфігурації з врахуванням особливостей кожного з трьох секторів); інституціональній базисі (інституціональній взаємодії на агростраховому ринку в розрізі формальних – законодавчі норми та правила страхування і неформальних обмежень – етичні та культурні норми); інноваційності агрострахової діяльності (новітніх підходів до використання потенціалу агрострахування); агростраховому середовищі (страховому середовищі в аграрному секторі економіки). Відповідно до ключових положень стратегії розвитку агрострахового ринку України, рекомендовано застосовувати логічно-функціональний підхід до архітекtonіки модернізації українського агрострахового ринку в умовах трансформаційних процесів, що ґрунтується на принципах: ефективності, толерантності, модерновості, інноваційності, стратегування, транспарентності, клієнтоорієнтованості, збалансованості, трансформаційності, форматності. Проведене дослідження містить теоретичні та практичні положення, що формують підґрунтя сталого та динамічного розвитку вітчизняного агрострахового ринку в умовах трансформаційних процесів.

Ключові слова: агрострахування, агростраховий ринок, агросектор, агровиробники, управління ризиками, стратегія розвитку.

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Architectonics of Complex Modernization of Agricultural Insurance Market of Ukraine in Conditions of Transformation Processes

Abstract. *Creating a strong agricultural insurance market in Ukraine as an effective resource and tool to strengthen the agricultural sector of the economy from the standpoint of minimizing risks affecting the profitability of production is one of the key stages in the development of the Ukrainian insurance system in the agricultural sector. However, the Ukrainian agricultural insurance market is still in its infancy and is developing unsystematically, without a clearly defined development strategy and proper state support. The purpose of the article is to develop proposals for the architecture of complex modernization of the Ukrainian agricultural insurance market in terms of transformation processes with vector interpretation of its development. The architectonics of complex modernization of the Ukrainian agricultural insurance market in the conditions of transformation processes is offered and the expediency of its strategizing in the context of five key vectors is proved, which, in turn, compose a vector set of directions of strategic character. The author's vision of strategic vectors of complex modernization of the agricultural insurance market of Ukraine is focused on: format outlines of the market (key forms of its further development), compositional structural framework of the market (formatting within the sectoral configuration taking into account the peculiarities of each of the three sectors); in terms of formal – legal norms and rules of insurance and informal restrictions – ethical and cultural norms), innovation of agricultural insurance activities (new approaches to the use of agricultural insurance potential) and agricultural insurance environment (insurance environment in the agricultural sector of the economy). According to the key provisions of the strategy of development of the agricultural insurance market of Ukraine, a logical and functional approach to the architecture of modernization of the Ukrainian agricultural insurance market in the conditions of transformation processes based on the principles: efficiency, tolerance, modernity, innovation, strategizing, transparency, clientele, customer orientation format. The study contains theoretical and practical provisions that form the basis for sustainable and dynamic development of the local agricultural insurance market in terms of transformation processes.*

Keywords: *agricultural insurance, agricultural insurance market, agricultural sector, agricultural producers, risk management, development strategy.*

Problem statement. Agricultural production has historically been interpreted as a key stimulant of economic and social development around the world. However, the primary products of the agricultural sector in terms of quantitative and qualitative determinants, which serves as its basic frame, is characterized by increased vulnerability to weather and other natural risks. Such a specific combination, on the one hand – the importance of the industry and on the other – the instability of the production process in primary production motivates the development of risk management strategies for both public authorities and the private sector. Agricultural insurance is an important, necessary and effective tool, but every state that aims to create an effective system of its operation must realize that to fully realize all its benefits, the latter requires constant efforts and dedication of all key stakeholders and modernization of the emerging agricultural insurance market, especially urgent need in terms of transformation processes in the latter.

Modern challenges and threats facing agricultural producers determine the objective need for further research in this area and the development of proposals for

the architecture of comprehensive modernization of the local agricultural insurance market.

Literature review. Various aspects of the functioning of such an important financial instrument, as agricultural insurance market, were investigated by a number of scholars and practitioners (Herasyenko & Zhemoida, 2009; Martsenyuk-Rozaronova, 2010; Navrotskyi, 2012; Nesterchuk et al., 2018; Pikus et al., 2018; Polchanov, 2013; Potiko, 2017; Sholoiko, 2014; Vilenchuk, 2014).

In their works, the researchers studied the main tendencies of the Ukrainian agricultural insurance market in general and certain aspects of its development, generalized the historical aspects of its formation and start-up, studied the peculiarities of insurance legislation, as well as specifics of the investigated market structure.

Some scientists have focused on characteristics of the agricultural insurance market in terms of insurance schemes, in particular, classical and parametric ones (Barnett et al., 2008; Sholoiko, 2009; Odening & Shen, 2014). Other researchers were limited to market research by taking on the analysis of insurance systems – agricultural crops and perennial plantings and farm animals (Dandekar, 1977; Vilenchuk, 2014; Porrini & De Masi, 2019).

Some Ukrainian scholars focused on the study of insurance products and insurance schemes that provide insurance protection for agricultural commodity producers, in particular, Nesterchuk, Tsymbaliuk & Rolinskyi, 2018; Sholoiko 2014.

At the same time, the realities of today are such that the Ukrainian market of agricultural insurance is currently disparate, not focused on solving specific problems and still do not use the available resources and its capabilities to the full extent, and insurance products are not in a good demand among farmers. In addition, parametric insurance products in the Ukrainian market of agricultural insurance are innovative and are at the stage of implementation. Given this, at this stage, the issue of use of newest practices and methods in agricultural insurance requires more and more consideration.

Taking this into consideration, the scientific substantiation of the directions of further development of the agricultural insurance system in Ukraine still needs to be strengthened, which is the subject of this article. Now it is extremely important to outline the architecture of the complex modernization of the local agricultural insurance market – otherwise the process of stagnation will continue.

The purpose of the article is to develop proposals for the architecture of complex modernization of the local agricultural insurance market in terms of transformation processes with vector interpretation of its development.

Main results of the research and discussion.

