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Науковий журнал «Науковий вісник Полісся» включено до Переліку наукових фахових видань України, в яких можуть публікуватися результати дисертаційних робіт на здобуття наукових ступенів доктора і кандидата наук з ЕКОНОМІКИ (Наказ Міністерства освіти і науки України № 747 від 13.07.2015 р.)

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Висвітлюються актуальні проблеми розвитку сучасної економіки, функціонування та розвитку підприємств різних форм власності, інвестиційно-інноваційної діяльності, підвищення конкурентоспроможності національної економіки, регіонального розвитку.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 336.76:338.46

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CONCEPTUAL PROVISIONS ON THE DEVELOPMENT AND IMPLEMENTATION OF THE MECHANISM OF THE INSTITUTE OF TRUST FORMATION IN THE FINANCIAL SERVICES MARKET

Urgency of the research. *In order to develop the financial services market, reform in this area needs to be implemented and measures should be taken to increase the level of trust among the key players in such a market.*

Target setting. *The realities of Ukrainian system of state regulation of the financial intermediaries' activity testify that the introduction of new ideas, concepts or provisions in this area requires the construction of an effective mechanism for their implementation. It should be clearly defined in the theoretical and methodological plane with the justification of its constituents.*

Actual scientific research and issues analysis. *The works in the field of functioning of the financial services market should include the papers of such scientists: Bobrov Ye. A., Bondarenko Ye. P., Vyshyvana B. M., Voytenko O. M., Kovalenko Yu. M., Rekunenko I. I., Smagin V. L., Unets-Khodakivska V. P., Yuriya S. I., Yashchuk V. V., Asmundson I., Herring R., Stijn C., Wyman O. та ін.*

Uninvestigated parts of general matters defining. *Despite the developments in this area, the theoretical and methodological principles of justification of the mechanism of forming confidence in the financial services market are not developed.*

The research objective. *The purpose of the work is to develop the provisions for the creation and implementation of a mechanism for the establishment of a trust institution in the financial services market.*

The statement of basic materials. *The importance of developing and implementing a mechanism of trust building in the financial services market for the further development of such a market is determined. The main elements of such a mechanism, the relationship between them are described and their essence and role in the process of building such a market are determined.*

Within the mechanism, its purpose, principles, functions, security units, methods and tools are identified. It is indicated that the mechanism should act in order to obtain concrete results, the types of which are defined.

Conclusions. *The article substantiates the principles of developing and implementing the mechanism of formation of the trust institution in the financial services market.*

Keywords: *trust; institute of trust; mechanism; principle; financial services market.*

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КОНЦЕПТУАЛЬНІ ПОЛОЖЕННЯ РОЗРОБКИ ТА ВПРОВАДЖЕННЯ МЕХАНІЗМУ ФОРМУВАННЯ ІНСТИТУТУ ДОВІРИ НА РИНКУ ФІНАНСОВИХ ПОСЛУГ

Актуальність теми дослідження. *Для розбудови ринку фінансових послуг необхідно провести реформу в цій сфері та впровадити заходи для підвищення рівня довіри між основними учасниками такого ринку.*

Постановка проблеми. *Реалії української системи державного регулювання діяльності фінансових посередників засвідчують, що впровадження нових ідей, концепцій або положень у цій сфері вимагає побудови ефективного механізму їх реалізації. Він повинен бути чітко окреслений у теоретичній та методологічній площині з обґрунтуванням його складових.*

Аналіз останніх досліджень і публікацій. *До робіт у сфері функціонування ринку фінансових послуг варто віднести праці таких науковців: Боброва Є. А., Бондаренка Є. П., Вишиваної Б. М., Войтенка О. М., Коваленко Ю. М., Рекуненка І. І., Смагіна В. Л., Унець-Ходаківської В. П., Юрія С. І., Ящук В. В., Asmundson I., Herring R., Stijn C., Wyman O. та ін.*

Виділення недосліджених частин загальної проблеми. *Незважаючи на напрацювання в цій сфері, не розробленими залишаються теоретичні та методичні засади обґрунтування механізму формування довіри на ринку фінансових послуг.*

Постановка завдання. *Метою роботи є розробка положень створення та впровадження механізму формування інституту довіри на ринку фінансових послуг.*

Виклад основного матеріалу. *Визначено важливість розробки та впровадження механізму формування довіри на ринку фінансових послуг для подальшого розвитку такого ринку. Описуються основні елементи такого механізму, зв'язки між ними та визначається їх сутність і роль у процесі розбудови такого ринку.*

У межах механізму ідентифіковано його мету, принципи, функції, блоки забезпечення, методи та інструменти. Зазначено, що механізм повинен діяти з метою отримання конкретних результатів, види яких визначено.

Висновки. *У статті обґрунтовані засади розробки та впровадження механізму формування інституту довіри на ринку фінансових послуг.*

Ключові слова: *довіра; інститут довіри; механізм; принцип; ринок фінансових послуг.*

Shkarlet S. M., Dubyna M. V., Zhuk O. S. Conceptual provisions on the development and implementation of the mechanism of the institute of trust formation in the financial services market

Urgency of the research. Reforming any macroeconomic system is a complex process of transforming the activities of the main actors of such a system, the links between them, changing their functions and general rules of operation. However, without developing and implementing new exogenous measures, impulses for the further development of this system, the endogenous potential will eventually be exhausted and it will begin to degrade. Such a process is also characteristic for the financial services market. Today, it is obvious that in order to develop effective relations between its main actors and to create an internal potential for its further development, it is necessary to carry out a reform in this sphere and to introduce a number of measures of different character in order to create conditions for improving the efficiency of financial institutions and trust growth among the major players in such a market.

Target setting. The realities of the Ukrainian system of state regulation of the financial intermediaries' activities and the retrospective of the implementation of the basic documents on the development of the said market, testify that the introduction of new ideas, concepts or provisions in this area requires the construction of an effective mechanism for their implementation. It should be clearly defined in the theoretical, methodological and applied plane with identification and substantiation of its main components. The presence of such a conscious mechanism of trust building in the financial services market makes it possible to realize the process of its development more harmoniously, taking into consideration, as much as possible, the interests of all entities that carry out their activities within such a market.

Actual scientific research and issues analysis. The market of financial services as a macroeconomic system has been studied by scientists for a long time. The most thorough work in this area should include the works of such scholars: Bobrov Ye. A., Bondarenko Ye. P., Vyshyvana B. M., Voytenko O. M., Gorbach L. M., Zarypova T. Yu., Zakharchenko K. V., Kovalenko Yu. M., Krasovskyi S. S., Podzygun I., Rekunenko I. I., Riazanova N. S., Smagin B. L., Soloshkina I., Titova V. A., Tretyakov M. M., Unets-Khodakivska V. P., Yuriy S. I., Yurchuk G. V., Yashchuk V. V., Asmundson I., Herring R., Santomero A., Stijn C., Wyman O.

The peculiarities of forming an institution of trust within the financial services market were considered in the writings of many foreign and domestic scientists, among which are: Alimpiyeva Ye., Vantukh T. Z., Galutova M. M., Ibragimova D. Kh., Yegorycheva S. B., Zhukovska Ye. V., Konovalova M. Ye., Kuzina O. Ye., Kuryliak V., Prymostka L. O., Reverchuk S. K., Savluk M. I. and others.

Uninvestigated parts of general issue defining. Despite numerous advances in the field of knowledge of the features of the functioning of the financial services market as a separate system, raising the level of trust within such a market among its main subjects, the theoretical and methodological principles of justification of the mechanism of forming such trust between consumers and producers of financial services were not developed. Such a situation requires the use of a systematic approach that would allow the components of such a mechanism to be identified and substantiate their essence, determine the principles of its formation and functioning.

The research objective. The purpose of the work is to develop conceptual provisions for the creation and implementation of a mechanism for the establishment of a trust institution in the financial services market.

The statement of basic materials. Substantiation and definition of new theoretical positions in the field of increasing the level of trust between consumers and financial service providers is an important part of reforming such a market and improving the quality and effectiveness of interaction between its main actors. To do this, you need a definite mechanism that will achieve a certain goal. However, an increase in the level of trust in financial institutions in a society cannot be the main goal, since trust is a rather variable phenomenon. It is the provision of its sustainable level in the end as a condition for the development of the financial services market.

We fully support the position of Robert Bruce Shaw who observes in his book “Keys to trust in the organization: effectiveness, decency, caring": "trust is not a panacea. It is necessary in many situations, but it is insufficient in itself to ensure success. For example, trust is needed if you need to improve teamwork. Without trust, the team members will not cooperate effectively with each other. But for a successful operation, there is not enough one trust; factors such as clear program of actions and goals, a sufficient level of knowledge and skills of employees, the correct distribution of roles, effective production procedures and learning mechanisms, also play an important role" [4, p. 28]. That is, to increase the level of trust, it is not enough to formulate measures to increase its level. An aspect of the stable development of the financial services market remains an important aspect. The introduction of directions for increasing the efficiency of such a market will positively affect the growth of confidence, in turn, raising its level also will have a qualitative effect on the functioning of such a market. The duality of the relationship between the level of trust and the level of development of the financial services market requires the development and implementation of appropriate mechanisms that would positively affect it as a macro system. In addition, their implementation should lead to an increase in the level of trust, which is an integral part of the development of such a market, and is considered as the basic factor for its further functioning.

Consequently, the issues of developing the theoretical basis for forming the directions of development of the financial services market are becoming relevant. Such a process is related to the justification of its mechanism, which allows systematizing and combining all aspects of creating the preconditions for the development of a well-defined market. Creation of the said theoretical platform will contribute to a more systematic presentation of the material that will address the development of applied aspects of the development of financial intermediaries and increase the confidence of economic entities in their activities.

First, we'd like to define the essence of the very definition of "mechanism". The outlined category has been widespread in many sciences and is interpreted within them in different ways. Rybak S. O. notes that "the term, the mechanism" is borrowed from the economic science of technology It means the method of interconnection between heterogeneous elements and in modern conditions is widely used in studies of social processes in general and economic in particular " [3, p. 44] The explanatory dictionary of S. I. Ozhegov defines the term "mechanism" as a "system that ascertains the order of any kind of activity" [5]. In the "Great Explanatory Dictionary of Contemporary Ukrainian Language," the notion "mechanism" is regarded as "the internal structure, the system of something, a set of states and processes from which a certain phenomenon is formed ..." [2, p. 665]. Bevzyuk N. A. also notes that "in terms of the economy, the mechanism can be represented as a specific set of elements, states and processes, located in this sequence, in certain relationships, relations and determine the order of any kind of activity " [1, p. 16]. Consequently, the mechanism can be considered as an integral component of geo genesis system of any object, a set of interrelated components that provide an opportunity to implement such a process and allow them to transform their future state when they are changed.

Thus, the mechanism is directly related to the process of origin, functioning and development of the systems of different nature. In the framework of economic science, it is customary to use the term 'economic mechanism', which by its very nature does not differ from the expanded interpretation of the nature of the definition of 'mechanism' however; its features are determined by the specific features of the studied system.

In the context of knowing the process of forming a trust institution in the financial services market, the "mechanism" category is one of the key elements in substantiating the main measures to increase the level of confidence within such a market. It is this mechanism that allows us to create the preconditions for the emergence and increase of financial trust in society through a set of methods, instruments, levers and observance of the corresponding principles of its action. In Fig. 1, the model of the mechanism for forming a trust institution in the financial services market is shown. Let us consider its main components in more details.

The purpose of this mechanism is to increase trust in the financial services market, which can be estimated through a combination of quantitative and qualitative indicators. The presence of a positive trend in the growth of financial trust in society will indicate the effectiveness of the mechanism and the coordinated work of its main components.

To achieve the goal, the tasks were formulated. Their outlined list is indicative and conditional, since their number can be expanded if necessary. However, since we describe the functioning of the mechanism of confidence building in the market of financial services, the given tasks quite allow to achieve its purpose of functioning.

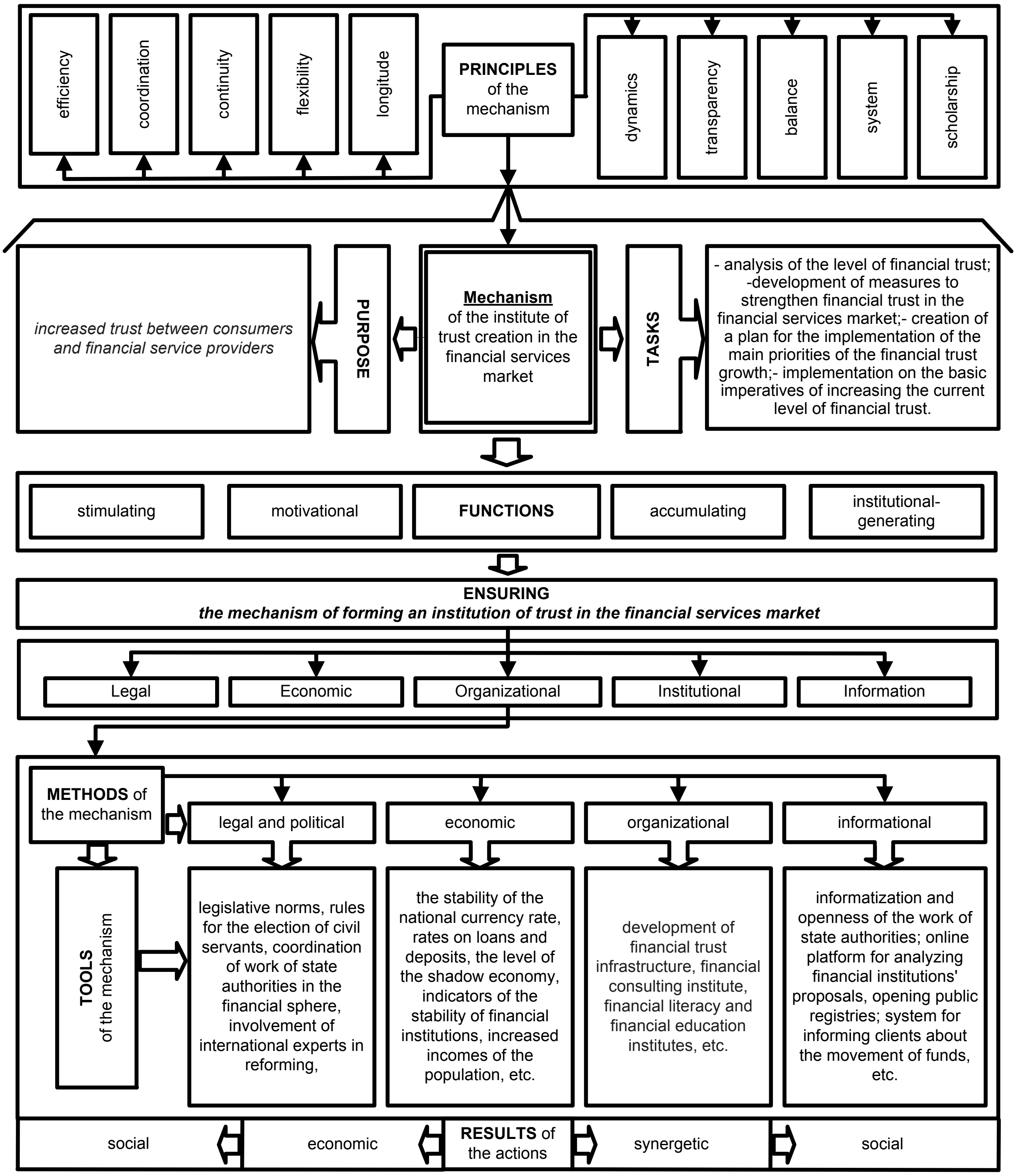

Fig. 1. Concept of the mechanism of the institution of trust formation in the market of financial services
Source: compiled by the authors considering

For the existence of a mechanism for forming an institution of trust in the financial services market, a prerequisite is the formation of the principles on which such a mechanism will function. Principles are an integral part of it, since they determine the basis for the functioning of such a mechanism, create rules for its work. An important condition for the effective operation of this mechanism is the continued observance of such rules. In addition, it should be noted that in this system of principles we have combined the principles of functioning of the mechanism of trust building in the market of financial services and the principles of its development. Let us consider their essence in more detail.

Scientific based principle – the reform of the financial services market and the improvement of the institute of trust within its boundaries should be carried out on a certain theoretical and methodological basis. It is the scientific platform that allows holistic identification of the object of reform itself, elaboration of measures and substantiation of expediency and consequences of their implementation. The mechanism of trust building itself also functions in space and is an abstract phenomenon; however, its scientific substantiation and description allow more comprehensively understanding the aspects of implementation of measures to improve the efficiency of the financial intermediaries functioning.

System based principle – the mechanism of forming financial trust is a set of elements that interact with each other and forms a certain system. The use of the system approach itself allows more reasonably to determine the relationships between the elements and to develop measures to improve both their functioning and the work of the mechanism as a whole. Its consideration as a system allows us to form a clearer understanding of the whole system of methods, tools, their interconnections and rules of use that contribute to the formation of system thinking.

Balance based principle – means that the mechanism for creating financial trust that penetrates the entire financial services market system should equally facilitate the adoption of measures for the development of all types of financial intermediaries. In the area of the financial trust functioning, it is important to ensure the sustainability of the entire financial services market, which depends not only on activities, such as banking institutions. In this case, the reform should relate to all components of the financial services markets and take place based on coordinating the measures of their further activities. In Ukraine today, this principle does not work. Banks are in fact monopolists in the financial services market in its most important segments (deposit, credit). The reform of credit co-operation and insurance services markets is not systematic or ineffective.

Transparency based principle – is to maximize the disclosure of the results of both the functioning of the mechanism itself and the further directions of its development. The financial services market is an important component of the economic functioning of the country. This causes increased attention to the processes of its reform and the introduction of new rules of work for financial intermediaries. It is worth emphasizing only a considerable public resonance during the mass closure of banking institutions in Ukraine. The outline just confirms the need to ensure the transparency of the operation of the entire mechanism. This concerns both the activities of public authorities, the functioning of financial intermediaries, and the publication of as much information as possible about the financial position of financial services consumers.

Dynamics based principle – this principle confirms the importance of understanding the variability of the mechanism for creating trust between producers and consumers of financial services. The mechanism operates in an open environment, is subject to various factors. This determines its dynamism and constant transformation. Such a situation may be conditioned not only by the continuous positive trend of its work and the effectiveness of the development of the financial services market, but also due to the slowing down of its functioning. In this case, in the short term, it is worth analyzing the causes of such a process and using other available tools to change this state (if possible within such a mechanism).

Longitude based principle – this principle is to provide a mechanism for creating financial trust with the necessary long-term data on the basic parameters of the behavior of various economic actors. Long-term studies of their nature are lengthy and provide an opportunity to obtain significant amounts of information about certain aspects of the functioning of the financial services market. It is the availability of such data that allows us to better formulate further measures for the development of such a market, use previous experience to overcome crises in the work of financial intermediaries, and predict further trends in its development based on retrospective information.

Flexibility based principle – means that the specified mechanism is not a constant set of elements, but must constantly change in accordance with the transformations of the environment, adapt to the new conditions of economic reality. In this case, the tools to achieve the purpose of the mechanism may be changed, the choice of which should be appropriate in each case of their use.

Continuity based principle – the mechanism for building trust between producers and consumers of financial services is, by its nature, a continuously developing system. Even without the introduction of any measures, this mechanism will work, but its efficiency will be low. This principle also shows that it is impossible to reach the ultimate goal of such a mechanism; it can only move, introducing more and more measures to increase the level of trust in the financial services market. This is due to the fact that the result in the applied plane is measured by the amount of money, and such resources cannot be sufficient It is the continuity of the mechanism that requires continuous improvement of the functioning of the financial services market, analysis of its current state, possible directions of the development, impact assessment on the macroeconomic situation in the country.

Consistency based principle – the mechanism for building trust in the financial services market is part of the overall financial mechanism, which is part of the economic mechanism. This situation requires constant coordination of the directions of development of the financial services market with the general financial and economic policies in the state. The process of building trust in the financial services market, measures to increase its effectiveness should be consistent with the strategic directions of the country's development in the short and long term.

Efficiency based principle – means that the implementation of the mechanism for raising the level of financial trust should occur with continuous monitoring of the effectiveness of its operation. Such efficiency can be calculated through the analysis of statistical indicators, or by conducting expert surveys.

It is these indicators that allow us to assess the quality of implemented reforms in the field of financial trust building and to determine their feasibility and effectiveness.

Since the mechanism can be considered as a separate system, a set of elements that interact with each other, then such a system inherent in certain functions. It should be noted that functions also exist in the financial services market and in the institution of trust. The functions of the mechanism, given that the function is work, activity, is to enhance the efficiency of the implementation of the defined objects of functions. That is, the effective operation of this mechanism should accelerate the implementation of the financial services market and its functions and allow you to receive the expected results of this process.

The main functions of the mechanism are as follows.

Stimulating function - allows the implementation of macroeconomic measures to increase financial trust by influencing the decision-making process by economic entities regarding the spending of own funds. This function makes it possible to increase the level of trust through the implementation of various systemic and general economic and organizational measures (for example, ensuring macroeconomic stability, raising the investment climate in the country, reducing interest rates on loans or increasing their deposits with deposit products).

Motivational function – this function of the mechanism is already in the influence on the decision of individual subjects in terms of investing. In this case, psychological factors that are inherent in society as whole, individual categories of citizens, etc. are already becoming important. Motivational function is important in the conditions of a stable financial system of the state, when there are no obvious threats to the provision of own funds at the disposal of other entities. Motivational function is important in the conditions of a stable financial system of the state, when there are no obvious threats to the provision of own funds at the disposal of other entities. However, subjects do not do this through certain stereotypes, habits. Measures to influence the behavior of economic actors are important from the point of view of raising the level of financial trust. Through the motivational function in a society, the traditions of an economical way of life, which in the long run become a culture of financial trust, are gradually being formed.

Accumulating function – the essence of this function lies in the fact that the mechanism of trust building in the financial services market can only work efficiently by accumulating the various resources necessary for it: personnel, information, material, institutional. The combination of these conditions is the basis for the functioning of this mechanism. Thus, its existence is entirely due to the availability of such resources. At the initial stage of its creation, the mechanism does not perform such a function, because it does not exist. However, there continues to be an objective need to use different resources to reform the financial services market and increase trust within it.

Institutional generating function - the mechanism for building trust in the financial services market is an abstract concept, but it permeates all areas of building such a market and increasing the level of trust between consumers and financial service providers. It is thanks to the effective operation of such a mechanism in the financial system of the country, if necessary, new institutes and institutions can be created, the purpose of which is to promote the increase of financial confidence in society. Such institutions include, for example, the "institution of the financial ombudsman", "the institution of financial consulting", "the institution of the megacity regulator in the financial services market".

In this context, the reform of the financial services market in accordance with the established strategy is through this mechanism. Within such strategic measures, the principle for the establishment of these institutions may be identified. However, their realization is carried out indirectly with the help of the indicated mechanism.

In order for all functions of the mechanism to be carried out effectively, and it itself worked smoothly, some security is needed. To its main units, we include the following: legal, economic, organizational, institutional and informational. It is their combination that allows us to create conditions for the further implementation of strategic measures to increase public trust in the activities of financial intermediaries.

Methods and tools of the mechanism for creating trust in the financial services market are partly presented in Fig. 1 Their list can be expanded. However, the article did not aim to present fully all instruments of this mechanism. It is logical that any measure of increased confidence requires the use of a certain set of different tools. We’d also like to note that they are not always instruments of state regulation of the financial services market.

Thus, the substantiation of the essence of the mechanism for building trust in the financial services market allows formulating a certain scientific and applied basis for its overall reform and increasing confidence among its main actors. The role of such a mechanism is really important for the functioning of this market, since it occupies a significant place in the system of its systematic genesis.

However, it should also be remembered that the model of the mechanism for creating trust in the financial services market described above is, although abstract, but still does not exhaustively describe all aspects of the real mechanism that exists in the financial and cordial space of the state. Thoroughly describing all the elements of such a mechanism is impossible. However, the knowledge of its essence through the definition of nature and structure provides an approximate, although approximate understanding of the laws of development and implementation of measures to increase the level of financial trust in the state.

Conclusions. Within the framework of this article, the importance of developing and implementing a mechanism for trust building in the financial services market for its further development within the national economy is substantiated. It is noted that such a mechanism is a part of the process of systematization of the financial services market as an open and complex macroeconomic system. The main elements of the mechanism, the relationship between them are defined within the article, and their essence and role in the process of developing the financial services market by raising the level of trust between consumers and the producers of financial services are described.

In particular, within such a mechanism, its purpose, principles, functions, units of its implementation and related methods and tools are identified. It is also noted that the mechanism must act in order to obtain concrete results, the types of which are also determined.

Taking into consideration the conceptual provisions of the development and implementation of the mechanism of the trust institution formation in the financial services market, the issue of determining the main imperatives to increase the level of development of such a market, the description of the basic methods and tools for their implementation and the development of methodological support for assessing the effectiveness of the mechanism becomes urgent.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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ТЕОРЕТИЧНІ І ПРАКТИЧНІ СКЛАДОВІ ЕКОНОМІЧНОЇ БЕЗПЕКИ В УКРАЇНІ

Актуальність теми дослідження. *Розвинуті країни світу, спираючись на потужний інноваційний потенціал та розроблені методи впливу, бажають наростити свої переваги і отримані нагромадження. Це, а також слабка власна конкурентоспроможність, створює нові фактори ризику для багатьох держав, у тому числі України.*

Постановка проблеми. *Доцільними є аналіз чинників, які формують загрози розвитку нашої держави, та окреслення заходів щодо мінімізації їх впливу.*

Аналіз останніх досліджень і публікацій. *Результати вивчення проблем забезпечення економічної безпеки в Україні та світі висвітлено у працях О. С. Власюка, В. М. Гейця, В. П. Горбуліна, Т. С. Клебинової, В. А. Предборського, А. І. Семенченка, Г. П. Ситника та інших.*

Виділення недосліджених частин загальної проблеми. *Враховуючи теоретичні та практичні здобутки напрацювань вчених, необхідно також зазначити, що багато проблем потребують подальшого вивчення.*

Постановка завдання. *Метою статті є дослідження проблем економічної безпеки в Україні, та розробка рекомендацій у даному напрямку.*

Виклад основного матеріалу. *У статті проведено аналіз з питань забезпечення економічної безпеки на сучасному етапі розвитку держави і суспільства. Охарактеризовано світовий досвід сьогодення, коли економіка все більше інтегрується у глобальні процеси. Досліджено внутрішні та зовнішні загрози економічній безпеці. Визначено основні завдання економічної безпеки в Україні.*

Висновки. *Вагому роль у частині забезпечення економічної безпеки держави відіграють процеси інтеграції і глобалізації, що призводять до необхідності розробки власної моделі розвитку, яка гармонійно поєднується із зазначеними явищами і мінімізує наслідки криз в економіці. Зроблено висновок, що економічна безпека України є особливо складною і важливою категорією і потребує додаткових заходів інституційно-правового, економічного та інформаційно-аналітичного характеру.*

Ключові слова: *економічна безпека; національна економіка; глобалізація; макрорівень; загрози; менеджмент; суспільство; Європейський Союз.*

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THEORETICAL AND PRACTICAL COMPOSITIONS OF ECONOMIC SECURITY IN UKRAINE

Urgency of the research. *Relying on strong innovative capacity and advanced methods of influence, developed countries wish to increase their benefits and received accumulation. This, as well as its own weak competitiveness, creates new risk factors for many countries, including Ukraine.*

Target setting. *It is advisable to analyze the factors that form threats to the development of our state, and outline measures to minimize their impact.*

Actual scientific researches and issues analysis. *The results of the studies on the problems of ensuring economic security in Ukraine and in the world are highlighted in the works of O. S. Vlasiuka, V. M. Heitsia, V. P. Horbulina, T. S. Klebynovoi, V. A. Predborskoho, A. I. Semenchenka, H. P. Sytnyka and others.*

Uninvestigated parts of general matters defining. *Taking into account theoretical and practical achievements of scientists' developments, it should also be noted that many problems require further study.*

The research objective. *The objective of the article is to study the issues of economic security in Ukraine, and to develop recommendations in this direction.*

The statement of basic materials. *The article analyzes the issues of ensuring economic security at the present stage of state and society` development. Characterizes the world`s experience of the present, when the economy is increasingly integrated into global processes. The paper also investigates the internal and external threats to economic security and determines The main tasks of economic security in Ukraine.*

Conclusions. *A significant role in terms of ensuring economic security of the state is played by the processes of integration and globalization, which lead to the need of creating its own model of development, which is harmoniously combined with the above mentioned phenomena and minimizes the consequences of the crises in the economy. It is concluded that the economic security of Ukraine is particularly complicated and important category that requires additional measures of legal and institutional, economic and information-analytical characters.*

Keywords: *economic security; National economy; globalization; macro level; threats; management; society; European Union.*

Актуальність теми дослідження. Сучасний світ в переважній більшості складових, включаючи економіку, глобалізований, поділений на сфери впливу, блоки, союзи та інше. Провідні держави, спираючись на високий потенціал розвитку та інновацій, засоби дипломатії, в окремих випадках на військові важелі тиску, не збираються поступатися своїми перевагами та отриманими накопиченнями. Більш того, вони намагаються посилити надбання. Окремі держави прискорено розвиваються і теж борються за «місце під сонцем». В зазначених умовах зростають фактори ризику для багатьох країн, а особливо тих, що перебувають на етапі трансформації. До таких країн належить і Україна.

Постановка проблеми. За більш ніж четверть століття незалежності наша держава не досягла високого ступеня економічної безпеки по основних складових як внутрішнього, так і зовнішнього характеру. Тому доцільно дослідити проблеми, що створюють загрози її розвитку і самому існуванню, окреслити заходи щодо поліпшення становища.

Аналіз останніх досліджень і публікацій. Теоретичні засади економічної безпеки і практичні дії по усуненню чи мінімізації загроз в Україні були вивчені у працях таких вчених-економістів як О. С. Власюк, В. М. Геєць, В. П. Горбулін, Т. С. Клебинова, В. А. Предборський, А. І. Семенченко, Г. П. Ситник та інші.

Виділення недосліджених частин загальної проблеми. Незважаючи на значну увагу науковців до даного питання, багато проблем у цій сфері залишаються дискусійними і потребують подальшого дослідження.

Постановка завдання. Метою статті є систематизація теорії та дослідження практичних питань щодо рівня економічної безпеки в Україні, надання пропозицій, які сприятимуть поліпшенню становища в даному напрямку.

Виклад основного матеріалу. Проблеми забезпечення безпеки національної економіки невіддільні від завдань економічного розвитку. Державна політика повинна бути спрямована на підтримку економіки у стабільному стані, забезпечуючи її розширене зростання та структурну перебудову у напрямку більш високих технологічних укладів.

Негативні фактори внутрішнього і зовнішнього характеру можуть перервати динамічний розвиток, сприяти кризовим явищам. Тому питання забезпечення економічної безпеки на кожному етапі розвитку держави і суспільства є виключно важливими.

У свій час один із засновників камералістської концепції забезпечення економічної безпеки німецький економіст Фрідріх Ліст розробив її основні положення. Хоча його теорія не стала популярною та всесвітньо відомою на кшталт класичної політекономії Адама Сміта, вона суттєво вплинула на формування системи захисту економічних інтересів конкретної країни від експансії західноєвропейських держав.

Саме завдяки такому підходу окремі новостворені чи слаборозвинені на той час держави змогли вийти в лідери. Мова в першу чергу йде про Сполучені Штати Америки, Німеччину, згодом Японію та інших. Тому Ф. Ліст вважається головним теоретиком камералістики (сукупності наукових теорій з проблем і підходів щодо державного регулювання, визначення національних інтересів та економічної безпеки) [1, с. 275].

Термін «безпека» йде від латинського слова «securitas», що означає «без турботи, страху». Головним чинником отримання прибутку в ринковій економіці є самостійна ефективна діяльність без реальної підтримки держави, коли доводиться розвиватися і виживати в умовах жорсткої конкуренції та впливу великої кількості негативних факторів як зовнішнього, так і внутрішнього середовища. В такій ситуації питання безпеки є особливо важливими у мікросередовищі.

Переходячи на макрорівень, національні економіки все більше інтегруються у світову глобальну економіку і кожній країні необхідно створити власну економічну модель, яка дозволить мінімізувати наслідки криз, а ще краще запобігти їх виникненню та поширенню. Ф. Ратцелем сформовано один із законів просторового розвитку – в усі часи основний зміст політики держав спрямовувався на володіння найбільш цінними елементами простору. Виходячи з такого підходу, економічна безпека України в часи глобалізації є особливо складною і важливою категорією, оскільки довгі роки вона не була єдиною територією та окремою країною. Різні колонізатори вплинули на розвиток, сформували відмінності у ментальності і стилі поведінки регіонів [2, с. 250-251].

У своєму дослідженні українські економісти З. С. Варналій, П. В. Мельник, Л. Л. Тарангул визначають, що економічна безпека – це «результат комплексу складових, орієнтованих на усунення фінансово-економічних загроз функціонування та розвитку, … забезпечення фінансової стійкості й незалежності, високої конкурентоспроможності, технологічного потенціалу, оптимальності й ефективності організаційної структури, правового захисту діяльності, захисту інформаційного середовища, комерційної таємниці, безпеки персоналу, капіталу, майна та комерційних інтересів» [3, с. 309]. При цьому науковці серед фінансово-економічних проблем наголошують на головній ролі фінансової складової.

На стан економічної безпеки значний вплив має якість менеджменту (Рис. 1), який відносять до однієї з головних її складових.

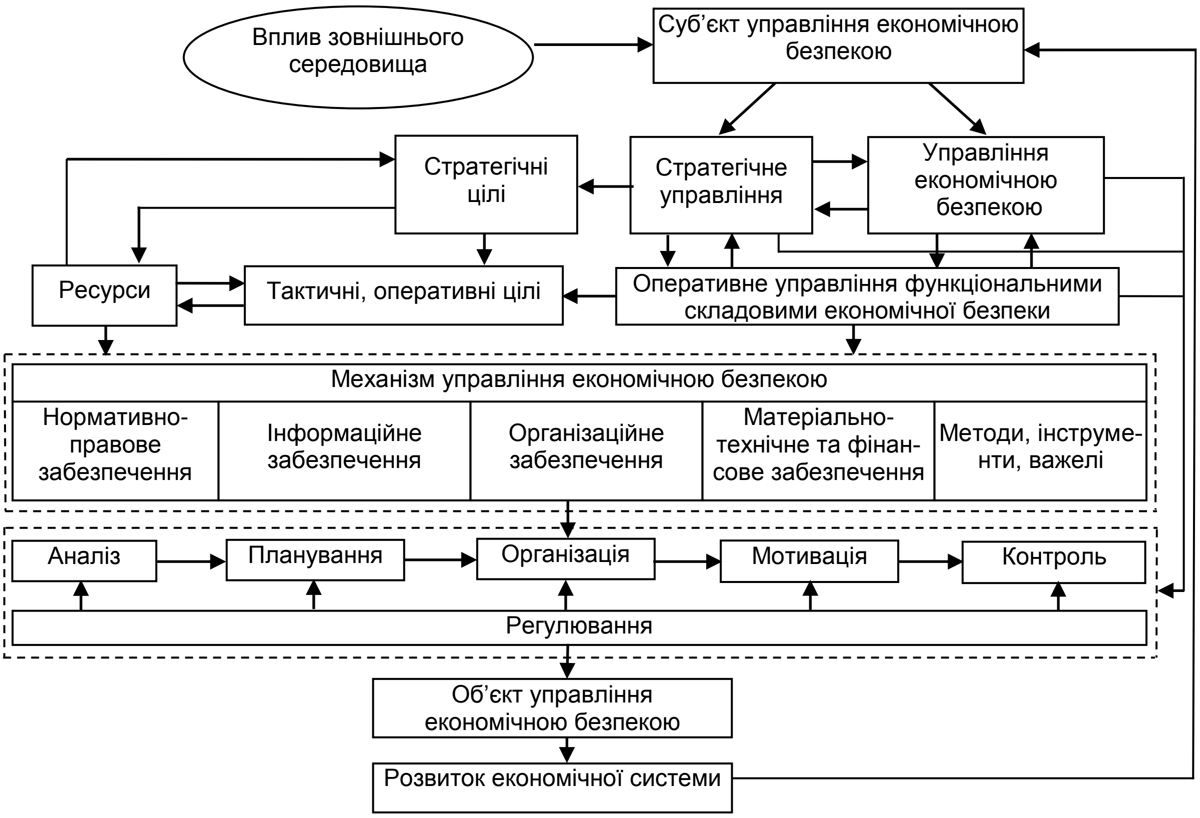

Рис. 1. Менеджмент економічної безпеки*
***Джерело:** [4, с. 72], доопрацьовано авторами*

Управління економічною безпекою характеризується наявністю таких ознак: невизначеність, пов'язана з подальшим впливом прийнятого рішення на проблемну ситуацію; відсутність повної картини розвитку ситуації на етапі формування рішення; прийняття рішення базується на прогнозуванні тенденцій розвитку системи в часі; розвиток складної системи може отримати велику кількість варіантів.

Приклади зарубіжних країн засвідчують, що важлива роль у сучасній економіці відводиться малому і середньому бізнесу. Відродження української держави також неможливе без створення ефективного бізнесового середовища, що забезпечує розвиток економічних та соціальних явищ. Проте значна частина вітчизняних підприємств працюють неефективно, часто стають банкрутами [5]. В таких умовах головні напрямки посилення економічної безпеки можна виділити як інституціонально-правовий, економічний та інформаційно-аналітичний (Табл. 1).

Система національної економічної безпеки має гарантувати не тільки захист та реалізацію потреб людини і суспільства в цілому, а й відображати множину інтересів, що є найпотужнішим фактором мобілізації, засобом реалізації потенціалу.

Зовнішньоекономічні відносини України на сучасному етапі розглядаються через євроінтеграційний вектор: відносини з ЄС та його країнами-членами; взаємини з Росією; лібералізація зав’язків з пострадянськими країнами; контакти з іншими розвиненими державами світу і тими, що розвиваються.

Таблиця 1

Напрями забезпечення економічної безпеки малого та середнього бізнесу*

№	Напрями	Заходи реалізації
1	Інституційно-правовий	– розвиток державних наукових і науково-технічних організацій, що здійснюватимуть координацію досліджень; – вдосконалення нормативно-правового і методичного забезпечення моніторингу і оцінки рівня економічної безпеки.
2	Економічний	– збільшення рівня цільового фінансування інноваційної сфери для забезпечення досягнення стратегічних пріоритетів розвитку; – збільшення частки високотехнологічного експорту, участь у міжнародних проектах та науково-технічній кооперації; – створення нових видів продукції (послуг), використовуючи сучасні технології; – покращення якості роботи працівників підприємств (підготовка кадрів, підвищення кваліфікації, матеріальне заохочення); – формування системи цільового фінансування пріоритетних напрямів науково-технічного розвитку.
3	Інформаційно-аналітичний	– організація виконання і забезпечення контролю за ходом реалізації заходів з подолання або нейтралізації загроз економічній безпеці; – формування системи репрезентативних показників економічної безпеки; – визначення реальних та потенційних загроз (ризиків) економічній безпеці та планування заходів щодо їх усунення (мінімізації); – налагодження моніторингу стану економічної безпеки та публікація результатів діяльності.

Джерело: [6], доопрацьовано авторами

Забезпечення економічної безпеки як фундаментальної складової розвитку – не новий предмет вивчення для вітчизняної наукової школи, проте сучасні умови, за яких, окрім проблем внутрішньої безпеки, суттєвою є глобалізація світової економіки, вимагають вдосконалення існуючих підходів для ефективного вирішення актуальних сьогоденних проблем.

Узагальнення теоретичних засад щодо визначення економічної безпеки дозволяє розглядати її як взаємопов’язану і взаємозалежну систему зав’язків міжнародного, національного і регіонального рівнів, а також юридичної та фізичної особи. При цьому слід констатувати глибокий взаємний вплив зазначених компонентів один на одного, що відкриває нові напрямки дослідження економічної безпеки як складної категоріальної системи на кожному з рівнів та можливості знайдення інших шляхів щодо вдосконалення її забезпечення, опираючись на сучасні умови розвитку [7, с. 19].

Найбільш актуальними для України є взаємовідносини з єдиним європейським ринком, а враховуючи об’єми зовнішнього боргу, необхідно досягти покращення таких макроекономічних показників: збільшення фінансової допомоги з боку зовнішніх кредиторів; зростання експорту, зокрема за рахунок інновацій та організаційних перетворень; раціоналізація імпорту, передусім через зниження енергоємності виробів і технологій; залучення «тіньового» валютного капіталу; реструктуризація боргів; збільшення прямих іноземних інвестицій; мобілізація приватних фінансових ресурсів на виплату боргів [8].

Сьогодні необхідно приділяти значну увагу питанням, пов’язаним із способами і методами активізації інвестиційної діяльності, створення сприятливого інвестиційного клімату, залучення фінансових ресурсів та їх ефективного використання.

Серед головних причин непривабливості вітчизняного інвестиційного клімату нераціональний розподіл приватних і державних внутрішніх інвестицій, повільні темпи реформування економіки, непередбачуваність ситуації для іноземних партнерів.

Необхідно сформувати стратегію таким чином, щоб наголос не робився тільки на бюджетне фінансування, оскільки це зменшує зацікавленість приватних інвесторів та загальний рівень забезпечення національної економіки, відволікає державні кошти від інших життєво важливих завдань.

Зазначені у дослідженні підходи дозволять з достатньою ймовірністю аналізувати стан економічної безпеки та впроваджувати заходи щодо його покращення.

Висновок. Питання забезпечення економічної безпеки на кожному етапі розвитку держави і суспільства є виключно важливим. Особливо гостро воно постало в умовах сьогодення, коли національні економіки все більше інтегруються у глобальні процеси і кожній країні потрібно впровадити власну модель, що дозволить попередити кризи чи мінімізувати їх наслідки.

Економічна безпека України є складною та важливою категорією, оскільки довгі роки і століття вона не була єдиною країною, а колонізатори вплинули на розвиток, сформували відмінності у менталітеті і стилі поведінки окремих регіонів.

Відродження та розвиток української держави неможливі без створення ефективного середовища, що забезпечить економічні і соціальні процеси. При цьому головними напрямками посилення економічної безпеки являються інституціонально-правовий, економічний та інформаційно-аналітичний.