The agricultural insurance market is a rather complex element of the market of the modern national economy of the country, which is a separate part of the mixed market economy, where the key subjects of relations are: producers-sellers of agricultural insurance services (insurance organizations), consumers of these services (insurers) as well as numerous intermediaries, between which there are financial (insurance) relations regarding the purchase and sale of the insurance product as a commodity, the formation of supply and demand for it. The objective need for the emergence and development of the agricultural insurance market is due to the public need for insurance protection of the agricultural sector of the economy and insurance companies that can meet it. It should be noted that the agricultural insurance market provides for the independence of the subjects of market relations, their equal partnership, as well as a developed system of horizontal and vertical links between them. In addition, within the specified market, an organic connection is provided between a significant number of stakeholders by jointly determining the need for agricultural insurance services.

Thus, the agricultural insurance market is a rather complex phenomenon that has its own internal structural framework and external environment. Features of the structural framework of the agricultural insurance market are shown in figure 1.

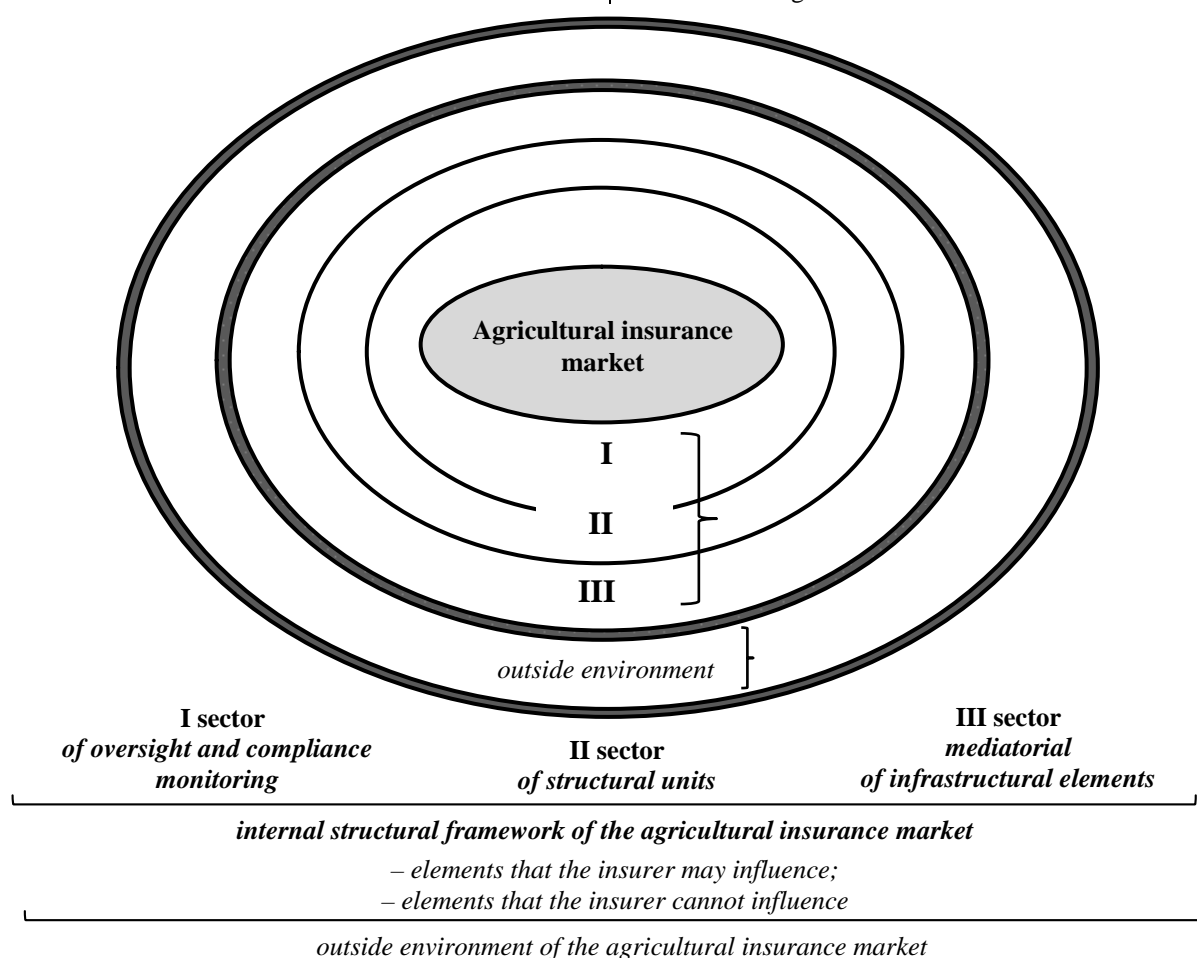


Figure 1. Features of the structural framework of the agricultural insurance market

Source: Created and developed by the authors.

At the same time, there is a situation in which Ukraine is still in the process of finding the optimal model of agricultural insurance given the state of development of this segment of the insurance market and the available opportunities of the state budget. Quite strong development of the agricultural sector of the economy in Ukraine is accompanied by insufficient development of agricultural insurance, which contradicts the generally accepted international practice. After all, most countries in the world in which agriculture is successfully developing (USA, Canada, Spain, China, etc.) are characterized by a high level of agricultural insurance.

This is primarily due to the fact that the local market of agricultural insurance services is developing without a clearly defined development strategy, and the development potential that was laid in previous periods has actually been exhausted and requires immediate renovation.

As a result, in this study the key attention will be focused on the development of proposals for the architecture of complex modernization of the local agricultural insurance market in the context of transformation processes with vector interpretation of its development. An in-depth study of the genesis of the local agricultural insurance market, comprehensive diagnosis of trends in its development, the dynamics of the latter in terms of object component and insurance protection schemes, the effectiveness of the market in the regional context was carried out in scientific papers of Nesterchuk, Prokopchuk, Tsymbalyuk, Rolinskyi & Bila; Prokopchuk, Tulush, Guzar, Korotiev & Melnyk (2018); Prokopchuk & Mentel (2018); Prokopchuk, Nesterchuk, Tsymbalyuk & Rolinskyi (2019). The conducted studies allow to draw a conclusion about the existence of essential distortions and problems and to define necessity of complex modernization of the agricultural insurance market of Ukraine.

Modernization (from the English “modern” – modern; French “modern” – the latest, modern) – renewal, improvement, giving anything a modern look, reformatting in accordance with modern requirements (Odening & Shen, 2014). Thus, the very term modernization translated from English and French means “updating” implying the introduction into society of the signs of modernity. The genesis of theories describing modernization should be considered from the standpoint of various concepts, including classical, neoclassical, as well as its modern types (Sholoiko, 2009). As a result, the research and elaboration of the latter allowed, from the author's point of view, to interpret modernization as a synonym of all processes of improving societies, the termination of which the latter are declining and disappearing.

Systematization of the achievements of the theory of modernization and assessment of the state and trends of the local agricultural insurance market allowed to formulate the key parameters of its reform in terms of modern transformation processes. The concept of transformation, which is traditionally interpreted as a change of something, a transformation of a system of different scale, depth, direction, caused by internal or

external factors (Porrini et al., 2019) is quite complex and multifaceted. It should be noted that in the economic sciences, transformation and transformation processes are considered from the standpoint of qualitative change in the economic system. The analysis of the definition and understanding of nature, the course of transformations from the standpoint of the economic context makes it possible to identify key characteristics of the transformation process in financial markets in general and in the agricultural insurance market in particular. The agricultural insurance market in the process of transformation is its special state at the stage of formation (evolution to a mature balanced state) and reform (evolution to a new market).

Thus, in our opinion, the analysis of the definition and understanding of nature, as well as the course of transformations in the agricultural insurance market makes it possible to identify the main features of the transformation process in this market. The latter determine the specific patterns of its development, which on the one hand, are reflected in the inertia of the latter and indicate the continuity of the evolutionary process, on the other – in the intensity of new forms as a manifestation of the irreversibility of transformation processes in society.

Architectonics of complex modernization of the Ukrainian agricultural insurance market in the conditions of transformation processes, from the author's point of view it is expedient to strategize in the context of five key components: format outlines of the market (key forms of its further development), compositional structural framework of the market. features of each of the three sectors), institutional basis (institutional interaction in the agricultural insurance market in terms of formal – legal norms and rules of insurance and informal restrictions – ethical and cultural norms, innovative agricultural activities) (innovative approaches to using the potential of agricultural insurance) and agricultural environment in the agricultural sector of the economy) (fig. 2).

Therefore, the strategic directions for the comprehensive modernization of the Ukrainian agricultural insurance market of each of the five selected components are described in detail in figure 3 – in terms of the specifics of the structure, format outlines and innovative approaches to the functioning of the market and figure 4 – in terms of institutional base and agricultural insurance environment, respectively.

The successful operation of any insurance organization and its effective management mainly depend on the effective use of innovative technologies. To increase the efficiency and competitiveness in the presence of a significant number of insurance companies and transformation processes in the insurance market, it is necessary not only to increase the capitalization and volume of insurance services provided, but also the active introduction of innovations is crucial. That is why local insurance companies call to implement new concepts of insurance marketing, the use of IT technologies and principles of quality management, as well as reengineering in insurance. Highly profitable activities of

insurance companies in the future, namely from the standpoint of short-term and long-term time frame, provides for the formation of a favorable insurance environment in which the interests of all key players in the agricultural insurance market will be taken into

account and protected. In this context, it is important to implement innovative developments in the field of insurance services to the agricultural sector of the economy.

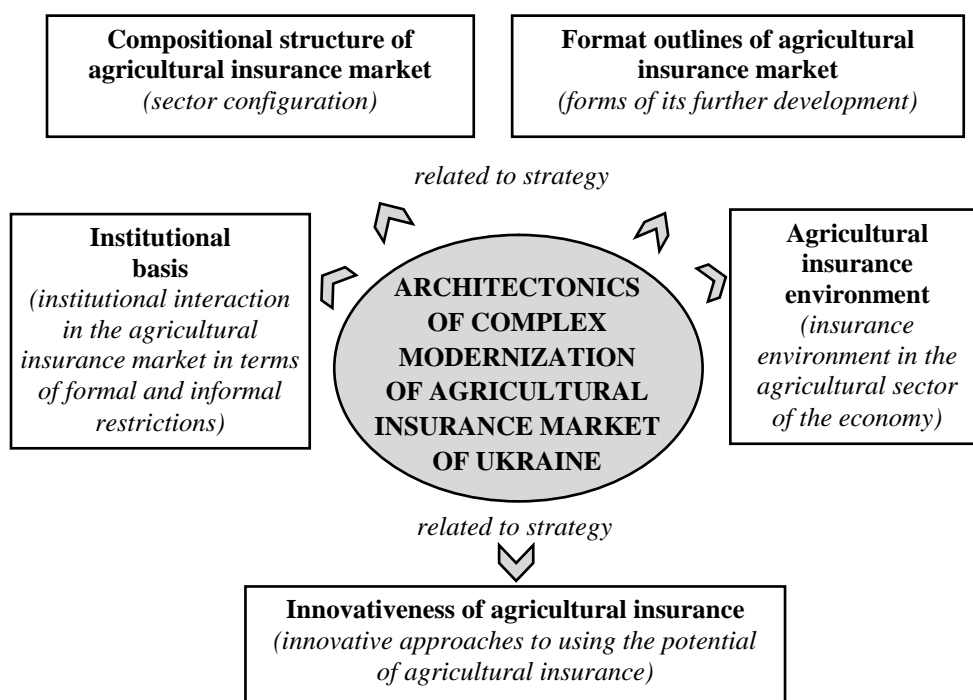


Figure 2. Architectonics of complex modernization of the Ukrainian agricultural insurance market in the conditions of transformation processes

Source: created and developed by the authors.

Agricultural insurance as a sector of the economy has significant innovation potential. The concept of “innovation potential” can be considered as a set of intellectual, human, technical, investment resources that form a single system capable of ensuring the successful innovative development of the insurance company, perception and implementation of innovative changes (Pikus et al., 2018). To ensure highly profitable activities of insurance companies not only in the short term but also in the long term, it is advisable to create a favorable agricultural insurance environment, which will take into account and protect the interests of all subjects of agricultural insurance. In this context, the introduction of innovative developments in the field of insurance services in the agricultural sector of the economy is important.