Економічна безпека як фундаментальна складова розвитку – не новий предмет вивчення для вітчизняних науковців, проте сучасні умови, коли, крім проблем внутрішньої безпеки, суттєвою є глобалізація світової економіки, вимагають вдосконалення існуючих підходів для вирішення актуальних проблем сьогодення.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 330.341.018

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ATTRIBUTIVE MODEL OF SYNERGETIC TYPE SYSTEMS DEVELOPMENT

Urgency of the research. *The environment of the social and economic systems functioning is characterized by a high degree of variability, which creates barriers for their development. The search for ways to ensure the development of social and economic systems has to be based on the perfect ownership of concepts and categories connected with development.*

Target setting. *The formation of a conceptual and categorical apparatus of development requires not only the study of the categories associated with this concept, but also the establishment of existing interrelationships between them.*

Actual scientific researches and issues analysis. *Afanasyev N., Rogozhyn V, Rudyk V. Belyayev O., Bebelo A., Bogatyryov I. and others have devoted their researches to the concept of development of social and economic systems at different levels of the hierarchy.*

Uninvestigated parts of general matters defining. *At the same time, the interrelation between the categories related to the development of the system that needs to be refined and visualized and has not been sufficiently studied.*

The research objective. *Construction of an attributive model for the development of social and economic systems by synergetic type in order to clearly illustrate the interrelations between the separate categories of the conceptual and categorical apparatus of systems development.*

The statement of basic materials. *The article investigates the interrelations between the categories of development, the adaptability of the social and economic system and the regulation of development. An attributive model of synergetic type has been constructed, the feature of which is the optimal breadth of coverage of social and economic systems. Within the framework of the constructed model, the attributes of time and interaction with the division of the latter on the attributes of the space, motion and influence have been highlighted.*

Conclusions. *The attributive model of the development of the social and economic system, constructed in this way, allows account the interrelationships between its development, the level of adaptability and the regulation of the system's development.*

Keywords: *social and economic system; development; attribute; development level; character of development; stability; variability; adaptability, regulation.*

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АТРИБУТИВНА МОДЕЛЬ РОЗВИТКУ СИСТЕМ СИНЕРГЕТИЧНОГО ТИПУ

Актуальність теми дослідження. *Середовище функціонування соціально-економічних систем вирізняється високим ступенем мінливості, що створює перепони для їхнього розвитку. Пошук шляхів забезпечення розвитку соціально-економічних систем має ґрунтуватися на досконалому володінні поняттями та категоріями, пов'язаними з розвитком.*

Постановка проблеми. *Формування понятійно-категоріального апарату розвитку потребує не лише дослідження пов'язаних з цим поняттям категорій, але й встановлення існуючих між ними взаємозв'язків.*

Аналіз останніх досліджень і публікацій. *Вивченню поняття розвитку соціально-економічних систем на різних рівнях ієрархії присвятили свої дослідження Н. Афанасьєв, В. Рогожин, В. Рудика, О. Бєляєв, А. Бебело, І. Богатирьов тощо.*

Виділення недосліджених частин загальної проблеми. *У той же час, недостатньо вивченими є взаємозв'язки між категоріями, пов'язаними з розвитком системи, які потребують уточнення та наочного відображення.*

Постановка завдання. *Побудова атрибутивної моделі розвитку соціально-економічних систем синергетичного типу з метою наочного відображення взаємозв'язків між окремими категоріями понятійно-категоріального апарату розвитку систем.*

Виклад основного матеріалу. *У статті досліджено взаємозв'язки між категоріями розвитку, адаптивності соціально-економічної системи та регулювання розвитку. Побудовано атрибутивну модель синергетичного типу, особливістю якої є оптимальна широта охоплення соціально-економічних систем. В рамках побудованої моделі виділено атрибути часу та взаємодії з поділом останніх на атрибути простору руху та впливу.*

Висновки. *Побудована в такий спосіб атрибутивна модель розвитку соціально-економічної системи дозволяє врахувати взаємозв'язки між її розвитком, рівнем адаптивності та регулюванням розвитку системи.*

Ключові слова: *соціально-економічна система; розвиток; атрибут; рівень розвитку; характер розвитку; стійкість; мінливість; адаптивність, регулювання.*

Urgency of the research. In today's conditions, the relevance of finding ways to ensure the development of social and economic systems of different levels is increasing. Of particular importance, this task acquires in a dynamic environment of the systems functioning, characterized by a high degree of instability, instability and turbulence. In connection with this, there is a need for the formation of a conceptual and categorical apparatus for the study of "development" concept.

Target setting. The study of such a complex concept as the development of the social and economic system requires a systematic approach to the formation of a conceptual and categorical apparatus, which involves not only the establishment of content categories associated with the development of the system, but also a careful study of the relationship between these categories. At the same time, it is extremely urgent to create an exhaustive idea of the course of the process of the system development as a characteristic of its movement in specific conditions of space and time under the influence of certain factors.

Actual scientific researches and issues analysis. In the researches of domestic and foreign scholars such as Afanasyev N., Rogozhyn V., Rudyk V. [1], Belyayev O., Bebelo A. [2], Bogatyryov I. [3], Mychernyi S., Dovbenko M. [4], Pogorelov Yu. [5], Sirko A. [6], etc. understanding of the essence of the social and economic system has been formed, the approaches to the concept of development have been considered, the characteristic features and specific features of the development of social and economic systems of the micro, meso and macro levels have been investigated. , the factors influencing the process of their development have been systematized.

Paying tribute to the research of scientists covering a wide range of theoretical, methodological and practical aspects of ensuring the development of social and economic systems as a focused process, it should be noted that the interrelations between categories related to the development of the system need to be clarified and more clearly reflected.

The research objective. The purpose of this research is to organize the conceptual and categorical apparatus of the study of social and economic systems development, to identify the relationships between individual categories and their visual representation by constructing a complex attributive model of the synergetic type.

The statement of basic materials. The study of the concept "development" in close relationship with other categories has allowed identifying categories that should be integral components of the conceptual and categorical apparatus of the research. Such categories are the development of the social and economic system. Adaptive feature of the development and its regulation.

In our opinion, it is expedient to consider the possibility of constructing an attributive model of a synergetic type, which will allow visualizing the interrelations between these categories. The choice of the attributive model is due to the fact that, as Popov S. states in [10], one of the peculiarities of the attributive approach is the optimal breadth of coverage of social and economic systems that allow solving the problems of their functioning and development, depending on the conditions and the level of complexity.

An attributive approach, avoiding the usual description of a particular category, is to distinguish its defining characteristic (attribute), which distinguishes this category from others, and possibly determines the rest of its characteristics.

The attributive approach is constructed using the theory of attribution, which can be successfully applied in relation to social and economic systems of different levels of the hierarchy.

Before proceeding to the construction of an attributive model for the development of the social and economic system, it is advisable to define the concept of "attribute" as the key concept of the attributive approach.

In the modern social and economic dictionary, compiled by Raisberg B., the attribute is interpreted as the property of the given object, the object, its attributes and symbols [11]. That is, the attribute is that in traditional logic it is called the distinctive feature of a certain thing, but in terms of not a species, but a substantive difference.

The attribute is also considered to be an integral, necessary, to ensure the integrity of the object (subject) or subject (person), property, its part, appendix [12]. According to the academic explanatory dictionary of the Ukrainian language, the attribute is a substantial, inalienable property of an object or phenomenon; a sign or an object that is a particular character feature of someone or something [13].

Regarding the attributive approach, it is characterized by the understanding of the object of study as a set of certain attributes. The application of the attributive approach is often aimed at constructing an attributive model, which is the most complete model that gives complete information on the structure of the research object.

All attributes are most often divided into the following groups: attributes of time - past, present, future; attributes of space - length, width, height; attributes of motion - direction, speed, purpose; attributes of influence - factors represented by the macro world [10].

From the point of view of the study of social and economic systems and their development, such a division into groups requires some adjustments. We believe that the attributes of time should be singled out, since they are unchanged for any social and economic systems and categories that characterize them. Each of these categories can be explored in retrospect, at the current time and with the prospect of future changes.

At the same time, the attributes of space, movement and influence differ for each category and reflect certain interrelationships that are characteristic of it. In view of this, it is proposed to combine the attributes of space, movement and influence into a single group – the attributes of interaction.

The relationship between time attributes and interaction attributes is shown in Fig. 1

Attributes			Time attribute				
			Past Period	Present .Period	Future Period		
					Short-term	Middle-term	Long-term
Attributes of Space Attributes Of Movement Attributes of Influence	Interaction attributes	Analytical Aspect	Retrospective Analysis	Current Analysisi	Perspective Analysis		
		Result Aspect	Analytical base for forecast	Analytical base for forecast	Short-term forecast	Middle-term forecast	Long-term forecast

Fig. 1. Interconnection between the attributes of interaction and time

From Fig. 1. it is shown that any object can be characterized by the attributes of time and interaction attributes. As attributes of the time, which is unchanged for all objects, is the past period, present period and future period. At the same time, the future period can be divided into short-term (up to 1 year), medium-term (up to 3-4 years), long-term period (from 5 years).

The attributes of interaction, which include the attributes of space, motion and influence, get the characteristic corresponding to the one from which point of view the space attribute is considered by this object. At the same time, in our opinion, it is worthwhile to highlight two aspects that characterize the relationship between time attributes and interaction attributes: analytical and productive.

The analytical aspect determines which kind of analysis will be applied to this object by the chosen attribute of interaction in terms of a specific attribute of time. It should be noted that in the case when the object is considered in the context of the past, we can talk about conducting a retrospective analysis. If the object and its inherent attributes of interaction are considered at the current moment, then we can talk about conducting the current analysis. At the same time, if the object and its attributes are studied in the context of detecting possible future changes, then, despite the duration of the research period (short-term, medium-term or long-term), it is a prospective analysis.

An effective aspect determines what should be the result of the selected type of analysis that will be applied to the given object by the chosen attribute of interaction in terms of a specific attribute of time. As for the conditions of the past and the current period one can say that the analytical basis for the forecast will be created as a result of the analysis (retrospective or current). The difference between these time periods is that only the short-term forecast can be built on the basis of the current analysis, and on the basis of a retrospective analysis combined with the current one, it is medium and long-term (depending on how many years of the previous period were subject to analysis). As for the effective aspect in the future time, we can talk about obtaining three possible types of forecasts - short, medium and long-term.

First of all, it is worth considering a simplified attributive model for the development of the social and economic system (without taking into account the attributes of time). The attribute of space in this case is the level of development; attributes of movement – the character and stability of development, the attributes of influence – the variability of the external environment, as it has been previously described, the level, the nature and sustainability of the development cause a change in each other. In turn, the level and nature of development is largely influenced by the variability of the external environment.

The development of the social and economic system and its characteristics are closely linked to the property of the system, which is adaptability. It's time to consider a simplified attributive model of the adaptability of the social and economic system (without taking into account the attributes of time).

We have found that adaptability have to be considered as the capability to adaptability. This concept has three main characteristics: action, direction and impulse. According to our proposed model of adaptability of space attributes is the adaptation to changes as an action, attributes of motion – change the parameters of the system as a direction, the attributes of influence – the change of external factors as an impulse. The interpretation of the constructed model can be as follows: the change of external factors gives impetus to actions that involve adjusting the social and economic system to changes, which is aimed at changing the parameters of the system in order to increase the level of development of the social and economic system and ensure its progressive character.

In the process of the relationship studying between attributive models of development and adaptability of the social and economic system, it has been established that the variability of the external environment leads to changes in external factors that create an impetus for the implementation of the mechanism of adaptation to changes, which maintains or increases the level of sustainability of the social and economic systems. Changing the system's parameters through which the adaptation to changes in external factors is being made contributes to a higher level of development and a progressive nature of development.

Unfortunately, the level of adaptability is not always enough to ensure the preservation or increase of the sustainability of the development of the social and economic system, as well as the level of growth and its progressive nature. Consequently, in such conditions, there is a need to regulate the development of the social and economic system.

Let's consider a simplified attributive model of regulation of the development of the social and economic system (without taking into account the attributes of time). The attributes of space in the attributive model of regulation of the development of the social and economic system is the strategy of development, attributes of motion – drivers of development, attributes of influence – impulses of development. Thus, under the influence of developmental impulses, a development strategy is selected and development drivers are developed within the framework of the chosen strategy.

In Fig. 2 presents the attributive model of the development of a social and economic system of synergetic type that combines elements of attributive models of development, adaptability and regulation of development, and takes into account connections within the categories. The variability of the external environment causes changes in external factors that give impetus to the launch of the adaptation mechanism, as well as create impulses of development, which takes into account the strategy and development drivers are being developed.

The level of development achieved in the current and past periods is the basis for choosing a development strategy that defines future developmental dimensions with adaptation to change. Implementation of the development strategy leads to a change in the parameters of the system, which are aimed at increasing the level of development and ensuring its progressive character. Development drivers developed in the development strategy contribute to the sustainability of development.

In turn, the development strategy implies the implementation of certain mechanisms (development drivers), the development of which is carried out taking into account the impulses of development, which are formed as a result of changes in external factors of the environment of the social and economic system.

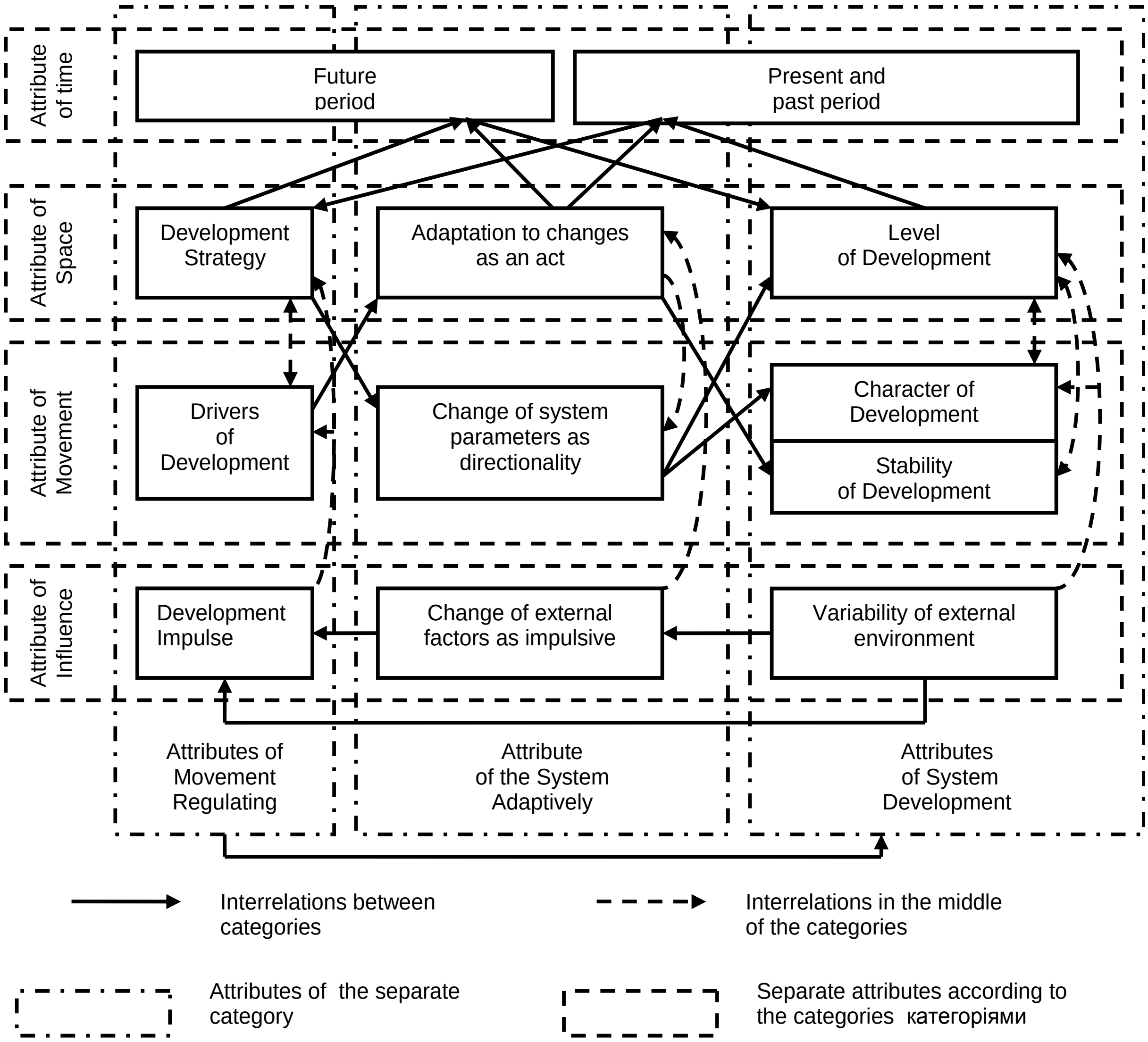

Fig. 2. Attributive model of development of social and economic system of synergetic type

Conclusions. Thus, the constructed model gives an exhaustive idea of the relationship between the attributes of the development of the social and economic system, the attributes of the adaptability of the social and economic system and the attributes of development regulation. Application of such a model allows taking into account the relationship between the development of the social and economic system, the level of its adaptability and regulation of the development of the social and economic system.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 338.439:631.147](447)

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FORMATION AND DEVELOPMENT OF ORGANIC PRODUCTION OF THE UKRAINIAN MARKET

Urgency of the research. *The organic production market over the past decades is extremely promising as demand for real food has increased. The urgency is caused by the problem of providing the population with ecologically safe products and the need for operation of the the organic production market.*

Target setting. *The intensive technological development and the environment pollution endanger the further human development and lead to the necessity of reproducing approach usage for solving environmental problems. Partial reduction of environmental pollution is possible through organic production.*

Actual scientific researches and issues analysis. *The following scientists have made a great contribution to the problems concerned the development of organic production market in Ukraine: Chychkalo-Kondratska I. B., Cuzmenko O. B., Tovmashevska, O. A. Pearson D. and others*

Uninvestigated parts of general matters defining. *This problem above has already been researched in many papers. But in spite of this, the possibilities of adapting foreign experience to create a competitive organic production market in Ukraine are understudied.*

The research objective *is to determine the peculiarities of the formation and prospects for the development of organic production market, as well as to make a comparative analysis of organic market trends in Ukraine and other countries, to highlight the experience of state support of this market in these countries.*

The statement of basic materials. *The article contains the factors that describe priority of organic production development in Ukraine and the reasons that restrain it. The suggestions on effective development of organic production in Ukraine under conditions of economic changes are presented.*

Conclusions. *For the effective development of organic production in Ukraine a set of measures should be introduced, including legal, regulatory, financial, advisory support and improvement of control tools.*

Keywords: *organic production market; organic production; market development.*

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ФОРМУВАННЯ ТА РОЗВИТОК РИНКУ ОРГАНІЧНОЇ ПРОДУКЦІЇ В УКРАЇНІ

Актуальність теми дослідження. *Ринок органічної продукції протягом останніх десятиліть є надзвичайно перспективним, оскільки зріс попит на екологічно чисті продукти харчування. Актуальність зумовлена проблемою забезпечення населення екологічно чистою продукцією та необхідністю функціонування ринку органічного виробництва.*

Постановка проблеми. *Інтенсивний розвиток технологій, забруднення екології ставлять під загрозу подальший розвиток людства і призводять до необхідності застосування відтворювального підходу у розв'язанні екологічних проблем. Частково зменшити процеси забруднення навколишнього середовища можливо за допомогою органічного виробництва.*

Аналіз останніх досліджень та публікацій. *Значний внесок у дослідження проблем стану та розвитку ринку органічної продукції зробили такі вчені, як Чичкало-Кондрацька І. Б., Кузьменко О. Б., Томашевська О. А., Пірсон Д. та ін.*

Виділення недосліджених частин загальної проблеми. *Незважаючи на велику кількість робіт з цього питання, можливості адаптації зарубіжного досвіду до формування конкурентоздатного ринку органічної продукції в Україні недостатньо вивчені.*

Постановка завдання *полягає в тому, щоб визначити особливості формування та перспективи розвитку ринку органічної продукції, провести порівняльний аналіз тенденцій ринку органічної продукції України та інших країн, висвітлити досвід державної підтримки даного ринку в цих країнах.*

Викладення основного матеріалу. *У статті розкрито фактори, які дають пріоритет для розвитку органічного виробництва в Україні та причини, що його стримують. Наведено пропозиції щодо ефективного розвитку виробництва органічної продукції в Україні в умовах ринкових трансформацій економіки.*

Висновки. *Для ефективного розвитку органічного виробництва в Україні слід запровадити комплекс заходів, включаючи правову, регуляторну, фінансову, консультативну підтримку та вдосконалення інструментів контролю.*

Ключові слова: *ринок органічної продукції; органічне виробництво; розвиток ринку.*

Urgency of the research. The organic production market is extremely promising and dynamic in most countries of the world in the last decades, as consumer demand for clean and safe food has increased significantly. The relevance of the research is due to the problem of providing the population with eco friendly products and the need for the functioning of the organic production market.

Target setting. An intensive technology development, population increase and environmental pollution endanger the further development of mankind, leading to the need for reproductive approach usage for solving natural ecological problems. Partially reduce those processes, that negatively affect the environment, resource potential and product quality is possible through organic production.

Actual scientific researches and issues analysis. A great contribution to the problems concerned the development of the organic market in Ukraine has been made by the following scientists: Chychkalo-Kondratska I., Kuzmenko O., Tovmashevska, O. and others.

Uninvestigated parts of general matters defining. But, despite the large number of papers on this issue, the possibilities of adapting foreign experience to create a competitive organic market in Ukraine are not sufficiently studied, and this is the reason for choosing a research direction.

The research objective is to determine the peculiarities of the formation and prospects of the market development for domestic organic products, to make a comparative analysis of trends in the development of the organic market in Ukraine and in other countries, to highlight the experience of the state support in these countries and the possibilities of its adaptation to the current realities of Ukraine.

The statement of basic materials. The modern scale usage of natural resources and environmental pollution has led to an aggravation of the contradiction between the growing needs of society and the possibilities of nature. Consumers are interested in a healthy, full-fledged meal. Moreover, there exists the importance of a direct contribution to the safety of the natural environment; therefore the production of organic products is a modern world trend while the growing demand for organic products continues to be one of the strategic directions of agricultural development.

The development of organic food in Ukraine is in an active stage of formation; the area of lands devoted to organic farming has almost doubled in the last 10 years. True to the Studies of the Federation of Organic Movement of Ukraine there were 80 certified organic farms in Ukraine in 2006, and the total area of lands occupied by organic agriculture amounted to 242 thousand hectares. In 2016 there were 390 certified organic farms in Ukraine, and the total area of lands occupied by organic agriculture amounted to 411.2 thousand hectares (about 1% of agricultural land). 335 thousand hectares of them were occupied by arable crops.

Agrarians mainly grow cereals, oil seeds and legumes on these lands. Vegetables and fruit are cultivated there, too, but in small volumes. Having such areas and providing proper diversification, it is quite possible to develop not only organic crop production but also animal husbandry. As in many other countries in the world the amount of organic farming varies from few tens to several thousands of hectares.

More than 80% of the output is directed to export. Today, the countries of the European Union are the main importers of Ukrainian organic products. The geography of exports is gradually expanding. Ukrainian organic products have also been exported to the USA, Canada and Japan recently. The countries of the Middle East, such as the United Arab Emirates, begin to be interested in Ukrainian certified organic products.

The research done by Federation of Organic Movement of Ukraine showed that the modern domestic consumer market for organic products began to develop in 2000. For the last 10 years it has increased from 400 thousand euros in 2006 to 21.2 million euros in 2016 (0.5 euros per one resident of Ukraine) [1].

In order to determine the key characteristics of demand for organic products, there were interviewed the supermarket consumers in the three large towns of Cherkasy region regarding the level of awareness and readiness to buy the organic products, where 548 people took part.

On the basis of the received data the consumers have been divided by the degree of organic products consumption into the following groups: "a weak consumer" "a moderate consumer" "an active consumer". Below it is the ratio interviewed by age to the total number of participants, the degree of readiness to buy the product and the level of monthly income (Tab. 1-3).

Table 1

The ratio of interviewed by age to the total number of participants, %

Index	till 22 years	23 - 40	41-60	60+
Weak consumer	35	30	31	4
Moderate consumer	8	36	49	7
Active consumer	9	32	53	6

Table 2

The ratio of interviewed by the degree of readiness to consume the product to the total number of participants, %

Index	Uninformed	Informed	Interested	Wishful	Intended to buy
Weak consumer	32	13	30	20	5
Moderate consumer	22	16	19	25	18
Active consumer	10	25	28	18	19

The analysis of primary marketing information has showed that the main consumers of organic products are women in the age range of 25-50 years with an income level of "average" and "above average".

Table 3

The ratio of interviewed by the level of monthly income to the total number of participants, %

Index	Low	Below the average	Average	Above the average	High
Weak consumer	58	12	12	11	7
Moderate consumer	14	34	35	10	7
Active consumer	6	12	44	27	11

It is worth to mention a low consumer awareness about organic food, its benefits and labeling.

An important component of the organic products market is the successful formation of distribution channels. Supermarkets tend to dominate the distribution of food in most developed countries. For example, in the UK, four chains account for around 80% of sales, whereas in Australia only two supermarket chains control a similar percentage of the market [2]. In big cities of Poland, they have made up specialized local markets, where consumers can purchase organic food directly from farmers or processing enterprises. In France, there has been an increase in the market share of specialized stores recently. In addition now special "organic" restaurants and cafes appear in the US and Europe. Another specific modern feature is a quick development of infant food organic market [3].

On average, the price on organic products in Ukraine is 2-2.5 times higher than the price on conventional food products; in the countries of the European Union the difference is 20-30%. The reason is explained by small volumes of production, which do not allow saving on the production level and paying high labor costs. However, the organic nature of products is the very thing on the market used by most producers of eco friendly food.

The study of current situation on the basis of SWOT-analysis has enabled to investigate strengths and weaknesses as well as opportunities and threats of the development of organic production in Ukraine (Tab. 4).

The arguments given above lead to the conclusion that, there are strengths in the development of organic production in Ukraine. At the same time there are also weaknesses and threats, which restrain it. One of them is a lack of the governmental policy and the support and development program for organic production. In Europe, this development became possible due to agrarian policy reforms based on sound state support [4], which is effective in the development of production and marketing of organic food products, which ultimately contributes to improving the quality of life of the population.

If studying the state support in other developing countries, following examples should be mentioned. In 2016, Sri Lanka launched the “Toxin Free Nation Program”, a 3-year plan that lays down ten areas of action to phase out toxic chemicals from Sri Lankan agriculture through a step-by-step process. In India, the Federal government launched the PKVY program that allocates 40 million of euros in organic support measures. The support of organic agriculture in the Philippines is fully with a national organic program that includes support measures such as subsidies for certification, organic substances development and provision, or research support and capacity building. In Armenia, the government started the "Organic Agriculture Support Initiative". This EU-funded project combines a range of support measures to boost national capacities and policies in favor of organic agriculture.

Table 4

SWOT-Analysis of development organic production in Ukraine

Strengths	Weaknesses
- favorable climatic conditions for production; - high fertility of soils; - availability of free production capacities; - ability to produce new products and diversification of activity; - high profitability of organic products; - cover and maintenance of lands; - protection of the natural environment; - increase in employment and development of agricultural sector; - current demand for real foods; - positive influence of the organic products on the public health; - low level of rental payments.	- lack of governmental policy, support and development program for organic production; - lack of preferential credits for organic products; - low level of state support for scientific research in organic production; - underdeveloped management and marketing system of foreign and domestic investments; - low level of foreign and domestic investment; - low purchasing power of the population; - limited financial resources for the development of enterprises; - lack of awareness of potential consumers about the organic products; - inefficient system of credit support.
Opportunities	**Threats**
- creating the image of Ukraine as an exporter of high quality organic products; - increased investment appeal of the agricultural economical sector; - development of processing industry with the purpose of revenue organic production; - the use of new advanced technologies and equipment of agricultural production; - the use of the innovative potential of agricultural science for the modernization of material and technical basis; - expansion of the basis of investment provision of innovative activity through preferential loans; - increased demand for organic food on the world market.	- demographic and social crisis of rural areas; - lack of systemic structural reforms in Ukraine; - Outflow of skilled professionals from Ukraine; - rising energy costs raise the cost of production and lower profitability; - instability of the national currency; - environmental degradation in agriculture and in the system of renewal of soil fertility; - lack of international certificates about the compliance of quality of agricultural products with international standards; - unstable pricing policy on fuel and energy carriers.

The development of organic agriculture is also on the agenda in China. The government plans to invest around 187 million of euros in 2016-2020 in new farmers training, with a focus on organic and sustainable agriculture. For example, in April 2016, the city of São Paulo decided that till 2026, 100% of the two million school meals offered in the city should be organic [5].

At the beginning of 2014, the Law "On the Production and Circulation of Organic Agricultural Products and Raw Materials" came into force in Ukraine. Its goal is to improve the health standards of the population by means of the consumption of organic products. The law has not been completely implemented yet. There is a number of inaccuracies, contradictions and inconsistencies.

In December 2015 the government adopted the national organic logo. The usage of the logo is voluntary. It can be used for organic products export and the processing of raw materials. No product has been marked with a national organic logo so far. Nevertheless, the organic logo of the EU is recognized and often used by many organic producers and processors in Ukraine. The majority of organic products for the domestic market are certified according to the EU organic farming legislation.

The urban population in country is great, but it's neither employed nor endowed. The development of organic farming can lead not only to ecological benefits, but also can reduce unemployment and poverty rate.

Organic agriculture can also play a role in future accumulation and development of social capital. Organic farming provides farmers, rural communities and consumers possibilities for joint actions; the creation of an organic movement; and the building a consumer-driven, trust-inducing certification system. Such systems have proven to decrease the cultural gap between rural and urban citizens and, thereby, promote societal cohesion [6].

The following steps are very important for the development of organic farming in Ukraine under current conditions of market economic changes:

- Adapting of national laws to European quality standards [7];
- The state support (subsidies or grants) [8];
- Organizing indicators of official statistics that would provide objective official information about the state of organic production;
- The whole marketing and controlling mechanism of organic products' quality and certification has been adopted;
- Informative companies regarding taking food and promotion of organic food have been organized in Ukraine;
- National clusters of organic farming should be created (positive changes already exist: in 2017 the Ukrainian Organic Cluster Public Union was created).

Conclusion. Under modern conditions organic farming can be defined like a strategic vector of the national economy development. The formation of organic production in Ukraine is characterized by positive trends in increasing the number of enterprises operating in this area, the area of organic agricultural lands and also in the volume of domestic consumer market. Unfavorable factors that very negatively affect the profits of organic farming are the following: lack of institutional providing, state financial support, and low awareness of the population due to organic products advantages as well as innovative passivity of farmers.

The analysis of the work shows, in countries where the organic products market has been formed and nowadays is being actively developed, the numbers of organic producers are also still increasing first of all because of the state financial support. By contrast with these countries in Ukraine neither financial assistance nor compensation for the introduction of organic production and the receipt of certificates are foreseen.

For the effective development of organic production in Ukraine, a set of measures should be implemented, including legal and regulatory support, appropriate incentive mechanisms and financial support, research and advisory support, and control instruments improvement.

In addition, it is also highly recommended to create a statistic development of the sector mentioned above. It allows the national statistical system act on the economic environment and consumer demands, according to the proved statistical information about the organic production.

Finally, realization of given above suggestions will provide the development of the organic market in Ukraine and make the position of Ukrainian organic articles competitive in the world market.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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BUDGETARY REVENUE BREAKDOWN AT REGIONAL LEVEL OF PUBLIC ADMINISTRATION IN THE FEDERAL COUNTRIES

Urgency of the research. *Process of democratization of public administration assumes redistribution of powers down within hierarchy of governance. Nevertheless, despite increase in a role of regional level of governance, financial resources of regional bodies are limited.*

Target setting. *Regions in the most of federal countries have no full financial self-sufficiency. The truth is also that in the federal countries there is no uniform model of distribution of public incomes between the central and regional authorities. The specified circumstances induce to carry out the comparative analysis of regional budgets' revenues breakdown in these countries.*

Actual scientific researches and issues analysis. *Nowadays more and more researches are devoted to studying of experience of various countries in formation of local budgets' resource base: Foremny D. et al., Bobáková V., Malikká L., Reznichenko D. S. et al., Muzyka O, Volokhova I. and some other are the most noticeable.*

Uninvestigated parts of general matters defining. *At the same time, more careful comparative analysis is necessary for understanding of an overall picture and regularities of fixing of certain financial resources to regional budgets.*

The research objective. *To identify structural features and the directions of transformation of budgetary revenue breakdown at regional level of public administration in the federal states from 2000 till 2015.*

The statement of basic materials. *Statistical materials for assessment of budgetary revenue breakdown is processed. Dynamics of revenue's structural changes for budgets of regional level of public governance at federal states as well as similarity and distinctions of revenue's breakdowns of regional budgets in federal countries are analyzed.*

Conclusions. *A tendency to reduction of own tax revenues and increase the interbudgetary transfers share was revealed as well as two clusters (with domination of interbudgetary transfers in regional budgets' revenue breakdown and with relatively higher of financial autonomy) were described. There is no strong evidence for real dependence between autonomy of the regional power and federal type of state system.*

Keywords: *budget; revenue; breakdown; regional level; federal countries; structural change; comparative analysis.*

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УДК 336.14:353 (1-43)

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СТРУКТУРА ДОХОДІВ БЮДЖЕТІВ НА РЕГІОНАЛЬНОМУ РІВНІ ДЕРЖАВНОГО УПРАВЛІННЯ У ФЕДЕРАТИВНИХ КРАЇНАХ

Актуальність теми дослідження. *Процес демократизації державного управління передбачає перерозподіл повноважень в межах ієрархії управління. Проте, незважаючи на збільшення ролі регіонального рівня управління, фінансові ресурси регіональних органів обмежені.*

Постановка проблеми. *Регіони в більшості федеративних держав не мають повної фінансової самодостатності. Правда також, що в федеративних країнах немає єдиної моделі розподілу державних доходів між центральними та регіональними владами. Зазначені обставини спонукають провести порівняльний аналіз розподілу доходів регіональних бюджетів у цих країнах.*

Аналіз останніх досліджень і публікацій. *В даний час все більше досліджень присвячено вивченню досвіду різних країн у формуванні ресурсної бази місцевих бюджетів: Форемний Д. та ін., Бобакова В., Малікка Л., Резніченко Д. С. та співавт., Музика О, Волохова І. і деякі інші є найбільш помітними.*

Виділення недосліджених частин загальної проблеми. *У той же час, більш ретельний порівняльний аналіз необхідний для розуміння загальної картини та закономірностей фіксації певних фінансових ресурсів у регіональних бюджетах.*

Постановка завдання. *Визначити структурні особливості та напрямки трансформації структури бюджетних надходжень на регіональному рівні державного управління у федеральних державах з 2000 до 2015 року.*

Викладення основного матеріалу. *Опрацьовано статистичні матеріали для оцінки бюджетних надходжень. Проаналізовано динаміку структурних змін доходів бюджетів регіонального рівня державного управління федеративних держав, а також подібність та відмінності розподілу доходів регіональних бюджетів у федеративних державах.*

Висновки. *Виявлено тенденцію до зменшення власних податкових надходжень та збільшення частки міжбюджетних трансфертів, а також було охарактеризовано два кластери (з домінуванням міжбюджетних трансфертів у розподілі надходжень до бюджетів та з відносно вищою фінансовою автономією). Не знайдено суттєвих доказів реальної залежності між автономією регіональної влади та федеративним типом державної системи.*

Ключові слова*: бюджет; доходи; розподіл; регіональний рівень; федеративні країни; структурні зміни; порівняльний аналіз.*

Urgency of the research. Process of democratization of public administration, which is a tendency in many countries today, assumes redistribution of powers down within hierarchy of governance for the purpose of providing rather higher opportunities of the operational solution of local problems. However resource base of the lowest level of local government (various kinds of communities) is objectively limited. It increases the importance of coordination of administrative actions at the mesolevel and a role of regional bodies of public administration. The specified changes obviously have to influence mechanisms of formation and execution of regional budgets that results in need of studying how financial resources for realization of public administration at the regional level are exactly formed.

Target setting. Federal state by the nature is an ideal option for consideration of features of providing financial autonomy of the regional power. It is fair as in their regions (states, lands, cantons) a considerable part of the state powers in the sphere of social and economic policy is concentrated. However except Switzerland in which the model of confederation (the highest level of decentralization of regions) is realized regions in the most of federal countries have no full financial self-sufficiency. The truth is also that in the federal countries there is no uniform model of distribution of public incomes between the central and regional authorities. The specified circumstances induce to carry out the comparative analysis of regional budgets' revenues breakdown in these countries.

Actual scientific researches and issues analysis. Nowadays more and more researches are devoted to studying of experience of various countries in formation of local budgets' resource base. Among the last it is necessary to pay an attention to works of Foremny D. et al. [1], Bobáková V. [2], Malikká L. [3], Reznichenko D. et al. [4], Ermasova, N. [5]. This issues also draws attention of Ukrainian scientists among whom the works of Muzyka O [6], Volokhova I. [7], Sokolovskaya A et al. [8] are the most noticeable.

Uninvestigated parts of general matters defining. At the same time, more careful comparative analysis is necessary for understanding of an overall picture and regularities of fixing of certain financial resources to regional budgets.

The research objective. To identify structural features and the directions of transformation of budgetary revenue breakdown at regional level of public administration in the federal states from 2000 till 2015.

For achievement of this purpose the following tasks have been set and solved as follow:

1) to process statistical material for assessment of budgetary revenue breakdown. As a statistical basis of the research data of the IMF on public finance of a number of the federal countries (Austria, Germany, Belgium, Canada, the USA, India, the Russian Federation, Switzerland, Argentina, Brazil, Mexico, Bosnia and Herzegovina, Malaysia) were used. Data on absolute values of revenue of regional budgets in national currencies were processed that allowed calculation of the corresponding budgets' breakdown indicators in 2000, 2005, 2010, 2015. Five-year intervals were chosen randomly, but owing to similarity of electoral cycles of change of governments, and respectively, possible changes of the principles of the budgetary policy, such approach quite allows monitoring of any transformations in breakdown of budgetary revenue categories. Unfortunately, owing to lack of data, not all selections formed as identical by the size, however their addition with information of national statistics was not done proceeding from need to provide comparability of basic data. It is also necessary to pay attention to the fact that in tables given below the main categories (taxes, grants, other revenue) are not always disclosed in categories of lower order, i.e. basic data are not always classified completely that influences results of assessment of structural changes dynamics;

2) to analyze dynamics of revenue's structural changes for budgets of regional level of public governance at federal states. Assessment of breakdown's transformation was done with use of the Ryabtsev index (Ryabtsev V., Chudilin G., 2011). Let $(s_1^1, s_2^1, \dots s_n^1)$ и $(s_1^0, s_2^0, \dots s_n^0)$ are vectors of shares of each analyzed category of revenue in the budget respectively during the studied and basic period. Then extent of structural changes can be estimated as:

$$I_R = \sqrt{\frac{\sum_{i=1}^{n}(s_i^1 - s_i^0)^2}{\sum_{i=1}^{n}(s_i^1 + s_i^0)^2}}$$

The choice of the Ryabtsev index among other quadratic indexes (The Gallagher Index, The Monroe index, The Gatev index, The Szalai index, The Aleskerov-Platonov index) was caused by two circumstances – its sensitivity to small selections and existence of a scale of assessment of structural distinctions (Tab. 1) that allowed interpreting the received coefficients without use of the comparative analysis.

Table 1

Scale of assessment of structural distinctions by the Ryabtsev index

Levels	Characteristic of breakdown similiarity
0.000 – 0.030	Identity of breakdowns
0.031 – 0.070	Very low level of distinction of breakdowns
0.071 – 0.150	Low level of distinction of breakdowns
0.151 – 0.300	Essential level of distinction of breakdowns
0.301 – 0.500	Considerable level of distinction of breakdowns
0.501 – 0.700	Very considerable level of distinctions of breakdowns
0.701 – 0.900	Opposite type of breakdowns
0.901 and more	Complete antithesis of breakdowns

Source: Ryabtsev V., Chudilin G., 2001 [9]

3) to analyze similarity and distinctions of revenue's breakdowns of regional budgets. As not only categories of budgetary revenues (tax revenues, transfers, own non-tax income) but also their subcategories are of great importance for assessment of distinction of breakdowns, the hierarchical cluster analysis (a method of single-linkage clustering with Euclidean distances) according to the recommendations of Jain A. et al. (1999) [10], Berkhin P. (2006) [11] in a Statistica 10 package was applied to the solution of this task.

The statement of basic materials. As it is shown, the average level of tax receipts to regional budgets was 42.3% in 2000, however level of variability of the sample presented by shares of own tax revenues was very high – 54,6% (Tab. 2).

Table 2

Regional (state) budgets' revenue breakdown in 2000, %

Categories / Countries	AUT	BEL	DEU	AUS	CAN	CHE	USA	IND	MYS	ARG	MEX
1	2	3	4	5	6	7	8	9	10	11	12
Revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Taxes	5.3	8.7	69.3	39.7	61.2	49.3	45.2	50.9	19.1	75.1	41.2
on income, profits, and capital gains	3.4	0.0	37.2	0.0	31.0	38.0	19.0	0.0	0.0	20.7	0.0
on payroll and workforce	0.8	0.0	0.0	9.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0
on property	0.2	3.8	1.6	2.6	0.0	7.6	1.9	0.0	12.4	0.0	0. 0
on goods and services	1.0	4.9	28.6	27.8	0.0	3.6	24.2	46.5	6.7	0.0	0.0
other taxes	0.1	0.1	1.9	0.0	0.0	0.1	0.0	3.8	0.0	0.0	3.1
Social contributions	5.8	7.3	6.0	0.0	2.6	0.6	2.3	0.0	0.0	0.0	0.0
Grants	84.0	77.5	16.7	37.2	14.2	25.5	21.7	38.9	25.6	15.2	51.0
from foreign gov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
from international organizations	0.4	0.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Continuation of Table 2

1	2	3	4	5	6	7	8	9	10	11	12
from other government units	83.7	77.3	15.5	37.2	0.0	25.5	21.7	38.9	25.6	15.2	51.0
Other revenue	4.8	6.5	8.0	23.0	22.0	24.6	30.7	10.2	55.3	9.7	7.8
property income	2.0	1.2	0.7	8.3	0.0	4.7	21.8	5.4	22.9	0.0	1.4
fines, penalties, and forfeits	0.0	0.0	0.7	0.7	0.0	0.5	0.0	0.0	0.0	0.0	0.0
transfers not elsewhere classified	-4.5	0.0	1.1	4.0	0.0	0.7	2.2	0.0	24.5	0.0	2.8

* hereinafter: grey colored cells contain values that are more than 0; ** hereinafter: AUT – Austria; BEL – Belgium; DEU – Germany; AUS – Australia; CAN – Canada, CHE – Switzerland, USA – United States, IND – India, MYS – Malaysia, RUS – Russian Federation, ARG – Argentina, BRA – Brazil, MEX – Mexico

Source: calculated on the basis of IMF data [12]

Among the countries with high rates of tax revenues in regional budgets breakdown (Germany, Canada, India, and Argentina) taxes on income and taxes on internal operations with goods and services became the main budget forming taxes. Some countries used taxes on property as a source of income of budgets of states, however only in Switzerland and Malaysia these taxes played an essential role in the budget. It is also worth noting that in a several countries (first of all, the members of the EU, Canada, Switzerland and the USA) some powers on social security were assigned to the level of the state governments that caused receipts for social support as a budgetary revenue source.

If to discuss on budgets of states revenue breakdown in 2005, it is necessary to pay an attention that cardinal changes happened only in the USA and Australia (Tab. 3).