Innovative activity of an insurance organization, in particular, working in the agricultural insurance market is the activity of finding new methods of work in the specified market; analysis of possible options for investing discretionary money of the investment fund and the money of own funds of insurance companies in physical assets, from which the insurer will receive more income than from investing in financial assets (Odening & Shen, 2014). The difference between agricultural insurance and other types of business activities is manifested in the peculiarities of the implementation of insurance services for the agricultural sector, the

formation and allocation of financial resources, organizational structure and development strategy. Therefore, these differences need to be improved and innovations applied for the effective functioning of the agricultural insurance market. At the same time, it should be noted that the vision of innovation in local insurance companies is mainly to apply technological solutions to improve business processes of the latter (automation of business processes, introduction of modern information technologies to optimize their management), creating new sales channels through marketing and analytical research, Internet technologies, etc. Such a somewhat narrow application of innovative solutions in agricultural insurance activities is due to the underdeveloped infrastructure of the local agricultural insurance market, lack of an effective mechanism for investing insurance reserves, insufficient skills in investment decisions and technologies, low insurance culture of agricultural producers, and low country. In the conditions of transformation processes the problem of formation of the perfect system of management in the agricultural insurance market acquires special value. The market constantly needs to expand management tasks, improve existing and develop new management techniques and methods that adapt to the conditions of transformation processes. All this requires finding ways to improve management.

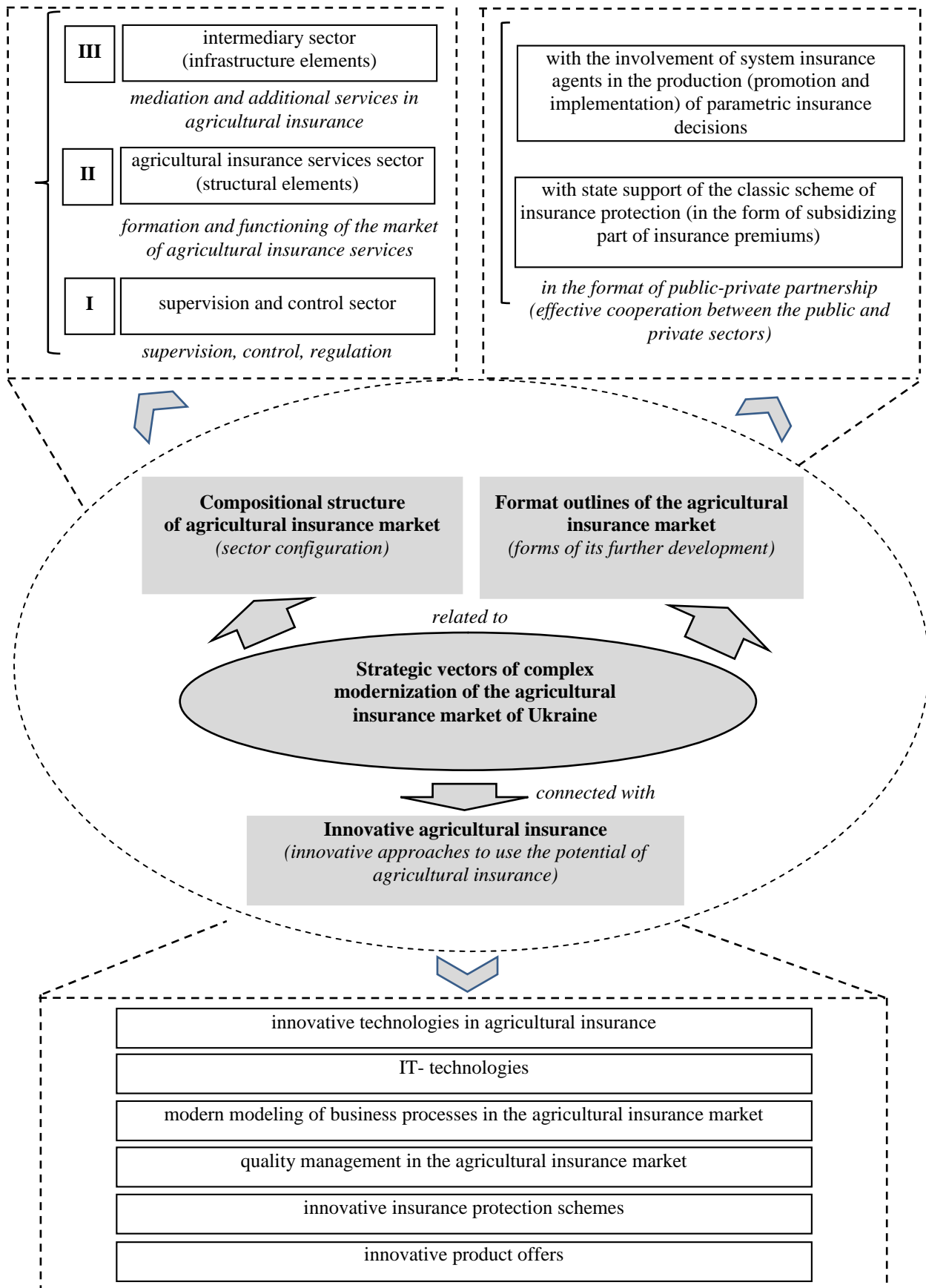


Figure 3. Strategic vectors of complex modernization of the agricultural insurance market of Ukraine in terms of the specifics of the structure, format and innovative approaches to operation

Source: Created and developed by the authors.