Table 3

Regional (state) budgets' revenue breakdown in 2005, %

Categories / Countries	AUT	BEL	DEU	AUS	CAN	CHE	USA	IND	US
Revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Taxes	5.3	15.9	65.0	31.9	55.5	50.2	57.3	53.5	71.6
on income, profits, and capital gains	3.3	0.0	33.1	0.0	26.9	39.4	15.0	0.0	59.0
on payroll and workforce	0.7	0.0	0.0	9.2	3.0	0.0	0.0	0.0	0.0
on property	0.2	4.5	2.0	3.4	0.0	7.1	17.8	0.5	6.8
on goods and services	1.0	11.3	28.2	19.3	0.0	3.6	24.6	42.6	5.9
other taxes	0.1	0.2	1.8	0.0	0.0	0.1	0.0	10.4	0.0
Social contributions	5.6	8.1	6.8	0.0	2.9	0.4	0.0	0.0	0.0
Grants	80.8	68.5	16.6	46.1	18.9	25.4	19.2	34.8	18.1
from foreign gov	0.1	0.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
from international organizations	80.7	68.3	15.6	46.1	0.0	25.4	19.2	34.8	18.1
Other revenue	8.4	7.4	11.7	22.0	22.7	24.0	23.4	11.7	10.2
property income	3.3	0.9	1.0	9.6	0.0	5.4	3.7	6.8	3.3
fines, penalties, and forfeits	0.0	0.0	0.7	0.8	0.0	0.5	1.4	0.0	0.1
transfers not elsewhere classified	-2.0	0.0	2.6	2.8	0.0	0.6	3.4	0.0	2.7

Source: calculated on the basis of IMF data [12]

Share of receipts from property taxes had considerably grown in the USA that had increased the level of own tax income by 12.1 percentage points. In Australia on the contrary – the importance of the interbudgetary transfers at the expense of own tax revenues had increased. Separately it is worth regarding the Russian Federation as data for 2000 on it were absent. Own tax revenues of subjects of the federation in 2005 made the most part of their income (71.6%) that together with significant own non-tax income had determined the high level of financial independence of regional budgets in this country.

In 2010 (Tab. 4) it is possible to note a further tendency to reduction of own tax income and increase in the importance of the interbudgetary transfers in formation of revenues of authorities at the regional level. Among essential changes reduction of specific weight of tax income of regional budgets in Russia (by 15.1 percentage points) is noticeable.

Table 4

Regional (state) budgets' revenue breakdown in 2010, %

Categories / Countries	AUT	BEL	DEU	AUS	CAN	CHE	USA	IND	RUS	BRA
Revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Taxes	5.6	15.6	62.4	28.7	53.6	49.2	53.7	55.0	59.5	65.3
on income, profits, and capital gains	3.5	0.0	32.1	0.0	26.3	38.8	12.9	0.0	46.4	3.4
on payroll and workforce	0.7	0.0	0.0	8.8	3.0	0.0	0.0	0.0	0.0	0.0
on property	0.2	4.8	1.8	3.7	0.0	6.9	18.3	0.7	6.7	5.1
on goods and services	1.2	10.7	26.8	16.2	0.0	3.5	22.5	43.3	6.4	56.7
other taxes	0.1	0.1	1.7	0.0	0.0	0.1	0.0	11.0	0.0	0.0
Social contributions	4.5	9.0	6.6	0.0	3.0	0.4	0.0	0.0	0.0	5.7
Grants	80.4	67.1	18.4	50.5	22.4	26.0	23.7	37.0	25.0	22.5
from foreign governments	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
from international organizations	0.0	0.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
from other government units	80.4	66.6	17.2	50.5	0.0	25.9	23.7	37.	25.0	22.5
Other revenue	9.5	8.2	12.6	20.8	21.0	24.5	22.7	8.0	15.5	6.5
property income	3.0	1.0	1.5	7.8	0.0	5.3	2.4	3.8	1.4	1.6
fines, penalties, and forfeits	0.0	0.0	0.7	0.8	0.0	0.7	1.3	0.0	0.2	0.9
transfers not elsewhere classified	-1.0	0.0	1.6	2.8	0.0	0.3	3.1	0.0	10.6	1.6

Source: calculated on the basis of IMF data [12]

In 2015 (Tab. 5) growth of a share of own tax income to the detriment of the importance of grants from budgets of other levels can be on the contrary noted.

Table 5

Regional (state) budgets' revenue breakdown in 2015, %

Categories / Countries	A UT	BEL	DEU	AUS	CAN	CHE	USA	RUS	ARE	BRA
1	2	3	4	5	6	7	8	9	10	11
Revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Taxes	5.2	19.7	66.6	31.7	58.1	49.1	55.6	49.0	67.7	65.4
Taxes on income, profits, and capital gains	3.3	6.1	34.4	0.0	29.2	38.5	15.3	37.8	4.5	4.5
Taxes on payroll and workforce	0.6	0.0	0.0	9.6	3.1	0.0	0.0	0.0	0.0	0.0

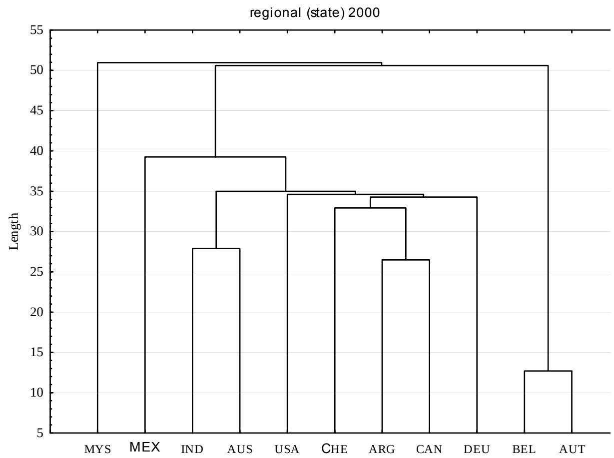
Continuation of Table 5

1	2	3	4	5	6	7	8	9	10	11
Taxes on property	0.1	4.6	1.9	4.0	0.0	7.1	16.6	6.1	0.0	6.0
Taxes on goods and services	1.1	8.9	27.4	18.2	0.0	3.3	23.7	5.1	58.5	54.9
Taxes on international trade and transactions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0
Other taxes	0.0	0.1	2.8	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Social contributions	3.5	7.6	5.6	0.0	3.1	0.2	0.0	0.0	0.0	7.0
Grants	81.2	65.2	15.7	44.5	18.9	25.7	21.1	30.1	0.0	19.0
From foreign governments	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
From international organizations	0.1	0.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grants from other general government units	81.1	64.7	14.6	44.5	0.0	25.6	21.1	30.1	0.0	19.0
Other revenue	10.1	7.6	12.1	23.8	19.9	24.9	23.4	20.8	32.3	8.5
Property income	2.2	1.1	1.1	10.3	0.0	4.5	2.2	1.7	13.3	1.5
Fines, penalties, and forfeits	0.0	0.0	0.5	0.9	0.0	0.7	1.3	0.7	1.9	1.0
Transfers not elsewhere classified	0.9	0.0	1.6	2.8	0.0	0.4	3.9	5.7	1.7	3.4

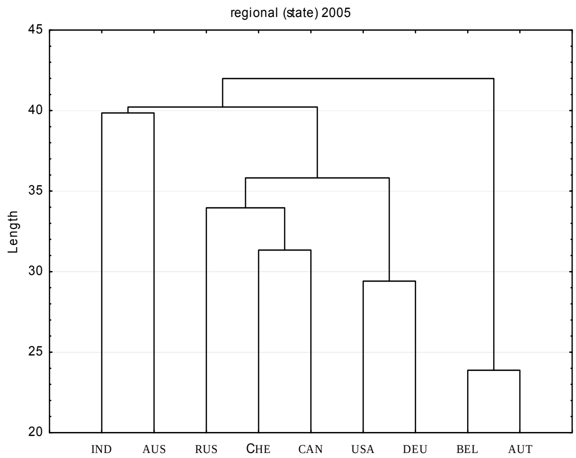
Source: calculated on the basis of IMF data [12]

As well as in 2010 the greatest changes had happened in the budgetary system of Russia: the volume of tax revenues as opposed to the general tendency reduced by 10.5 percentage points while the specific weight of the interbudgetary transfers has increased by 5.1 percentage points.

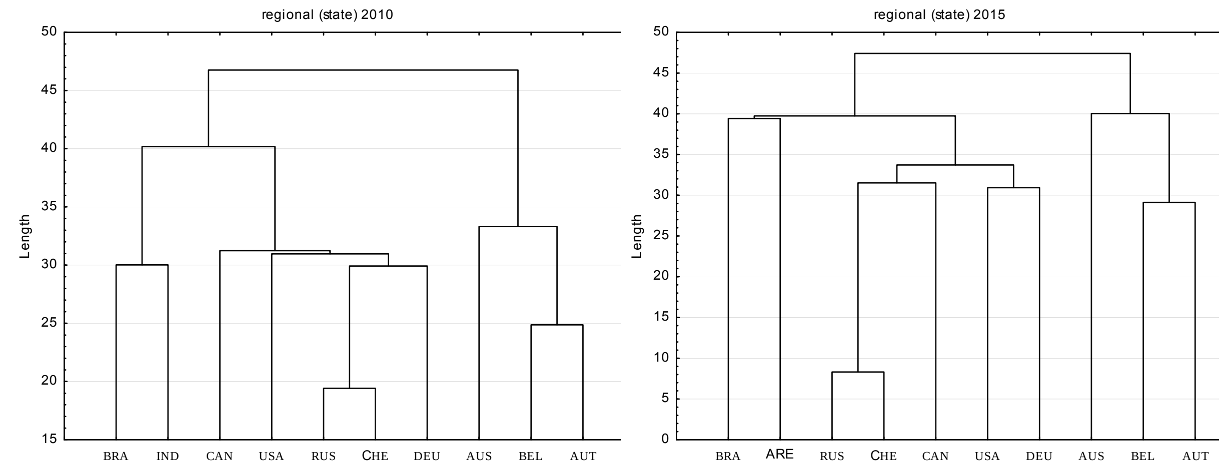
The analysis of the countries on the basis of revenue breakdown of regional budgets in 2000 (Fig. 1a) gave the opportunity to allocate several groups.



a)



b)



c) d)

Fig. 1. Clusters of countries by regional (state) budgets' revenue breakdown in: a) 2000; b) 2005; c) 2010; d) 2015

Group 1 – Malaysia – distinctive feature of this country was the highest level of own non-tax incomes in structure of receipts in budgets of states (55.3%), at the same time a quarter of income was provided at the expense of the interbudgetary transfers while the level of own tax incomes was less than 20% and was formed by receipts from the property tax; group 2.1 – Belgium and Austria – the countries with very low level of own tax incomes of regional budgets (8.7% and 5.3% respectively) and the highest level of the interbudgetary transfers (77.3% and 83.7%); group 2.2.1 – Mexico – the country with almost equivalent contribution of own tax revenues and the interbudgetary transfers to formation of revenues of regional governments; group 2.2.2 – the countries in which the shares of own tax and non-tax receipts in sum were more than a share of transfers from budgets of other levels.

Level of differences between the countries in formation of revenues of regional budgets in 2005 in comparison with 2000 had decreased a little (Fig. 1b). Group consisting of Belgium and Austria in which extent of centralization of distribution of budget revenues continued to remain very high was steady. Structures of formation of income of regional budgets in the USA and Germany became more similar (because of approximately identical share of receipts from taxes on goods and services and rather low share of the interbudgetary transfers in sources of revenues). Proximity was noted in structure of regional budgets' revenues in Canada and Switzerland (as for tax revenues in general and taxes on income and profits). Besides approximately identical levels of the interbudgetary transfers and also own non-tax receipts were in these countries.

In 2010 (fig. 1c) in comparison with 2005 variety of regional budgets structures of revenues increased but this result should be connected with addition of the new countries in the analysis. Least structural changes had concerned Belgium and Austria. The truth is also that revenue breakdowns of budgets of regions in Russia, Canada, Switzerland, the USA and Germany had leveled, but it is worth paying attention to decrease in level of financial independence of regional authorities in Russia. The same factor has caused similarity of revenue sources and their shares in Australia and India.

At the end of the analyzed period (2015, fig. 1d), two rather various clusters had remained as well as in 2010 though they are very non-uniform inside. The countries with the largest level of the interbudgetary transfers in formation of income of regional budgets (Austria – 81,1%, Belgium – 64,7%, Australia – 44,5%) were at the first whereas the second group consisted of the countries in which financial autonomy of regional budgets was higher.

In aspect of regional budgets' revenues breakdown the USA (increase in the importance of own tax revenues at the expense of the property taxes' share and also insignificant increase in a share of the interbudgetary transfers) and Russia (obviously traced reduction of financial autonomy of regional budgets) were among leaders of structural transformations (Tab. 6).

Table 6

Ryabtsev indexes of change of regional budgets' revenue breakdown

Countries	2005/2000	2010/2005	2015/2010	2015/2000
Austria	0.025	0.030	0.011	0.037
Belgium	0.073	0.013	0.036	0.102
Germany	0.045	0.028	0.039	0.042
Australia	0.126	0.070	0.073	0.121
Canada	0.060	0.032	0.046	0.044
Switzerland	0.060	0.032	0.046	0.044
USA	0.231	0.058	0.037	0.235
Russian Federation	-	0.125	0.116	0.222*

* - 2015 to 2005

Lower level of distinction of structures was observed in Australia (reduction of own tax revenues of state budgets though in much smaller scales) and Belgium (the opposite phenomenon).

Conclusions. The research has shown as the following:

1) the average level of tax receipts to regional budgets was 42.3% in 2000, however level of variability was very high further structural changes displayed a tendency to reduction of a role of own tax revenues and increase in the importance of the interbudgetary transfers; it demonstrates an increase in central control of regional authorities' financial capacities;

2) as a result two rather various clusters may be differentiated in 2015: the first consists of the countries with the largest level of the interbudgetary transfers in formation of income of regional budgets (Austria – 81,1%, Belgium – 64,7%, Australia – 44,5%) whereas the second consists of the countries in which financial autonomy of regional budgets was higher;

3) the USA (increase in the importance of own tax revenues at the expense of the property taxes' share and also insignificant increase in a share of the interbudgetary transfers) and Russia (obviously traced reduction of financial autonomy of regional budgets) have to be considered as contrasts in change of financial autonomy of regional budgets

At the end it is critical to accent that the accuracy of the received results in essential measure depends on completeness and structuration of basic data that raises requirements to formation of government financial statistics internationally (for example Swiss experience would be very interesting and useful). It will also be expedient to develop the studied issue in line with a research of compliance between quantitative indices of budgets and features of institutional structure of the budgetary system in each of the analysed countries.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 330.3:008

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TOPICAL CONCEPTIONS OF THE DEVELOPMENT OF INFORMATION SOCIETY UNDER CONDITIONS OF NBIC-CONVERGENCE

Urgency of the research. *The need for studying the problems and current trends in the field of integration of scientific achievements of the present in the context of its influence on the social paradigm is caused by the requirements and challenges of the next stage of civilization development - the information society.*

Target setting. *It is expedient to update the directions of the development of the information society and formulate its main concepts on the basis of the analysis of the achievements of world science.*

Actual scientific researches and issues analysis. *The scientific works of such scholars as I. Rodzin, S. Titarenko, M. Anissimov, J. Schummer, K. Borner, M. Rocco, V. Bainbridge and others are devoted to questions of the actual technological, social and economic aspects of the information society.*

Uninvestigated parts of general matters defining. *The scientists have not yet sufficiently developed the issues of developing and implementing the achievements of the newest world-building technologies in their synergy and interacting within the framework of the NBIC-convergence.*

The research objective. *The article aims to analyze and develop proposals for the actual concepts of building an information society in the context of NBIC-convergence.*

The statement of basic materials. *The article defines the main components of NBIC-convergence and the results of their interdependent development, which form the latest technological basis of the information society. It is substantiated the necessity of development of cognitive technologies in the socio-economic sphere in their synergy with information technologies. It is offered hypothetical directions of development of society in the post-informational era.*

Conclusions. *NBIC-convergence as the natural process of science towards the synergistic interaction and interdisciplinary scientific approaches creates the foundation for the transition to a new state of human capabilities through radical technological transformation.*

Keywords: *NBIC-convergence, information society, cognitive technologies, information technologies.*
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АКТУАЛЬНІ КОНЦЕПЦІЇ РОЗБУДОВИ ІНФОРМАЦІЙНОГО СУСПІЛЬСТВА В УМОВАХ NBIC-КОНВЕРГЕНЦІЇ

Актуальність теми дослідження. *Потреба у вивченні проблематики та сучасних тенденцій у сфері інтеграції наукових досягнень сьогодення в контексті її впливу на суспільну парадигму спричинена вимогами та викликами наступного етапу цивілізаційного розвитку – інформаційного суспільства.*

Постановка проблеми*. Доцільним є актуалізація напрямів розвитку інформаційного суспільства та формування його основних концепцій на основі аналізу здобутків світової науки.*

Аналізостанніхдосліджень і публікацій. *Наукові праці таких вчених, як І. Родзін, С. Тітаренко, М. Аніссімов, Й. Шуммер, К. Бьорнер, М. Роко, У. Бейнбридж та інших присвячені питанням актуальних технологічних, соціальних та економічних аспектів інформаційно гоcуспільства.*

Виділення недосліджених частин загальної проблеми. *Науковцями ще недостатньо опрацьовані питання розроблення та впровадження досягнень новітніх світобудівних технологій у їх синергії та взаємовпливі в рамках NBIC-конвергенції.*

Постановка завдання. *Метою статті є аналіз та розроблення пропозицій щодо актуальних концепцій розбудови інформаційного суспільства в умовах NBIC-конвергенції.*

Виклад основного матеріалу. *У статті визначено основні складові NBIC-конвергенції та результати їх взаємозалежного розвитку, які формують новітню технологічну основу інформаційного суспільства. Обґрунтовано необхідність розвитку когнітивних технологій в соціально-економічній сфері в їх синергії з інформаційними технологіями. Запропоновано гіпотетичні напрями розвитку суспільства в постінформаційну епоху.*

Висновки. *NBIC-конвергенція як закономірний процес розвитку науки в напрямку синергетичної взаємодії та міждисциплінарнихнаукових підходів створює фундамент для переходу у якісно новий стан людських можливостей шляхом радикальної технологічної перебудови.*

Ключовіслова: *NBIC-конвергенція; інформаційне суспільство; когнітивні технології; інформаційні технології.*

Urgency of the research. If we rephrase the well-known mythology that the Earth stands on four pillars, then one of them, of course, is a science and in its current development, the Cybernetics plays a leading role as the fundamental science of the complex systems managing that has a global goal, a mandatory inverse and generates the need to use the technology. The laws of the Cybernetics laid the foundation of the society that changes qualitatively under the influence of the science development, the achievements of information revolutions and the movement from simple to complex systems. As a science, the Cybernetics consists of a plurality of aspects that covers the processes of forming and development of all possible types of economic, political, social and spiritual activities. It focuses on the study and solving of complex problems, the interconnection of management and information systems in the technology, living nature and society, the creation of an artificial intelligence, the development of nano-, bio-, info- and sociotechnologies.

Target setting. Accelerating the pace of scientific and technological progress and the emergence of new advances in information revolutions require the revision of existing approaches to determine the fundamental principles of future society. New interdisciplinary sciences can bring more understanding to the vision of the current social and economic processes.

Actual scientific researches and issues analysis. Many scientists and researchers deal with the problems of forming and developing the information society, studying the issues of scientific influence on these processes. Among them: I. Rodzin, S. Titarenko, M. Anissimov, J. Schummer, K. Bjorner, M. Rocco, V. Bainbridge and others.

Uninvestigated parts of general matters defining. To date, such direction of society development as the development and implementation of the achievements of the newest world-building technologies - technologies of NBIC-convergence, remains practically unexplored.

The research objective. The purpose of this article is to analyze and elaborate proposals for actual concepts of forming an information society in the context of NBIC-convergence.

The statement of basic materials. Under the conditions of the turbulent environment and constant information changes and the results of the scientific and technological progress, there are whole wave of discoveries that are superimposed on each other in time. As practice shows, almost all the laws of the Universe have been already discovered. For the science development, actual knowledge is not only from a certain science. Everything takes place at the intersection of sciences, where medicine and biology occupy the dominant place. Thus, in the early 80's of the last century, one-by-one scientific and technological revolutions took place in the information and communication technologies, and in recent years there were marked changes in the field of the nanotechnology and cognitive sciences. In fact, all these events are very interconnected and affect one another. This phenomenon was widely studied in the scientific community, and in 2002, its researchers, M. Rocco and W. Bainbridge, reported about their achievements at the World Technology Assessment Center (WTEC) [1], revealing its peculiarities, focusing on the meaning for the world civilization development, and also giving the name - *NBIC-convergence*.

Taking into consideration the doctrine of the changes in Kondratiev's waves and the forming of the technological processes, NBIC-convergence can be interpreted as a hypothetical core of the sixth technological structure, which is based on the unification and synergistic enhancement of the achievements of nano-, bio-, info- and cogno-technologies, which results in merging these technologies into a single scientific technological area of knowledge [2].

NBIC-convergence is at an early stage of development. However, it is expected to create an artificial intelligence, cyborgs (a biological organism consisting of mechanical or electronic components, a machine-human hybrid), iBodi (an immortal body, non-protein, built on new principles for the transfer of human personality to it), biocomputers, any materials with predefined or predictable properties, etc.

It is known that the development of an information society takes place by moving from the post-industrial phase to innovation and knowledge-oriented. Knowledge is also a driving force in the society development, all types of economic and socio-technical activities, a human as a whole. Practice shows that under the present living conditions, the individual and social development of a person is based on the achievement of technical and technological capabilities of NBIC-convergence, which can be visualized, based on the analysis of the information borrowed from different sources of the citation and the cluster analysis in the form of a scheme that most fully reveals its essence (Fig. 1) [2].

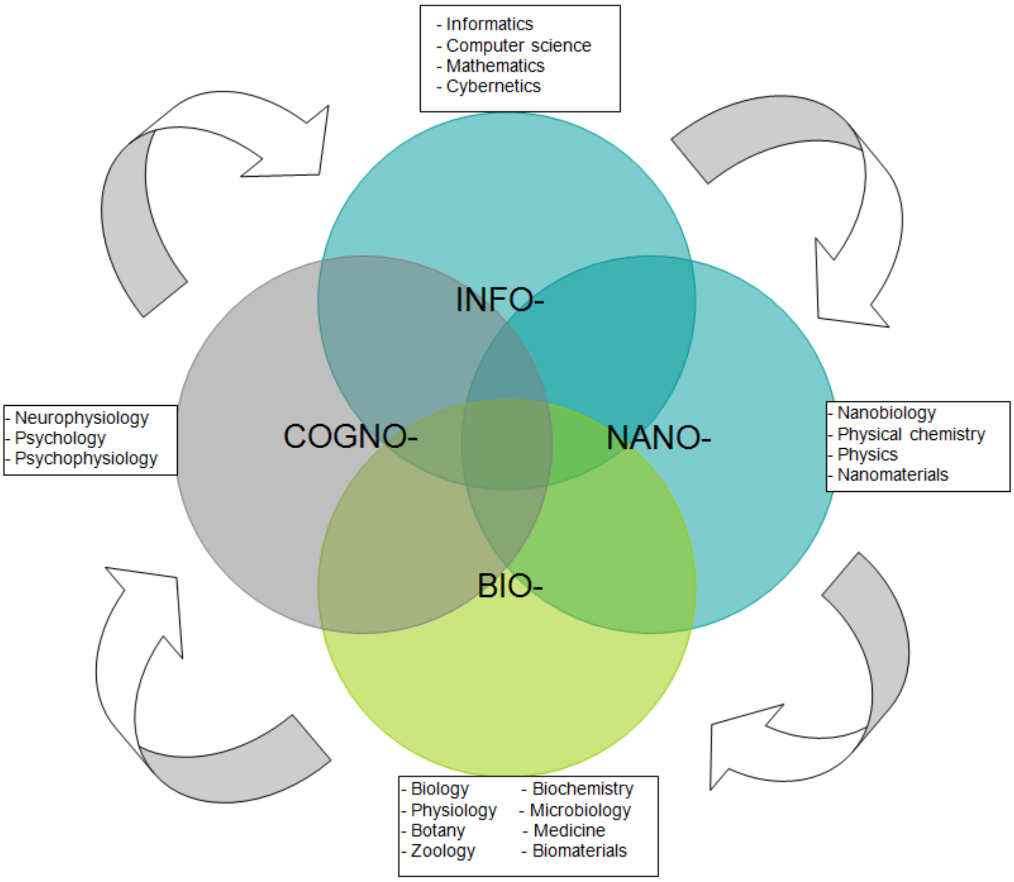

Fig. 1. Cognitive map of intersection of the latest technologies
Source: Formed by the author on the basis of [3]

Today, a person is surrounded by a huge amount of knowledge and information that is neither possible nor necessary to be kept in the memory. So, it's important to be able to accumulate and use it at the right time and in the right place. Therefore, the most advanced are information and communication technologies, which are used as a tool for the accumulation, processing of the information and knowledge, as well as the development of other technologies through the possibility of computer simulation of various processes.

As can be seen in Fig. 1, all technologies are developing interdependently. So, after the introduction of procedures for the use of information and communication technologies, there is the emergence of a biotechnological revolution that gradually integrates one into another. The result of such integration is the accounting biology, which includes bioinformatics, system biology, and so on. All of this is aimed at modeling of living organisms. The integration of the information and biotechnologies gradually becomes a sphere of nanotechnological operations and further development of the cognitive science. In general, these processes are multilateral and of a fundamental nature. For example, as a result of the integration and synergy of the information, cognitive, biological and nanoscientific operations, one can now observe the rapid development of the concept and material realization of artificial intelligence, for example, the robot-hyoid Sofia, created by the Hong Kong company Hanson Robotics in 2015, which has an artificial intelligence, can display a certain list of human emotions, recognize the language and face, maintain a conversation with people and constantly improve both hardware and software. Creating such a prototype is undoubtedly a breakthrough in the development of future opportunities for the society [4].

The expanding possibilities and prospects for the mutual integration of the nanoscience and cognitive technologies have two-ways, that is the direct and feedback influence on obtaining new knowledge, development of the latest models and obtaining innovative scientific results [5]. So, on the one hand, there is the possibility of a more detailed and in-depth study of the human brain and its capabilities and, as a consequence, the emergence of cyborgs, biocomputers and other types of an artificial intelligence, as has been discussed above [6]. On the other hand, the reciprocal influence of the information on the cognitive technology allows the programs system to develop additional qualities that extend the human mental processes. Taking into account all human intellectual potential, it is impossible to reject the existence of certain restrictions that cause uneven the social development and the presence of unresolved problems of the universal nature - wars, incurable physiological and psychological illnesses, the social inequality and injustice. Such restrictions by their nature are cognitive, which arise as a result of the uniqueness and originality of the mind of the each individual, but do not allow the human civilization to act in a coherent way as a computer system. Currently, the direct and highly effective interaction of the computer system and the person is in a constant development and is still not publicly available. Therefore, on the edge of information and cognitive technologies, tools are developed to overcome the "gaps of misunderstanding" between a person and a computer - natural language interfaces, image and speech recognition systems, cognitive graphics, etc. To solve the problem of cognitive limitations between people for their effective socio-economic activity and progressive development, cognitive control technologies, cognitive modeling methodology, cognitive analysis of socio-economic systems and objects are formed.

The proliferation of cognitive technologies creates new knowledge and capabilities of man and machines, which also promotes the society to newer technological ways. Scientific and technological revolutions give impetus to the transition of the society from the outdated technological processes to the newest, which penetrate into all spheres of the public life, radically changing socio-economic relations towards progress. However, the emergence of new ways would be impossible without the foundation of the basic technologies, which are the core of the first, second, third and fourth modes. At the present stage of social development, the advanced technological way is the fifth, which marked the transition of the industrial to information society based on the use of information and communication technologies (computer technology, software, network technologies). In the future, one can observe the formation of the core of the sixth technological way - advanced technologies for the integration of the achievements of the world knowledge in the field of the nanobiology, psychophysiology, cognitive science, medicine, biology, physical chemistry, etc. [7].

The analysis of these trends of the mutual integration of the knowledge, sciences, technological support allows us to assert that the merger of NBIC-convergence into a single scientific and technological branch of knowledge with the advent of more sophisticated systems of knowledge, scientific discoveries, a life, reason, and man [8].

The development of NBIC-technologies is the beginning of a new phase of a human evolution. As soon as a science finally reveals the possibilities of the brain, then the stage of a change of the bodily flesh, the possibilities of self-preservation and self-development of a person, the continuation of the family, qualitative changes in the economy and social development of mankind will begin. [9]. Hypothetically, the next stage in the development of a person as a species on the basis of NBIC-convergence may be the emergence of "intellectoid" (from the words "android" and "intelligence") - biologically flawless, artificially created membranes with their consciousnesses transferred to them without cognitive limitations and differences/

In the place of the information stages of the economic and social development, an epoch, based on the concept of the formation of post-informational technologies, based on the use of resources of consciousness, which is called *psychonetics* and further *nanopsychonetics*, will come. That is, in replacing the long and slow processes of an accumulation of favorable changes, the engineering process of defining tasks and their solutions will come. Already today we can observe genetically modified plants, animals and food products, artificially created biosystems in medicine, transplants of human organs, artificial mechanisms, biocomputers, etc. [10]. And, obviously, the traditional terms, categories and images that have been formed by the human culture in the conditions of limited material and intellectual resources will deviate from the background of the future biosystems that will more closely meet the needs of a mankind. The human civilization must now assess all the risks of such a powerful scientific knowledge - the result of the NBIC-convergence, deprived of the inherent qualities and principles of ethics, humanity, conservation of nature and resources for future generations.

Conclusions. Nano-, bio-, info-, cognotechnologies do not develop independently, they are strongly influenced by each other, interconnected, which is manifested, for example, at the level of high-tech convergence processes and the synergy of these scientific knowledge. The convergence creates the basis for the transition to a qualitatively new state of human opportunities through the radical technological adjustment. With the development of NBIC-technologies, the boundaries between living and non-living, thinking and programmed systems, concepts about life itself and death disappear. It is also a programmed system, concepts about life itself and death. It can also lead to the implementation of the "digital immortality" scenario, the restoration of living beings with the help of information about them, which will be stored on personal carriers of knowledge. By the way, this is the basis of the cybernetics and those events in human life and the society development that are taking place today.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 339.97

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GLOBAL DOMINENTS FORTHE DEVELOPMENT OF CHINA'S TRADE POLICY: OPPORTUNITIES AND THREATS FOR COOPERATION WITH UKRAINE

Part 2. Modernization of China's trade policy

Urgency of the research. *Effective foreign trade policy of China and its accession to the WTO have had a positive impact on the country's integration into the global economy and have provided China with world leadership in terms of the main trade indicators in recent years.*

Target setting. *Trade policy of the People's Republic of China plays a leading role in economic development of the country, despite its contradictory nature.*

Actual scientific researches and issues analysis. *The works of V. Kiktenko, O. Oliynyk, K. Frend, L. Chen and others are devoted to the issues of economic development of China and its place in the world economy.*

Uninvestigated parts of general matters defining. *At the theoretical level, insufficient attention has been paid to the issues related to the modernized trade policy of the PRC.*

The research objective. *The aim of the work is to investigate the current state of trade policy of the People's Republic of China.*

The statement of basic materials. *Trade policy of the country is characterized by the use of tariff and non-tariff instruments. The customs duty of China includes the MFN rates, contractual tariff rates, special fares, general tariff rates, tariff quota rates, and temporary duties. Import and export licensing holds an important place among the non-tariff instruments of China's trade policy. It should be noted that China also introduces general restrictions on export and those which are country-specific.*

Conclusions. *China's foreign trade policy goes through the period of modernization towards greater liberalization, pluralism and transparency. The protection of national interests are becoming more and more analogous to those of the leading countries of the world, it is characterized by hierarchically lined state and business institutions and takes into account the economic and political interests of stakeholders. At the same time, the role of China as a trade partner for the most of the countries increases.*

Keywords: *China; trade policy; tariff and non-tariff instruments.*

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ГЛОБАЛЬНІ ДОМІНАНТИ РОЗВИТКУ ТОРГОВЕЛЬНОЇ ПОЛІТИКИ КИТАЮ: МОЖЛИВОСТІ ТА ЗАГРОЗИ ДЛЯ СПІВПРАЦІ З УКРАЇНОЮ

Частина 2. Модернізація торговельної політики Китаю

Актуальність теми дослідження. *Ефективна зовнішньоторговельна політика Китаю та вступ до СОТ позитивно вплинули на інтеграцію країни у глобальну економіку та забезпечили світове лідерство за основними торговельними показниками протягом останніх років.*

Постановка проблеми. *Торговельній політиці КНР належить провідна роль в якості інструменту економічного розвитку країни, незважаючи на її суперечливість.*

Аналіз останніх досліджень і публікацій. *Питанням економічного розвитку Китаю та його місця в світовій економіці присвячені роботи В. Кіктенка, О. Олійника, К. Френда, Л. Чен та ін.*

Виділення недосліджених частин загальної проблеми. *На теоретичному рівні не достатньо уваги приділено питанням модернізованої торговельної політики КНР.*

Постановка завдання. *Метою роботи є дослідження сучасного стану торговельної політики КНР.*

Виклад основного матеріалу. *Торговельна політика країни реалізується за допомогою тарифних і нетарифних інструментів. Митний тариф Китаю складається зі ставок РНС, договірних тарифних ставок, спеціального пільгового тарифу, загальних тарифних ставок, ставок тарифної квоти та тимчасових мит. Серед нетарифних інструментів торговельної політики Китаю важливе місце займають ліцензування імпорту та експорту. Слід також зазначити, що Китай вводить загальні обмеження на експорт, а також залежно від країни призначення.*

Висновки. *Зовнішньоторговельна політика Китаю проходить період модернізації у бік більшої лібералізації, плюралізму та прозорості. Захист національних інтересів стає все більш подібним до аналогів провідних країн світу з ієрархічно вишикуваними державними і бізнес інституціями та врахуванням економічних й політичних інтересів стейкхолдерів. Одночасно зростає вагомість КНР як торговельного партнера більшості країн світу.*

Ключові слова: *Китай; торгова політика; тарифні і нетарифні інструменти.*

Bilan Yu. V., Yatsenko O. M., Nitsenko V. S. Global dominents for the development of China's trade policy: opportunities and threats for cooperation with Ukraine (Part 2. Modernization of China's trade policy)

Urgency of the research. The dynamization of the global competitive environment is due to the growing role of trade and to the use of multilaterally agreed rules of international trade and the mechanisms of policies' formation and implementation. According to Jeffrey Sachs' estimates, nowadays international trade accounts for 80% of all international economic relations [14]. He notes that the economic success of any country directly depends on the level of development of its foreign trade. Still, no country has succeeded in creating a competitive economy and a developed society, being isolated from the world economic system. In 2014 the share of 10 leading countries in total World trade was 51%, during the same period, the share of developing countries has increased to 41%, and the volume of trade in goods of the WTO member countries was 18.0 USD trillion. Nowadays, World export of goods is 19.00 USD billion. In the United States, in 1995 the same indicator was 5.17 USD bn, and in 2005 – 10.51 USD bn. The leading World exporters and importers are the United States, the EU and China [15-17].

The same trade policy provides countries with effective levers to mitigate the potentially negative effects of liberalization of trade and economic relations, first of all, due to the possibility of mitigating socio-economic problems and of eliminating distortions of the competitive environment, which in turn promotes the emergence of wider and more various tools for using the benefits from participating in the international division of labor, and for ensuring the implementation of national economic interests [10].

The characteristic feature of China's development as a world trade leader was the foreign trade policy that determined the external economic position of the State and led to the country's intra-economic transformation.

Target setting. These features evoked a scientific interest in studying the mechanisms of China's trade policy in the context of rules of modern global trading system, as it is currently quite controversial. Currently, China's foreign trade policy is undergoing a period of modernization towards greater liberalization, pluralism and transparency. Protection of national interests is becoming more and more analogous to those of the leading countries of the world, and it is characterized by hierarchically lined state and business institutions and takes into account the economic and political interests of stakeholders.

Actual scientific researches and issues analysis. The works of I. Burakovsky, A. Kireev, P. Krugman, T. Melnyk, V. Sidenko, T. Tsygankova, A. Shnirkova and others are devoted to the problems of international trade policy under the conditions of economic globalization. The ambiguity of socio-economic problems caused by economic liberalization is covered in the works of such researchers as: L. Antonyuk, O. Bilorus, A. Galchinsky, V. Heyets, I. Guzhva, D. Lukyanenko, S. Sidenko, A. Filipenko and many others. The diverse aspects of China's economic development and its place in the global economy are considered in the researches of such domestic and foreign authors as: B. Balling, M. Amatey, J. Berger, E. Gobov, A. Goncharuk, Din Dzhundzhun, A. Kaidal, V. Kiktenko, O. Koval, M. Kovalev, S. Koshovoi, V. Mikheyev, O. Oliynyk, V. Novik, V. Polyakov, E. Preseda, A. Prikhodko, K. Frend, L. Chen, A. Shkarpova, R. Schenina et al.

Uninvestigated parts of general matters defining. Despite numerous theoretical studies, insufficient attention has been paid to the issue of modernized China's trade policy, which has a decisive impact on the global economy. These questions require additional scientific research and conduce the logic of the article.

The research objective. The aim of the work is to investigate the current state of China's foreign trade policy, in particular, the use of tariff and non-tariff instruments and mechanisms in regulating international trade in the context of the global trading system functioning.

The statement of basic materials. The approaches to the determining the essence of trade policy, and therefore the range of issues that it deals with, gradually changed alongside with the development of economic and political thought of society. Initially, trade policy focused exclusively on the regulation of export-import flows. It was directly linked to the domination of the mercantilist ideas in the world. They focused much attention on the area of trade in goods. Later on, with the transition of economic relations to a new level, the growing number of transactional international agreements, the emergence of a network of transnational corporations, the issue of trade policy of the country began to affect other related areas – finance, consumption and production, redistribution of human flows between countries [4]. There is no single definition of trade policy, but countries implement it, first of all, through the use of tariff and non-tariff instruments. China is not an exception [1; 3; 5-7].

The concept of foreign trade management of the People's Republic of China was set out in the Regulation on the Provision of Import and Export in Goods in the People's Republic of China. This Regulation was adopted on the eve of China's accession to the WTO and reflected a number of agreements reached during a number of years of negotiations with this international organization. The third article of the Regulation clearly indicates that the State controls the import and export in goods [8]. The regulatory role of the State has affected the creation of favorable rules for export-import operations, which allowed the Chinese economy being systematically developed. State control over the development of a rapidly growing economy is an important component of government policy even at the current stage [9]. The State regulation system aimed at the development of the economy foresees several tasks: to create opportunities for foreign trade activities for all corporations, as well as, to encourage all corporations that produce in China to develop their foreign trade activities [10]. A huge amount of work is being done in the framework of these principles. All Chinese society is interested in it, and at the same time practically everyone is involved in the implementation of these programs. Despite the meticulous control over the activities of entrepreneurs, the regulation of trade policy is not very rigid.

The Chinese customs tariff consists of MFN rates, contractual tariff rates, special fares, general tariff rates, tariff quota rates, and temporary duties [3, p. 49]. The MFNs rates are most widespread. They are much lower than the general rate. The following goods are subject to this duty: those imported to China from the WTO member countries; those imported from countries that have bilateral trade agreements with China and have the most-favored-nation (MFN) regime; goods originating in China. The distribution of China's use of the MFN tariff has not changed significantly since the last review in 2015, as China's trade policy review is taking place every two years. The MFN tariff in China contains 54 different tariff rates for ad valorem duties, which range from 0% to 65%. About 40% of all tariffs in the range from 5% to 10% also did not change from 2011 and 2013 (Fig. 1).

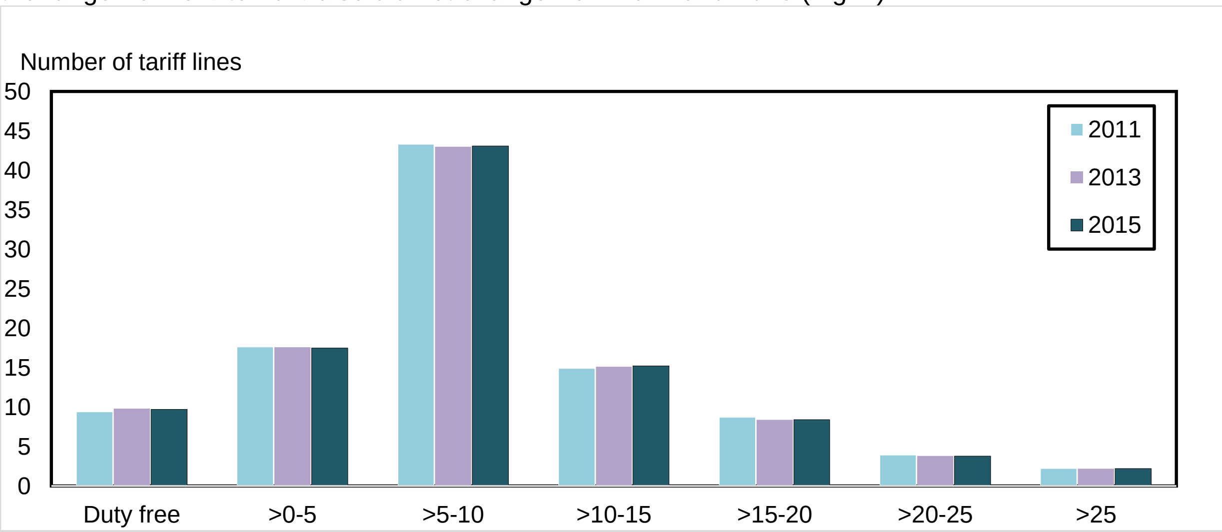

Fig. 1. Distribution of Most Favored Nation (MFN) tariffs in China, 2015
Source: [7, p. 51] on the materials of the WTO Secretariat's calculations, based on data provided by the Chinese authorities

Contractual rates apply to imports from countries and customs territories China has preferential trade agreements with. The special preferential tariff applies to imports from the least developed countries China has trade agreements (Ethiopia, Afghanistan) with. General tariffs apply to products whose origin can not be determined, as well as to products from countries that do not have bilateral trade agreements with China or which are not WTO members; and to some areas of the EU Member States.

Sometimes China imposes temporary duties on some imported goods. So, in 2013, in order to boost imports and to meet the domestic demand, China has set temporary tariffs lower than the MFN customs duties for more than 780 types of imported goods, such as: seasonings, pacemakers, special mixtures of dried milk for children, as well as, white clay, alfalfa and fluff. If a country appears in several lists at the same time, and several tariff rates may be applied to it, the most favorable rate for the country is chosen [3]. China's average customs tariff for 2011-2015 is presented in Tab. 1.

Table 1

Average customs tariff in China, %, 2011-2015

Product group	Year		
	2011	2013	2015
All products	9.5	9.4	9.5
agricultural	15.1	14.8	14.8
non-agricultural	8.6	8.6	8.6

Source: [3, p. 50]

After having analyzed the dynamics of the average customs tariff in 2011-2015, it is worth noting that this rate remained practically unchanged from 2011 and equated 9.5% in 2015. The tariff was higher for agricultural products. In 2011, it was 15.1%. A slight decrease occurred in 2013, and the same average tariff for agricultural products remained in 2015. The average customs tariff for non-agricultural products remained unchanged.

Goods exempted from import duties are: goods from one batch of goods with the estimated value of less than 50 Yuan; promotional materials and samples that do not have commercial value; goods and materials provided by international organizations or foreign governments; goods that have been damaged before customs clearance; goods intended for sale in free trade areas and in zones of production of goods for export [3, p. 53].

Among the non-tariff instruments of China's trade policy, import and export licensing is important. It should also be noted that, according to the WTO Secretariat's Report on the Trade Policy of the People's Republic of China from 2016, China has not introduced any import quotas for the period 2013-2014. China applies the import licensing regime with three types of licenses: automatic licenses, non-automatic licenses and certificates of tariff quotas. For some products (e.g. cars, electrical appliances), the license is issued automatically to all applicants, and it is used for more accurate import tracking. In other cases, the license is not automatic. Such non-automatic import licenses are used to control the import of dangerous goods and to impose tariff quotas (the two-stage tariff is foreseen, where the right to pay a lower import tariff is granted for a specified number of goods).

The type of license depends on the type of imports, which may be unlimited, limited and prohibited. Automatic licensing helps you keep track of import volumes that are unlimited. As a result, there are no quantitative restrictions on the import of goods subject to automatic licensing. Automatic import licenses are valid for the period of six months and are not subject to transfer. Non-automatic licenses or quotas are issued for goods which are subject to limited imports. Goods which are subject to non-automatic licensing are listed in the Import Licensing Catalog issued by MOFCOM, then by the GACC, as well as by the Directorate General for Quality Control, Inspection and Quarantine (AQSIQ).

In 2015, the Catalog of Restricted Import Licensing Products contained 89 tariff rates, while in 2013 – 87 (Fig. 2). During 2013 to 2015 non-automatic licensing was used mainly for cars and electronic equipment. There were 365 goods in the Catalog of prohibited import goods [3, p. 56].

From the chart above, it can be concluded that automatic import licenses are most often issued for the import of transport equipment and the import of animal and vegetable fats. There are also a large number of them issued for the import of livestock, mineral products and machinery and electronic equipment. Imports of leather, leather goods, textiles and clothing, plastic and rubber goods require only a non-automatic licensing.

Like restrictions on imports, the State may restrict or prohibit exports in order to support national security and public morals, to protect human beings, animals and plants, the environment, non-renewable natural resources that are in short supply or are requiring "effective protection".

The Ministry of Trade of the People's Republic of China, in cooperation with other relevant departments, develops and issues the Catalog of goods of restricted or prohibited export. This Catalog was last updated in 2008. In this view, the products subject to the export ban remain unchanged from 2013. The export ban applies to products such as: bezoara, musk, black moss, some plants, ivory, natural sands (HS chapter 25), asbestos, halogenated derivatives of hydrocarbons, organic chemicals (HS chapter 29), non-chemically treated fertilizers; rough wood and some platinum products [7].

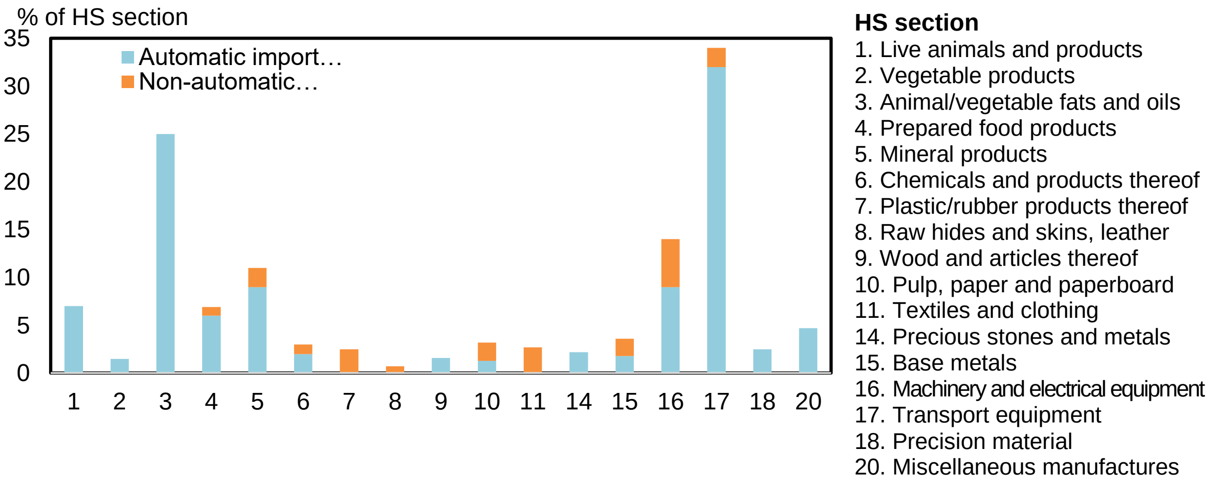

Fig. 2. Licensing of imports into China by product structure, 2015
Source: [3, p. 56] according to WTO calculations based on data provided by the authorities; and the Ministry of Environmental Protection online information

Export restrictions may take the form of quotas and/or licenses.

China imposes general export restrictions, as well depending on the destination country. General export quotas apply to 193 tariff lines [3, p. 74-75]. Goods subject to export quota include: rice, corn, wheat, cotton, coal; wheat flour; cornflour; rice flour; lumber; live cattle, pigs and chickens (for export to Hong Kong and Macao); crude oil; refined oil; trumpet; tin products; silver; indium and phosphate; magnesium oxide.

Recently, as of 01.01.2015, China has withdrawn export quotas for rare earths. They include a group of 17 elements such as: lanthanum, scandium, yttrium, and also lanthanides. They are used in the manufacture of smartphones, chips, electric motors, space industry, and high-precision weapons. For almost 10 years, China possessed an actual monopoly on these important strategic raw materials. The reason for this decision was the WTO requirements, according to its rules export restrictions under free trade should not exist. In addition, the WTO has received a lot of complaints about excessive prices for these products. The Chinese authorities explained the rigorous measures used in quotation of rare earths as necessary for the protection of the environment and Chinas' natural resources (when they are extracted, many toxic substances are released into the atmosphere). The WTO, however, saw it as a violation of international competition law [6].

In order to control the movement of products across the border, the Ministry of Trade of the People's Republic of China has introduced a system of mandatory licensing, inspection and quarantine. That is why, during the customs inspection, it is necessary to have documents confirming the permission of products' import or export obtained from state structures, as well as, if necessary, licenses for the goods. In the absence of a license for goods belonging to the category of products subject to mandatory licensing, the customs will be forced to refuse registration of the declaration and passage of the goods through the state border.

The Ministry of Commerce of China splits all products into 3 main categories: 1) goods banned for exports and imports (there are about 1100 items, including: chemical products, previously exploited equipment, as well as industrial and chemical wastes that potentially cause damage to the environment); 2) goods requiring mandatory licensing and quotation; 3) goods exported and imported without special restrictions [11].

It should be noted that only the producer of the product, which has the right to conduct foreign trade activities, can obtain an export license. Goods subject to licensing are: cattle, pigs and chickens (except for Hong Kong and Macao markets); fresh chilled beef, pork and chicken; frozen beef, pork, and chicken; bauxite rare earths; paraffin; tungsten; carborundum; platinum; some metals and metal products; molybdenum and products from it; natural sand; oil and its products (lubricants); citric acid; penicillin of industrial salt; vitamin C; sulfuric acid; sulphate of disodium; motorcycles, engines and frame; mototechnics; substances that destroy the ozone layer, aluminum oxide, coke, tungsten products, silicon carbide, manganese and fluorite [3, p. 76].

There are a lot of complaints in world practice regarding illegal export subsidies practiced by China. If we look at recent cases, in 2016, the United States has appealed to the WTO with a complaint about the illegal subsidization of rice, corn and wheat producers in China, as well as about the support to the agro-industrial complex in general [12]. The USA states that Beijing has exceeded the WTO-approved subsidy threshold for rice, wheat and maize producers by 100 USD bn in order to stimulate national production growth. The Chinese government has set prices for wheat, maize and rice far above the market level, which has led to unfair government subsidies that violate WTO rules. According to the American wheat trade groups, Beijing's price support guarantees Chinese farmers the price of wheat at about 10.0 USD per bushel versus 3.30-3.90 USD per bushel in the USA. The American authorities have argued their complaint that these programs distort prices in China, undermine the work of American farmers and violate the commitments that China has agreed to adhere to the WTO.

China agreed to complete the program, which provided State support for Chinese companies' exports, only after the next USA complaint to China in 2016, according to the announcement of the Office of the United States Trade Representative (USTR). It concerned with seven business sectors: textile products – clothing and footwear, modern materials and metals, light industry, specialty chemicals, medical products, hardware and building materials, agriculture [13]. This happened in 2016, a year after the United States filed a complaint against the Program to the World Trade Organization (WTO), accusing Beijing of providing "dishonest, forbidden subsidies to a large group of Chinese manufacturers and suppliers" [5]. An agreement with China to stop exporting subsidies should provide the necessary transparency, which create a solid basis for accurate monitoring and confirmation that the terms of the agreement are respected.

It should be noted that the above program included subsidies for the export of metals, including special stainless steel and aluminum. The question of subsidizing stainless steel was particularly controversial due to the extremely powerful Chinese potential in its production, which put pressure on other suppliers' prices. According to the USTR estimates, over three years (2013-2016), Chinese suppliers, having been subsidized for the production of goods for export, received more than a billion of USD from their government.

China is actively using technical regulation, that is the methods of trade protection that arise in order to provide the national technical, administrative and other rules and regulations arranged in such a way as to prevent the import of goods that can compete with national producers inside the country [11]. The application of technical barriers is due to the objective requirements of mass industrial production, safety considerations, health care, environmental protection and other similar reasons. The key clause of the Agreement on Technical Barriers to Trade of the WTO (Article 2.2) indicates that WTO members should ensure that technical norms, standards and rules are not used in such a way as to create barriers to international trade that exceed those which may arise in their common use for the purposes for which they were created [8].

In China the most common technical barriers are: 1) the compliance with national standards; 2) the receipt of certificates on quality of imported products; 3) the specific packaging and labeling of the goods; 4) the observance of certain sanitary-hygienic norms; 5) the observance of complicated customs formalities [3, p. 62].

The main technical barrier used by China against other countries, especially the EU member states, is the requirements for compliance with national standards. The system of standards in China is based on the model of the former Soviet Union. Prior to the adoption of the Standardization Act, all standards in China were mandatory. In accordance with the Standardization Act, standards are divided into two types: mandatory and voluntary. At present stage, only a few countries use this model, including Vietnam, Cuba and North Korea [12].

Currently, technical regulations in China are in force in the form of a resolution, order and mandatory standard, and the mandatory standard is the main form. Following the accession of China to the WTO, there is a similar situation: voluntary standards have appeared, but are almost not used. Mandatory standards cover such areas as: protection of human health and safety, animal and plant safety, and the protection of the environment. This raises many problems due to the fact that the standard and technical provisions differ in terms of law, design, content and copyright protection [3, p. 62].

China has cleared the list of national standards by reducing the number of mandatory standards. However, the organization, the order and the principle of development, content and copyright protection of the standard differs from those of these provisions. In this case, the system of standards becomes part of the legal system of the nation, because the mandatory standards are considered in the PRC as technical provisions. Organizations such as the Technical committee, the Institute and the association of standardization, represent the interests of individuals, become organizations for the development of legislation. In addition, the technical provisions must be communicated to the public, so that it can be viewed on the website of the government or the media. However, PRC standards are copyrighted, and people are forced to pay for the access to them [12].

The priority direction of China's economic diplomacy is to strengthen its influence in regional economic organizations such as ASEAN, the Shanghai Cooperation Organization (SCO), the South Asian Association for Regional Cooperation (SAARC), the Asia-Pacific Economic Cooperation (APEC), the East Asian Community (EAC), Asian Development Bank (ADB), BRICS. China is also actively using such a format of economic cooperation as the Asian International Forum in Boao, which sessions are held on annually basis in April on the Island of Hainan. China has entered into free trade agreements with many countries in the region, including Singapore, Macao, Hong Kong, New Zealand, Pakistan, to strengthen its economic position in the Asia-Pacific region. China also believes that strengthening cooperation with South Africa is a factor of promoting the development of relations between China and the whole Africa [3, p. 128].

Over the past few years, the People's Republic of China has been actively involved in all types of trade liberalization initiatives. At the multilateral level, China is actively advocating the speedy conclusion of the DPR negotiations (Doha Development Plan). China has also joined talks on liberalization of IT products (ITA) and environmental goods (EGA) and is negotiating accession to the GPA (WTO Agreement on Government Procurement).

At the regional level, China has been actively promoting the economic partnership with ASEAN and has begun the establishment of the Free Trade Area of Asia-Pacific (FTAAP) [11].

At the moment, China has already signed 13 Free Trade Agreements and is negotiating with 8 other countries, including such important countries as Australia and Korea. China has also begun unilateral liberalization through various pilot free trade zones in Shanghai [2].

Among all these initiatives, China has always emphasized that the multilateral trading system at the WTO level remains the "foundation" and the "main channel" for trade liberalization and simplification of procedures [29]. Thus, it is expected that China will continue to play an active role, and is likely to play a leading role in the WTO, given its economic and trade potential.

Conclusions. China has been at the forefront of key trade indicators over the past few years, with the country's entry into the World Trade Organization at the beginning of the 21st century and its integration into the global economy.

The trade policy of the People's Republic of China is implemented through tariff and non-tariff instruments. The Chinese customs tariff consists of the rates of the MFN regime, the contractual tariff rates, the special tariff preferences, the general tariff rates, the rates of the tariff quota and the temporary duties. The fees for the most-favored nation countries are the most common. The average customs tariff in China remained almost unchanged, during 2011-2015, and in 2015 it was 9.5% for all commodities, 14.8% for agricultural products and 8.6% for non-agricultural goods.

Among the non-tariff instruments of China's trade policy, import and export licensing is the most important. China applies the import licensing regime, which includes three types of licenses: automatic licenses, non-automatic licenses, and tariff quota certificates. The type of license depends on the type of import, which may be unlimited, limited and prohibited. China also has a system of mandatory licensing of exports, inspection and quarantine. There are three main categories of goods: prohibited for export; those that are subject to mandatory licensing / quotation; those that are exported without special restrictions. It should also be noted that China introduces general export restrictions, as well as country-specific.

The economic diplomacy of the People's Republic of China marked a strategic direction in enhancing influence in regional economic organizations such as ASEAN, the Shanghai Cooperation Organization (SCO), the South Asian Association for Regional Cooperation (SAARC), the Asia Pacific Economic Community (APEC), the East Asian Community (SAS) Asian Development Bank (ALB), BRICS. In order to strengthen China's economic position in the Asia-Pacific region, the government has entered into free trade agreements with many countries in the region, including Singapore, Macao, Hong Kong, New Zealand, Pakistan. The cooperation with Africa plays an important role; it is realized through the strengthening of China's cooperation with South Africa. At the regional level, China has been actively promoting the economic partnership with ASEAN and has begun the establishment of Asia-Pacific Free Trade Area (FTAAP).Currently, 13 free trade agreements have been signed by the country.

China takes an active part in all WTO initiatives on trade liberalization and procedures simplification. It is likely that China will play a leading role in the WTO, along with the leading countries of the world, given its trade and economic potential.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 338:601:608:339.9

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SYNERGETIC INTERACTION OF THE BIOECONOMICS PRINCIPLES IN THE GLOBAL ECONOMIC SYSTEM STRUCTURE

Urgency of the research *is to take into account the principles of bioeconomy in integrating economic systems into the world economy with the focus on providing conditions for minimizing various risks.*

Target setting. *Determination of the bioeconomy principles in synergistic interaction, which will reveal their socio-economic beneficial effect for the development of the world economy.*

Actual scientific researches and issues analysis. *Solving the issues of economy formation and development both in the world and in Ukraine.*

Uninvestigated parts of general matters defining. *Studying synergistic interaction new forms and methods of bioeconomic processes and their integration into the global economic system.*

The research objective. *Studying the synergistic interaction basic principles of bioeconomy from the point of effective socio-economic development.*

The statement of basic materials. *Bioeconomy is considered as an economic mechanism for the biotechnology implementation. The value of this approach is to take into account the triple combination of the sustainable development principles: economic, social, biological, based on four fundamental foundations: gene technology and industry engineering; resource-restoration production; research-scientific integration; practical bioclast orientation.*

Conclusions. *The bioeconomy basic principles fulfillment will make it possible to reorient the global management system to a new high-quality level, on which basis strategy of socially-oriented and safe development of the economic system will be based.*

Keywords: *bioeconomics; biotechnology; bioeconomic processes; bioresources; synergistic interaction.*

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СИНЕРГЕТИЧНА ВЗАЄМОДІЯ ПРИНЦИПІВ БІОЕКОНОМІКИ У СТРУКТУРІ ГЛОБАЛЬНОЇ ГОСПОДАРСЬКОЇ СИСТЕМИ

Актуальність теми дослідження *полягає у врахуванні принципів біоекономіки при інтеграції економічних систем у світове господарство з орієнтацією на забезпечення умов для мінімізації різних ризиків.*

Постановка проблеми. *Визначення принципів біоекономіки у синергетичній взаємодії, яке дозволить виявити їх суспільно-економічний корисний ефект для розвитку світового господарства.*

Аналіз останніх досліджень і публікацій. *Розв'язання питань становлення та розвитку біоекономіки як в світі, так і в Україні.*

Виділення недосліджених частин загальної проблеми. *Вивчення нових форм і методів синергетичної взаємодії біоекономічних процесів та інтеграції їх у світову господарську систему.*

Постановка завдання. *Дослідження основних принципів синергетичної взаємодії біоекономіки з позиції ефективного суспільно-економічного розвитку.*

Виклад основного матеріалу. *Біоекономіка розглядається як економічний механізм реалізації біотехнологій. Цінність такого підходу полягає у врахування триєдиного поєднання принципів сталого розвитку: економічного, соціального, біологічного, в основі яких лежать чотири фундаментальні основи: генна технологія та галузева інженерія; ресурсновідновлювальне виробництво; дослідницько-наукова інтеграція; практична біокластерна орієнтація.*

Висновки. *Дотримання основних принципів біоекономіки дасть змогу переорієнтувати світову систему господарювання на новий якісний рівень в основі якого знаходитиметься стратегія суспільно орієнтованого та безпечного розвитку економічної системи.*

Ключові слова: *біоекономіка; біотехнології; біоекономічні процеси; біоресурси; синергетична взаємодія.*

Urgency of the research. At the present stage of development, the world market is characterized by general transformations that determine the parameters of the global socio-economic world order and are conditioned by significant technological achievements of mankind. The key role of the technological factor in the process of economic growth is realized through a system of relevant world technological priorities that contribute to structural changes in the economy.

In such conditions, the issue of further dynamic technological development and the integration of all economic systems into the world economy and increase of its productivity is not the only priority and urgent issue, but also providing the world community with the conditions for minimizing economic, technological, social, political, environmental and other types of risks remains the priority and urgent issue. That is, we are talking about the security of the global economic system, which is based on the bioeconomy principles.

Target setting. Since adherence to the basic bioeconomics principles for ensuring a stable and dynamic development of the world economy, oriented not only on the demands of modern society, but also future generations, underlies the effective functioning of the global economic system, it is important to study certain principles in synergetic interaction thoroughly, which will allow to reveal fully their socio-economic useful effect**.**

Actual scientific researches and issues analysis. Investigating the question of the formation and development of bioeconomics both in the world in general and in Ukraine in particular, it should be noted that leading domestic and foreign scientists are considering certain aspects of this topic. Bioeconomy as an object of regulatory influence was studied by foreign scientists such as H. Henriquez-Cabot and R. Martinez, who first proposed the term "economics of biological origin". Also in the scientific world the works by P. Verburg, R. Kellogg, K. Patermann, S. Richardson, A. Sheppard, etc. are well-known. The works by F. Mantino, D. Viaggi, and others [1] are devoted to the problems of the transition to bioeconomics.

Thus, among domestic scientists we can single out the works by M. P. Talavyra [2], O. V. Shubravska [3], I. V. Dulska [4], who studied bioeconomics as one of the foundations of sustainable development of society, and also determined the features of the formation and development of bioeconomics in Ukraine. In his works, V. V. Baidala proposes the formation of a system of indicators for assessing the level of development of bioeconomics in Ukraine and determines the macroeconomic factors of its development [5]. S. D. Melnychuk, V. V. Zhebka, O. D. Baranovska, V. V. Vashchenko examine and study strategies for the development of bioresources on a bioeconomic basis [6]. The question of the organizational and economic mechanism for the implementation of bioeconomics was covered by V. I. Hlazko, considering the current directions of the "green economy" and the need to include the natural environment in the system of socio-economic relations and the infrastructure of bioeconomics [7]. V. I. Liashenko investigated the features of regulation and development of economic systems and determined the place of bioeconomics in them [8].

Uninvestigated parts of general matters defining. Despite a significant amount of works in this direction, the issue of development and synergetic interaction of bio-economic processes and their integration into the world economic system, in our opinion, is still open, as the world market is in constant development and requires new forms and methods of introducing modern efficient and safe management system.

The research objective. Studying the synergistic interaction basic principles of bioeconomy from the point of effective socio-economic development, the concretization of their synergetic interaction and the features of their integration into the global economic system under conditions of global transformation.

The statement of basic materials. In accordance with the general world trend, more and more business entities prefer to use renewable resources for the development of new types of products and processes, which in turn contributes to the formation and dynamic development of a new form of management - bioeconomy. This form has significant socio-economic benefits, which can be attributed to increasing food security for the world population, increasing the number of available sources of renewable and alternative energy, and reducing and preventing the effects of global climate change.

In spite of this, the principles and concepts of bioeconomics for the world economy and humanity are not new, but, given the current trends in the market, its rapid technological development, accompanied by increased risks and problems associated with the deterioration of the environmental situation, leading to devastating consequences and changes in climatic zones, acquires new content. Often, bioeconomics is seen as an economic mechanism for the implementation of biotechnology, that is, as a new branch of the existing technological structure.

Based on the analysis of well-known scientists and practitioners' interpretations, we formulate our vision for defining the essence of the category: bioeconomics is an economy based on the systematic use of biotechnologies in the production, distribution, exchange and consumption of biological resources, with a focus on maintaining the principles of restability and safety, directed to meet public, industrial and economic needs.

The value of a bioeconomic approach is to take into account the triune combination of sustainable development principles:

✓ economic – involves the optimal use of limited resources and the use of environmental, energy and material-saving technologies, including the extraction and processing of raw materials, the creation of environmentally acceptable products, minimization, processing and disposal of waste;

✓ social – is aimed at maintaining the stability of social and cultural systems, including the reduction of the number of destructive conflicts between people and the equitable distribution of benefits;

✓ ecological – is ensured by the integrity of biological and physical natural ecosystems, on which the global possibility of self-healing and dynamic adaptation to changes depends.

The purpose of this development is to meet the needs of modern society, with an orientation towards the ability of future generations to meet their needs.

By expanding and globalizing the bioeconomy, additional opportunities can be found for solving global problems, such as limiting food resources, reducing primary non-renewable energy resources, environmental safety and improving the life quality.

Having analyzed the approaches to the definition and proper interpretation of leading scientists, we can conclude that the bioeconomy basis principles are four fundamental foundations: gene technology and branch engineering; resource-restoration production; research-scientific integration; practical bioclast orientation.

Let us dwell on the biocluster orientation. A biocluster is a network of interconnected agro-industrial enterprises that are created to provide a complete cycle of processing of raw materials and waste products, and therefore the purpose of biocluster orientation is to build around the main agrocompany of such a network of production and processing enterprises that use waste products and their by-products, which would allow to develop transport, logistics and social infrastructure at a high innovation and technological level, thus ensuring an effective socio-economic development both a region and the country in general, without violating the biobalans and following the biosafety principles.

World business practice is oriented on the high level of such bioclasters implementation, since in the future such system will significantly increase the profitability of farm complex. However, the obstacle to the effective implementation of the global multi-level policy in this direction is the high cost and long payback period of such biotechnological production.

Implementation of an effective bioeconomic strategy is possible only in the conditions of synergistic interaction of the three process components: government, society, business entities (Fig. 1).

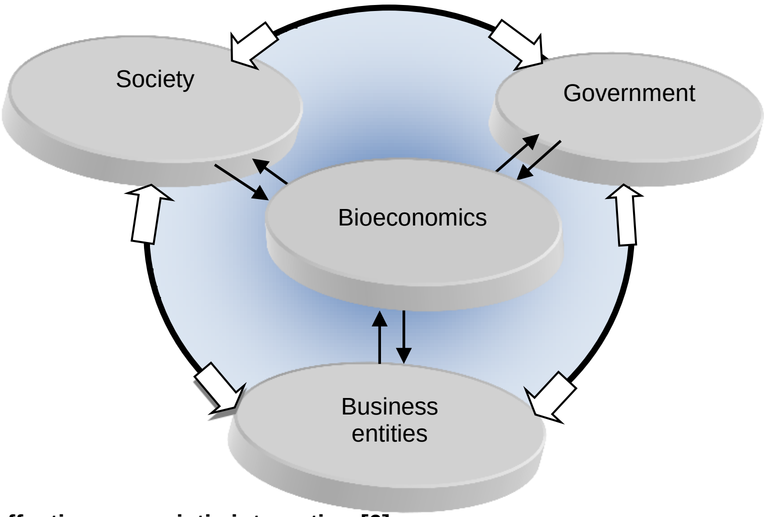

Fig. 1. Model of effective synergistic interaction [6]

The role of the government in this model is ensured by the introduction and support of national bioeconomy development programs, research and projects in a particular direction, the innovation system formation, and the promotion of a systematic plan implementation of the investment policy for the rapid and effective bio-industry development.

In the given model, business entities in order to ensure its effective functioning, require a reorientation to the generally accepted norms and standards of biotechnological production. Of course, changing the vector of economic activity from traditional methods of inefficient, resource-intensive and multiwaste production to modern one, with the use of renewable resources, sources expansion of alternative energy and environmentally safe, non-waste, requires the attraction of capital and additional investments. Therefore, close interaction with the government is at the heart of such a reorientation. The beneficial effect of such interaction will solve the global problems associated with the limited availability of food raw materials, mineral resources, and environmental pollution. At the same time, the actors involved in biomedicine and healthcare with the support of the government are able not only to solve problems related to diagnosis, prevention and treatment of the population, but also to significantly improve the quality of the society life, but also to take leading competitive positions in the market.

Modern society is rather ambiguous in responding to the bioeconomy positive opportunities. Insufficient educational and informational training of the population makes it difficult to perceive innovative offers and benefits. Accordingly, there is a low readiness to use the broad perspectives and possibilities of solving problems related to quality and life expectancy for the mankind benefit. Broad promotional and informational activities both from the state side and from the side of economic entities, providing feedback and freedom of choice would help to neutralize negative trends and prepare society for the transition to a new biotechnological level of development.

Regardless of the approaches and peculiarities of the bioeconomics division into separate spheres, the issues of implementing the basic principles in each of them remain relevant and priority both at the global and local levels of the economic system. In addition, the implementation of such principles should be adapted in accordance with regulatory requirements for each individual level. In our opinion, it is necessary to single out the basic levels of such a system, to determine the features of development, regulation and determine the bioeconomics place in this structure (Tab. 1).

Table 1

Bioeconomy place in the basic levels of the global economic system and their characteristics

Economic system levels	Structure	Regimes and Development Modes	Functions
1	**2**	**3**	**4**
Meta-level (interstate relations)	World economy as a set of all interacting levels: branches, intersectoral, bioclasters, territorial complexes, individual farms	Military programs, international agreements and cooperation on general biosafety issues	Ensuring the global reproduction of humanity as a biological species.
Mega-level (integration associations)	Integration specialized territorial and regional alliances and associations covering farms of different groups of countries, multinational corporations.	International treaties, concepts of sustainable development, agreements in the field of bioeconomic development; regimes of mutual benefits and tariffs for the development of biogas; investment programs for biotechnology support	Efficient use of scarce resources, provision of conditions for their reproduction and search for solutions to reduce environmental impacts.
Macro-level (national interests)	Individual state economy	International treaties, state programs of sustainable social and economic development; national legislation; special customs and tax (preferential) regimes for biotech industries	Ensuring the conditions for population and resources reproduction; creating an attractive investment climate; ensuring the effective use of bioresources and biosafety
Meso-level (industrial-financial groups)	Regional, territorial, branch and inter-sectoral complexes and associations	Priority biotechnology development programs; special tax privileges	Corporate development of intersectoral community with an orientation on the bioresources moderate use and the biocluster formation
Micro-level (intra-industry interaction)	Enterprises and their associations that produce the final product	Priority biotechnology development programs; special tax privileges; the only strategy for biotechnology development	Provision and organization of biotechnological production with minimal impact on the environment to meet consumers' needs; alternative energy sources use

Continuation of Table 1

1	2	3	4
Mini-level (individual groups interaction)	Entrepreneurs, public associations, workers professional associations	Special modes of business incubators; simplified driving regimes for small businesses; corporate social strategies; tactical programs of biotechnology development within the framework of the sectoral strategy	Provision of general production conditions for the enterprise and formation of environmentally safe working conditions
Nano-level (Individual interests)	Individuals, entrepreneurs, workers, whose activities are aimed at the creation and satisfaction of public goods	General and special tax regimes aimed at stimulating self-employment; workers motivation mode; training and advanced training	Providing the appropriate level of employment, forming a socially responsible worker

Source: created by the authors on the basis of [8, p. 49-51]

As we can see from the table, the implementation of the biosafety and bioeconomic development principles both for the global economic system and for individual economic structures will make it possible to bring the management system to a new quality level, based on the strategy of socially oriented and safe (including biological) development of the economic system.

To ensure such development by the 7th Framework Program (FP7), which brings together all industries related to biological objects of economic activity, the BECOTEP (Bio Economy Technology Platforms) project was proposed. The project is based on the principles of bioeconomics based on (Knowledge Based Bio Economy) knowledge. BECOTEP unites in its structure 9 European technology platforms: ETP «Global Animal Health»; ETP «Plants for the Future»; ETP «Food for Life»; ETP «Sustainable Chemistry»; ETP «Sustainable Farm Animal Breeding and Reproduction (FABRETP)»; ETP «Forest Based Sector»; ETP «Biofuels»; ETP «Agricultural Engineering»; ETP «Aquaculture and Innovation».

But the work of these platforms is only part of the bioeconomic development global policy aimed at developing new technologies and processes for the bioeconomy, the development of markets and increasing their competitiveness in the sectors of bio-economy by cooperating stakeholders. Such platforms will make it possible to identify priority directions for human development, their research and perspective development vectors within the specified time frame. As a result, the reorientation of financing, investment and research in the field of management, of global significance for the development of humanity and the maintenance of a high standard of living [10].

Conclusions. Under conditions of global transformation, effective implementation and adherence to the basic principles of bioeconomy to ensure a stable and dynamic bioeconomic development of the world economy, biosecurity for both the global economic system and individual economic structures, will allow to reorient the global system of management to a new level of quality. It will be based on the strategy of socially oriented and safe development of the bioeconomic system. Synergetic interaction between government, society and business entities will allow to implement an effective bioeconomic strategy and fully identify its socioeconomic beneficial effect at different levels of the economic system, identifying the priority directions for the development of humanity.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 656.6:338.47

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THREATS AND ADVANTAGES OF INSTITUTIONAL BASIS THAT DETERMINED THE ASYMMETRY OF THE MARKET OF UKRAINE'S TRANSPORT SERVICE

Urgency of the research. *The institutional basis that creates the asymmetry of transport markets is due to the disadvantages of the relevant legislative provision, which reorientation of traffic flows in the other direction.*

Target setting *is the analysis of the current legislation for the purpose of assessing the regulatory impact on transport services markets and identifying the conditions that constitute those or other obstacles.*

Actual scientific researches and issues analysis. *Back in the 1980s and 1990s, the theory of asymmetry.*

Uninvestigated parts of general matters defining. *Asymmetry is conditioned by external and internal factors: institutional barriers and lack of institutional support.*

The research objective. *Investigation of the institutional basis's influence on the level of asymmetry of the transport market and identification of the direction of its elimination*

The statement of basic materials. *Considers the content of the institutional basis work that creates the asymmetry of transport markets, which mainly affect the creation of artificial barriers to the free-of-charge ironing of goods in inland waterways of Ukraine. So, analyzed the situation on the domestic transport services market in Ukraine in comparison with other countries of the world. As well as analyzing two major draft laws on inland water transport presented to the Verkhovna Rada of Ukraine, which will determine and regulate the further situation. Deficiencies and failure to take into account some of the pointsare identified. This will allow the creation of the same conditions for the transport of river transport for national and foreign carriers. What to reduce the level of asymmetry in the domestic transport market of Ukraine.*

Conclusions. *Elimination of the asymmetry of the domestic transport market of Ukraine should be linked to such basic requirements for the development of appropriate institutional arrangements that should be in line with the existing system of international agreements and regulations, as well as create a level playing field for all participants in the water transport market, regardless of ownership.*

Keywords: *asymmetry of transport markets; asymmetry in the transport sector; institutional basis; external and internal factors of asymmetry.*

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ЗАГРОЗИ ТА ПЕРЕВАГИ ІНСТИТУЦІЙНОГО ПІДҐРУНТЯ ЩО ОБУМОВЛЮЮТЬ АСИМЕТРІЮ РИНКУ ТРАНСПОРТНИХ ПОСЛУГ УКРАЇНИ

Актуальність теми дослідження. *Інституційне підґрунтя, що створює наявність асиметрії транспортних ринків обумовлюється недоліками відповідного законодавчого забезпечення що змушує переорієнтовувати вантажопотоки в іншому напрямку.*

Постановка проблеми *є аналіз чинного законодавства на предмет оцінки регуляторного впливу на ринки транспортних послуг та виявлення положень які становлять ті чи інші перешкоди.*

Аналіз останніх досліджень і публікацій. *Ще у 1990 роки іншого сторіччя була використана теорія асиметричності.*

Виділення недосліджених частин загальної проблеми. *Асиметрія обумовлюється зовнішніми та внутрішніми чинниками: інституційними перешкодами з боку третіх країн та відсутністю власного інституційного забезпечення.*

Постановка завдання. *Дослідження впливу інституційного підґрунтя на рівень асиметрії транспортного ринку та виявлення напрямки її усунення*

Виклад основного матеріалу. *Зміст інституційного підґрунтя якій створює наявність асиметрії транспортних ринків які впливають, головним чином, на створення штучних перешкод на шляху вільного прасування товарів внутрішніми водними шляхами України. Аналізуя ситуацію що склалася на внутрішньому ринку транспортних послуг в Україні та два основних законопроекту про внутрішній водний транспорт що представлені на розгляд до Верховній раді України, які й будуть визначати та регулювати подальшу ситуацію. Визначаються недоліки та неврахування де яких моментів у цих законопроектах. Це дозволить створити одинакові умови здійснення перевезень річковим транспортом для національних та іноземних перевізників. Що знизити рівень асиметрії на внутрішньому транспортному ринку України.*

Висновки. *Усунення асиметрії що склалася на ринку внутрішніх перевезень України слід пов'язувати з такими головними вимогами до розробки відповідного інституційного забезпечення, які повинні відповідати існуючий системі міжнародних угод і правил, а також створювати рівні умови для всіх учасників ринку водних перевезень, незалежно від форми власності.*

Ключові слова: *асиметрія транспортних ринків; асиметрія у транспортній сфері; інституційне підґрунтя; зовнішні та внутрішні чинники асиметрії.*

Urgency of the research. The institutional basis that creates the asymmetry of transport markets is due to the disadvantages of the relevant legislative provision, which reorientation of traffic flows in the other direction. It also identifies the factors affecting the asymmetry of transport markets and the level of their impact, which can be divided by the definition of a sign of influence on threats and benefits.

So, analyzed the situation on the domestic transport services market in Ukraine in comparison with other countries of the world. As well as analyzing two major draft laws on inland water transport presented to the Verkhovna Rada of Ukraine, which will determine and regulate the further situation. Deficiencies and non-consideration of some of the requirements in these bills are identified, as well as the threats are identified in the event that these deficiencies are not remedied.

The main requirements for the development and adoption of institutional support in the field of inland water transport of Ukraine are also defined. This will allow the creation of equal equilibrium conditions for the transport of river transport for national and foreign carriers. That will allow as much as possible to reduce the level of asymmetry existing on the domestic transport market of Ukraine.

Target setting. Therefore, the main condition for managing asymmetry is the analysis of the current legislation for the purpose of assessing the regulatory impact on transport services markets and identifying the conditions that constitute those or other obstacles and cause negative asymmetry in the transport sector.

Actual scientific researches and issues analysis. Back in the 1980s and 1990s, the theory of asymmetry was used in the next century, a major contribution to the development of which was made by Nobel Prize winners in 2001 by economics George Acerlof, Michael Spence, Joseph Stiglitz. The essence of this theory lies in the level of asymmetry in existing information flows on the market. But there is a cure for this unfavorable trend - various institutional arrangements such as safeguards that allow sellers "good services" to give the signal to the buyer about the high quality of their product. Acerlof also noted the special importance of mass informational asymmetries in the economies of developing countries [1]. So Michael Spence believed that in the changing information it leads to inappropriate economic behavior and economic differentiation [2].

Uninvestigated parts of general matters defining. Asymmetry is conditioned by external and internal factors: institutional barriers from third countries and imperfection or lack of institutional support.

The research objective. Investigation of the institutional basis's influence on the level of asymmetry of the transport market and identification of the direction of its elimination

The statement of basic materials. Considers the content of the institutional basis work that creates the asymmetry of transport markets, which mainly affect the creation of artificial barriers to the free-of-charge ironing of goods in inland waterways of Ukraine. So, analyzed the situation on the domestic transport services market in Ukraine in comparison with other countries of the world. As well as analyzing two major draft laws on inland water transport presented to the Verkhovna Rada of Ukraine, which will determine and regulate the further situation. Deficiencies and failure to take into account some of the pointsare identified. This will allow the creation of the same conditions for the transport of river transport for national and foreign carriers. What to reduce the level of asymmetry in the domestic transport market of Ukraine.

The statement of basic materials. The most significant manifestation of external factors is the prohibition by Russia of transit of goods of the countries customs union on the territory of Ukraine. This causes asymmetry of traffic because of their reorientation from traditional, cheaper routes to other more expensive, longer and less fast routes. The elimination of external factors ensured through the implementation of procedures stipulated by the WTO and other international legal norms. Which, for the most part, foresee a trial of contradictions between the countries and the adoption of decisions to ensure their implementation. Given the current international situation, the solution of external asymmetry is a very long-term perspective.

Asymmetry due to internal factors is, first of all, the creation of obstacles for the development and use in the country of the cheapest and environmentally friendly water transport (sea and river). As a result, national cargo owners are forced to use the services of foreign sea carriers or national surface transport in domestic traffic.

Fig. 1 shows the possibilities of using the waterways of Ukraine along the length of navigable areas. Fig. 2 shows a comparison of the volume of goods transported with such a river as the Mississippi. So with a length less than a little more than 3 times, the volume of transportation is less than 130 times. Moreover, the transportation of grain with an export volume of sea ports of more than 40 million tons, is only 1.5 million tons, that is just a little more than 3 percent. Or in some cases, as it was in 2015-16, it was necessary to charter for foreign currency foreign tonnage for the implementation of the latter. Of course, this is most negatively reflected in the currency balance of the country and leads to a decrease in the parity of the national currency. One reason is the lack of adequate institutional support.

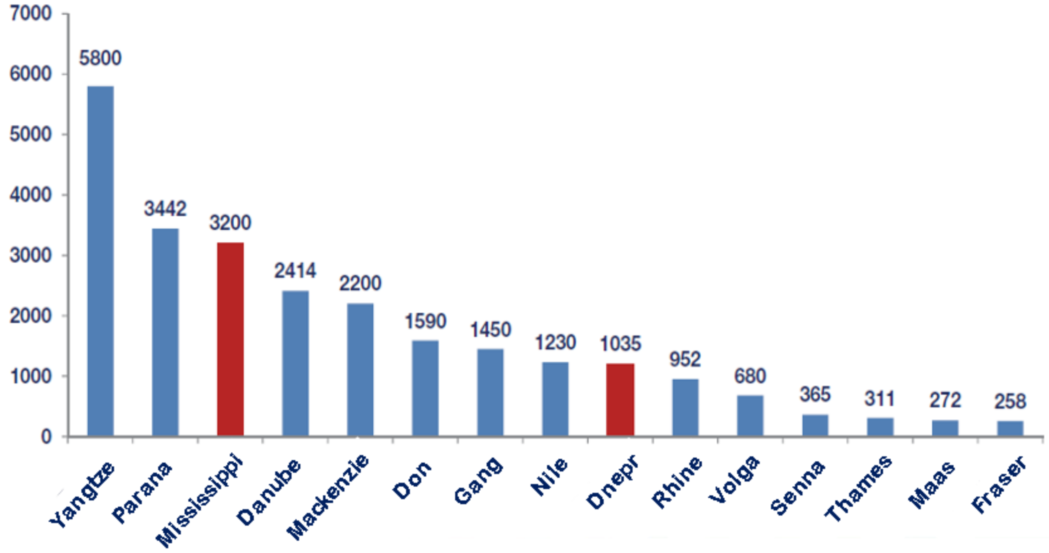

Fig. 1. Efficiency of use of water resources in Ukraine in comparison with other countries of the world (length of navigable areas, km) [3]

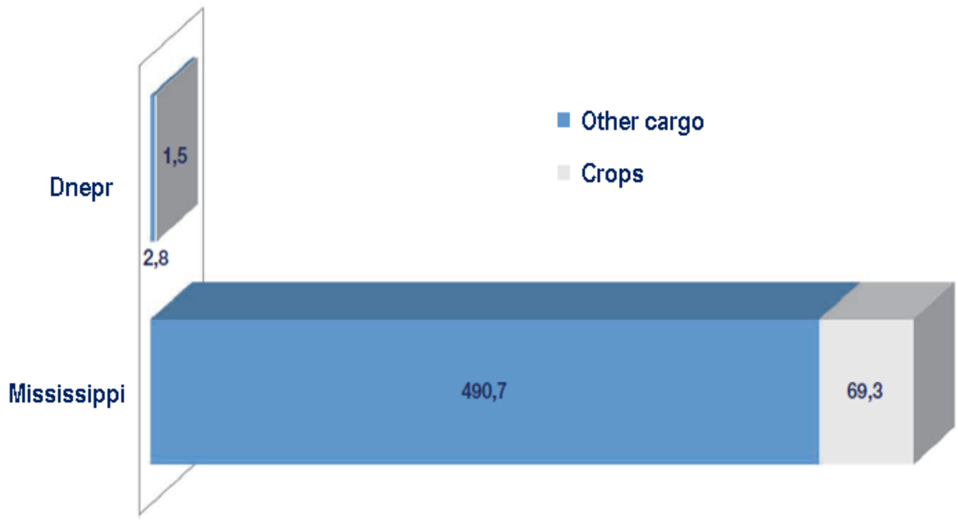

Fig. 2. Volume of traffic by inland waterways of Ukraine, mln tons, in comparison with Mississippi, USA

In general, Ukraine uses only 3% (6.7 million tonnes) of the total river potential, while Romania - 29% (30 million tonnes). USA- 40% (630m). The Netherlands -46.6% (359 million tons). The main obstacles and the transportation of goods by inland waterways are limited navigation on the Dnieper and imperfect legal field.

Since the cost of transporting goods in inland waterways by river is potentially 3 times smaller than other modes of transport (railways), there is an urgent need for the development of river transport.

With regard to the development of national maritime shipping, the issue is the adoption of the Law of Ukraine on the International Register of Vessels of Ukraine. The draft of this Law was developed by the Institute in 2009 in accordance with the decision of the National Security and Defense Council of Ukraine "On the development of Ukraine as a maritime state", but until now it has not even been submitted to the Verkhovna Rada of Ukraine.