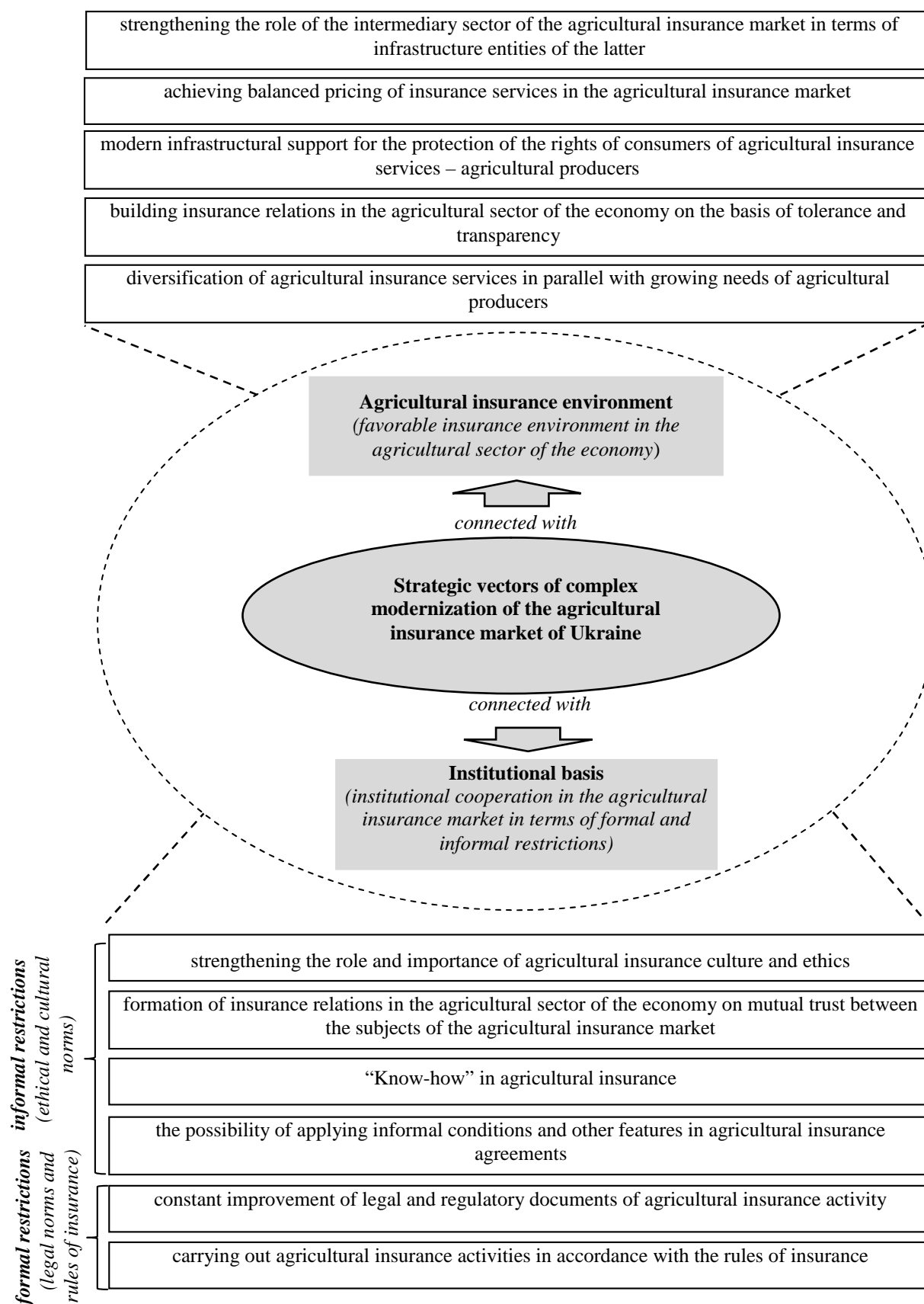


Figure 4. Strategic vectors of complex modernization of the agricultural insurance market of Ukraine in terms of institutional base and agricultural insurance environment

Source: Created and developed by the authors.

The effective functioning of the agricultural insurance market presupposes the need to comprehensively take into account the interests of its key subject composition in terms of three-sector gradation. Leveling the set of contradictions in terms of organizational, socio-economic and financial direction, and thus achieving progress in relations between major market participants is possible provided that the latter systematically adheres to the moral and ethical basis.

The need to form a model of social responsibility of the subject composition of the agricultural insurance market is due to the need to form a socio-ethical basis for the perception of agricultural insurance, compliance with the main market performers' moral and ethical standards of behavior, consistent and gradual formation of agricultural insurance culture and ethics and advocacy in the agricultural insurance market. The integration of the basis of moral and ethical norms in the relationship in the agricultural insurance market and the social responsibility of the market in the professional activities of the latter will help restore trust between them and restore a suitable insurance environment in the agricultural sector.

The model of formation of social responsibility of the subject structure of the agricultural insurance market is based on four key components:

1. The formation of social and ethical basis of perception of agricultural insurance which in turn is focused on five key vectors (increase of educational and information awareness on insurance protection in agrarian sector of economy), reproduction of a favorable insurance environment in the agricultural sector of the economy, the formation of insurance relations in the agricultural sector of the economy on the basis of transparency, the use of innovative approaches to using the potential of agricultural insurance, diversification of agricultural insurance services in terms of various criteria);

2. The formation of moral and ethical standards composition of the agricultural insurance market, which is revealed in the context of three areas (the formation of proper business activity of the subjective composition of the agricultural insurance market within the relevant moral and ethical norms; appropriate combination of moral and ethical and socio-economic needs and interests of the subject composition of the agricultural insurance market, building relationships in the agricultural insurance market based on legal norms, rules and principles of insurance);

3. The formation of agricultural insurance culture and ethics of the market, which is interpreted in four directions (reflection of the system of values in the agricultural insurance market, trust, mutual respect and tolerance), subject composition of the market, service improvement of agricultural insurance services, awareness of the role and importance of agricultural insurance from the standpoint of the need for timely and effective counteraction to agricultural risks, procedures for settling insurance cases on the basis of objectivity, transparency and rapid response);

4. The formation of values in the agricultural insurance market, which is connected with three main

lines (the ability to take into account and ensure the commonality of insurance interests in the agricultural insurance market; the formation of partnerships in the agricultural insurance market in the format of integrity and humanity);

5. The reflection of behavioral models of the subject composition of the agricultural insurance market on the distribution of risks and responsibilities on a consolidation basis).

The formation of an appropriate level of social responsibility of the subject composition of the agricultural insurance market requires the implementation of comprehensive measures of all stakeholders on the functioning of a reliable system of insurance protection in the agricultural sector of the economy. As a result, the above requires the implementation of a number of measures – the agricultural insurance market should develop in areas that will provide:

- modernization of the legal framework in terms of formation and development of the agricultural insurance market with the provision of state support for its operation;

- improving the conditions for the formation and functioning of the intermediary sector of the agricultural insurance market, its infrastructure in terms of the intermediary component of direct and indirect support;

- ensuring effective state regulation aimed at improving the financial reliability of insurance companies operating in the agricultural insurance market to meet their obligations to agricultural producers;

- popularization of agricultural insurance among key structural individuals of the agricultural insurance market and their awareness of the main trends of its development;

- improving the training of personnel for servicing the agricultural insurance market, supporting the process of financial integration of insurers within the system controlled by them.

It is necessary to create appropriate legislative and institutional conditions for the implementation of effective agricultural insurance, in particular such as:

- legislative definition of agricultural insurance as a separate type of insurance in a voluntary form and, accordingly, the establishment of additional requirements for its implementation (mandatory inclusion in the relevant register maintained by the Pool, the establishment of accounting and reporting, etc.);

- promotion of agricultural insurance with state support should be due to the need for the insurance company to be a member of the Pool;

- establishment of criteria (in the form of a set of requirements) and standards for the financial condition of insurance companies (including liquidity, funds and solvency, asset quality and requirements for separate formation, accounting and placement of reserves) in agricultural insurance without state support and with its application;

- setting requirements for reinsurers, including non-residents, to whom insurance companies transfer to reinsurance part of the risks associated with agricultural insurance.

The formation of priority vectors for the development of the Ukrainian agricultural insurance market was carried out in parallel with the interpretation of the expected results from their implementation.

In accordance with the key provisions of the strategy of development of the agricultural insurance market of Ukraine in the framework of this study proposed a logical and functional approach to the architecture of modernization of the Ukrainian agricultural insurance market in terms of transformation processes based on the principles of efficiency (degree of effectiveness) and relations in the agricultural insurance market between its structural and infrastructural subjects), modernity (the basis of modern formation of relations in this market), innovation (basis of market innovations), strategizing (identification of key patterns and trends in parameters

and relations in the agricultural market), transparency (formation of a transparent agricultural insurance environment and the availability of effective communications), customer orientation (building relationships in the market with an emphasis on centrism in the consumer of insurance services – the agricultural producer and his needs in insurance protection), balance (achieving balance and equilibrium between all market participants), transformational (ability to change and transform taking into account modern agricultural insurance trends), format (formation of external contours and format outlines of the market). The logical-functional approach to the architecture of modernization of the Ukrainian agricultural insurance market in the conditions of transformation processes in the author's interpretation is presented in figure 5.

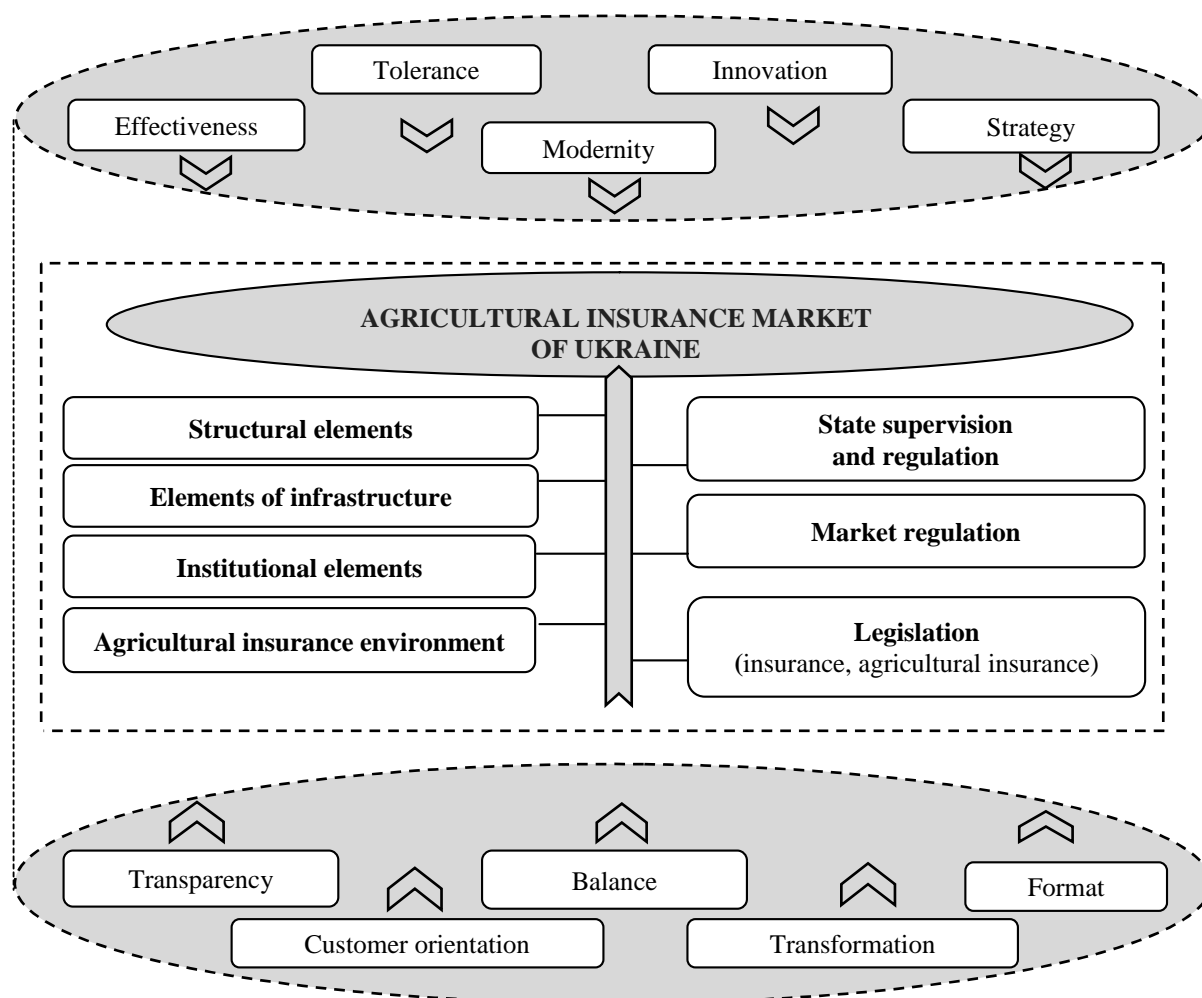


Figure 5. Logical and functional approach to the architecture of modernization of the Ukrainian agricultural insurance market in the conditions of transformation processes

Source: created and developed by the authors.