In the case of inland waterway (river) transport, elimination of asymmetry of transportation due to the insufficient level of its development should be linked only with the improvement of the corresponding institutional support in view of the institutions, that is, the legal framework and institutions that is governments (institutions, organizations, etc.).) who will implement this legal framework. In this case, the systematic approach teaches that at the beginning an institutional basis is created (regulatory legal field - institutions), and then it is built on an institutional basis (the system of institutions for the implementation of institutions - governments and organizations that ensure the implementation of institutions). However, the current situation in Ukraine requires the creation of both a system of institutions and an institution's system. Even some institutions must be created before adopting appropriate institutional arrangements. This primarily concerns the Administration of Sea and River Transport of Ukraine, which, according to IMO requirements, should already operate in the country for a long time. The decision on its creation was adopted by the Cabinet of Ministers of Ukraine in early September 2017 but has not been practically implemented until this time. The main reason for the asymmetry that impedes the development of river transport in Ukraine is the artificially created economic disadvantage of their implementation compared with road and rail transport. In addition, the opening of free access of tonnage under foreign flags to the inland waterways of Ukraine makes the national water carrier economically uncompetitive in comparison with foreign ones. All this is due, above all:

- by assigning to the river transportation fees for the development of bridges and support of inland waterways;
- establishment of excise duty on fuel;
- availability of duties and VAT on equipment and components for the national fleet;
- the need to pay port duties and VAT for transit passage through sea ports located on the rivers (Kherson, Mykolaiv) ;
- availability of payments for the use of water during transportation;
- in the country there is not only legislation on inland water (river) transport, there is not even a corresponding code, although in the former Soviet Union such a code existed.

To date, it has been estimated that every one million tons of freight transported from road to water transport not only reduces environmental burden on the environment by 10 times, but also saves almost 800 million hryvnia for road surface repairs.

To date, for Ukraine in the transport sector, the most prominent are draft laws on inland water transport [4; 5], which are under consideration in the parliament. Since the texts of these bills not only do not eliminate the existing asymmetry, they can, on the contrary, create obstacles to the free movement of goods in the cheapest and most environmentally friendly way - waterways and thus create an additional asymmetry of the Ukrainian transport market.

Accordingly, two existing draft versions of the said law are considered in the paper, and, in accordance with the requirements set out above, recommendations are made regarding the necessary interpretation of its substantive provisions.

River carriers should be exempted from paying all taxes and compulsory payments, including: income tax; VAT from freight for transportation; excise tax on fuel; duties and VAT on components and ship equipment; etc.

Instead of the specified taxes and mandatory payments, a permanent River tax on tons of deadweight of the vessel (self-propelled or not) for each day of the navigation period in the amount of 0,01 euro cents per tone of deadweight per day of navigation (for non-self-propelled 20% less). For a vessel with a deadweight of 3000 tons for a navigation period equal to 360 days will be about 11 thousand euros per year. Such vessel for the relevant term can earn about 100 - 120 thousand euros of profit. A non-propelled barge with a deadweight of 1000 tons with a similar navigation period will cost 2.8 thousand euros, and another 300 euros will be paid by a tug.

The river tax will be levied on all vessels irrespective of the flag they are floating around.

Between the breeding of bridges farms should be carried out at the expense of those economic entities who created the bridge. As it is done around the world.

Both bills have been repeatedly reworked, some comments have been taken into account, including the author of this work. However, until recently, there are still no significant defect. What each and everyone in difference and all together will cause significant obstacles to the free movement of goods by inland water transport of Ukraine. In our opinion, the main reason for the turmoil in these draft laws is the absence of the Code of Inland Water Transport in Ukraine. What should be the basic principles of activities, rights, obligations, restrictions and conditions of operation. And only then, one should adopt a law on economic relations in this area of activity.

Conclusions. Elimination of the asymmetry of the internal market of Ukraine should be linked to the following essential requirements for the development of appropriate institutional support, which should:

1. To answer the existing system of international agreements and rules (terminology used, main principles and principles).
2. To create equal conditions for all participants of the market of water transport, regardless of the form of ownership.
3. Foreign participants in the Ukrainian river transport market should not have advantages or obstacles to national participants, based on the conditions of access to the market and the high school of the Ukrainian shipowners in the country of such a foreign participant. That is, a foreign river carrier in Ukraine is allowed all the same and to the same extent as allowed by a Ukrainian carrier in the respective country, but no more than allowed by the national carrier in Ukraine.
4. Richkovye transportation should be exempted from all non-regular payments to them (breeding bridges, fees for passing seaports in transit, fees for the use of water, etc.).
5. River carriers should be exempted from paying all taxes and compulsory payments, including: income tax; VAT from freight for transportation; excise tax on fuel; duties and VAT on components and ship equipment; etc. Instead of the specified taxes and mandatory payments, a permanent River tax on tone of deadweight of the vessel (self-propelled or not) for each day of operation in the navigation period in the amount of 0.01 UAH per tone of deadweight per day of navigation (for non-self-propelled 20% less). For a vessel with a deadweight of 3000 tons for navigation period equal to 360 days it will amount to about 11 thousand UAH per year. Such vessel for the relevant term can earn about 100 - 120 thousand euros of profit. A non-propelled barge with a deadweight of 1000 tons with a similar navigation period will pay 2.8 thousand UAH and another about 300 UAH will be paid by a tug.
6. River fees will be charged to all vessels irrespective of the flag they are floating around.
7. For those vessels flying the flags of countries with which Ukraine has no bilateral agreements on river navigation, there is still a permission system for access to inland waterways of Ukraine with the possibility of obtaining such permission online.

Such requirements for institutional support will be an incentive for the development of river transport and will create the same equitable conditions for all transport by river transport, will promote its development in the country.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 339.9 : 338.439(100)

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DEVELOPMENT OF MODEL SCENARIOS FOR FOOD PRODUCTION AND CONSUMPTION FORECASTS IN TERMS OF SOLVING GLOBAL FOOD PROBLEM

Urgency of the research. *Food problem issues take a prominent place in national security concepts of every developed country. In the context of Ukraine's commitment to integration into the European community, the food problem is of prominent significance.*

Target setting. *Given the global economy dynamics, the research of this problem is not exhaustive and needs new approaches to scientific research.*

Actual scientific researches and issues analysis. *The problems of food support of the population reflected in the works of L. Brown (2011), O. Berezin (2011), L. Berezina (2011), V. Vlasov (2009), M. Lysak (2009), R. Maltus (1998), B. Paskhaver (2007), M. Puhachov (2014), A. Sen (1979), Ya. Stoliarchuk (2009), etc.*

Uninvestigated parts of general matters defining. *Existing mechanisms of formation and distribution of world food resources, international trade therein, and food aid do not create an efficient system to ensure sufficient food support around the world. Therefore, it is important to reason the forecast ratio of deficit and domestic production for certain types of food to satisfy the demand under WHO standards.*

The research objective. *The purpose of the article is to identify the most and least vulnerable countries in terms of food security through the forecast ratio of deficit (shortage) and domestic production for certain types of food to satisfy the demand under WHO standards in particular parts of the world.*

The statement of basic materials. *Prospects for tackling the global food issue by using trend, adaptive and integrated autoregressive models (Box-Jenkins and OLYMPUS models) have been analysed. The calculations herein have been provided by different parts of the world: Africa, America, Asia, Europe, and Oceania.*

Conclusions. *The results show that almost all parts of the world are unable to provide the population with rational norms of major foods through domestic production.*

Keywords: *global food problem; food support; food security; food standards; food deficit.*

УДК 339.9 : 338.439(100)

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РОЗРОБКА МОДЕЛЬНИХ СЦЕНАРІЇВ ПРОГНОЗУ ВИРОБНИЦТВА ТА СПОЖИВАННЯ ПРОДОВОЛЬСТВА У КОНТЕКСТІ ВИРІШЕННЯ ГЛОБАЛЬНОЇ ПРОДОВОЛЬЧОЇ ПРОБЛЕМИ

Актуальність теми дослідження. *Питання продовольчої проблеми займають важливе місце в концепціях національної безпеки усіх розвинутих країн. В умовах прагнення України інтегруватися у європейське співтовариство продовольча проблема набуває особливого значення.*

Постановка проблеми. *Враховуючи динаміку глобальної економіки можливості поглиблення дослідження даної проблеми потребують нових підходів наукового пошуку.*

Аналіз останніх досліджень і публікацій. *Проблеми продовольчого забезпечення населення знайшли своє відображення в працях: О. Березіна, Л. Березіної, Л. Брауна, В. Власова, М. Лисака, Р. Мальтуса, Б. Пасхавера, М. Пугачова, П. Саблука, А. Сена, Я. Столярчук та ін.*

Виділення недосліджених частин загальної проблеми. *Існуючі механізми формування і розподілу світових продовольчих ресурсів не створюють ефективної системи забезпечення країн світу достатнім обсягом продуктів харчування. Тому важливим є обґрунтування прогнозних оцінок співвідношення обсягів дефіциту та внутрішнього виробництва за окремими видами продуктів харчування для забезпечення попиту за нормативами ВОЗ.*

Постановка завдання. *Метою статті є виявлення країн найбільш і найменш уразливих з точки зору продовольчого забезпечення, шляхом здійснення прогнозних оцінок співвідношення обсягів дефіциту (нестачі) та внутрішнього виробництва за окремими видами продуктів харчування для забезпечення попиту за нормативами ВОЗ по окремих частинах світу.*

Виклад основного матеріалу. *Досліджено перспективи вирішення глобальної продовольчої проблеми шляхом використання трендових, адаптивних та інтегрованих авторегресійних моделей (моделей Бокса-Дженкінса та ОЛІМП). Розрахунки виконано за окремими частинами світу: Африка, Америка, Азія, Європа, Океанія.*

Висновки. *Отримані результати свідчать, що практично за всіма частинами світу по основних продуктах харчування відсутня можливість забезпечення населення раціональними нормами харчування за рахунок внутрішнього виробництва.*

Ключові слова: *глобальна продовольча проблема; продовольче забезпечення; продовольча безпека; нормативи харчування; дефіцит продовольства.*

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Urgency of the research. One of the most urgent and unresolved problems today is the global food problem. Existing at all times, it is still relevant in the 21st century as the availability and quality of sufficient volumes of food remains the basis for the existence of any person and country. Lester Brown, are cognized American agrarian and global food problem expert wrote that it was the reduction of food support that caused the fall of many civilizations [1].

The essence of the food problem is manifested in the uneven distribution of food resources between countries and inadequate nutrition of the significant amount of population. Thus, according to the Food and Agriculture Organization (FAO), the number of the starving in 2014 amounted to 805 million people [2]. Moreover, FAO experts refer 77 countries to the countries with low-income and food deficit [3].

Target setting. The urgency of the food problem is conditional to the fact that it relates to the basics of human existence as a biological kind. The level of food availability affects the possibility of physiological, psychological, and intellectual condition of people as well as determines the level of peace or social tension in the society. Lack of food leads to inevitable death.

Given the global economy dynamics, the research of this problem is not exhaustive and needs new approaches to scientific research.

Actual scientific researches and issues analysis. Domestic research of contemporary global problems is characterised by comprehensiveness and focus on forecast modelling of their solutions. The problems of food support of the population as well as uneven food production and consumption around the world are reflected in the works of foreign and domestic scientists, e. g.: L. Brown (2011) [1], O. Berezin (2011) [4], L. Berezina (2011) [4], V. Vlasov (2009) [5], M. Lysak (2009) [5], R. Maltus (1998) [6], B. Paskhaver (2007) [7], M. Puhachov (2014) [8], A. Sen (1979) [9], Ya. Stoliarchuk (2009) [10], etc. At the same time approaches to the food problem evaluation by means of the usage of global indicators set by international organizations are still not enough investigated and require further improvement.

Uninvestigated parts of general matters defining. Uneven development of the world economic system entities dramatically increases the tendency to aggravation of the global food problem, which has been only deepened by permanent global crisis. Existing mechanisms of formation and distribution of world food resources, international trade therein, and food aid do not create an efficient system to ensure sufficient food support around the world. Therefore, it is important to reason the forecast ratio of deficit (shortage) and domestic production for certain types of food to satisfy the demand under WHO standards.

The research objective. The purpose of the article is to identify the most and least vulnerable countries in terms of food security through the forecast ratio of deficit (shortage) and domestic production for certain types of food to satisfy the demand under WHO standards in particular parts of the world.

The statement of basic materials. The strategies addressing the global food problem are developed based on identifying the opportunities for countries to meet their demand for major food in terms of rational standards.

The long-term assessment to ensure food support under the specified standards of consumption through domestic production is based on the development of model forecast scenarios for production and consumption.

The scenarios have been developed based on the following initial grounds:

- Certain predictive estimates for the years 2018-2020 are defined on the ground of optimal approximation models for trends in production of certain products.
- Forecast production volumes, which can be applied for food, may be calculated taking into account the food share in production.
- The population of a particular part of the world is forecast through the extrapolation of trends prevailing for the years 2006-2015.
- The amounts of certain foods required to meet the needs of the population while ensuring the defined standards of food are calculated.
- The additional need or surplus (+/-) in the major foods production to ensure food standards is determined.

All calculations are based on the production database and the domestic consumption of major foods for the years 2006-2015 by the following parts of the world: Africa, America, Asia, Europe, and Oceania.

The modelling of trends of change in production volumes of certain products is based on the use of trend, adaptive, and integrated autoregressive models (Box-Jenkins and OLYMPUS) while the choice of the optimal model is made under formal criteria of approximation: min OLS, min ε rel., max F-criterion.

The predicted estimates are defined as the extrapolation of trends under the optimal model for a fixed term estimate. For example, in Asia (Tab. 1), best models for all major food are trendy models, in particular, second-order parabolic curves, except for the logarithmic model of vegetable production trend. Formal criteria of approximation and accuracy evidence their authenticity grounding the possibility of their use to forecast relevant figures for the years 2018-2020. The models for the prediction of the total population are determined in the similar way. We conducted similar calculations for all parts of the world.

Table 1

Forecast Number of Population and Production of Major Foods in Asia for 2018-2020

Indices	Symbols (Y_i)	Optimal Model and Relative Error of Approximation ($\mathcal{E}$ rel.,%)	Forecast Production, mln. t.			Food Ratio,%
			2018	2019	2020	
Population, mln	Y_1	Y_1=3752 +33,054t+1.567t^2 ε=0.2%	4,521.8	4,682.1	4,766.82	–
Grains and Legumes	Y_2+Y_5	Y_2=620.075+65.812t-2.223t^2 ε=7.9% Y_5=27.44-0.55t+0.106t^2 ε=1.8%	1,101.0 43.0	1,104.0 45.8	1,096.4 48.8	74
Sugar Crops	Y_4	Y_4=612.008-3.685t+1.542t^2 ε=6.7%	903.6	947.8	995.0	34
Potato and Potato Products	Y_3	Y_3=135.76-6.267t+0.984t^2 ε=3.7%	263.1	287.4	313.6	71
Vegetable Oil	Y_6	Y_6=48.726+4.6t-0.05t^2 ε=1.3%	106.4	109.5	115.5	56
Vegetables	Y_7	Y_7=1.575+0.22lnt ε=1.6%	2.18	2.19	2.20	34
Tomatoes	Y_8	Y_8=589.18+13.58t+1.053t^2ε=0.9%	1,029.9	1,076.0	1,124.4	87.7
Fruits	Y_9	Y_9=503.8+10.13t+0.741t^2 ε=1.1%	822.5	855.6	890.1	87.2
Cattle Meat	Y_{10}	Y_{10}=87.32+3.3t+0.035t^2 ε=0.6%	144.6	149.1	153.5	99.6
Poultry	Y_{11}	Y_{11}=44.33+1.755t-0.013t^2 ε=1%	67.8	69.1	70.4	99.8
Eggs	Y_{12}	Y_{12}=33.107+0.873t+0.017t^2 ε=0.9%	49.96	50.9	52.9	89.2
Milk	Y_{13}	Y_{13}=165.28+13.834t-0.295t^2 ε=0.6%	306.3	311.1	315.3	88.7
Tomatoes	Y_8	Y_8=589.18+13.58t+1.053t^2ε=0.9%	1,029.9	1,076.0	1,124.4	87.7
Fish and Seafood	Y_{14}	Y_{14}=132.257+4.899t+0.096t^2 ε=0.3%	227.4	235.2	243.3	88.5

Source: calculated by the author

The next stage of forecasting scenarios development to assess the possibility of food support through domestic production is associated with defining the necessary food production volume taking into account both nutrition standards and the food share in the whole production. We defined average figures for each type of product for the years 2006-2015, which are shown in column 5 of the relevant tables: for Asia, it is Tab.1 and the average food nutrition standards for major products. The scenarios have been developed based on the selected standards under WHO recommendations and the average standards of developed countries.

Uneven development of the world economic system entities dramatically increases the tendency to aggravation of the global food problem, which has been only deepened by permanent global crisis. Existing mechanisms of formation and distribution of world food resources, international trade therein, and food aid do not create an efficient system to ensure sufficient food support around the world. Therefore, it is important to reason the forecast ratio of deficit (shortage) and domestic production for certain types of food to satisfy the demand under WHO standards.

The provided estimates for Asia (Tab. 2) show that the domestic production fully satisfies the demand in such products as grains and legumes, vegetables and tomatoes, fish, and seafood both in terms of World Health Organization standards and those of developed countries (Tab. 3), while the surplus is used for export. The domestic production of vegetable oils, fruits and vegetables, and eggs in the region is sufficient to meet the demand under the WHO standards but is insufficient to ensure food support under the standards of developed countries.

Table 2

Forecast Demand for Major Foods in Asia for 2018-2020

Products	Consumption Standards, kg/year		Year Forecast, mln. t.						Forecast Food Production Share, mln. t.		
			2018		2019		2020				
	WHO Recommendation	Developed Countries	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards	2018	2019	2020
Grains and Legumes	117	158	529.1	714.5	520.2	702.5	557.7	753.2	851.0	850.9	847.7
Potato and potato products	108	100	444.6	452.2	505.7	468.2	514.8	476.7	186.8	204.1	222.7
Sugar crops	38	32	171.8	144.7	177.9	149.8	181.1	152.5	31.0	32.0	33.8
Vegetable Oil	13	22	58.8	99.5	60.9	103.0	62.0	104.9	59.6	61.3	62.4
Vegeta-bles and Tomatoes	139	140	628.5	633.1	650.8	655.5	662.6	667.4	904.0	944.4	986.8
Fruits	100	182	452.2	823.0	468.2	852.1	476.7	876.7	717.2	746.1	776.2
Cattle Meat	78	96	352.7	434.1	365.2	449.5	371.8	457.6	144.2	148.5	152.9
Poultry	27	30	122.1	135.7	126.4	140.5	127.8	143.0	67.5	68.8	70.3
Eggs*, egg/kg	291/ 9.24	260/ 10.4	41.8	47.0	43.26	48.7	44.0	49.6	44.6	45.4	47.2
Milk	380	217	1718.3	981.2	1,779.2	1,061.0	1,811.4	1,034. 4	271.4	275.6	279.4
Fish and Seafood	18	21	81.4	95.0	84.3	98.3	85.8	100.1	201.2	208.2	215.2

* – When calculating the volume of egg production, we came from the fact that the standard is given in eggs and production in tons, thus we accepted the average weight of an egg (40 g) for the calculation. Source: calculated by the author.

Table 3

Surplus (+) or Deficit (-) of Domestic Production in Asia to Satisfy the Demand under the Consumption Standards for 2018-2020

Products	Consumption Standards under the WHO Recommendations	Actual Consumption in 2015 at the Ex-pense of Domestic Production, kg/year	Deviations of Forecast Food Production Volume and Demand in Terms of Consumption Standards, per mln. t.					
			2018		2019		2020	
			Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards
Grains and Legumes	117	162.38	321.9	135.5	330.7	148.4	290.0	94.5
Potato and Potato Products	108	29	-257.8	-265.4	-301.6	-264.1	-292.1	-254.0
Sugar Crops	38	5.32	-140.8	-113.7	-145.9	-117.8	-147.3	-118.7
Vegetable Oils	13	9.26	0.8	-39.9	0.4	-41.7	0.4	-42.5
Vegetables and Tomatoes	139	168.7	275.5	270.9	293.6	288.9	324.2	319.4
Fruits	100	137.3	265	-105.8	277.9	-106.0	299.5	-100.5
Cattle Meat	78	31.31	-208.5	-290.0	-216.7	-301.0	-218.9	-304.7
Poultry	27	15.0	-54.6	-68.2	-57.6	-71.7	-59.0	-72.7
Eggs*, egg/kg	291/9.24	9.11	2.8	-2.4	2.14	-3.3	3.2	-2.4
Milk	380	58.74	-1,446.9	-709.8	-1,503.6	-785.4	-1,532.0	-755.0
Fish and Seafood	18	40.2	119.8	106.2	123.9	109.9	129.4	115.1

Source: calculated by the author

At the same time, Asia has a significant deficit in food support through domestic production both under the WHO standards and those of developed countries for the following types of products: potatoes and potato products, sugar crops, cattle meat, poultry, milk, and dairy products.

It should be noted that, e. g., production of milk and dairy products in 2018-2020 should be almost 4.72 – 4.86 times more than the forecast volumes, i e. in case of the same development trends that appeared in 2006-2015 (Tab. 4), the production of potato should increase by nearly 93.3 – 104.9%, poultry – more than three times, and cattle meat – 1.43 – 1.45 times.

Table 4

Forecast Ratio of Deficit (Shortage) and Domestic Production for Certain Foods to Satisfy the Demand under the WHO Standards for Asia

Products	MU	Ratio of Food Deficit and Total Production		
		2018	2019	2020
Potato and Potato Products	%	97.7	104.9	93.3
Sugar Crops	%	15.6	15.4	14.8
Cattle Meat	times	1.44	1.45	1.43
Poultry	times	3.1	3.14	3.11
Milk	times	4.72	4.83	4.86

Source: calculated by the author

Based on the scenarios provided, the opportunity to support public consumption under basic nutrition standards by domestic production, estimates of surplus or shortage of basic food product, the strategies to ensure food security of the people of certain part of the world have been developed.

The situation with the food support by domestic production is especially dramatic in developed countries in Africa. According to the forecast, the production of certain types of food will decrease if the same trends that emerged during the 2006-2015 maintain (e.g., grains, tomatoes, and vegetable oil). In addition, the growth of cattle meat, eggs, sugar crops, and vegetables production is significantly lower than the population growth, which also negatively affects the possibility to implement rational nutrition and food security programmes. The common factors identified significantly lower even promising opportunities in the people's supply with domestic food under the standards recommended.

The production of all foods except grain is significantly lower than those needed to ensure a balanced diet. For example, the production of cattle meat should be 12.4 – 12.7 times more than the volumes that can actually be produced in 2018-2020 in case of maintaining development trends prevailing for the period in question. In similar circumstances, the production of milk should be 7.6 – 7.7 times more, poultry – almost three times more, etc. The only exception is the production of grains and legumes, which, according to the forecast, may satisfy the demand under the WHO standards (Tab. 5).

Table 5

Surplus (+) or Deficit (-) of Domestic Production in Africa to Satisfy the Demand under the Consumption Standards for 2018-2020, mln. t.

Products	Deviations of Forecast Food Production Volume and Demand in Terms of Consumption Standards					
	2018		2019		2020	
	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards
Grains and Legumes	35.7	-8.5	30.8	-14.6	24.9	21.54
Potato and Potato Products	-89.3	-80.8	-90.1	-81.3	-90.9	-81.8
Sugar crops	-35.2	-28.7	-36.2	-29.6	-37.1	-30.3
Vegetable Oils	-6.83	-16.54	-7.34	-17.27	-8.0	-18.2
Vegetables, Tomatoes	-69.2	-70.3	-73.4	-74.5	-78.3	-79.5
Fruits, Berries, Cherries	-35.4	-123.9	-35.6	-126.2	-35.6	-128.4
Cattle Meat	-77.68	-97.1	-79.5	-99.4	-81.6	-101.9
Poultry	-20.86	-24.16	-21.1	-24.45	-21.24	-24.6
Eggs	-6.9	-7.9	-6.98	-8.08	-7.1	-8.4
Milk	-359.4	-183.6	-368.4	-188.3	-377.6	-193.0
Fish and Seafood	-8.7	-12.0	-8.6	-11.9	-8.6	-12.0

Source: calculated by the author

The forecast shows that the production of certain foods in America in the years 2018-2020 tend to decrease: e. g., the production of oil, vegetables and tomatoes, cattle meat, fish, and seafood. America produces enough grains and legumes, fruits and vegetables, poultry, and eggs (Tab. 6) to ensure the rational nutrition of the population under the WHO standards.

Table 6

Surplus (+) or Deficit (-) of Domestic Production in America to Satisfy the Demand under the Consumption Standards for 2018-2020, mln. t.

Products	Consumption Standards under the WHO Recommendations, kg/year	Actual Consumption in 2015 at the Expense of Domestic Production, kg/year	Deviations of Forecast Food Production Volume and Demand in Terms of Consumption Standards, mln. t. (+/-)					
			2018		2019		2020	
			Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Devel-oped Countries Standards	Under WHO Standards	Under Devel-oped Countries Standards
Grains and Legumes	117	124.4	2.0	-38.9	1.0	-40.2	0.0	-41.5
Potato and Pota-to Products	108	2.88	-103.9	-96.0	-104.7	-96.7	-105.4	-97.3
Sugar crops	38	3.58	-34.2	-28.2	-34.4	-28.4	-34.4	-25.4
Vegetable Oils	13	12.97	-0.1	-9.06	-0.4	-9.4	-0.65	-9.75
Vegetables, Tomatoes	139	98.45	-9.5	-11.2	-9.7	-10.7	-10.0	-11.0
Fruits, Berries, Cherries	100	107.55	9.1	-72.5	9.8	-72.6	10.6	-72.6
Cattle Meat	78	29.27	-52.9	-70.8	-54.8	-72.9	-56.8	-75.1
Poultry	27	38.49	14.6	11.65	15.1	12.1	15.5	12.5
Eggs	231 / 9.24	11.79	2.2	1.2	2.1	1.1	1.93	0.79
Milk	380	172.79	-190.0	-27.8	-189.0	-25.2	-187.9	-22.6
Fish and Sea-food	18	14.25	-9.17	-12.17	-10.0	-13.2	-10.9	-13.9

Source: calculated by the author

At the same time, according to the situation as at 2015 and the forecast production and consumption under the specified nutrition standards (Tab. 7), there is a substantial deficit of sugar crops, potatoes and potato products, cattle meat cattle, milk, etc.

Table 7

Forecast Ratio of Deficit (Shortage) and Domestic Production for Certain Foods to Satisfy the Demand under the WHO Standards for America

Products	MU, times, %	Ratio of Food Deficit and Total Production		
		2018	2019	2020
Potato and Potato Products	Times	25.0	23.6	22.2
Sugar Crops	Times	9.7	9.4	9.1
Vegetable Oils	%	53.3	57.8	63.7
Vegetables, Tomatoes	%	53.7	56.5	59.8
Cattle Meat	Times	3.1	3.4	3.7
Milk	Times	1.9	1.9	1.913
Fish and Seafood	%	99.7	106.0	116.2

Source: calculated by the author

E. g., the production of potato and potato products should be increased by more than 22.0 – 22.5 times; sugar crops – 9.1 – 9.7 times, cattle meat – 3.1 – 3. 7 times, milk – almost twice; vegetable oils, vegetables and tomato – 54 – 64 %; fish and seafood – 100 – 116.2 %.

Forecast of agricultural products production in European countries shows that under the conditions prevailing during the period in question, the possibility of further growth in production of potato, vegetable oils, vegetables and tomatoes, fruits, and vegetables has been almost exhausted. In particular, potato production in the next three years may even reduce by almost 14 % –from 129.3 mln. t. as at 2015 to 117.4 mln. t. (as forecast for 2020). The production of vegetable oils and cattle meat may be almost the same as it was in 2015.

The ability to provide people with food in Europe under the standards recommended by the WHO will preserve only for grain and legumes, vegetables, tomatoes, poultry, eggs, fish, and seafood (Tab. 8).

Table 8

Surplus (+) or Deficit (-) of Domestic Production in Europe to Satisfy the Demand under the Consumption Standards for 2018-2020, mln. t.

Products	Deviations of Forecast Food Production Volume and Demand in Terms of Consumption Standards					
	2018		2019		2020	
	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards
Grains and Legumes	19.5	-11.24	20.9	-9.3	22.3	-8.6
Potato and Potato Products	-26	-20	-26.5	-20.5	-26.9	-20.9
Vegetable Oils	-7.8	-14.56	-7.83	-14.59	-7.86	-14.63
Vegetables, Tomatoes	2.44	1.74	2.24	1.44	2.9	2.2
Fruits	-13.8	-75.2	-15.3	-76.9	-17.1	-78.8
Cattle Meat	-47.56	-61.1	-47.64	-61.14	-47.71	-61.3
Poultry	3.63	1.33	5.12	2.88	7.0	3.5
Eggs	3.7	2.90	4.2	3.33	4.44	3.6
Milk	-113.3	8.8	-113.0	9.3	-112.9	9.9
Fish and Seafood	6.0	3.8	7.34	5.06	8.7	6.43

Source: calculated by the author

There is a significant lack in the domestic production of other food agricultural products and the deficit of certain products for the years 2018-2020 will even increase (Tab. 9).

Table 9

Forecast Ratio of Deficit (Shortage) and Domestic Production for Certain Foods to Satisfy the Demand under the WHO Standards (Forecast) for Europe

Products	MU, times, %	Ratio of Food Deficit and Total Production, %		
		2018	2019	2020
Potato and Potato Products	%	23.0	23.7	24.1
Vegetable Oils	times	2.8	2.8	2.8
Fruits	%	21.4	24.3	27.9
Cattle Meat	times	4.35	4.35	4.3
Milk	%	52	51.7	51.4

Source: calculated by the author

E. g., cattle meat production in Europe should be almost 4.35 times higher; vegetable oils – 2.8 times; potatoes –by 23 – 24 %, fruits and vegetables –by 21.4 – 28 %, and milk – nearly 52 % of the existing volumes. Given the opportunity of meeting the food demand under the standards prevailing in the developed countries, these ratios significantly increase.

The forecast for countries of Oceania and Australia shows the negative trend of the following food agricultural products production: potatoes, sugar crops, vegetables, and cattle meat. At the same time, despite slight growth in the production of other foods in this part of the world, except for poultry, eggs, fish, and seafood, there is no opportunity to satisfy the demand for food by domestic production (Tab. 10).

For example, the domestic production of potato should be 1.35 times higher than the actual volume; vegetables and tomatoes –1.1 – 1.31 times higher; milk production should increase by about 73.4 – 94.5 %, and vegetable oils – almost by 43 %.

Table 10

Surplus (+) or Deficit (-) of Domestic Production in the countries of Oceania and Australia to Satisfy the Demand under the Consumption Standards for 2018-2020

Products	Consumption Standards under the WHO Recommendations, kg/year	Actual Consumption in 2015 at the Expense of Domestic Production, kg/year	Deviations of Forecast Food Production Volume and Demand in Terms of Consumption Standards, mln. kg.					
			2018		2019		2020	
			Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards	Under WHO Standards	Under Developed Countries Standards
Grains and Legumes	117.0	94.0	-0.377	-1.70	-0.425	-1.77	-0.474	-1.84
Potato and Potato Products	108	47.89	-2.175	-1.915	-2.22	-1.96	-2.3	-2.04
Sugar Crops	38	0.07	-	-	-	-	-	-
Vegetable Oils	13	19.98	-0.34	-0.63	-0.34	-0.634	-0.338	-0.638
Vegetables and Tomatoes	139	114.68	-2.907	-2.937	-2.917	-2.947	-2.914	-2.944
Fruits	100	92	-1.197	-3.847	-1.48	-4.17	-1.735	-4.47
Cattle Meat	78	39.22	-1.658	-2.24	-1.74	-2.33	-1.89	-2.44
Poultry	27	42.09	0.565	0.467	0.627	0.534	0.687	0.587
Eggs, egg/kg	291/9.24	7.37	-0.036	-0.072	0.069	0.031	0.092	0.053
Milk	380	202.87	-6.67	-1.4	-5.58	-0.23	-5.52	-0.08
Fish and Seafood	18	26.48	0.188	0.088	0.18	0.08	0.175	0.075
Fruits	100	92	-1.197	-3.847	-1.48	-4.17	-1.735	-4.47

Source: calculated by the author

Conclusions. The calculations provided show that almost all parts of the world are unable to ensure good nutrition of the population through the domestic production of major foods. The situation is especially dramatic in Africa, which requires the development of modern strategies for solving the global food problem.

Solution of the food problem is the most urgent issue of the current global economic system. According to the FAO estimates, the last two decades are characterised by the tendency to reduce hunger in the world. The share of the starving population fell far greater than the absolute number of starving people. However, a large share of population in developing countries still does not consume the food required for active and healthy life.

The analysis of the figures related to the solving of the global food problem, provided the Millennium Development Goals, give cause for optimistic solution of the tasks. The starving share of the population decreases annually by 0.5 %. If current trends continue, in 2015, the starving share of the world population will be 12.8 %, which is only 1.1 % more than the target of the Millennium Development Goals.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 330.341.1

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ENERGY SECURITY OF THE NATIONAL ECONOMY BASED ON A SYSTEMS APPROACH

Urgency of the research. *Forming the energy policy of the national economy on the basis of the energy security concept will ensure making balanced management decisions concerning the future energy development of the country.*

Target setting. *Both in the world and Ukrainian practices, the most common approach to forming a model of energy security is based mainly on sources of energy supply. However, such approach does not reflect the aggregation of the complexity of the relationship in energy systems.*

Actual scientific researches and issues analysis. *Problems of studying national energy security are highlighted in works of such scientists as J. Jewell and A. Cherp, A. Kachynskyi, B. Kruyt, A. Mikhalevych, B. Sovakul, A. Shevtsov, A. Smenkovskyi, as well as of different international organizations.*

Uninvestigated parts of general matters defining. *The concept of energy security requires further consideration in the context of a systems approach and its operationalization at the methodological level.*

The research objective *is the conceptualization of energy security on the basis of a systems approach and its operationalization using the 4E model.*

The statement of basic materials. *The article studies the features of functioning of energy systems and proposes a system concept of energy security. The authors suggest considering the subsystems of energy supply, energy conversion and energy consumption as its components, the assessment of energy security of which at the methodological level is performed using the corresponding system indicators: energy dependency, energy efficiency and energy conservation. The stable existence of an energy system is ensured by such a component of energy security as energy self-sufficiency. In the work, the approbation of the proposed methodological approach to the assessment of energy security in Ukraine has been carried out.*

Conclusions. *Energy security should be considered as a system category, and its concept based on a systems approach. The operationalization of energy security is based on its assessment by means of the methodological approach using the 4E model: energy conservation, energy efficiency, and energy dependency, as well as energy self-sufficiency.*

Keywords: *energy security; energy system; energy dependency; energy efficiency; energy conservation.*

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ЕНЕРГЕТИЧНА БЕЗПЕКА НАЦІОНАЛЬНОГО ГОСПОДАРСТВА НА ОСНОВІ СИСТЕМНОГО ПІДХОДУ

Актуальність теми дослідження. *Формування національної енергетичної політики на основі концепції енергетичної безпеки забезпечить прийняття зважених управлінських рішень щодо майбутнього енергетичного розвитку країни.*

Постановка проблеми. *У світовій та українській практиках поширеним є підхід до формування моделі енергетичної безпеки переважно за джерелами енергозабезпечення. Однак, такий підхід не віддзеркалює агрегування усієї складності відносин в енергосистемах.*

Аналіз останніх досліджень і публікацій. *Проблемам дослідження національної енергетичної безпеки присвячені роботи таких науковців як Дж. Джуел та А. Черп, А. Качинського, Б. Круйт, А. Міхалевича, Б. Совакул, А. Шевцова, А. Сменьковського, а також різних міжнародних організацій.*

Виділення недосліджених частин загальної проблеми. *Потребує подальшого осмислення концепція енергетичної безпеки з позиції системного підходу та її операціоналізація на методичному рівні.*

Постановка завдання. *Метою цієї статті є концептуалізація енергетичної безпеки на основі системного підходу та її операціоналізація на основі моделі «4Е».*

Виклад основного матеріалу. *Досліджено особливості функціонування енергосистем та запропоновано системну концепцію енергетичної безпеки. В якості складових авторами пропонується розглядати підсистеми енергозабезпечення, енергоперетворення та енергоспоживання, оцінка якості функціонування яких на методичному рівні проводиться за системними індикаторами енергозалежності, енергоефективності та енергозбереження. Стале існування енергосистеми забезпечує така складова енергетичної безпеки як енергодостатність. В роботі проведено апробацію запропонованого методичного підходу до оцінки енергетичної безпеки в Україні.*

Висновки. *Енергетична безпека повинна розглядатися як системна категорія, а її концепція базуватися на системному підході. Операціоналізація енергетичної безпеки спирається на методичний підхід до її оцінки на основі моделі «4Е»: енергозбереження, енергоефективність та енергозалежність, а також енергодостатність.*

Ключові слова: *енергетична безпека; енергетична система; енергозалежність; енергоефективність; енергозбереження.*

Urgency of the research. The energy component plays an extremely important role in ensuring national security and sustainable development of a national economy. The uneven distribution of primary fuel and energy resources (PFERs), the difference in their economic value and technological imperfection of equipment determine using various approaches to the formation of national energy policies. An approach to shaping the energy policy based on modeling energy security is generally accepted. However, the latter is considered a complex economic category, which reflects various aspects of the use of PFERs in a national economy.

Target setting. The boundaries of energy security are rather blurred, which leads to difficulties in measuring and shaping the main objectives of the state energy policy, as well as finding ways to ensure it. Traditionally, when discussing issues of energy security, attention is focused rather on sources of energy supply than on the needs, interests that it is called upon to meet and the valuable effects it should provide. The priority of goals of energy supply over those of efficient energy consumption determines the current nature of national energy solutions in the policies of most countries: the search for new importing suppliers, diversification of supply routes, getting discounts from the market price for energy resources, etc. However, this approach does not bring down the urgency of the problem of energy security but only substitutes it with issues of ensuring reliable energy supply. The conceptualization and operationalization of energy security should be aimed at defining the boundaries of this concept in order to eliminate "overlaps" between the goals of the energy security policy, sustainable development, and economic efficiency as well as at the development of an effective methodological approach to its assessment.

Actual scientific researches and issues analysis. Presently, the research of problems of energy security are highlighted in works of leading foreign and Ukrainian scientists, namely, J. Jewell and A. Cherp [1], A. Kachyns'kyy [2], B. Kruyt [3], A. Mikhalevych [4], B. Sovacool [5], A. Smenkovskyi [6], and others. At the same time the problem is of concern to different international organizations: the International Energy Agency, the World Energy Council, the World Bank, the United Nations, European Commission, and others [7-18]. However, it can be objectively stated that there are no effective models of energy security that are capable of ensuring counteraction to negative factors.

In the scientific literature there are two theoretical and content approaches to the definition of the concept "energy security", namely its interpretation as the uninterrupted supply of energy and energy carriers [1]; uninterrupted satisfaction of energy demand in the context of sustainable development [12].

Central place among the presented theoretical approaches is occupied by the concept of uninterrupted energy supply, which has contributed to the development of all other theoretical directions, with the focus remaining on sources of energy supply and uninterrupted energy supply. The initial definition, which gave impetus to the development of the whole spectrum of scientific research on this subject, is its interpretation by the International Energy Agency (IEA) as "the uninterrupted availability of energy sources at an affordable price". However, today the IEA's main focus in studying the issue of energy security is on risks related to "energy sources and infrastructure for their provision", which emanate from various natural, economic and political factors [7]. The most complete in this group is the definition proposed by the World Energy Council (WEC) which, by energy security, means "effective management of primary energy supplies from internal and external sources, the reliability of the energy infrastructure and the ability of energy suppliers to meet current and future demand" [14]. A common characteristic of the first group of definitions is the understanding that an increase in the relative level of energy deficit is the main problem of (threat to) energy security, and for the implementation of energy security policies a balance between the interrupted supply of certain types of energy and the level of prices for them is necessary.

The second approach defines energy security in the context of the dominant scientific paradigm of sustainable development. In a number of definitions, references to economic, social or environmental constraints can be found. Most completely the concept of energy security in the context of sustainable development is disclosed in documents of the European Commission (Green Paper of Commission of the European Communities 2000 [18]), in which the concept acquires the following meaning: "ensuring the well-being of its citizens and the proper functioning of the economy, the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development”.

In the official documents of Ukraine there reflected a transition from the first to the second approach, and from 2013 the concept of energy security already implies ensuring sustainable development: “the economic situation that contributes to the efficient use of the country’s energy resources, availability of a sufficient number of energy producers and suppliers in the energy market, as well as accessibility, differentiation, and environmental compatibility of energy resources” [19; 20]. Although the new understanding of this term points to the importance of the environmental component of energy security, it still focuses on energy sources (suppliers and energy producers), placing energy consumption beyond the scope of energy security: energy security only facilitates the efficient use of PERs.

Summarizing the carried out analysis, it can be noted that all the interpretations of this concept explicitly or implicitly include the idea of counteracting dangers that affect the uninterrupted energy supply. The variety of the available interpretations is determined by a number of limitations, filters of complexity, which are proposed to measure the security or risk of changes exclusively in the field of energy supply.

Uninvestigated parts of general matters defining. The problems of studying energy security become even more complicated at the methodological level. Thus, in the process of operationalization of energy security most scientists and scientific institutes do not consider the interrelation between the conceptual scheme and its methodological tools, offering an intuitive list of indicators presented by the local criteria for measuring energy security [1-6]. This work proposes to develop a systems approach to studying energy security at the conceptual level and provide its operationalization at the level of methodological support.

The research objective is the conceptualization of energy security on the basis of a systems approach and its operationalization using the 4E model: energy conservation – energy efficiency – energy dependency – energy self-sufficiency.

The statement of basic materials. Studying the problems of energy security should be built on understanding the philosophical aspects of the phenomenon “security”, which can be defined by the following:

– there are several empirical approaches to understanding security: as a state of protection from threats, as a specific activity, as certain states [21], but they cannot be considered as theoretical (general and universal) ones;

– not all needs are an object of security, but only those that are an attribute of the existence of subjects of the system and security itself, and are realized through their activities, i.e., interests;

– security is represented as a set of interrelations between subjects that are in a certain hierarchical (vertical) structure of the system (individual → society → nature), and at the same time these relations are horizontally ordered (agreed);

– security of the system is determined by the actions of its individual elements but is undivided between them (“security for oneself through security for all”): “security of the system is equivalent to the safety of its weakest element” [23; 24];

– the concept of security is built on the laws of dialectics.

This allows to give our own empirical understanding of the concept “security” at the philosophical level as a state of an open system that ensures its existence and guarantees satisfaction of interests of its elements, as well as actions aimed at its (state) achievements. The presented definition proves the idea of the authors that security should be considered as a system concept. The methodology of its investigation can and should be built on the general system theory (L. von Bertalanffy [25]), the viable system theory (S. Beer [26]).

Traditionally, when investigating energy security problems, its certain components (blocks) are singled out: energy dependency, energy efficiency, price volatility, energy availability, environmental sustainability, energy equality, etc. [1-6]. However, this approach seems to be not well grounded and thus ineffective and does not lead to weighty results and conclusions. Therefore, in this paper, it is proposed to replace the block approach with the systems one based on the structure of the energy system itself, whose elements serve a basis for further assessment of the energy security indicators.

The basis of the system concept of energy security is energy systems and the relationship between their individual elements concerning the satisfaction of energy interests. This brings us to understanding by objects of energy security the attributes of the energy system and energy interests of its elements (Fig. 1).