The key determinants of the strategy of development of the agricultural insurance market of Ukraine are interpreted in terms of improvement of legislative and regulatory framework, standards of activity (formation of agricultural insurance market design), organization of databases (data collection, storage and management in the format of each of them), catastrophic risk reinsurance

system, improving the marketing line of product offerings with an emphasis on the range and quality, human resources development in terms of technical knowledge and experience and improving the quality of management in insurance companies operating in the agricultural insurance market, mutual understanding between key stakeholders of the agricultural insurance process and

resumption and improvement of the Agricultural Insurance Pool.

Further development of an effective agricultural insurance system in Ukraine should be carried out within the framework of a public-private partnership with a clearly defined systemic approach to its construction, as evidenced by positive international experience. At the same time, an important aspect is the use of achievements of previous years, in particular in terms of agricultural insurance tools, which at this stage is not inferior to international practices and taking into account previous mistakes in implementing the policy of further formation of insurance protection in Ukraine. The agricultural insurance market proves its viability and potential for further development, while requiring the creation of a new development strategy with maximum consideration of the interests of all the members of insurance organizations, their associations (in the form of a pool), states, agricultural producers and subsidiary installations.

Conclusions. The development of the agricultural insurance market, in particular, in the conditions of transformation processes, requires the formation of new scientific and methodological approaches to understanding its functioning as a complex integrated system, including by defining the specifics of insurance companies, providing them with quality competitive insurance services and strategic and tactical tasks insurers using a systematic approach based on quality

management. Thus, the issues of complex modernization of the Ukrainian agricultural insurance market on the basis of innovative approaches from the standpoint of using the potential of agricultural insurance in terms of transformation processes in it are urgent. As a result, the study proposes modern vectors of the compositional structure of the agricultural insurance market in terms of transformation processes related to the strategy of the latter in five key areas: innovation of agricultural insurance, market shape, compositional structural structure of the market, institutional framework and agricultural insurance environment. The proposed architectonics of complex modernization of the specified market will provide an impetus for its sustainable and dynamic development in the conditions of transformation processes.

In accordance with the key provisions of the strategy of development of the agricultural insurance market of Ukraine, the authors propose a logical and functional approach to the architecture of modernization of the Ukrainian agricultural insurance market in terms of transformation processes, based on a set of principles, including efficiency, tolerance, modernity, innovation, strategy, transparency, clarity and formatting. Each of these principles improves and complements the overall strategy of development of the agricultural insurance market of Ukraine at the functional level.

4 Список використаних джерел

- Barnett B. J., Mahul O. Weather index insurance for agriculture and rural areas in lower-income countries. *American Journal of Agricultural Economics*. 2007. № 89(5). pp. 1241-1247.
- Dandekar V. M. Crop insurance for developing countries. Teaching and Research Forum Paper. 1977. № 10. *Agricultural Development Council*, New York.
- Герасименко Н. А., Жемойда О. В. Ризики в сільському господарстві з урахуванням регіонального аспекту. *Економіка АПК*. 2009. № 9. С. 62-65.
- Марценюк-Розарьнова О. В. Державна підтримка при страхуванні сільськогосподарських товаровиробників. *Економіка АПК*. 2010. № 10. С. 91-95.
- Навроцький С. А. Стан та тенденції розвитку сільськогосподарського страхування. *Наука й економіка*. 2012. № 1(25). С. 61-68.
- Nesterchuk Y., Prokopchuk O., Tsybalyuk Y., Rolynskyi O. & Bilan Y. Current state and prospects of development of the agrarian insurance system in Ukraine. *Investment Management and Financial Innovations*, 2018. № 15(3). pp. 56-70. [http://dx.doi.org/10.21511/imfi.15\(3\).2018.05](http://dx.doi.org/10.21511/imfi.15(3).2018.05).
- Odening M., Shen Z. Challenges of insuring weather risk in agriculture. *Agricultural Finance Review*. 2014. № 74(2). <http://dx.doi.org/10.1108/AFR-11-2013-0039>
- Pikus R., Prykaziuk N. & Balytska M. Financial sustainability management of the insurance company: case of Ukraine. *Investment Management and Financial Innovations*. 2018. № 15(4). pp. 219-228. doi:10.21511/imfi.15(4).2018.18
- Полчанов А. Ю. Агрострахування як складова продовольчої безпеки держави. *Вісник Київського національного торговельно-економічного університету*. 2013. № 4. С. 48-57.
- Porrini D., De Masi F. The role of insurance in the management of disaster risk: the case of the Italian cathedrals. *Insurance Markets and Companies*. 2019. № 10(1). pp. 9-25. [http://dx.doi.org/10.21511/ins.10\(1\).2019.02/](http://dx.doi.org/10.21511/ins.10(1).2019.02/)
- Потійко С. В. Розвиток аграрного страхування в умовах євроінтеграції. *Облік і фінанси*. 2017. № 3(77). С. 107-111.
- Prokopchuk O., Prokopchuk I., Mentel G. Index Insurance as an Innovative Tool for Managing Weather Risks in the Agrarian Sector of Economy. *Journal of Competitiveness*, 2018. № 10(3). pp. 119-131. <https://doi.org/10.7441/joc.2018.03.08>
- Prokopchuk O., Tulush L., Guzar B., Korotieiev M. & Melnyk K. Functioning of Insurance Protection System in the Agrarian Sector of Economy in Ukraine. Proceedings of the 32nd International Business Information Management Association Conference (IBIMA). *Vision 2020: Sustainable Economic Development and Application of Innovation Management from Regional expansion to Global Growth*, 15-16 November 2018, Seville Spain, pp. 1614-1624.