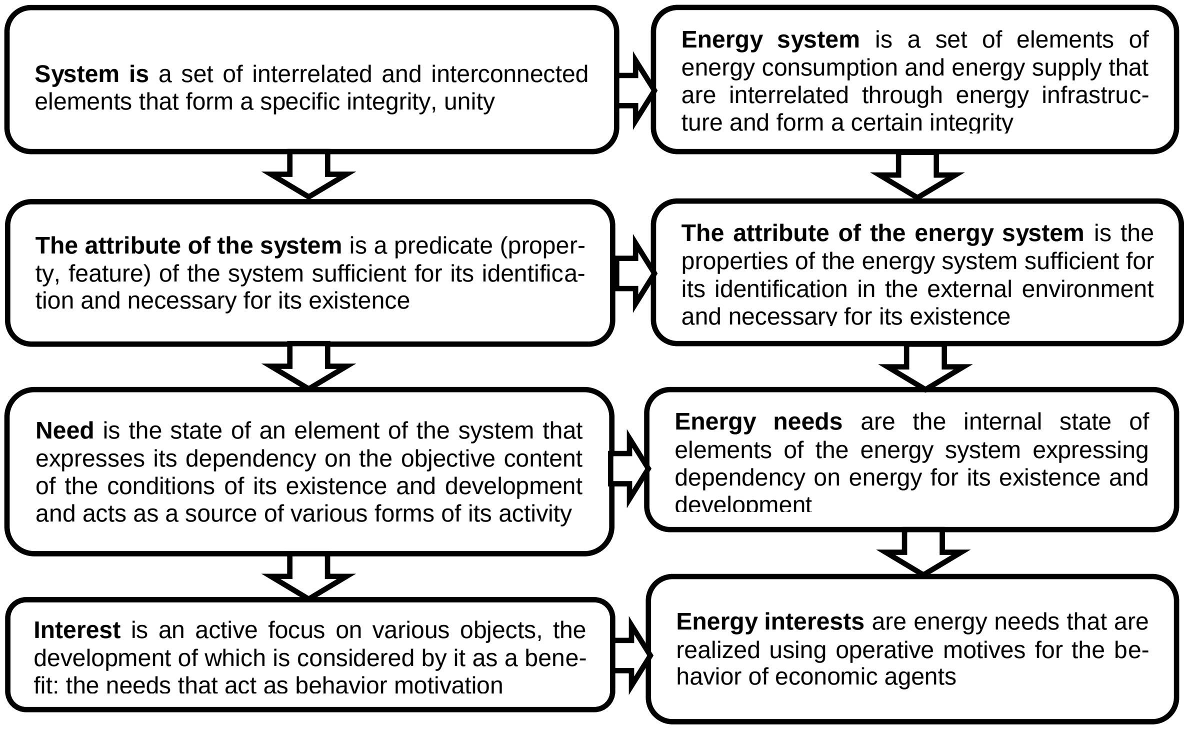

Fig. 1. Problem field of objects of energy security (developed by the authors based on [21; 22; 24])

The problem field shown in Fig. 1 allows to put forward the author's empirical definition of the concept "energy security", which refers to the state of the energy system that ensures its existence and development, which guarantee satisfaction of energy interests of its elements as well as actions aimed at achieving it.

A simple open system model, proposed by L. von Bertalanffy [25] is considered acceptable for studying problems of energy security systems. The energy system represents an open system that is part of, first, a higher-order energy system (external energy system); second, a more complex socio-economic system, and, third, an ecosystem (nature). The resources applied in the energy system are components of the socio-economic system (technology and human resources, information, etc.), PFERs, which the energy system itself removes from the ecosystem. PFERs, which give components of a higher complexity that represent the result of vital activity and are estimated as economic benefits introduced into the socio-economic system, are subject to conversion. At the same time, waste and emissions are dumped to the ecosystem from the energy system.

Based on S. Beer's Viable System Mode (VSM), all energy systems are considered recursive [26]: i.e., each energy system is part of itself and at the same time contains other viable / recursive systems (subsystems for energy supply, energy conversion and energy consumption), and it is part of a viable high-level system (socio-economic one, which is itself part of the ecosystem).

System decomposition implies the determination of subsystems and individual elements. The model of the structure of the energy system depends on the level at which the breaking down is stopped. As a result of the decomposition of the energy system considered in this work, there singled out subsystems of energy supply, energy conversion and energy consumption (Fig. 2).

It is the combination of the systems of energy supply, energy conversion and energy consumption that allows to consider the uninterrupted energy cycle that includes such stages of conversion of PFERs: extraction of PFERs → conversion of PFERs to energy and energy carriers → consumption of energy and energy carriers. Application of this approach within the framework of the system concept of energy security allows achieving significant results in reducing consumption volumes. Thus, the conservation of energy and energy carriers in the subsystem of energy consumption provides additional savings for the entire energy system: expenses of the energy conversion subsystem and costs of extracting PFERs in the energy supply subsystem decrease.

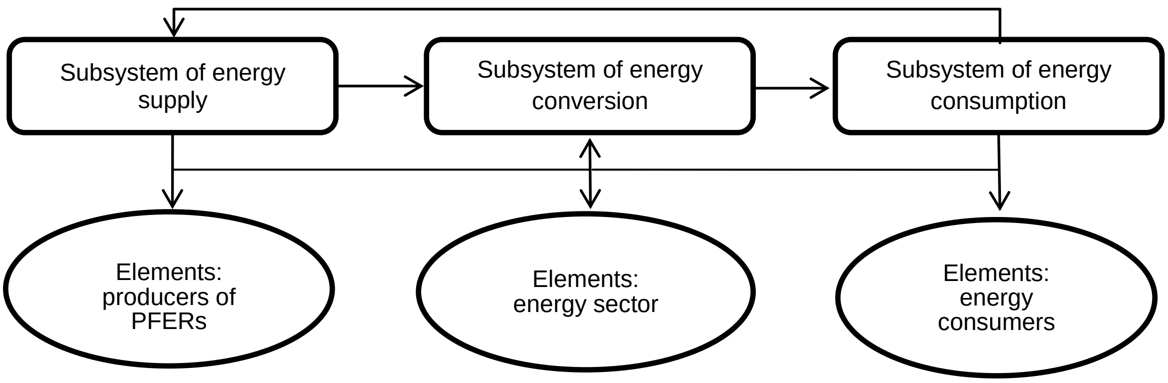

Fig. 2. Simplified model of the energy system structure

It can be noted that a specific feature of the energy system is that each element of the energy supply subsystem can potentially be transformed in the energy conversion subsystem to any type of energy and energy carriers, and at the same time used as raw materials and materials in the non-energy sphere of the energy consumption subsystem. For example, coal can be transformed into electricity, used to generate heat energy, consumed as boiler-stove fuel from which synthetic motor fuels can be obtained, or used as raw materials for non-energy consumption in the chemical industry. The direction of energy flows in a particular energy system is determined by its existing production and technological base, and, therefore, the strengthening of energy security is associated with its development.

Measurement of energy security should be carried out in the order reverse to the movement of energy flows in the energy system: from the subsystem of energy consumption to the subsystem of energy conversion, and then to the subsystem of energy supply. Thus, changing the block approach to the systems one leads to a new understanding of components of energy security, which should be presented by energy subsystems (Fig. 3). Thus, the presented systems approach to studying energy security problems gives rise to a new methodological approach to its assessment, based on analysis of indicators of subsystems of an integral energy system.

The problem of energy security is considered in the context of market relations in open energy systems, although issues of energy security are not limited to the market issue. The central place in energy security is occupied by the issue of ensuring satisfaction of energy interests, since all dangers have a negative impact on satisfaction of interests of its elements and their existence (Fig. 4).

In this case, satisfaction of energy interests is possible through balancing energy supply and demand. This paper emphasizes the fundamental importance of harmonization of the subsystems of energy supply, energy conversion and energy consumption in contrast to traditional approaches based on consideration of sources for satisfying energy demand in the required quantity and at affordable prices. Ensuring energy security means achieving such a state of the energy system when its subjects are aware of the effective level of their own energy consumption, which ensures their functioning in the chosen mode of operation and promotes their development, while energy producers are able to satisfy energy interests in the required quantity and of a proper quality.

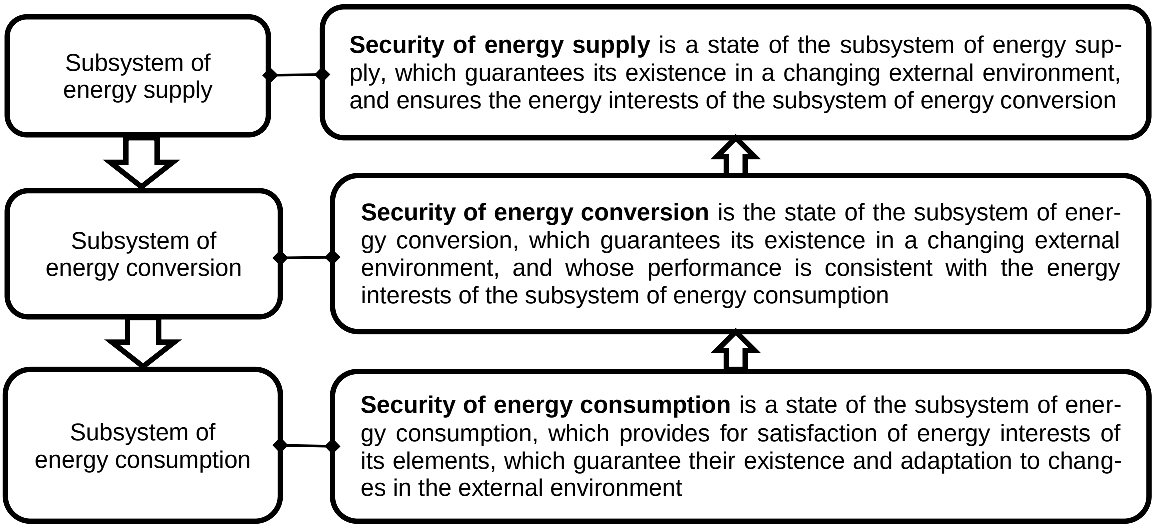

Fig. 3. System components of energy security

At the same time, prices act as regulatory links that determine the behavior of entities: limit their unreasonable needs, and transform the reasonable needs into energy interests.

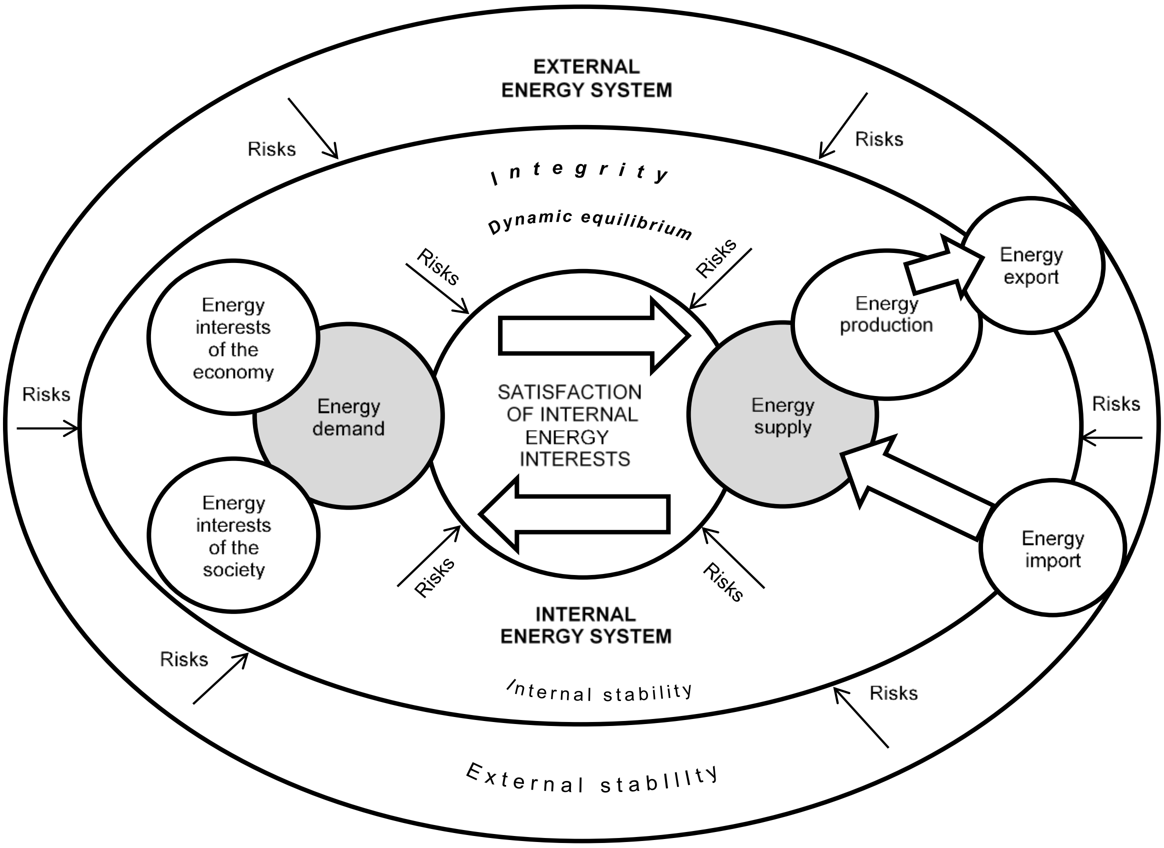

Fig. 4. Economic model of the energy system functioning

The operationalization of the systems approach to the study of energy security issues involves the development of a methodological approach to its assessment at the national level. The identified subsystems of energy security make it possible to propose three system indicators that will reflect the state of their functioning and development:

– for the subsystem of energy consumption, it is expedient to use the integral index of energy conservation, which determines the technological progressiveness of the final energy consumption;

– for the energy conversion subsystem, there used the integral index of energy efficiency, which reflects the property of an economic system for efficient conversion of PFERs (both domestic and imported ones) to other types of final energy;

– for the subsystem of energy supply, the integral index of energy dependency is used, which is measured as the level of dependency from the monopoly import of PFERs and their derivatives in the total amount of their primary supply of the country.

The presence of abrupt externalities, inherent in the current stage of development of ecological and socio-economic systems, necessitates the artificial introduction of a separate integral index of energy self-sufficiency, which characterizes the minimum attributes of the energy system necessary for its existence.

Thus, the 4E model, which consists of such components as energy conservation (EC), energy efficiency (EE), energy dependency (ED) and energy self-sufficiency (ES), is based on the author's methodological approach to the assessment of energy security of a national economy. All components of energy security are equivalent, i.e., they have the same importance for security of an energy system.

Further we present the main results of studying the assessment of these four system indicators.

The integral index of energy conservation is intended to characterize the gap in the trends in the volumes of economic activity and energy consumption. While for the dynamics of economic activity a growing trend is desirable, the dynamics of energy consumption should reflect a decline or a stable trend. The comparison of these two trends (the gap between the two indicators) allows to determine the progressiveness of the final energy consumption.

Thus, the energy conservation index for a particular type of economic activity is calculated as the difference between the volume index of production and the energy consumption index. Negative values of this indicator and its regressive dynamics are considered a positive characteristic, i.e., the increase in the volumes of economic activity should outstrip the dynamics of energy consumption. The integral index of energy conservation (EC) is proposed to be calculated by the formula (1):

$$EC = \sum_{i=1}^{N} \gamma_{\mathrm{i}} \times (IFEC_i - VIP_i), \quad (1)$$

where γ_i – specific weight of the i[th] sector of the economy in the inter-sectoral balance;

$IFEC_i$ – index of final energy consumption of energy resources by the relevant sector of the economy;

VIP_i – volume index of production the relevant sector of the national economy.

The calculation of the integral index of energy conservation (reference value is equal to 1) implies the standardization of local contributions to the achievement of the national target and is presented in Tab. 1.

Table 1

Estimation of energy conservation indices in the national economy of Ukraine

Indicator	2010	2011	2012	2013	2014	2015
Volume index of production	105.2	111.8	112.4	111.6	103.8	93.9
Index of final energy consumption	109.5	102.5	96.4	95.1	92.7	78.9
Weighted index of energy conservation	-0.1	-3.7	-3.7	1.2	-4.3	-5.9
Standardized index of energy conservation	0.003	0.186	0.184	0.000	0.216	0.295
Integral index of energy conservation	0.295					

The traditional way of the assessment of energy efficiency is calculating the energy conversion efficiency (*ECE*), which is the ratio of amount of final energy produced to amount of PFERs in energy terms. In this research, energy efficiency is understood as the economic energy conversion efficiency (*EECE*), which takes into account not only the amount of energy consumed and produced but also the cost of final energy and PFERs used for its production, and can be calculated by the formula (2):

$$\mathrm{EE} = EECE_{ij} = \frac{Output_{ij}}{Input_{ij}} \times \frac{Price_j}{Price_i} \quad , \tag{2}$$

where $Output_{ij}$ – output of the j^{th} type of final energy of the i^{th} type of PFERs;

$Input_{ij}$ – consumption of the i^{th} type of PFERs for producing the j^{th} type of final energy;

$Price_j$ – market price for the j^{th} type of final energy;

$Price_i$ – market price for the i^{th} type of PFERs.

The expediency of applying this index is justified by the different economic value of both PFERs and final energy in energy terms.

The calculation of the integral energy efficiency index requires consideration of the structure of consumption of PFERs for their conversion into final types of energy and standardization of the values of economic energy conversion efficiency (*EECE*) in terms of priority of their use for the production of certain types of final energy (Tab. 2).

Table 2

Economic energy conversion efficiency of PFERs in 2015

Indicator		Economic energy conversion efficiency (EECE)				Structure of PFERs for conversion				Standardized values of EECE			
		CrO	NG	C	Bio	CrO	NG	C	Bio	CrO	NG	C	Bio
Types of energy and energy carriers	EE	0.37	0.64	1.16	0.77	0.08	0.42	0.96	0.94	0.13	0.22	0.40	0.26
	TE	0.63	1.16	1.74	1.40	0.04	0.58	0.04	0.06	0.13	0.24	0.35	0.28
	MF	1.03	0.58	0.57	0.14	0.88	–	–	–	0.45	0.25	0.25	0.06
EE of the i^{th} type of PFERs											0.41	0.23	0.39
Structure of PFERs											0.12	0.29	0.57
Integral index of EE										0.34			

CrO – crude oil; NG – natural gas; C – coal; Bio – biofuel; EE – electrical energy; TE – thermal energy; MF –motor fuel

The economic interpretation of local values is as follows:

1) if its value is greater than 1, then the technology is considered efficient, and it is expedient to use the i^{th} type of PFERs and produce the j^{th} type of final energy;

2) if the value of this index is less than 1, this corresponds to the situation when less than 1 monetary unit of final energy is produced per monetary unit spent on consumption of PFERs and such use of PFERs is considered inefficient;

3) among the several technologies for production of the j^{th} type of final energy, the most efficient is the one for which the value of the economic energy conversion efficiency (*EECE*) is higher.

Energy dependency is measured as the level of dependency from the monopoly import of PFERs and their derivatives in the total volume of their primary supply of the country and can be calculated by the formula (3):

$$ED = 100 - \sum_{i=1}^{N} \gamma_i \times \frac{Import_i}{TPES_i} \times \beta i \times 100\%, \tag{3}$$

where γ_i – specific weight of the i^{th} type of PFERs in the energy balance;

$Import_i$ – total import of the i^{th} PFERs;

$TPES_i$ – total primary energy supply by the i[th] type of PFERs;
βi – share of the monopoly importer in the total volume of imports of the i[th] type of PFERs.

The standardization of this index implies its comparison with the national boundary values, on the basis of which a monopoly position in the market is determined. The calculation of the level of Ukraine's energy dependency is presented in Tab. 3.

Table 3

Energy dependency of the national economy in 2015

Indicators	C	CrO	OP	NG	Bio
Production, ths toe.	17423	2618	-	14814	2606
Import, ths toe.	9940	238	7887	13288	30
Export, ths toe.	-487	-22	-90	0	-539
Net import, ths toe.	9453	216	7797	13288	-509
Total supply of primary energy, ths toe.	27344	2851	7700	26055	2102
Energy dependency by types of fuel and energy resources, %	0.36	7.58	101.26	51.00	-24.22
Specific weight of the i[th] type of PFERs in the total energy balance, %	30.4	3.2	8.5	28.9	2.3
Share of the dominant import, %	54.3	99.9	46	37.3	81.9
The country of origin of the imported FER by the dominant importer	Russia	Kazakhstan	Belarus	Russia	Turkey
Energy dependency on monopoly imports, %	19.74	8.34	47.12	19.02	1.17
Energy independency on monopoly imports, %	80.26	91.66	52.88	80.98	98.83
Standardized values of energy independency from monopoly imports, %	0.436	0.762	0.000	0.457	0.967
Integral index of energy dependency	0.3111				

C – coal; CrO –crude oil; OP – oil products; NG – natural gas; Bio – biofuel

Assessment of the energy self-sufficiency of the national economy involves calculating the country's minimum energy demand (MED) for corresponding types of PFERs in the event of an emergency, that is, necessary to maintain the existence of the energy system. The MED is calculated on the basis of the necessity to cover 100 % of the vital needs (food, agriculture, living conditions of the population, public services) and 25 % of the needs of other types of economic activity (mining, processing industry and construction) in the final types of energy (electricity, heat energy, motor fuels, as well as final consumption of natural gas and solid fuels).

The assessment of the MED level is based on a retrospective analysis of the annual energy balance in the corresponding areas of final energy consumption (Tab. 4):

$$ES = \sum_{i=1}^{N} \gamma_i \times \frac{Output_i + Stocks_i}{MED_i} \times 100\% \quad (4)$$

where γ_i – specific weight of the i[th] supply of PFERs in the energy balance of the country;
$Output_i$ – total output of the i[th] type of PFERs;
$Stocks_i$ – available stocks by the i[th] type of PFERs at the beginning of the year;
$MEDi$ – minimum energy demand by the i[th] type of PFERs.

The recalculation of the level of final energy consumption to the level of the demand for primary fuel and energy resources is carried out taking into account the highest level of the actual ECE by the spheres of energy conversion: crude oil→ motor fuel (0.54), coal → electrical energy (0.32); natural gas → a) natural gas (is not converted); b) thermal energy (0.75); others → others (are not converted).

Table 4

Estimation of the minimum energy demand (MED) in 2015

Indicator	Sphere of use	Type of final energy					
		EE	TE	NG	MF	Others [1]	Total
Annual energy demand, ths toe.	Food industry	350	740	165	114	28	1397
	Agriculture	287	212	129	1300	28	1956
	Household sector	2874	3184	9083	14	1400	16555
	Transport	585	0	1572	6554	38	8749
	Public services	1878	1560	195	92	113	3838
	Extractive industry	844	75	293	276	2	1490
	Process industries	3039	2049	2279	269	5622	13258
	Construction	64	16	25	155	3	263
	Total	6961	6231	11793	8249	3014	36248
ECE	CrO				0.54		
	NG		0.75	1			
	C	0.32				1	
	Bio					1	
Minimum demand for PFERs, ths toe.	CrO				15276		15276
	NG		8308	11793			20101
	C	21753				1392	23145
	Bio					1622	1622

EE – electrical energy; TE – thermal energy; NG – natural gas; MF –motor fuel
[1] - biofuel, wastes and coal

The level of energy self-sufficiency of the country is calculated as the ratio of the minimum demand for PFERs to annual production level and stocks available at the beginning of the year using formula (4) and is presented in Tab. 5.

Table 5

Energy self-sufficiency of the national economy in terms of PFERs

PFERs	MED, ths toe.	Annual output, ths toe.	Energy self-sufficiency in terms of output, %	Stocks, ths toe.	General energy self-sufficiency, %	Specific weight of the i^{th} energy resource, %	Standardized values of energy self-sufficiency
CrO	15276	2037	13.3	821	18.7	0.16	0.1306
NG	20101	14814	73.7	10755	127.2	0.394	0.8882
C	23145	11688	50.5	2050	59.4	0.414	0.4144
Bio	1622	2323	143.2	–	143.2	0.032	1.0000
Total	60144	30862	280.7	13626	82.28	1	0.574

The general level of energy security of the country is calculated as the average of its four components, since all the components are equivalent, and is equal to 0.381 (Fig. 5).

Thus, the integral index of energy security is boundary with its value being between the crisis and the pre-crisis state (on the Harrington's desirability scale). The subsystem of energy consumption is characterized by the lowest value (the energy conservation index is 0.295), which indicates the fuel and raw materials orientation and technological backwardness of the national industry. The energy component has reached its highest level (energy self-sufficiency index is 0.574) due to the surplus production of solid PFERs and the presence of significant stocks of natural gas in storage facilities.

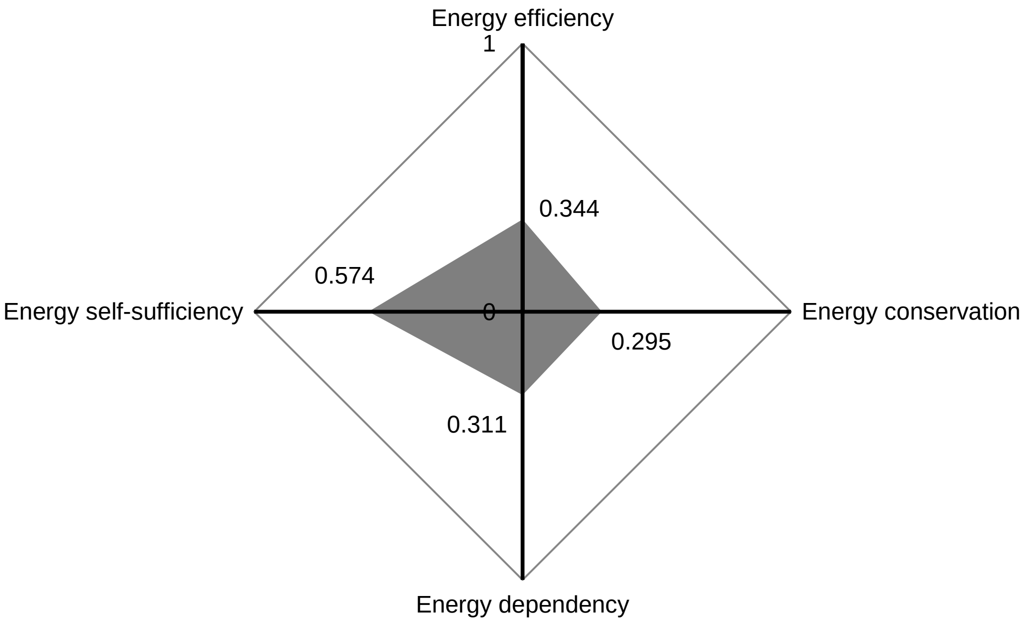

Fig. 5. Profile of energy security of Ukraine in 2015

Conclusions. The conceptualization of energy security shows that it should be considered on the basis of a systems approach. The principal assertions justifying its system concept are as follows:

1) objects of energy security are the attributes of an energy system and energy interests of its elements;

2) energy security is considered as the internal state of the energy system;

3) import and export are a priori regarded as entropy processes presenting dangers for its integrity and existence;

4) assessment of energy security should be based on qualitative and quantitative characteristics of its subsystems: energy supply, energy conversion and energy consumption;

5) measurement of energy security is carrying out in a reverse order in relation to the direction of movement of energy flows in the energy system: security of energy consumption → security of energy conversion → security of energy supply.

The operationalization of energy security is based on the development of a methodological approach to its assessment by subsystems of energy consumption, energy conversion and energy supply, for evaluation of which three system indicators have been proposed: indicator of energy conservation, energy efficiency and energy dependency. To determine the attributes of the energy system that support its existence, energy self-sufficiency is additionally introduced to the composition of these indicators.

The approbation of the proposed methodological approach to the Ukrainian energy system has allowed to conclude that its current level is low.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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ECONOMIC END LEGAL ASPECTS OF ENSURING FOOD SECURITY

Urgency of the research. *Guaranteeing unhindered economic access to high-quality and safe food products is one of the main goals of the state agricultural policy of Ukraine. Therefore, it is particularly important to ascertain the status of social relations in this area.*

Target setting. *Legal regulation is the most effective instrument of state influence on any type of social relations, including agrarian ones. Accordingly, it is necessary to pay attention to the issues of the legal mediation of relations that arise, change and cease in the food security field.*

Actual scientific researches and issues analysis. *Such well-known domestic economists as O. G. Bilorus, V. I. Vlasov, O. I. Goychuk, B. Y. Paskhaver, P. T. Sabluk, O. M. Schpichak and others put sufficient attention to the various aspects of the formation of an economic mechanism for ensuring food security.*

Uninvestigated parts of general matters defining. *At the same time, all legal scholarly works are devoted exclusively to the legal issues of food security, without taking into account the economic directions of its provision.*

The research objective. *Clarification of the current state of the legal support of food security in Ukraine taking into account the economic indicators of its formation.*

The statement of basic materials. *The article examines the legal status of food security in Ukraine. The relations in the sphere of ensuring food self-sufficiency, economic availability, food quality and safety have been analyzed.*

Conclusions. *It is necessary: to completely prohibit any import and use of palm oil for the food; to specify the annual state support for the production and circulation of organic products. It is worth adopting the Law of Ukraine «On Food Security», the content of which should take into account as far as possible the achievements of the agrarian and law doctrine.*

Keywords: *Food security; food independence; indicators of food security; quality and safety of food.*

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ЕКОНОМІКО-ПРАВОВІ АСПЕКТИ ЗАБЕЗПЕЧЕННЯ ПРОДОВОЛЬЧОЇ БЕЗПЕКИ

Актуальність теми дослідження. *Гарантування безперешкодного економічного доступу людини до якісних і безпечних продуктів харчування є однією з основних цілей державної аграрної політики України. Тому, особливо важливим є з'ясування стану суспільних відносин у зазначеній сфері.*

Постановка проблеми. *Правове регулювання є найефективнішим інструментом державного впливу на будь-який тип суспільних відносин, включаючи й аграрні. Відповідно, слід звернути увагу на питання юридичного опосередкування відносин, які виникають, змінюються і припиняються у сфері забезпечення продовольчої безпеки.*

Аналіз останніх досліджень і публікацій. *Різним аспектам формування економічного механізму забезпечення продовольчої безпеки приділено достатньо уваги з боку таких відомих вітчизняних вчених-економістів як О. Г. Білорус, В. І. Власов, О. І. Гойчук, Б. Й. Пасхавер, П. Т. Саблук, О. М. Шпичак та ін.*

Виділення недосліджених частин загальної проблеми. *Водночас всі юридичні наукові праці присвячені виключно правовим питанням продовольчої безпеки без врахування економічних напрямів її забезпечення.*

Постановка завдання. *З'ясування сучасного стану правового забезпечення продовольчої безпеки в Україні з урахуванням економічних показників її формування.*

Виклад основного матеріалу. *У статті розглянуто стан правового забезпечення продовольчої безпеки в Україні. Проаналізовано відносини у сфері забезпечення продовольчої незалежності, економічної доступності та якості й безпечності продуктів харчування.*

Висновки. *Необхідно: повністю заборонити будь-яке ввезення і використання для харчування пальмової олії; конкретизувати щорічну державну підтримку виробництва та обігу органічної продукції. Варто прийняти Закон України «Про продовольчу безпеку», зміст якого має максимально врахувати досягнення аграрно-правової доктрини.*

Ключові слова: *продовольча безпека; продовольча незалежність; індикатори продовольчої безпеки; якість і безпечність продуктів харчування.*

Urgency of the research. Ukraine, despite its favorable geoclimatic location, has not overcome the food security problems, primarily in terms of food independence, economic accessibility, and the quality and safety of food. This causes a need for clarification of the state of this area of public relations.

Target setting. Food security is an important part of the formation of the national security of our country. Moreover, in addition to its organizational and economic factors, which are disclosed through the introduction of effective technologies for the production of food products, the issue of the legal mediation of these relations becomes more and more important. Indeed, legal regulation is the most effective instrument of state influence on any type of social relations, including agrarian ones.

Actual scientific researches and issues analysis. Such well-known domestic economists as O. G. Bilorus, V. I. Vlasov, O. I. Goychuk, B.Y. Paskhaver, P. T. Sabluk, O. M. Schpichak and others put sufficient attention to the various aspects of the formation of an economic mechanism for ensuring food security.

Uninvestigated parts of general matters defining. At the same time, only a few publications of V. M. Yermolenko, T. V. Kurman, A. M. Stativka, V. Y. Urkevych are devoted to the legal problem of ensuring food security. At 2014 S. O. Lushpayev has defended his Ph.D. thesis «Legal principles of food safety of Ukraine» [1]. Unfortunately, all legal scholarly works are devoted exclusively to the legal issues of food security, **without taking into account the economic directions of its provision.**

The research objective. Clarification of the current state of the legal support of food security in Ukraine taking into account the economic indicators of its formation.

The statement of basic materials. The economic basis for the calculation of food security was made up on the basis of the main indicators, the method of determination of which is fixed by the Decision of the CMU as of December 5, 2007, No. 1379. The first indicator is the daily energy value of the human diet, which should be 2,500 kcal per day, with 55 percent of the daily ration should be provided for account of consumption of products of animal origin. In 2016, the nutritional value of the daily ration of Ukrainian was 2742 kcal, of which 790 kcal (28.8%) of animal origin [2, p. 220-221]. In the presence an excess of the general threshold level of nutrition by 9.7% against the background of almost double (28.8% vs. 55%) of under-consumption of animal products exists. Therefore, domestic economists have offered a realistic picture of the real food situation in the country through comparison of the existing level of consumption with the upper levels of consumption. For this purpose, they have developed a classification of levels of food supply of the population, built on the principle of compliance of food supply with the tasks of increasing fertility, maintaining health, active life of a person and achieving the maximum possible in modern conditions, average life expectancy. According to this classification, there are seven levels of food supply of the population in the countries: catastrophic, critical, minimal, sufficient, rational (normative), optimal and perspective [3, p. 147]. Accordingly, the average daily diet of a Ukrainian is just at the upper limit of minimal consumption, which makes it impossible to starve. At the same time, no human development is said.

The next is the indicator of human food security by main types of products. The analysis of statistical indicators of consumption of basic food products makes it possible to conclude that the diet of the average resident of our country is equal to or exceeds the scientifically substantiated standards of nutrition for such products: potatoes - 112,7%, vegetables and melons - 101,6%, cereal products - 100 , 0%. At the same time, the indicator of under-consumption of rational norms should be a cause for concern: fish and fish products - 48.0%, milk and dairy products - 55.1%, fruits - 55.4%, meat and meat products - 62 , 2%, sugar - 87.6%, oil - 89.9%, eggs - 92.1%. In essence, these indicators are either at the lower limit of the physiological minimum consumption, or even do not «reach out» to them. This indicates that the overwhelming majority of Ukraine's population is on the brink of hunger.

The lack of consumption of most of the main products can be explained solely by the economic inaccessibility of food products, which is the essence of the next indicator. The economic availability of food for the population is the ability of the population to safely satisfy their rational needs in food products at the expense of their own income. For economic availability of products, the marginal criterion is considered to be its 60% level degree. The Law of Ukraine of December 7, 2017 «On the State Budget of Ukraine for 2018» from the 1 January 2018 sets the living minimum of 1770 UAH, and the minimum wage is 3723 UAH, which does not ensure the economic availability of the population to food products. The study of the content of the minimum consumer basket proposed by the government in 2017, established on the basis of the minimum wage of 3200 UAH, indicates an intensification of the process of economic inaccessibility of the population to the main food products. For example, according to the Decree of the CMU of October 11, 2016, No. 780 «On Approval of Suites of Foods, Sets of Non-Food Products and Sets of Services for Major Social and Demographic Groups», the annual rate of consumption of meat and meat products is set for the working population - 53 kg, milk and dairy products - 143.5 kg, fish and fish products - 13 kg, eggs - 220 units. The physiological minimum is for: meat and meat products - 52 kg, milk and dairy products - 341 kg, fish and fish products - 12 kg, eggs - 231 units. The simple comparison of the above indicators shows that consumption of meat, fish and eggs is a consumer basket formed on the basis of physiological (i.e. minimum) norms, and in dairy products, even this rate is reduced by 2.5 times. Thus, for the type of Ukrainian food, the nature of the diet of Ukrainians will continue to be not the ration of development, as in the diet of survival.

Finally, the last of the main indicators is the food independence of a single product that is available if its import does not exceed 30 percent, although the international indicator of food independence is set at 20% [4, p. 90]. Balance analysis and consumption of basic food products allowed us to obtain a conclusion on the share of critical imports of fruits (30.7%) [2, p. 211-216], as well as fish and fishery products (78.3%) [5, p. 5].

The solution is to balance agricultural policy with identified gaps with the focus on these areas of financial resources of state support, issued (as an option) in the form of corresponding national programs with the condition of their effectiveness, and not declarativeness. In support of this, two consistently adopted state programs should be mentioned: «National Program for the Development of the Fisheries of Ukraine for the Period until 2010», approved by the Law of Ukraine of February 19, 2004 and the State Target Economic Program for the Development of the Fisheries for 2012-2016, approved by by the Resolution of the Cabinet of Ministers of Ukraine of November 23, 2011 No. 1245, which did not yield any tangible result despite the spent public finances. Instead, if to analyze as for a worthy example in the field of fisheries, then it is undoubtedly the Kingdom of Norway, one of the leaders in exporting fish and fish products in the world, supplying products to more than 130 countries. Fisheries provide about 0.7% of its GDP [6].

The essential component of food security is the quality and safety of food. Despite the fact that the said field of food security has fallen out of its indicators set by the government, it is, as a doctrinal criterion, an extremely important indicator. First of all, it should be pointed out that the legislation is fairly extensive, the study of which should be based on the concept that poor quality and unsafe food products are not, because it does not serve the purpose of maintaining the health of our citizens. This concept, without any exclusions and tolerances, should be the basis of any regulatory act in the field under study. Instead, such a law instead of the strict imperative of its provisions, along with a considerable amount of discretion, contains a lot of artificially created gaps and collisions, which in general alleviates the mechanism of legal regulation introduced by it. This leads to a situation where the law exists on its own in the context of the absolutely autonomous existence of social relations, which it is called to organize. For example, it should be noted that the basic Law of Ukraine of July 22, 2014 «On Basic Principles and Requirements for Food Safety and Quality» was widely advertised at the legislative stage, did not meet the expectations expected from him. By its content - this is an act of technological (veterinary and sanitary) nature with an extended version of the state control unit (control) and a separate legal responsibility unit, which by its nature is purely administrative. But the realities of today confirm the absolute helplessness of administrative and legal responsibility in any sphere of social relations. And state control in the field of quality and safety of food stuffs in general has lost its value due to the actively implemented deregulation of business conditions.

Meanwhile, one of the most probable threats to the health of our population is the widespread use in the food industry of the so-called «palm oil», which annually imports into Ukraine more than 40 thousand tons, that is, an average of about 1 kg per inhabitant, including babies. This substance can be conventionally as oil, because any oil is a product of processing of the corresponding plant material. And the process of extraction of palm oil reminds faster of the process of pine resin in our forests. And in its consistency - it is more likely a resin, the original purpose of which was to lubricate metal rolling mills. Now this «grease» is actively consumed by our population in a variety of products, even in baby food.

The direct threat of palm oil lies in the fact that it, once hit, is no longer derived from the human body, settling on the internal organs, mainly in the vessels. After all, it has a solid fraction (stearoptene) with a melting point of 44-56˚C, which can not be achieved by the human body, since after 42˚C the protein is completely coagulated. Of course, most of raw palm oil is subject to rectification, bleaching, and deodorization, and then becomes suitable for nutritional purposes [7], but it is a significant additional cost, which results in a loss of ultra-high economic benefits, and therefore the meaning of its use.

For comparison in Russia for the needs of the food industry allowed the use of exclusively refined, deodorized oil, guaranteed by the state standard of the Russian Federation [8]. In general, palm oil, which has not undergone previous rectification, is prohibited from being used for food purposes in all countries. In this form it serves as raw material for the production of soap, cosmetics, candles, and others. In Ukraine, the state standard DSTU 4306: 2004 «Palm Oil» [9], which allows for the use of food products along with rectified and crude (cheese) palm oil, operates. Of course, the production of «palm» food products is one of the most serious crimes against the health and life of the population of Ukraine, which should be subject to severe criminal responsibility of all those involved, starting with the import of palm oil, to the commodity producers and sellers of products that it contains Of course, at first it is necessary to prohibit at the legislative level any, even minimal and under any reason, the import of this poison into the territory of our state. And the sooner it is done, the less the threat to food security in general.

One of the outcomes of the negative situation of food consumption of poor safety and quality is the global trend of returning to the production of organic products. Ukraine is no exception to this, although organic production processes have lagged behind the world for several decades. Nevertheless, the sphere of organic production is regulated by the special Law of Ukraine «On the Production and Circulation of Organic Agricultural Products and Raw Materials» of September 3, 2013, which in general has systemic essence. At the same time, the mechanism of simulation of organic production in it is absent at all. Moreover, it should be emphasized that the Law of Ukraine of December 7, 2017 «On the State Budget of Ukraine for 2018» provides for state support for agriculture in the following positions: 1) development of hop harvesting, laying of young gardens, vineyards and berries, and supervision over them; 2) livestock sector; 3) financial support of agricultural producers. But there is no mention of encouraging organic production. In other words, its financing is given away by the Ministry of Agrarian Policy and Food of Ukraine, which will divide the total amount of state support on its own conviction. Therefore, it is worth noting the need to specify the amount of annual state support for production and circulation of organic products (for example, at a solid interest rate from the total amount of state support for agricultural production).

Conclusions. The daily diet of a Ukrainian is a diet of survival at the limit of minimal consumption, which makes it impossible to starve. An absolute majority of indices of consumption of basic foodstuffs is either at the lower limit of the physiological minimum consumption, or even does not «catch up» with them. The mismanagement of most of the main products can only be explained by their economic inaccessibility. The food insecurity indicator for a single product is also unsatisfactory due to the share of critical imports of fruits (30.7%) and fish and fishery products (78.3%). In the area of quality and safety of food products, it is necessary to completely prohibit any import and use of palm oil for the food. It is also necessary to specify the annual state support for the production and circulation of organic products (for example, at a solid interest rate from the total amount of state support for agricultural production). It is worth adopting the Law of Ukraine «On Food Security», the content of which should take into account as far as possible the achievements of the doctrine in this area of public relations.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 352.07

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DEVELOPMENT OF THE CAPACITY OF TERRITORIAL COMMUNITIES

Urgency of the research. *In the conditions of decentralization of power, the formation of the capacity of territorial communities, which are responsible for ensuring the sustainable development of the territory concerned, a creation of conditions that ensure high quality of life of the population is relevant.*

Target setting. *The overwhelming majority of newly created territorial communities do not have sufficient capacity to exercise their powers, therefore, the dissatisfaction of the population with the standard of living and the quality of service delivery is rising.*

Actual scientific researches and issues analysis. *Significant scientific contribution to the formation of effective local self-government in Ukraine has been made by O. Vasylieva, T. Kravchenko, I. Koziura, V. Mamonova and specialists on decentralization: A. Tkachuk, V. Nehoda, M. Pittsyk and others.*

Uninvestigated parts of general matters defining. *The ability of local governments to ensure the capacity of territorial communities requires further research.*

The research objective. *Formation of evaluation criteria for the research of local self-government activities and, on their basis, the creation of practical tools for the formation and development of the capacity of territorial communities.*

The statement of basic materials. *The article analyzes the activity of local self-government bodies at the level of the united territorial communities by studying the evaluation criteria for determining their organizational capacity, parameters of intervention in their activity and readiness for reform. It was revealed that main problems hindering the development of the capacity are: the low organizational capacity of local governments, lack of organizational strategy and organizational processes, low level of interest and awareness of local government reform processes, the weak correlation between organizational structure and strategic goals and tasks, etc.*

Conclusions. *It is proposed to form and develop the capacity of the united territorial communities in Ukraine through the employment of a comprehensive methodology for policy-making based on evidence for the path search and exploitation of practical tools for the formation and development of community capacity.*

Keywords: *capacity; territorial community; local self-government bodies.*

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РОЗВИТОК СПРОМОЖНОСТІ ТЕРИТОРІАЛЬНИХ ГРОМАД

Актуальність теми дослідження. *В умовах децентралізації влади актуальним є формування спроможності територіальних громад, на які покладено відповідальність за забезпечення сталого розвитку відповідної території, створення умов, що забезпечують високу якість життя населення.*

Постановка проблеми. *Переважна більшість новостворених територіальних громад не володіє достатнім потенціалом для виконання повноважень, тому зростає невдоволення населення рівнем життя та якістю надання послуг.*

Аналіз останніх досліджень і публікацій. *Значний науковий внесок у формування дієвого місцевого самоврядування в Україні зробили: О. Васильєва, Т. Кравченко, І. Козюра, В. Мамонова і фахівці з децентралізації: А. Ткачук, В. Негода, М. Пітцик та ін.* ***Виділення недосліджених частин загальної проблеми.*** *Потребує дослідження здатність органів місцевого самоврядування забезпечити спроможність територіальних громад.*

Постановка завдання. *Формування оціночних критеріїв для дослідження діяльності органів місцевого самоврядування та розробка на їх основі практичних інструментів формування та розвитку спроможності територіальних громад.*

Виклад основного матеріалу. *В статті проведено аналіз діяльності органів місцевого самоврядування на рівні об'єднаних територіальних громад шляхом дослідження оціночних критеріїв визначення їхньої організаційної спроможності, параметрів втручання у їх діяльність та готовності до реформування. З'ясовано, що основними проблемами, які заважають розвитку спроможності є: низький рівень організаційної спроможності органів місцевого самоврядування, відсутність організаційної стратегії й організаційних процесів, низький рівень зацікавленості та обізнаності процесами реформування місцевого самоврядування, слабке співвідношення між організаційною структурою та стратегічними цілями і завданнями тощо.*

Висновки. *Запропоновано формувати та розвивати спроможність об'єднаних територіальних громад в Україні шляхом використання комплексної методології формування політики, заснованої на доказах для пошуку шляхів і використання практичних інструментів формування та розвитку спроможності громад.*

Ключові слова: *спроможність; територіальна громада; органи місцевого самоврядування.*

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Urgency of the research. Each reform requires its performers and their deep understanding of the essence of reform. Without it, any, even the best-prepared reform is doomed to failure. Reforming public administration in Ukraine involves the decentralization of power, the transfer of a number of functions and powers to local authorities by the center, the legal exclusion of powers of the state as a legal entity in favor of another legal entity of local government, transfer of budget commitments and additional income base to ensure the capacity of the united territorial communities to provide guaranteed public services and to provide an adequate living environment for citizens, taking into account the interests of the state and territorial community.

Target setting. Ukraine is a young state that only tries to form its institutions on the example of the developed countries of the world. The problem with Ukraine is that it does not try to create its own model of public administration, but in a hurry to take its place among the successful countries of the world, copies state systems of successful countries, while forgetting that it has its own history, traditions and that experience can only be its own, since it is impossible to learn experience and to take it over. It can only be acquired using its own or resumed knowledge and realizing them in practice. The acquisition of its own experience in forming the basis of state governance of the capable territorial communities is extremely important for Ukraine since the development of any state starts with its basis of villages, settlements, cities and people who want to be hosts in their land and feel secured citizens of their state.

Each of us lives in a territorial community (village, settlement, city), and the quality and duration of our lives depends on how this community is capable, the future of our descendants depends. Will they seek a better future in the capable communities of other countries, or will they multiply what we will pass on to them in Ukraine.

Scientists and specialists in public administration are still arguing whether it is necessary to weaken the vertical of the state executive bodies by transferring powers and resources to the level of local self-government bodies. In particular, this article is directly related to the scientific research of the Department of Public Administration and Management of Innovation Activities of the Post-Graduate Education and Research Institute of the National University of Bioresources and Natural Resources of Ukraine and the developments of the European project “Support for the Implementation of the EU-Ukraine Association for Ukraine & for you”.

Actual scientific researches and issues analysis shows that the problem of decentralization of power and the formation of effective local self-government was carried out by such domestic and foreign scientists as O. Vasylieva, T. Kravchenko, I. Koziura, V. Mamonova and specialists: A. Tkachuk, V. Nehoda, M. Pittsyk and others.

Uninvestigated parts of general matters defining. Despite the fact that the attention of specialists and scholars is closely linked to the territorial communities and their analysis was repeatedly the subject of research in scientific works of domestic and foreign researchers, systematic research on the assessment of the activities of local self-government bodies to determine their readiness to ensure the capacity of the territorial community has not yet been carried out.

The research objective. The purpose of the article is to analyze the activities of local self-government bodies in order to ascertain their readiness to ensure the capacity of the territorial community.

Proceeding from the goal of the article the following tasks were solved:

– distinguish the evaluation criteria and their elements for elucidation of the mechanisms of ensuring the capacity of the united territorial community;

– generalize the estimated results of the research of the activities of local self-government bodies;

– develop recommendations for interested bodies on the capacity building of territorial communities.

The statement of basic materials and obtained scientific results. In accordance with the “Concept of reformation of local self-government and territorial organization of power in Ukraine” [4], the second final stage of its implementation (2015-2017) should complete, and indeed, the entire reform as a whole. However, the purpose of the Concept, which was to determine the directions, mechanisms and timing of the formation of effective local self-government and territorial organization of power, was not achieved.

The current state of the organization of power in Ukraine indicates that measures for the reform of local self-government are at the initial stage and not at the final stage. What is the reason for this state of affairs? Why do state authorities not transfer their powers and resources to local self-government bodies? Why, at the state level, in accordance with the current legislation, local state administrations have not been liquidated and executive bodies are not created at local self-government bodies? Why the created united territorial communities, in their overwhelming majority, were in a legal, resource and personnel vacuum?

Using the experience gained during the participation in the project "Association for Ukraine & for you" and the skills of developing a public policy based on evidence, we will conduct an analysis of the activities of local self-government bodies at the community level and, with the help of evaluation criteria for determining the capacity, find out ways to create a capable territorial communities envisaged by the decentralization of public administration reform.

According to the European Charter of Local Self-Government (hereinafter the Charter) an essence of local self-government is reduced to the guaranteed by the state rights and real ability of local communities of citizens (communes, municipalities, communities, local groups, local communities) and those bodies that they choose, to decide independently under its responsibility, the issues of local significance, acting within the constitution and laws of the respective state [2]. Article 3 of the Charter, which is part of the legislation of Ukraine stipulates that "local self-government denotes the right and the ability of local authorities, within the limits of the law, to regulate and manage a substantial share of public affairs under their own responsibility and in the interests of the local population. This right shall be exercised by councils composed of members freely elected by secret ballot on the basis of direct, equal, universal suffrage, and which may possess executive organs responsible to them". The key to these definitions is the "ability" of the authorities to exercise certain powers. What is the basis for this definition?

The Academic Explanatory Dictionary of 1970-1980 defines the ability in three dimensions: as a property of value; the ability to commit something; the presence of conditions favourable to something, circumstances that assist something, the opportunity.

The Ukrainian language dictionary: in 11 volumes, the word "capable" is interpreted as someone/something "that can, able to carry out or to do anything".

A dictionary of synonyms for the word "capable" selects the next synonymous series "able", "suitable", "reasonable", "sound".

The Ukrainian language dictionary, organized by B. Grinchenko, defines capacity as an opportunity (to have the opportunity, to have means).

The Methodology of the formation of capable territorial communities (hereinafter Methodology) defines a capable territorial community, which, as a result of a voluntary association, is capable of providing, on its own or through appropriate local self-government bodies, the appropriate level of service provision, in particular in the field of education, culture, healthcare, social protection, housing and communal services, taking into account human resources, financial support and infrastructure development of the corresponding administrative and territorial unit [3].

Thus, under the capacity, it is necessary to understand the ability and capability of local governments to cope with the powers that they have been given.

What are the powers of the local government bodies at the basic level? Main responsibilities include: provision of local economic development (investment attraction, entrepreneurship development); development of local infrastructure, in particular roads, networks of water, heat, gas, electricity and drainage, information networks, social and cultural objects; planning of community development; solution of the issues of development of the territory and its improvement; provision of housing and communal services; organization of passenger transportation on the territory of the community; public security; extinguishing fires; management of institutions of secondary, pre-school and out-of-school education; provision of ambulance services, primary health care, prevention of diseases; development of culture and physical culture; provision of social assistance and administrative services, etc.

Today, even though at the end of 2017 there were already 688 united territorial communities in Ukraine, the overwhelming majority of them, having the right to decide local issues, cannot fulfill them due to lack of experience, decay or lack of infrastructure (necessary buildings, structures, roads, etc.), as well as the lack of human recourses of the relevant qualification, etc. Therefore, much of the local issues are not properly addressed - schools and hospitals and other buildings of communal property are not kept, as well as landscaping, street lighting, etc. are not provided.

According to the official data of the Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine, which are placed on the official site under the heading "Decentralization", only 12% of the existing united territorial communities are capable, the rest are created in violation of the Methodology.

This is despite the fact that state support for the development of united territorial communities and the development of their infrastructure has increased by 30 times. In particular, state support in 2017 amounted to UAH 14.9 billion, of which: UAH 5 billion is aimed at socio-economic development of communities; UAH 3.5 billion allocated state fund of regional development; UAH 1.5 billion subventions for the infrastructure of the united territorial communities; UAH 4.0 billion subventions for the development of medicine in rural areas; UAH 0.27 billion for construction of football fields; UAH 0.65 billion European Union funds in support of sectoral regional policy.

However, even providing these resources, the overwhelming majority of territorial communities did not ensure their capacity.

What is the basis of the capacity of the territorial communities? Researchers of capacity and potential of communities M. Kruger, K. Hilton and others outlined ten community capacity components: public participation; leadership; powerful social networks; the ability to clearly formulate values; the meaning of history; the meaning of the community; critical thinking; the ability to accumulate resources; amount of skills; the ability to use power. Resources are understood as financial and human resources, infrastructure, the capabilities of individuals and organizations, relationships between people, relationships between organizations and access to services, etc. [1, p. 14].

To find out the key issue of ensuring the capacity of territorial communities, we conducted a study, which on the one hand was based on the analysis and synthesis of two-tiered interviews and collegial/panel discussions with officials of local self-government, deputies, residents of territorial communities, representatives of local government bodies of executive power, on the other hand was based on the key principles of the formation of public policy based on evidence.

Within the framework of our research, we have identified three evaluation criteria and their elements:

1. The first criterion of organizational capacity assesses the capacity of local self-government in terms of strategy, structure, resources, processes, information technology and understanding of decentralization.

2. The second criterion is readiness for reform and it is evaluating the moral spirit and ethics of the staff; defines the blocking body, adversaries and opponents; duration of obligations and change of obligations.

3. The third criterion is intervention parameters that assess the satisfaction of expectations of beneficiaries, stakeholders, donors, assess donor financing and timeframe of donors, intervention priorities.

In Tab. 1 the estimated results of determining the organizational capacity of the united territorial community based on studies of local self-government officials and local self-government bodies of the united territorial community were disclosed, using empirical and theoretical levels of general scientific research methods.

Schematically, the results of this study are shown in Fig. 1, in which the designation should be perceived as follows: circle is the level of basic knowledge; hexagon (external) is the level of required competence for local government officials and deputies; from 0 from the middle of the Fig. to 2 (the level of required competence) leave the rays of the existing competence (or lack thereof) of different elements of the investigated criterion.

Exhibited in Tab. 1 and shown in Fig. 1 analysis of the organizational capacity of local self-government bodies of the united territorial community provides grounds for establishing such results. The investigated united territorial community, through officials of local self-government and deputies, demonstrated a low level of organizational capacity.

Table 1

Estimated results of determining the organizational capacity of the united territorial community

Title of the evaluation criterion	Elements of the criterion	Obtained estimated result
Organizational capacity	Strategy	Organizational strategy is nominal: community officials do not have any written or verbal strategy to achieve community goals, or have only a set of common ideas (aspirations, wishes, etc.) that are not organized at all.
	Structure	The organizational structure is basic: a weak correlation between organizational structure and strategic goals and objectives.
	Resource	Organization of personnel/human resources is basic: local self-government officials mostly have basic knowledge and skills for performing official duties; local council deputies are largely unfamiliar with their powers.
	Processes	Organizational processes are nominal: processes occurring in the community and at council sessions are unrelated or poorly related to the goals, results, functions and activities of the territorial community, and the adoption and implementation of decisions do not always foresee orientation for future community development.
	Information technology	Information and communication technologies are low-technological: they do not use information technology or use only the basic programs for work in the office (Word/Excel, etc.), and most, if not all key processes and procedures are based on paper documents.
	Decentraliza-tion	Understanding of decentralization is nominal: the overwhelming majority does not understand the goals of decentralization, it is not familiar with the regulatory legal documents that regulate it. Complains about the fragmentation of the regulatory framework for regulating the activities of the united territorial communities.

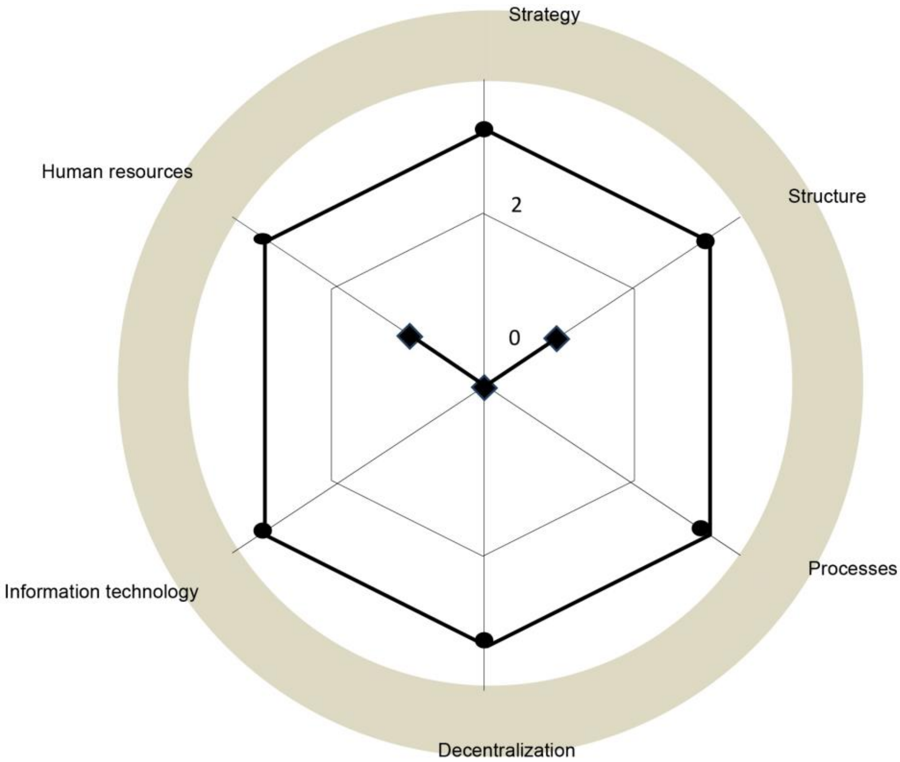

Fig. 1. Assessment analysis of the organizational capacity of local self-government of the united territorial community

In particular, the research found that human resources are quantitatively sufficient but not well prepared to fulfil their responsibilities. This is due to many subjective and objective reasons, including the inability to make decisions in situations of uncertainty; lack of communicative skills to find compromises in decision making; the inability to form a leadership environment for solving topical issues; the prevalence of own interests over community interests, etc. The organizational structure is formed and the establishment is completely filled, that is, all key areas of community development have responsible executives, however, the verification of the level of professional competence of the employees showed low training. Information and communication technologies are used only for the creation or sending of documents. This is due to low staff training and improper computerization or Internet quality. The most important threats to the capacity of the territorial community are the lack of organizational strategy and organizational processes. Officials of local self-government and deputies are people whom the inhabitants of the community have entrusted to manage their life for 5 years. All this time, it is they who must ensure an adequate standard of living in the community and think about its future development. Therefore, the first thing that should be done is to formulate a development strategy, not as a document that nobody needs, but as a guideline that knows everything and plans every day to implement it. It is the systemic measures in all areas of community life that should be outlined in the strategy, and the strategy itself should become the basis for building the capacity of the territorial community.

The same procedure evaluated the readiness for reform and evaluated the parameters of intervention.

Research has shown that there is no real inclination to change in a given territorial community, but there is a desire to nominally agree with the reforms since this can provide additional resources. The morale and ethics of the staff are at a level below the average: people only develop the skills of working in the united territorial communities, study the interaction between the elders, representatives of the centres of the provision of administrative services, citizens and other bodies of local self-government. A number of blocking factors have been identified, one of the key factor is the fragmentary and controversial legal framework, the absence of auxiliary rules and regulations. The assessment of satisfaction with the expectations of the beneficiaries is also low. The analysis of the activities of local self-government bodies in the united territorial communities allows us to state that, first of all, it is necessary at the state level to provide adequate support to the already existing unions that are in the process of uniting and those who are still thinking to create a union. A significant problem for all of them is the lack of managerial skills, the imperfection of the legal field of their activities, low staffing capacity. Secondly, of that 12 % of the united territorial communities that are really capable of attracting specialists (for a certain period of time) into territorial communities that are less successful, since nobody other than them can provide more practically oriented support for community capacity building.

Summarizing, note that based on the results of the study, we have developed the following recommendations for the formation of the capacity of territorial communities: to develop a comprehensive complex decentralization policy; to create a broad political consensus for a clear division of powers between local self-government bodies; personalize the responsibility of officials of local self-government for creating insolvent territorial communities (in violation of the provisions of the Methodology); modernize training of local government officials in accordance with the specifics of the tasks performed; at the state level, to initiate the creation of reform groups from representatives of capable territorial communities that have been established and successfully work for more than 1 year and with the assistance of the State Fund for Regional Development to ensure 100% coverage of the territorial communities of Ukraine by communicating with these reform groups. These measures will provide a broad understanding of decentralization, strengthening local self-governance and professional competence.

Taking into account the results of the study, the systemic approach of the state and the experience of the capable united territorial communities should serve to build the capacity of the territorial communities in Ukraine.

And if we really want to make qualitative reforms, we need to go a small step, pulling up all the components of success to the required level. The analysis showed that Ukraine is not ready for implementation of the decentralization reform today and needs a serious preparatory phase at the national level.

Conclusions and perspectives of further research. The obtained research results are basic for the formation and development of the capacity of territorial communities. In addition, the authors of the study allow on the stage of creation of united territorial communities to identify problem areas and influence their elimination before the creation of a community that will enable the newly formed community from the very beginning to be capable.

In the future it is expedient to continue research on the formation and development of the capacity of territorial communities, focusing on the development of resource potential.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 338.124.4, 519.865.7

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NEUROMODELLING OF FINANCIAL AND ECONOMIC SECURITY OF THE REGION

Urgency of the research. *In the light of changes in the global security system, the problem of an adequate assessment of economic security in a regional context is acute. Existing methods provide for the calculation of a complex indicator or system of indicators for assessing economic security. Instead, the realities of today require a revision of the conceptual approach to the definition of "economic security", which will take into account the impact of the processes of interpenetration and the integration of economic systems of individual regions.*

Target setting. *The problem of finding and testing new methods to assess the economic security of regions arises.*

Actual scientific researches and issues analysis. *A considerable amount of research is devoted to the quantitative and qualitative assessment of the country's economic security. The classic approach to assessing economic security involves calculating the integral index and does not take into account the integration of individual regions and the country as a whole into world markets.*

Uninvestigated parts of general matters defining. *The need to change the angle of view on the monitoring of regional economic security arose in connection with: an increase in the scale and acceleration of the processes of globalization; difficult geopolitical situation in the country.*

The research objective. *The purpose of this study is to assess the feasibility of combining theoretical approach and indicative of the theory of open systems to assess the level of economic security of the region.*

The statement of basic materials. *In this work an algorithm for using the apparatus of the theory of neural networks for the estimation of the economic system of the regions is developed. The obtained economic-mathematical model allows to perform clusterization of territorial units according to selected indicators of economic security. Testing of the developed algorithm is conducted on the basis of data on the state of economic development of the regions of Ukraine.*

Conclusions. *The result of the simulation is a cluster structure that divided the totality of regions of Ukraine into four clusters according to selected classification characteristics. The results obtained have a clear economic interpretation.*

Keywords: *economic security; region; neural network; clusterization; indicative approach.*

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НЕЙРОМОДЕЛЮВАННЯ ФІНАНСОВО-ЕКОНОМІЧНОЇ БЕЗПЕКИ РЕГІОНУ

Актуальність теми дослідження. *У світлі зміни системи глобальної світової безпеки, гостро постає проблема адекватної оцінки економічної безпеки в регіональному розрізі. Існуючі методики передбачають розрахунок комплексного показника або системи показників для оцінки економічної безпеки. Натомість реалії сьогодення вимагають перегляду концептуального підходу до визначення поняття «економічна безпека», що врахує вплив процесів взаємопроникнення та інтеграції економічних систем окремих регіонів.*

Постановка проблеми*. Постає задача пошуку та тестування нових методів щодо оцінки економічної безпеки регіонів.*

Аналіз останніх досліджень і публікацій. *Проблематиці кількісної та якісної оцінки економічної безпеки країни присвячена значна кількість досліджень. Класичний підхід до оцінки економічної безпеки передбачає обчислення інтегрального індексу та не враховує інтеграцію окремих регіонів та країни в цілому у світові ринки.*

Виділення недосліджених частин загальної проблеми. *Необхідність зміни кута зору на проблематику моніторингу регіональної економічної безпеки виникла у зв'язку з: збільшенням масштабів та пришвидшенням процесів глобалізації; складною геополітичною ситуацією в середині країни.*

Постановка завдання. *Метою даного дослідження є теоретична оцінка можливості поєднання індикативного підходу та положень теорії відкритих систем до оцінки рівня економічної безпеки регіону.*

Викладення основного матеріалу. *В роботі розроблено алгоритм використання апарату теорії нейронних мереж для оцінки економічної системи регіонів. Отримана економіко-математична модель дозволяє виконувати кластеризацію територіальних одиниць за обраними індикаторами економічної безпеки. Тестування розробленого алгоритму проведено на основі даних про стан економічного розвитку регіонів України.*

Висновки*. Результатом моделювання стала кластерна структура, що розподілила сукупність регіонів України на чотири кластери відповідно до відібраних класифікаційних характеристик. Отримані результати мають чітку економічну інтерпретацію.*

Ключові слова: *економічна безпека; регіон; нейронна мережа; кластеризація; індикативний підхід.*

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Urgency of the research. In relation to the global world security system changes, the revision of economic, social and political ties between countries is particularly acute in the issue of an adequate assessment of economic security in a regional context. Existing methods ensure the complex indicator or system of indicators calculation for assessing economic security. Instead, the modern realities require a revision of the conceptual approach to defining the term "economic security", which will take into account the impact of the interpenetration and integration of economic systems processes of individual regions.

Target setting. The purpose of this study is to work out existing developments in the quantitative assessment of Ukraine's economic security, identify their weaknesses in terms of the international economic relations transformation, and provide the theoretical assessment of the possibility to combine the indicative approach and the provisions of the open system theory with the economic security level assessment in the region.

Actual scientific researches and issues analysis. A considerable part of the research is devoted to the quantitative and qualitative assessment of the country's economic security. Among the founders of this direction are: L. Abalkin, Y. Altukhov, V. Abramov, V. Andriychuk, G. Androschuk, I. Binko, A. Baranovsky, B. Bogomolov, A. Blinov, S. Varnal, G. Viachkanov, O. Vlasyuk, V. Gorotkin, A. Galchinsky, V. Heyets, T. Gladchenko, O. Goncharenko, A. Gorbunov, V. Spirit, A. Draga, M. Yermoshenko, A. Kachinsky, V. Kirilenko, T. Klebanova, T. Kovalchuk, A. Kozachenko, M. Kozoriz, P. Krainov, B. Kravchenko, D. Lyapin, I. Mazur, O. Malinovska, V. Muntiyan, G. Pasternak-Taranushenko, N. Reverchuk, V. Senchagov, A. Sukhorukov, T. Hailova, V. Shlemko and others.

The country's economic security is defined as a set of conditions and factors that ensure the national economy independence, stability and sustainability, the ability to continuously update, confront external threats and development. This necessitates a generalized assessment and a systematic approach to regulating the state economic security level.

In order to determine the dynamics of the economic security integral index and its components, an appropriate methodology that can provide adequate diagnostics with the possibility of comparison with the integral threshold (optimal) values is required. Solving this problem is a necessary condition but not sufficient to develop a strategy to ensure the desired level of state economic security. Therefore, the development of scientific approaches in order to justify the necessary values of the economic security components and their indicators, which ensure the economic security level in a favourable or specified zone, is essential [1].

Uninvestigated parts of general matters defining. The need to change the angle of view on the issue of regional economic security monitoring has arisen in connection with:

- increase of the scale and acceleration of globalization processes in the world;
- a complex geopolitical situation in the middle of the country, when the unplanned change in the status of certain parts of the industrial and recreational regions has led to the actual alienation of large enterprises of various functional purposes, the termination of production cycles, and the significant migration of the population.

The research objective. This study aims to determine the possibility, prospects and outline the benefits of using the conceptual foundations of the open system theory in order to assess the regional economy security level.

The statement of basic materials. The classic approach to assessing the national economy vulnerability is indicative. The algorithm foresees the preliminary calculation of the indicators set and further comparison with the limit values. It is assumed that beyond these values the economic system becomes vulnerable to internal and external factors and loses the ability to self-development, competitiveness, and national wealth accumulation [1]. Thus, the task of optimal economic regulation is to periodically monitor a certain system of indicators and formulate appropriate corrective actions.

The resulting assessment of the country's economic security can be carried out in two directions:

1. complex estimation calculation on the basis of pre-calculated sub-indicators in the context of the basic social, economic and political processes and the subsequent comparison with boundary norms or reference values;
2. the calculation of the sub-indicators number corresponding to the normative values, and the ap-

pointment of the country's economic security status (optimal, dangerous, critical, etc.) according to their share in the total number.

Currently, at the legislative level in Ukraine, the methodological recommendations for calculating the country's economic security level are fixed, which essentially implement the indicative approach in assessing the national economy vulnerability and ultimately provide the calculation of the integral estimation [2]. Compared with the abolished methodology from 2007, the new development has a number of advantages, namely:

- definition of the boundary values vector of integral indicators;
- setting of weight coefficients for calculating the contribution of each subindex to the integral index by the main components method;
- substantiation of the factor axes rotation method.

This methodology has several methodological and technical issues in determining the economic security integral index.

The economy openness at the national and regional levels, on the one hand, provides ample opportunities for the economic competition development and the country welfare through international trade. The interdependence that arises during internal or external financial and economic integration, in terms of sharp economy deterioration in one of the partner countries, the economic crisis, or worsen political relationships at the highest level create, at times, higher risks for the national economy than any indicative value of an integral or sub-integral indicator of economic security that goes beyond the boundaries. This is primarily due to the impossibility for the government or the president to unilaterally quickly extinguish the negative effects of such changes and the lack of a methodological basis for the permanent assessment of such risks.

In this regard, the author proposes to form a methodology for assessing the economic security of the region using the conceptual apparatus of the open system theory [3]. Accordingly, the economy is seen as an open system that shares resources (material, energy, and information) with the environment. Through the resources exchange with the environment, the system is constantly evolving. The resources coming from the outside go for life support, streamline and maintain system stability. Closed systems degrade and collapse. As an example of closed systems researches in this field distinguish tribal, collectivist and socialist society.

The use of preliminary studies in the field of open system modelling makes it possible, when assessing national security, to take into account the impact of external factors, including unexpected shocks, economic volatility and manipulations of partner governments.

In this case, the trajectory of economic development can be described using the nonlinear differential equation of Fischer-Kolmogorov-Petrovskii-Piskunov [4-5], which is the basic equation for the theory of active media and the theory of systems that are self-organized:

$$\frac{\partial X(R,t)}{\partial t} = F[X(R,t)] + \frac{\partial}{\partial R_i}\left[D_{ij}(X)\frac{\partial X}{\partial R_j}\right], \tag{1}$$

where $X(R,t)$ is the set (vector) of functions characterizing the economic system; $F(X)$ is the nonlinear functions, which are determined by the structure of the system being studied. For example, for a single-product open economy, consisting of bistable elements, it may look like a polynomial [6]:

$$F(X) = (a - bX^2)X \text{ for } b > 0, \tag{2}$$

and the corresponding dynamic equation for calculating a separate element of the system will look like:

$$\frac{\partial X}{\partial T} = (a - bX^2)X, \text{ for } b > 0, \tag{3}$$

where parameter a defines the bifurcation point of the economic system, for $a<0$ there is a state of rest, for $a>0$ it is a bistable state of the economic system with $X\pm\sqrt{\frac{a}{b}}$; D is the coefficient of spatial diffusion of an open system elements; R is the radius vector of points of the medium. The concept of α control parameter (or set of control parameters) is introduced and determines the ordering degree of the open economic system conditions. The control parameter determines the direction and speed of the controlled system in the phase plane (abstract space with the number of measurements, equal to the number of time dependent variables that characterize the state of the system being studied). For a random system, the recovered attractor in the phase plane will have the shape of a cloud for any dimension of the attachment (Fig. 1). In the case of correct selection of the characteristics of the phase plane, there will be a random attractor of a completely different shape (for example, Fig. 2).

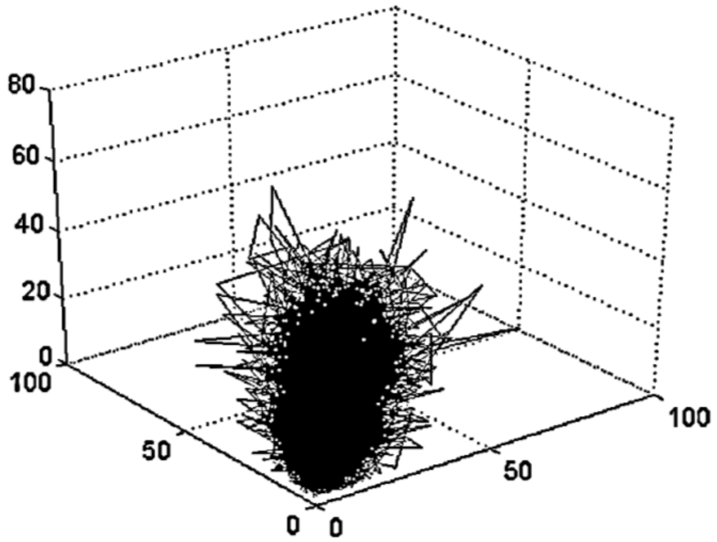

Fig. 1. Recovered attractor of a random system for the embedding dimension of three

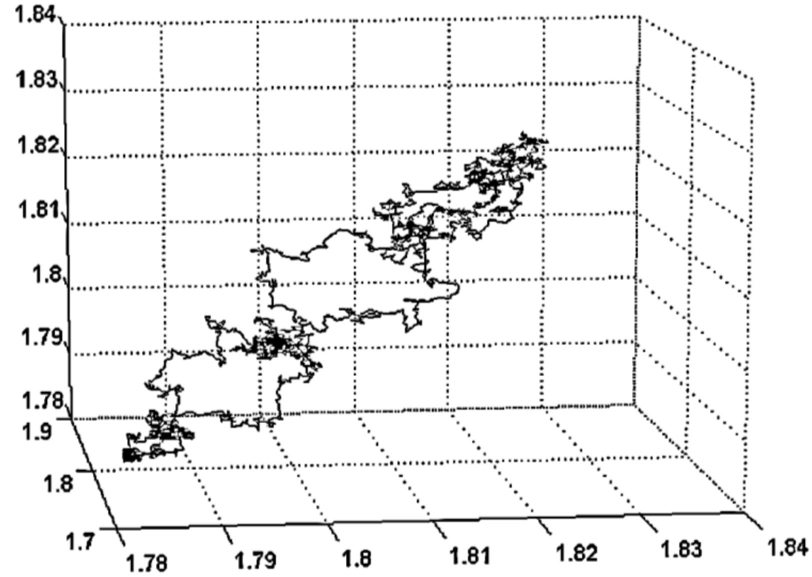

Fig. 2. Recovered attractor of the dynamic exchange rate system of British Pound/US dollar for the embedding dimension of three

Therefore, the task of determining the optimal trajectory of economic development is to select a set of control parameters that will ensure the transition from one equilibrium state of the system to another.

According to the classic indicative approach, optimal management of economic security includes: periodic monitoring and calculation of sub-indices in the context of basic social and economic processes (production, demographic, energy, foreign economic, investment-innovation, macroeconomic, food, social, financial); comparing them with the limit values and developing such managerial influences that will ensure the calculated indicators are located within safe limits.

Considering the economic security of the region in terms of open systems concept described above, the process of approaching the trajectory of the economic system movement to the critical value of one of the indicators of its functioning on the phase plane is not characterized as catastrophic. Particular attention in the context of this concept requires a set of values of the economic system characteristics, in which it approaches the point of bifurcation.

In accordance with the nature of the object of study, the point of bifurcation will in the future be called the critical state of the regional economic system, which leads to a stability violation of its established operation mode and the emergence of bifurcation point of the whole spectrum of alternative virtual evolution scenarios. Due to the economic stability system loss at the point of bifurcation, minor changes in the environment can lead to significant qualitative changes in the structure of the economic system and the further trajectory of its development. From the point of view of the mathematical description of this process, the bifurcation signifies the solutions ramification of the nonlinear differential equation (1) [4].

According to the synergetics theory, the sensitivity of the regional economy to external fluctuations and changes will be the higher the less diversified its structure is. This conclusion is explainable, because the economy is oriented, for example, only on the energy resources export or a narrow range of industrial goods in the conditions of sharp changes in the market, and will lead to a corresponding budget revenues reduction and deterioration of the population welfare. The reorientation will require considerable resources and time.

Similarly, the resistance to external fluctuations depends on the region: the larger it is, the less its sensitivity. Nevertheless, both links are nonlinear and constrain the transition to another state of the economic system only to some extent. Over time, the accumulation of external stimuli that has not found the appropriate response will lead to the system bifurcation, and the presence of an extensive internal structure and large territory will make the country less manageable and reduce its vulnerability to fluctuations.

For an adequate description of the economic system dynamics and the safety assessment in terms of its trajectory approximation in the phase space to the bifurcation time, it is necessary to select an appropriate system of basic indicators. Such system ought to include, in addition to the generally accepted quantitative characteristics of the economy efficiency assessment, specific criteria. In particular, for modelling and assessing the financial and economic security of the region, it is suggested using the following indicators:

The first group is the generally accepted quantitative characteristics, calculated in accordance with the State Committee of Statistics methodology.

1. The growth rate of gross regional product, calculated on the basis of statistical indicator of growth rate:

$$R_{growth}^{GRP} = \frac{GRP_t}{GRP_0}, \qquad (4)$$

where R_{growth}^{GRP} is the growth rate, GRP_t is the gross regional product at the time t, GRP_0 is the gross regional product at the basic moment of time.

2. The unemployment rate growth of the region's population:

$$R_{growth}^{UR} = \frac{UR_t}{UR_0}, \qquad (5)$$

where R_{growth}^{UR} is the growth rate, UR_t is the unemployment rate at the time t, UR_0 is the unemployment rate at the basic moment of time.

3. The index of accrued real wage that characterizes the change in the purchasing power of wages in the reporting period compared with the base one. It is determined by dividing the net nominal wage index into the consumer price index for the same period:

$$I^{CRW} = \frac{I_{t,0}^{NW}}{I_{t,0}^{CP}}, \tag{6}$$

where I^{CRW} is the index of the calculated real wage, $I_{t,0}^{NW}$ is the index of accrued nominal "net" wages of the current period in comparison with the base one, $I_{t,0}^{CP}$ is the consumer price index of the current period in comparison with the base one.

4. The index of agricultural products reflects the relative level of total physical quantities of agricultural products produced for any periods of time chosen for comparison. For its calculation, the Laspeyres formula is chosen, i.e. [7]:

$$I_t^{AP} = \frac{\sum_{i=1}^{n} q_t^i \cdot p_0^i}{\sum_{i=1}^{n} q_0^i \cdot p_0^i}, \tag{7}$$

where q^i is the volume of production of a particular product type in kind; p_0^i is the comparable price for a particular type of i product; $t, 0$ are time periods (base and reporting) selected for comparison.

5. The index of industrial products is the weighted average, the basis of the weight structure of which is the data on the added gross value distribution between industrial activities, from the corresponding individual indices for each product [8]:

$$I_t^{AP} = \frac{\sum_{i=1}^{n} q_t^i \cdot p_0^i}{\sum_{i=1}^{n} q_0^i \cdot p_0^i}, \tag{8}$$

where q^i is the volume of i production of a particular kind of industrial products in kind; p_0^i is the comparable price for a specific type of i industrial product; $t, 0$ are time periods (base and reporting) selected for comparison.

6. The index of construction products is the sum of the weighted average of the indices of buildings and other structures construction, calculated as the ratio of the number of worked man-hours in the reporting month to the average monthly value of the number of hours worked in the base year. The share of building materials components for each type of construction product is chosen as weight. The index is adjusted in accordance with the productivity factor and the calendar amendment [8]:

$$I^{CP} = \left(\left(\frac{N_t^{HWCC}}{\overline{N}_0^{HWCC}} \right) \cdot \Delta_0^{CC} + \left(\frac{N_t^{HWES}}{\overline{N}_0^{HWES}} \right) \cdot \Delta_0^{EC} \right) \cdot C \cdot I^{LP}, \tag{9}$$

where I^{CP} is the construction products index; N_t^{HWCC} is the number of man-hours worked on objects of capital construction in the current month; $\overline{N}_0^{HWCC}$ is the average monthly number of hours worked in the base year at the objects of capital construction; Δ_0^{CC} is the share of capital construction volume of all products in the base year; N_t^{HWES} is the number of man-hours spent in the current month on objects of engineering structures; $\overline{N}_0^{HWES}$ is the average monthly number of hours worked in the base year on the objects of engineering structures; Δ_0^{EC} is the share of the volume of engineering structures in the base year; C is the coefficient of calendar changes to the average monthly value of the base year; I^{LP} is the index of labour productivity in the previous reporting year to the base one.

7. The capital investment index is defined as the ratio of the assets value invested in a particular quarter, adjusted for the corresponding price indices, to the average value of the assets invested in the base year:

$$I^{CI} = \frac{\sum_{j=1}^{m}(V_t^j \div i_{t/0}^j)}{\sum_{j=1}^{m}\overline{V}_o^j}, \tag{10}$$

where I^{CI} is the capital investment index; V_t^j is the capital investments volume by j type of asset in the reporting period; $i_{t/0}^j$ is the index of capital investment prices by type of assets j in the reporting period t to the average of the base year; $\overline{V}_o^j$ is the average quarterly capital investment by type of asset j in the base year.

8. The consumer price index is an indicator that characterizes changes in the time of the general level of prices for goods and services purchased by the population for non-productive consumption. It is an indicator of the change in the value of a fixed set of consumer goods and services in the current period compared with the base one.

The second group is specific criteria reflecting the consequences of globalization and the integration of certain areas for economic security. In particular, the so-called indicators of economy openness (adapted to the terminology of the regional economy):

1. Export quota:

$$EQ = \frac{EV}{GRP} \cdot 100\%, \tag{11}$$

where EQ is the export quota, EV is the export value for a specified period, GRP is the value of the gross regional product.

2. Import quota:

$$IQ = \frac{IV}{GRP} \cdot 100\%, \tag{12}$$

where IQ is the import quota, IV is the import value for a specified period.

3. Import share:

$$IS = \frac{IV}{GRP + IV - IE} \cdot 100\%, \tag{13}$$

where IS is the import share.

4. Indicator of capital movements:

$$ICM = \frac{FDI}{NI}, \qquad (14)$$

where ICM is the indicator of capital movements, FDI is the foreign direct investments, NI is the number of inhabitants.

Therefore, the proposed list of quantitative indicators will allow taking into account the impact of interregional and international integration processes in assessing economic security.

In order to avoid the contradictions accompanying the algorithm for estimating the integral index of national economic security, it is proposed to use the mathematical apparatus of the neural networks theory to assess the level of economic security of the Ukrainian regions (oblasts).

It is necessary to assess the level of economic security of the regions with the help of a neural network like the Kohonen-type map. The input sample has been divided out of 24 territorial units characterized by a set of two types of indicators in the total number of 12. There is an input sample size of the $24 \times 12 = 288$ elements. Clustering is done separately for each year. The study period is seven years from January 1st, 2011, to January 1st, 2017.

The optimal number of neural network clusters is determined from the empirical relation [9]:

$$N_{nt} > \frac{N}{\%e}, \qquad (15)$$

where N_{nt} is the number of the training sample ($N_{nt} = 24$); $\%e$ is the percentage of training error. If the value of training error equals $\%e = 0{,}2$, based on formula (15) it is possible to determine the maximum possible number of clusters $\max(N) = 4$.

An example of original sample for clustering for 2016 is given in Tab. 1.