14. Prokopchuk O., Nesterchuk Y., Tsymbalyuk Y., Rolinskyi O. Current trends in agricultural insurance market operation in Ukraine. *Problems and Perspectives in Management*, 2019. № 17(3). pp. 57-75. doi:10.21511/ppm.17(3).2019.05
15. Шолойко А. С. Класичні та індексні страхові продукти для галузі рослинництва. *Облік і фінанси АПК*. 2009. № 3. С. 161-165.
16. Шолойко А. С. Страховий ринок України: підходи до його класифікації та періодизації. *Науковий вісник Національного університету біоресурсів і природокористування України. Серія: Економіка, аграрний менеджмент, бізнес*. 2014. Вип. 200(3). С. 94-102.
17. Віленчук О. М. Стан розвитку аграрного страхування в Україні. *Облік і фінанси*. 2014. № 2(64). С. 91-96.

4 References

1. Barnett, B. J., Mahul, O. (2007). Weather index insurance for agriculture and rural areas in lower-income countries. *American Journal of Agricultural Economics*, 89(5), 1241-1247.
2. Dandekar, V. M. (1977). Crop insurance for developing countries. Teaching and Research Forum Paper No. 10. *Agricultural Development Council*, New York.
3. Herasymenko, N. A., Zhemoida, O. V. (2009). Ryzky v silskomu hospodarstvi z urakhuvanniam rehionalnoho aspektu [Agricultural risk, taking into account the regional aspect]. *Ekonomika APK*, (9), 62-65.
4. Martseniuk-Rozaronova, O. V. (2010). Derzhavna pidtrymka pry strakhuvanni silskohospodarskykh tovarovyrobnykiv [State support for agricultural producers' insurance]. *Ekonomika APK*, (10), 91-95.
5. Navrotskyi, S. A. (2012). Stan ta tendentsii rozvytku silskohospodarskoho strakhuvannia [State and trends in agricultural insurance development]. *Nauka i ekonomika*, 1(25), 61-68.
6. Nesterchuk, Y., Prokopchuk, O., Tsymbalyuk, Y., Rolinskyi, O., Bilan, Y. (2018). Current state and prospects of development of the agrarian insurance system in Ukraine. *Investment Management and Financial Innovations*, 15(3), 56-70. [http://dx.doi.org/10.21511/imfi.15\(3\).2018.05](http://dx.doi.org/10.21511/imfi.15(3).2018.05)
7. Odening, M., Shen, Z. (2014). Challenges of insuring weather risk in agriculture. *Agricultural Finance Review*, 74(2). <http://dx.doi.org/10.1108/AFR-11-2013-0039>
8. Pikus, R., Prykaziuk, N., Balytska, M. (2018). Financial sustainability management of the insurance company: case of Ukraine. *Investment Management and Financial Innovations*, 15(4), 219-228. doi: 10.21511/imfi.15(4).2018.18
9. Polchanov, A. Yu. (2013). Ahrostrakhuvannia yak skladova prodovolchoi bezpeky derzhavy [Agricultural insurance as a component of the food security of the state]. *Visnyk Kyivskoho natsionalnoho torhovelno-ekonomichnoho universytetu*, (4), 48-57.
10. Porrini, D., De Masi, F. (2019). The role of insurance in the management of disaster risk: the case of the Italian cathedrals. *Insurance Markets and Companies*, 10(1), 9-25. [http://dx.doi.org/10.21511/ins.10\(1\).2019.02/](http://dx.doi.org/10.21511/ins.10(1).2019.02/)
11. Potiiko, S. V. (2017). Rozvytok ahrarnoho strakhuvannia v umovakh yevrointehratsii [Development of Agrarian Insurance in the Context of European Integration]. *Oblik i finansy*, 3(77), 107-111.
12. Prokopchuk, O., Prokopchuk, I., Mentel, G. (2018). Index Insurance as an Innovative Tool for Managing Weather Risks in the Agrarian Sector of Economy. *Journal of Competitiveness*, 10(3), 119-131. <https://doi.org/10.7441/joc.2018.03.08>
13. Prokopchuk, O., Tulush, L., Guzar, B., Korotiev, M., Melnyk, K. (2018). Functioning of Insurance Protection System in the Agrarian Sector of Economy in Ukraine (pp. 1614-1624). In *Proceedings of the 32nd International Business Information Management Association Conference (IBIMA). Vision 2020: Sustainable Economic Development and Application of Innovation Management from Regional expansion to Global Growth*, 15-16 November 2018, Seville Spain.
14. Prokopchuk, O., Nesterchuk, Y., Tsymbalyuk, Y., Rolinskyi, O. (2019). Current trends in agricultural insurance market operation in Ukraine. *Problems and Perspectives in Management*, 17(3), 57-75. doi: 10.21511/ppm.17(3).2019.05
15. Sholoiko, A. S. (2009). Klyasychni ta indeksni strakhovi produkty dlia haluzi roslynnytstva [Classic and index insurance products for the crop industry]. *Oblik i finansy APK*, (3), 161-165.
16. Sholoiko, A. S. (2014). Strakhovyi rynek Ukrainy: pidkhody do yoho klasyfikatsii ta periodyzatsii [Ukrainian insurance market: approaches to its classification and periodization]. *Naukovyi visnyk Natsionalnoho universytetu bioresursiv i pryrodokorystuvannia Ukrainy. Serii: Ekonomika, ahrarnyi menedzhment, biznes*, 200(3), 94-102.
17. Vilenchuk, O. M. (2014). Stan rozvytku ahrarnoho strakhuvannia v Ukraini [State and Prospects of Agrarian Insurance Development in Ukraine]. *Oblik i finansy*, 2(64), 91-96.