Table 1

Output data for the distribution process modelling of oblasts in the country by economic security level

Oblast	Indicator											
	Rate of GDP growth, %	Rate of unemployment growth, %	Index of accrued real wages,%	Index of agricultural products, %	Index of industrial output, %	Index of construction products, %	Index of capital investments, %	Consumer price index, %	Export quota, %	Imported quota, %	Share of imports, %	Capital flow rate, UAH
1	2	3	4	5	6	7	8	9	10	11	12	13
Vinnitsa	104.9	108.99	87.90	117.50	97.60	136.40	102.50	110.00	42.69	13.00	18.49	4874.77
Volyn	109.0	117.35	86.60	102.10	95.30	100.00	97.50	111.80	50.20	92.78	65.07	5745.54
Dnipropetrovsk	99.5	109.72	82.60	100.20	98.70	81.00	115.50	112.70	70.86	41.60	58.81	9500.52
Donetsk	101.8	102.17	78.40	106.30	97.20	72.40	145.10	111.60	77.56	25.11	52.81	2532.51
Zhytomyr	104.5	99.12	85.40	115.70	91.50	79.00	127.50	112.60	32.80	22.78	25.32	4160.85
Zakarpattia	96.1	108.70	86.90	95.90	79.90	111.50	93.90	111.70	108.83	101.78	109.50	2955.84
Zaporozhye	98.1	103.09	87.70	98.40	93.30	76.40	131.30	112.30	66.93	29.15	46.85	5836.14
Ivano-Frankivsk	101.2	104.76	86.80	101.50	87.90	118.30	65.30	110.90	32.53	23.02	25.44	4752.37
Kievskaya	101.8	106.25	91.00	110.00	105.60	135.90	124.80	112.20	42.62	73.77	56.25	17918.2
Kirovograd	108.7	108.77	84.80	109.30	113.00	88.20	147.00	112.30	28.91	12.44	14.90	6344.09
Lugansk	53.0	102.56	87.10	118.70	96.00	138.00	146.40	110.70	47.50	38.96	42.60	1322.73

Continuation of Table 1

1	2	3	4	5	6	7	8	9	10	11	12	13
Lviv	99.3	93.90	88.20	102.00	92.40	121.90	130.70	111.90	35.02	46.66	41.80	6696.97
Nikolaev	104.0	108.99	84.10	108.40	116.30	290.70	147.60	112.20	89.90	37.00	78.55	7921.68
Odessa	106.2	104.62	89.10	111.40	96.80	118.40	163.40	113.60	39.63	32.09	34.71	6275.25
Poltava	100.3	104.13	84.20	103.10	99.90	67.60	132.20	114.20	38.95	22.86	27.24	7675.76
Rivne	98.5	107.07	83.90	105.00	94.50	175.20	91.20	112.30	23.47	18.81	19.73	3516.05
Sumy	97.1	92.08	82.00	104.30	83.90	55.60	135.40	114.20	33.92	27.33	29.26	4678.96
Ternopil	97.1	97.46	84.90	104.40	95.70	86.50	117.20	111.60	28.70	26.81	27.33	4234.85
Kharkiv	103.7	90.14	86.00	106.50	97.10	103.20	135.90	114.10	21.41	31.02	28.30	5793.68
Kherson	100.3	109.80	86.30	101.70	96.30	128.80	135.80	112.80	19.90	13.43	14.35	4094.81
Khmelnitsky	101.3	92.16	84.80	107.50	97.50	72.20	123.40	111.40	20.17	21.00	20.83	6799.50
Cherkassy	103.6	106.12	86.30	102.10	97.50	99.70	135.00	112.70	24.26	14.89	16.43	4951.90
Chernivtsi	100.3	93.55	86.50	101.00	96.70	118.80	85.90	111.00	16.76	13.45	13.91	2689.66
Chernihiv	103.0	105.61	86.30	104.40	112.90	60.10	132.50	112.80	30.44	33.33	32.40	4791.28

Source: author's own calculations and State Committee of Statistics [Electronic resource] - http://www.ukrstat.gov.ua/

Although the output information given in Tab. 1 is presented as relative values, for the regions clustering and the neural network construction, it should be reduced to a scale with a maximum value of 1 and a minimum of 0. It is necessary to do the preliminary data valuation in accordance with the formula:

$$x_{ij}' = \frac{(\max - \min) \cdot (x_{ij} - x_{\min i})}{(x_{\max i} - x_{\min i})} + \min , \tag{16}$$

where x_{ij}' is the the j's value of i's row of standardized data array; $x_{\min i}$ is the minimum value per row i; $x_{\max i}$ is the maximum value per row i; $\max = 1$; $\min = -1$.

With the help of MatLab software, the following neo-neural network of Kohonen-type map was obtained, which divided twenty four areas into four groups according to definite indicators.

Figures 3-4 depict the general and detailed structure of the constructed neural network.

As a result of the simulation, a trained neural network has been obtained that distributes Ukrainian oblasts to clusters according to the financial and economic security level. An example of such structure for data of 2016 is shown in Fig. 5.

It is necessary to consider the oblasts included in each cluster on the modelling basis in more detail.

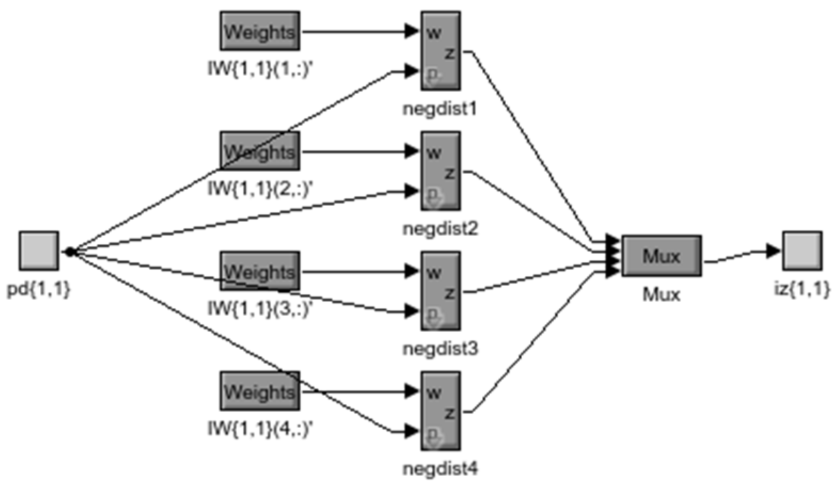

Fig. 3. The detailed structure of the "Self-organizing map construction" block

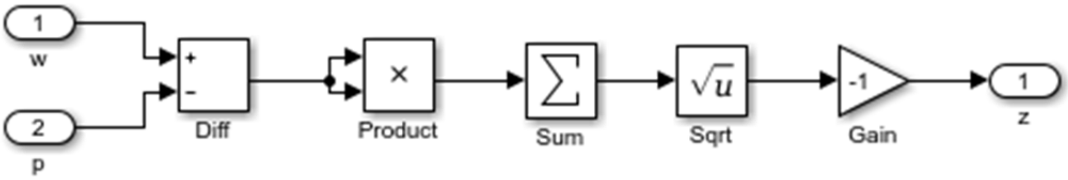

Fig. 4. The expanded internal algorithm structure, which implements the calculation of weights for each neuron

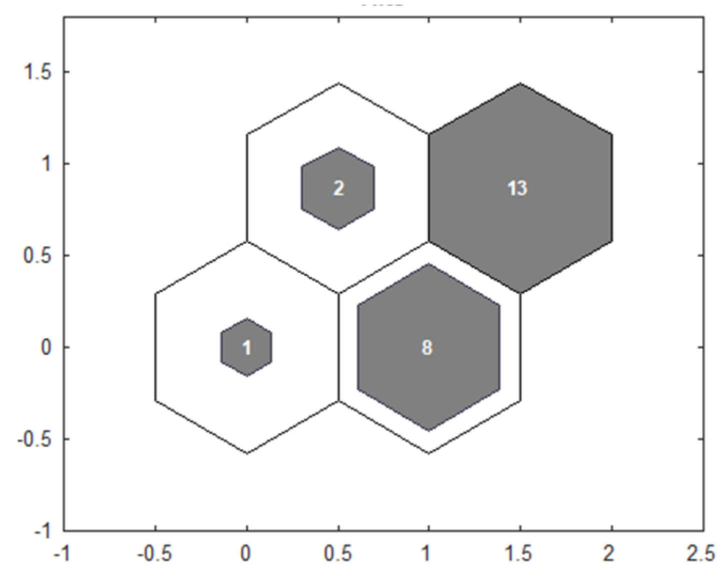

Fig. 5. Clusterization of oblasts' economies in terms of financial and economic security

The first cluster: the Kiev oblast.

The second cluster: Vinnytsia, Zhytomyr, Ivano-Frankivsk, Lugansk, Rivne, Ternopil, Khmelnytsky, Chernivtsi oblasts.

Third cluster: Volyn, Zakarpattia oblasts.

The fourth cluster: Dnipropetrovsk, Donetsk, Zaporozhye, Kirovograd, Lviv, Nikolaev, Odessa, Poltava, Sumy, Kharkiv, Kherson, Cherkasy, Cherkassy oblasts.

The average values of absolute values, which are the classification characteristics of clusterization, have been analyzed.

According to the results obtained, it can be concluded that the highest level of financial and economic security in 2016 was typical to the oblasts included in the first and fourth clusters.

It ought to be noted that as a result of clusterization, only the Kiev oblast was included into the first cluster. This special position in the cluster structure is logical. The first cluster is characterized by maximum values of five out of twelve classification characteristics; 50% of the classification characteristics are at the second level on the strength of all the evidence. Thus, the Kyiv oblast has the highest level of financial and economic security.

The oblasts included in the fourth cluster account for more than 50% of the total sample: these are 13 oblasts including the Dnipropetrovsk one. This cluster is characterized by the highest average rate of GDP growth, capital investment index and consumer price index. The core of the cluster is historically formed industrial oblasts of Ukraine (for example, Dnipropetrovsk, Donetsk, Kharkiv, Mykolaiv, Zaporozhye, Odessa oblasts). The level of financial and economic security of the oblasts' included in the cluster number four can be characterized as steady.

The highest average rate of unemployment growth, import quota and the smallest average values of such classification characteristics as the agricultural product index, industrial production index, capital investment index are typical for the oblasts included in the third cluster (Volyn and Zakarpattia oblasts). The lack of industrial potential and the peculiarities of the geographical location determine the peculiarities of the GRP structure formation and the high share of transboundary movement of goods and services. On the whole, the level of financial and economic security of the oblasts included in the third cluster should be classified as marginal or inadequate.

The level of financial and economic security for the second cluster can be considered as the edge or sufficient one. It is the second largest in the cluster structure and includes eight oblasts. The values of the classification features in the group take the second or third place on the strength of all the evidence.

Conclusions. Acceleration and increase of the globalization processes scale requires a of the conceptual approach revision to assessing the level of economic security. The classic indicative approach that is used by governments of most countries allows assessing the security of an equilibrium economic system and taking into account the slight changes in the external environment. However, in terms of recent world events, it becomes clear that adequate security management of the regional economy is impossible without taking into account the risks of significant fluctuations in the policies and economies of partner countries. In this regard, in the study, an analysis of the possibility of using the conceptual apparatus of open systems theory for the economic security determination has been made. The construction of an adequate nonlinear model implies the definition of acceptable characteristics, which will uniquely determine the regional economic system state at any given time. In addition to the generally accepted macroindicators, it is proposed to use the characteristics associated with integration processes inside the country and outside its borders.

In order to construct an adequate model of financial and economic security assessment at the regional level, a neural network of self-organized map type is used.

The simulation result has been a cluster structure that has divided the set of oblasts in Ukraine into four clusters according to selected classification characteristics. Each cluster corresponds to a certain level of financial and economic security, which was characterized as: high, stable, sufficient and marginal or insufficient.

The obtained results have a clear economic interpretation.

Therefore, the conclusion can be made on the promising use of this approach to assessing the financial and economic security level.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 339.9

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THE DEVELOPMENT OF THE RURAL ECONOMY: CONVERGENCE TO EUROPEAN MODERNITY

Urgency of the research. *Integration of Ukraine into European Area actualizes a necessity to improve efficiency of management in all spheres of national economic system, including its important element – rural economy.*

Target setting. *The authors prove feasibility of implementing the European principles of development of rural economy from the perspective of ensuring overall economic growth of Ukraine, justify the need of improvement of national legislative and institutional support for the concept of rural development.*

Actual scientific researches and issues analysis. *The issue of rural development in the system of European integration of Ukraine is deeply studied by O. Borodina, O. Popov, I. Prokopa [1] T. Ostashko [2], Y. Malko [3], L. Nikitina [4], A. Uzhva [5], R. Hine, K. Ingersent, A. Rayner [6] and others.*

Uninvestigated parts of general matters defining. *The determinants of formation, possibilities and peculiarities of adaptation as well as strategic guidelines for development of rural economy in Ukraine in the context of the gradual implementation of European experience are not defined at the theoretical and methodological level.*

The research objective.*To consider the main provisions of the Strategy for the development of the agrarian sector of Ukraine for the period up to 2020. To develop a modern model of the formation and strategic forecast for the development of rural economy in Ukraine taking into consideration the peculiarities of the policy of rural development, defining its key positions with the substantiation of the determinants of implementation.*

The statement of basic materials. *The model defines the main priorities and objectives of development via convergence with European modernity, in particular by providing proper conditions of life of the population in rural areas, improving the quality of human capital, the efficiency of agricultural production, enhancement of participation of rural society in it, and preservation of environment.*

Conclusions. *All this emphasizes feasibility and effectiveness of the implementation of the basic principles of the European practice and realization of the provisions of domestic legislative and institutional support of rural development.*

Keywords: *development of rural economy; rural development; convergence with European modernity; integration.*

УДК 339.9

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РОЗВИТОК СІЛЬСЬКОЇ ЕКОНОМІКИ: КОНВЕРГЕНЦІЯ ДО ЄВРОПЕЙСЬКОЇ СУЧАСНОСТІ

Актуальність теми дослідження. *Інтеграція України до європейського простору актуалізує необхідність підвищення ефективності господарювання у всіх сферах національної економічної системи, у тому числі її важливого елемента – сільської економіки.*

Постановка проблеми. *Автори статті доводять доцільність імплементації європейських засад розвитку сільської економіки з позиції забезпечення загальноекономічного зростання України, обґрунтовують необхідність удосконалення законодавчого та інституційного забезпечення концепції сільського розвитку.*

Аналіз останніх досліджень і публікацій. *Питання сільського розвитку в системі європейської інтеграції України глибоко досліджують О. Бородіна, О. Попов, І. Прокопа [1] Т. Осташко [2], Ю. Малько [3], Л. Нікітіна [4], А. Ужва [5], Р. Хін, К. Інгерсент, А. Рейнер [6] та інші.*

Виділення недосліджених частин загальної проблеми. *На теоретико- методологічному рівні не визначено детермінанти формування, можливості й особливості адаптації та стратегічні орієнтири розвитку сільської економіки в Україні в умовах поступової імплементації європейського досвіду.*

Постановка завдання. *Розглянути основні положення Стратегії розвитку аграрного сектора України на період до 2020 р. Розробити сучасну модель формування та стратегічного передбачення розвитку сільської економіки України на основі врахування особливостей політики сільського розвитку, визначення її ключових позицій з обґрунтуванням детермінантів імплементації.*

Виклад основного матеріалу. *Модель окреслює основні пріоритети та цілі розвитку через призму конвергенції до європейської сучасності, зокрема забезпечення належних умов життєдіяльності населення в сільській місцевості, поліпшення якості людського капіталу, підвищення ефективності аграрного виробництва та активізації участі в ньому сільського соціуму, збереження довкілля.*

Висновки. *Усе це підкреслює доцільність та ефективність імплементації основних засад європейської практики та реалізації положень вітчизняного законодавчого та інституційного забезпечення сільського розвитку.*

Ключові слова: *розвиток сільської економіки; сільський розвиток; конвергенція до європейської сучасності; інтеграція.*

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Urgency of the research. A study of trends and models of development of rural economy is an economic base of rural development and important element of national economic system. This issue is extremely important in view of strategic course of Ukraine's integration into European economic area. The signing of the Association Agreement with the European Union on the one hand confirms commitment of our country to become a full member of European civilized society and on the other hand it is the agreement on modernization of almost all sectors of national economy in accordance to European principles, norms and standards.

Target setting. The aim of the study is to substantiate strategic guidelines for the development of rural economy using the European experience. The authors prove feasibility of implementing the European principles of developing rural economy eventually ensuring overall economic growth of Ukraine, substantiating the need of improving national legislative and institutional support for the concept of rural development.

Actual scientific researches and issues analysis. The founders of modern scientific and methodological basis of policy of rural development are the following Ukrainian economists-agrarians: O. Borodina, O. Popova, I. Prokopa [1], T. Ostashko [2] and others. These scientists have formed a scientific school of rural development in Ukraine. The issue of rural development in the system of priorities of European integration of Ukraine is deeply studied by Y. Malko [3], L. Nikitina [4] and A. Uzhva [5]. Issues regarding the improvements of the Common Agricultural Policy in terms of versatility of economy are considered in works of foreign scientists such as R. Hine, K. Ingersent, A. Rayner [6] and others.

Uninvestigated parts of general matters defining. The determinants of formation, possibilities and peculiarities of adaptation as well as strategic guidelines for development of multifunctionl rural economy in Ukraine in the context of the gradual implementation of European experience are not defined at the theoretical and methodological level.

The research objective. Implementation of the European principles of development of rural economy is now a determinant of the Strategic Concept of Development of our state in general and formation of rural development policy in particular.

The statement of basic materials. Under the contemporary business conditions, which are characterized by dynamic changes in all spheres of national economy, a systematic approach should be considered as the basis for formation of the model of rural development in Ukraine. It is based on the paradigm of man-centeredness where all efforts are focused on improving the standards of life of rural residents. The policy and practice of rural development in the European Union is implemented on this approach.

In domestic scientific research, the term "European integration" is interpreted as creation of European institutions and policies that evolve toward the formation of certain supranational center around which a common European area should be constituted [4, p. 68]. It is evident that a necessary prerequisite for successful flowing of this process in Ukraine is the approximation of social and economic foundations of rural development to principles, rules and norms of the European countries which are considered economically rational and socially oriented in the world. Rural development policies in European countries are carried out under the Common Agricultural Policy (CAP). First of all it is manifested in the configuration of elements of different types of government policies: structural, regulatory, pricing and foreign trade. The European model of rural development involves implementation of three basic components namely economic, social and environmental. Integrated and mutually agreed communications in all spheres of the rural economy are put into the basis of this model in order to create proper living conditions and vital functions of rural population and their active participation in agricultural production.

European experience of rural development is determined by proper institutional and state support. Thus socioeconomic content is characteristic for such support. The regulatory actions of the state are aimed at ensuring organizational legitimacy. The planned Common Agricultural Policy budget of the European Union for 2014–2020 is 386.9 billion dollars, which is presented in Fig. 1. The most funding (72.8 %) of the budget is for covering direct payments and marketing costs. Such expenses form financial unit I. 89.9 billion USD is allocated for the development of rural areas (financial unit II). That is 23.2% of total funding. 3.5 billion dollars (0.9%) is provided for preparing food reserves in case of crisis in the agricultural sector [7].

The state policy of rural development in Ukraine involves an appropriate legislative framework, however, at presents its stability and institutional security are still low. All above confirms the discrepancy in universally recognized standards of the European Union. Hence there is limited possibility of adaptation European principles to national realities. Taking into considerations integrating factor of sectoral and territorial aspects, especially gradual departure from principles of territorial division, current goals of the European Union and the Common Agricultural Policy are prerequisite for overall objectives of rural development, formed on the approaches related to territorial coordination and convergence.

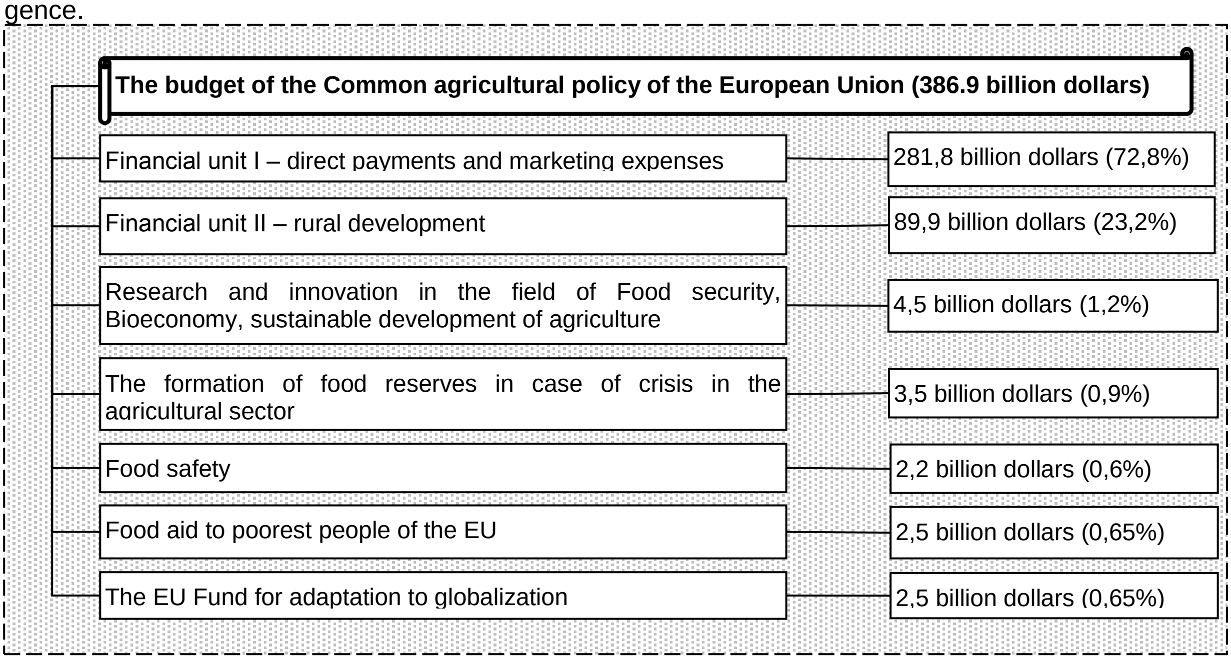

Fig. 1. The planned budget of the Common Agricultural Policy of The European Union for 2014-2020, %
Source: Adapted from [7; 1]

In the framework of the mentioned policy, expenditure on rural development are differentiated depending on the priority of certain measures (Tab. 1). The largest share of expenditure is on agri-environmental payments – 23.4 %, the lowest (2.3 %) – initial afforestation of agricultural land.

Table 1

The expenditure on the measures for rural development within the framework of Common Agricultural Policy of the European Union, %

Measures according to the programmes	Share, %
Agri-environmental payments	23,4
Modernization of farms	11,5
Payments to farmers who work under difficult conditions	7,5
Compensatory payments to farmers in mountain area	6,5
Creation of added value in agriculture and forestry	5,9
Improvement and development of rural infrastructure	5,2
Local development strategies (community participation)	4,1
Restoration and development of a village	3,4
Basic services for economy and rural population	3,3
Involvement of young farmers	2,9
Early retirement of farmers and agricultural producers	2,7
Initial afforestation of agricultural land	2,3

Source: [1; 7]

The Common Agricultural Policy of the European Union for 2014–2020 has identified three vectors of strengthening national economy, namely smart growth (economic development based on knowledge and innovation); sustainable development (economic development based on targeted use of resources, environment and competition); comprehensive growth (promoting employment, obtaining a social and territorial coherence) [7].

It should be noted that key provisions of the Strategy of development of agrarian sector in Ukraine till 2020 correlate with the programming period 2014–2020 of the European Union Common Agricultural Policy in terms of: 1) the priority of rural development via policy orientation on: social and economic development of community; effective use of local resources to preserve the ecosystems and avoid the risks of climate change; introduction of innovation in the rural economy; improvement of competitiveness of agricultural producers and their personal involvement in the formation of added value chains; 2) encouraging the development of partnerships with processing enterprises as well as ensuring and protecting the rights of farmers by increasing the number of professional and non-governmental organizations; 3) promoting employment diversification in rural areas (agricultural and non-agricultural) which will ensure the growth of rural economy [7].

The strategy "Europe 2020", which is designed to create appropriate conditions for a balanced and inclusive growth, presupposes sustainable and multivectoral economic development of rural areas focused on reasonable long-term strategic goals (employment, research and scientific development (innovation), climate and energy balance, education, the struggle against poverty and social exclusion), each of which involves carrying out specific objectives with implementation of clear proposals [8].

An important step towards implementation of European principles of rural development in Ukraine is to develop a unified comprehensive strategy for the development of agriculture and rural areas for 2015–2020. Its purpose is to increase the competitiveness of agriculture as the foundations of rural economy and to promote development of rural areas according to the standards of the European Union and international ones. The Strategy comprises ten key priorities, including rural development, which systematically provide complex unprejudiced realistic concept of development and general foundations of reformation. The main problems of Ukrainian rural areas that are subject to be solved in the framework of this Strategy are: supporting small producers of agricultural products; improving the standards of life; diversifying economic activities in rural areas, and rural development based on community [9]. These directions are clearly in compliance with the key principles of modern European practices of rural development.

Another important step on the part of the state is development of the concept of rural development up to 2025 [10]. Its purpose is to create organizational, legal and financial preconditions for rural development by diversification of economic and non-economic activities in rural areas, to increase incomes of rural residents from agricultural and non-agricultural activities, to improve social standards and living conditions, to protect environment and to bring legislation of rural development in accordance to the standards of the European Union.

In the context of this study the empiric model of formation and strategic foresight (expected results) of developing multifunctional rural economy was designed provided that the basic principles of the European practice and realization of the provisions of the domestic legislation and institutional support are implemented (Fig. 2).

The basis of this model is the consideration of the key imperatives of the European rural development policy up to 2020, which involve for the triune purpose of its implementation. Thus, the European model of rural development is modern scientific and methodological basic of defining the strategic priorities of multifunctional development of rural economy. Its innovation (particularly from the perspective of activating local initiatives) should be manifested on the background of increasing opportunities for the social needs of local communities taking into account the inherent features of rural areas. Ensuring proper living conditions in rural areas, improvement of quality of human capital, improvement of the efficiency of agricultural production and environmental protection are the main priorities and objectives of rural development in Ukraine via convergence with European modernity.

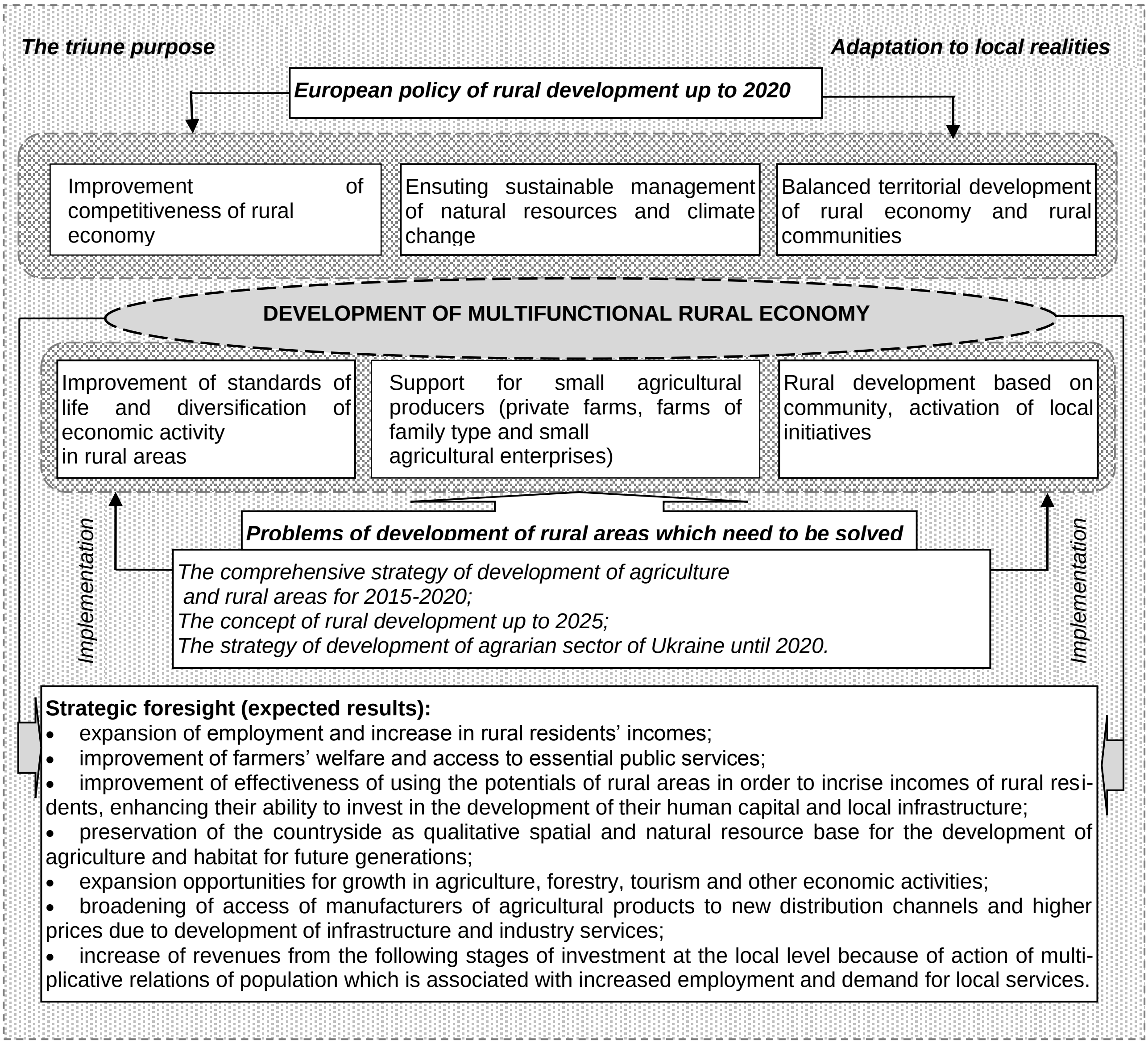

Fig. 2. Conditions of formation and strategic forecasting of development of multifunctional rural economy
Source: Elaborated by the authors

Conclusions. The adaptation of the main tools of the European policy of rural development to local realities involves performance at least of three key objectives: improvement of competitiveness of agriculture as foundations of rural economy; ensuring effective development and use of institutional and social and economic potential of rural areas; balanced rural development via full self-realization of rural society and benefits of multifunctionality of rural economy.

The integration of Ukraine into the world economic area will determine balanced development of rural areas through moving the focus of the state agricultural policy from support of agricultural sector to support of rural development, economic basis of which is rural economy. Matching goals of Agricultural policy and Rural Development policy is the prerogative of the contemporary European practice of multifunctional development of rural economy, which configures the possibility of forming the main priorities of strategic development.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 378:005:339.137.2(477)

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COMPETITIVENESS MANAGEMENT OF UKRAINIAN HIGHER EDUCATIONAL INSTITUTIONS

Urgency of the research. *A special role in the formation of a competitive national economy belongs to the system of higher education and individual higher education institutions (HEIs), since they determine the levels of human capital and intellectual potential of the nation. In addition, a sufficient competitiveness level (CL) of domestic HEIs is a prerequisite for the integration of Ukrainian higher education system into the European educational space.*

Target setting. *The activity of the HEIs in Ukraine occurs under the influence of a significant number of factors that increase competition in the market of educational services and significantly complicate the managing process of HEIs CL. These circumstances actualize the search for ways to improve the management of HEIs CL.*

Actual scientific researches and issues analysis. *The HEIs CL as an object of research by economists, is found in the writings of such scholars as Bachynska O. M., Vorobiova K. O., Hryshchenko I. M., Dudko P. M., Ivanov Yu. V., Nefedova T. M., Prus L. R., Salohubova V. M., Tarasenko I. O., etc.*

Uninvestigated parts of general matters defining. *The question of determining the management stages sequence of HEIs CL remains insufficiently researched in the scientific literature.*

The research objective. *The investigation of category essence of HEIs CL; definition of the management stages sequence of HEIs CL.*

The statement of basic materials. *The article studied the essence and proposes the definition of the category of HEIs competitiveness. A sequence of management stages of HEIs CL is formed, which involves the choice of a competitive strategy for HEIs on the environment factors evaluation results and factors of the HEIs CL.*

Conclusions. *The main advantages of the management stages proposed sequence of the HEIs CL are: providing condition monitoring of the environment and factors of HEIs CL; the possibility of choosing a competitive strategy.*

Keywords: *HEIs competitiveness; competitiveness factors; competitive advantages; competitiveness management.*

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УПРАВЛІННЯ КОНКУРЕНТОСПРОМОЖНІСТЮ ЗАКЛАДІВ ВИЩОЇ ОСВІТИ УКРАЇНИ

Актуальність теми дослідження. *Особлива роль при формуванні конкурентоспроможної національної економіки належить системі вищої освіти та окремим ЗВО (закладам вищої освіти), оскільки саме вони визначають рівні людського капіталу та інтелектуального потенціалу нації. Крім того, достатній рівень конкурентоспроможності (КС) вітчизняних ЗВО є необхідною умовою інтеграції системи вищої освіти України в європейський освітній простір.*

Постановка проблеми. *Діяльність ЗВО в Україні відбувається під впливом значної кількості чинників, які посилюють конкурентну боротьбу на ринку освітніх послуг та значно ускладнюють процес управління КС ЗВО. Зазначені обставини актуалізують пошук напрямів вдосконалення процесу управління КС ЗВО.*

Аналіз останніх досліджень і публікацій. *КС ЗВО, як об'єкт досліджень економістів, зустрічається в працях науковців: Бачинської О. М., Воробйової К.О. Грищенка І. М., Дудка П. М., Іванова Ю. В., Нефедової Т. М., Прус Л. Р., Салогубової В. М., Тарасенко І. О. та ін.*

Виділення недосліджених частин загальної проблеми. *Недостатньо дослідженим у науковій літературі залишається питання визначення послідовності етапів управління КС ЗВО.*

Постановка завдання. *Дослідження сутності категорії КС ЗВО; визначення послідовності етапів управління КС ЗВО.*

Виклад основного матеріалу. *У статті досліджено сутність та запропоновано визначення категорії конкурентоспроможності ЗВО. Сформовано послідовність етапів управління КС ЗВО, що передбачає вибір конкурентної стратегії ЗВО за результатами оцінювання чинників зовнішнього середовища та факторів КС ЗВО.*

Висновки. *Основними перевагами пропонованої послідовності етапів управління КС ЗВО є: забезпечення моніторингу стану зовнішнього середовища та факторів КС ЗВО; можливість вибору конкурентної стратегії.*

Ключові слова: *конкурентоспроможність ЗВО; фактори конкурентоспроможності; конкурентні переваги; управління конкурентоспроможністю.*

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Urgency of the research. The socio-economic situation in Ukraine is characterized by deepening of crisis phenomena and, at the same time, accompanied by an increase in European integration and globalization processes. Considering this, in accordance with the Law of Ukraine "On the Fundamentals of National Security of Ukraine", the main contemporary priorities of national interests include, in particular, the creation of a competitive, socially oriented market economy and ensuring the constant improvement of living standards and welfare of the population; integration of Ukraine into the European political, economic, legal space [1]. A special role in the formation of a competitive national economy belongs to the system of higher education and individual higher education institutions (HEIs), since they determine the levels of human capital and intellectual potential of the nation. In addition, a sufficient competitiveness level (CL) of domestic HEIs is a prerequisite for the integration of the national system of higher education into the European educational space.

Target setting. The activities of HEIs in Ukraine are under the influence of a significant number of factors, which intensify the competitive struggle in the market of educational services and greatly complicate the process of managing the competitiveness of HEIs. These factors include the following: reforming the system of higher education; increase in the level of HEIs autonomy; applicants number reduction; insufficient competitiveness level of the national economy, which, in turn, greatly reduces domestic HEIs competitiveness in the international market of educational services. These circumstances update the search for ways to improve the management of HEIs competitiveness in modern conditions.

Actual scientific researches and issues analysis. Analysis of scientific literature on the subject of research shows that the question of the competitiveness essence, the definition of its components and influence factors, the system formation for managing the competitiveness of production and intermediary organizations are studied in detail in domestic and foreign scientists' works. HEIs competitiveness, as an object of economists' research, is not so common in scientific literature. At the same time, the need to ensure the competitiveness of domestic HEIs in modern conditions causes the scientists' interest to this question, in particular Bachynska O. M., Vorobiova K. O., Hryshchenko I. M., Dudko P. M., Ivanov Yu. V., Nefedova T. M., Prus L. R., Salohubova V. M., Tarasenko I. O., etc. [2-8]. Thus, the special role of the quality of educational services and image in managing HEIs competitiveness is emphasized in the papers [2; 3]. In the paper [4], innovative development of HEIs and its priority directions are investigated as the main factor of ensuring HEIs competitiveness. In Ivanov Yu. V., Prus L. R., [6; 7] and Salohubova V. M.'s [8] writings the management of HEIs competitiveness is proposed to be based on the use of marketing tools, namely: "7P" marketing [8] and benchmarking technologies [6; 7].

Uninvestigated parts of general matters defining. The question of determining the management stages sequence of HEIs CL remains insufficiently researched in the scientific literature.

The research objective. The investigation of category essence of HEIs CL; definition of the management stages sequence of HEIs CL.

The statement of basic materials. Analysis of scientific literature [2, p. 6; 3-5; 6, p. 14-16; 7, p. 5-6; 8, p. 12-13] became the basis for identifying the main characteristics of HEIs competitiveness, which the author summarizes as follows: (1) high quality of educational services; (2) meeting the consumers' needs of educational services and society as a whole; (3) the HEIs adaptability to changes in the educational services market; (4) the effectiveness of the search, formation and competitive advantages use.

The revealed characteristics of HEIs competitiveness, as well as the essence of the categories "competitiveness factors" ("... factors that affect the viability of the enterprise, which absence endangers its existence" [6, p. 19]) and "HEIs competitive advantage" ("... advantage , which, as a result of its influence, brings HEIs additional income... Competitive advantages ensure the uniqueness of the service and satisfy client's specific needs "[6, pp. 18-19]) became the basis for the formation of the author's definition of HEIs competitiveness as HEIs place complex characteristics in the educational services market, formed on the basis of effective adaptive management of competitiveness factors set (identified by the author as competitiveness "necessary conditions") and HEIs competitive advantages (defined by the author as competitiveness "sufficient conditions").

The theoretical study of competitiveness essence, the categories of "competitiveness factors" and "competitive advantages", as well as the specifics of HEIs activity, allowed to determine the competitiveness management principles of HEIs, namely:

– complexity and systemic, researching HEIs competitiveness as an open system taking into account the complex of interconnected elements - factors of the external environment and competitiveness internal factors;

– scientific and practical significance that envisages the HEIs competitiveness management according to objective laws based on the use of recent scientific achievements and best practices;

– continuity and adaptability, which means the need to consider HEIs competitiveness management system as a dynamic system that constantly changes and adapts to changes in the external environment;

– optimality and innovation, implying the orientation of the management system for HEIs competitiveness to achieve the optimal competitiveness level on the basis of effective management of existing competitive advantages and the formation of new ones;

– focusing on stakeholder requests, which means finding a compromise between the educational services consumers' needs, employers and other actors.

The proposed stages sequence of HEIs competitiveness management is shown in Fig. 1

In the process of controlling HEIs competitiveness, it is implied to monitor continuously the external environment factors: HEIs opportunities and threats, consumers' demands of educational services and employers, leading HEIs activities in the domestic and international educational services markets.

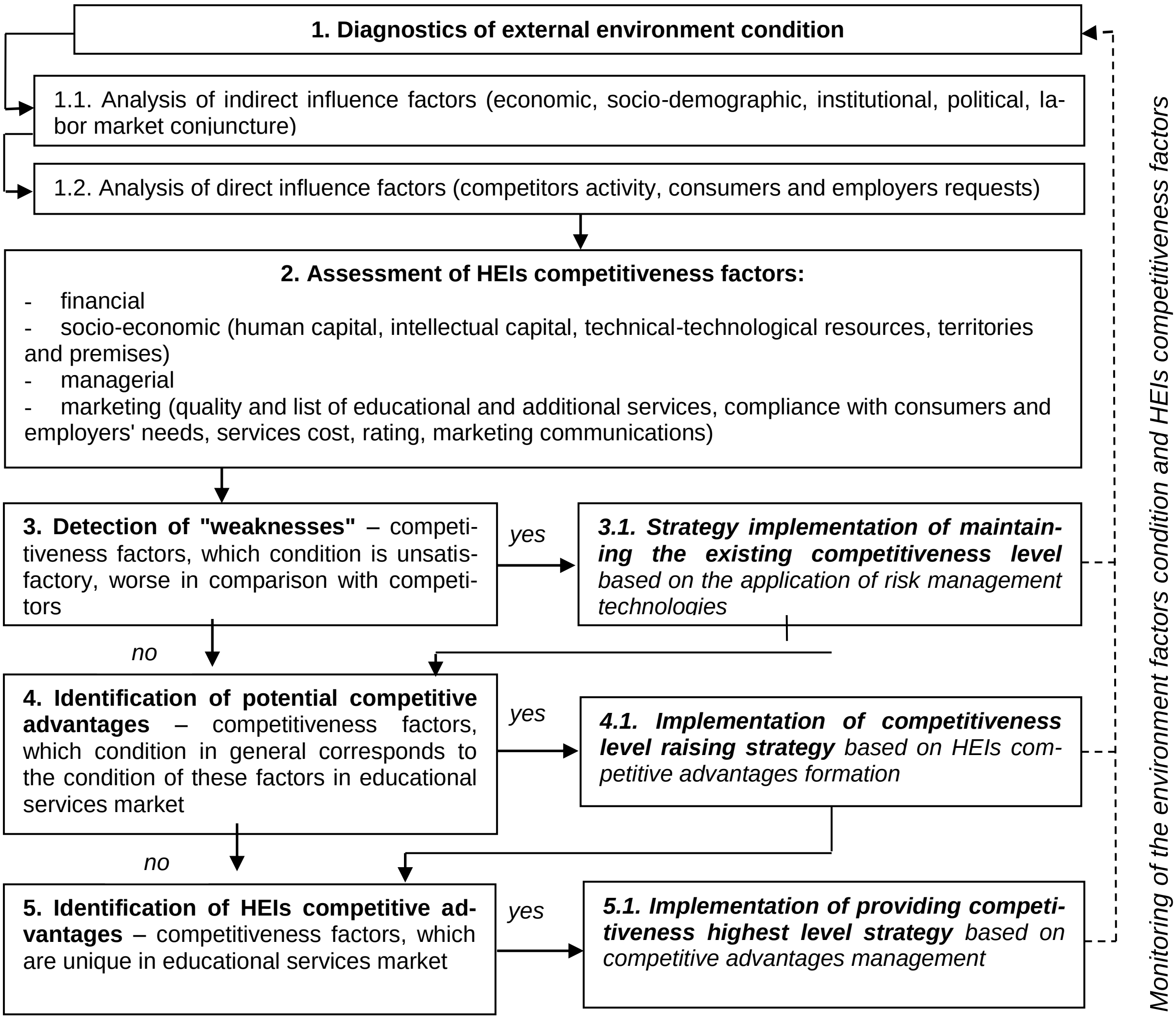

Fig. 1. Stages of HEIs competitiveness management

Source: created by the author

Besides, ensuring HEIs competitiveness management effectiveness requires the assessment of all competitiveness key factors in order to identify HEIs weaknesses; distinguishing those competitiveness factors that can potentially become HEIs competitive advantages; as well as the available competitive advantages. Identifying the factors of competitiveness that are unsatisfactory ("weaknesses"), implementation of the strategy of preserving the existing level of HEIs competitiveness is necessary. Successful implementation of this strategy allows us to move to the next level of competitiveness management – implementation of increasing HEIs competitiveness strategy based on formation of HEIs competitive advantages (in the presence of competitiveness factors that can potentially become competitive advantages). In the case of "weaknesses" absence in HEIs activity and HEIs competitive advantages system formation, it is expedient to implement a strategy of ensuring the highest level of competitiveness based on managing the competitive advantages.

It should be noted that taking into account the current stage of socio-economic development of Ukraine and global trends in the development of higher education, a special role in competition in educational services market belongs to such competitive advantages as: brand (HEIs image); high quality of educational and related services; diversification of educational services portfolio; low cost of services; orientation to the real sector of the economy, employment assistance; technical-technological uniqueness of educational services provision (eg, the presence of extramural and distance learning); convenient location of HEIs, presence of hostels.

Conclusions. The research of the essence of economic categories "HEIs competitiveness", "competitiveness factors", "competitive advantages" became the basis for definition of principles and formation of management stages sequence of HEIs CL. The advantages of the proposed stages sequence are: ensuring the monitoring of environment condition and factors of the HEIs CL; the possibility of choosing a competitive strategy based on the analysis of the "weaknesses" identified by the results, the available and potential competitive advantages of the HEIs. Further research requires specification of these competitive strategies of HEIs; as well as methods of formation and management of competitive advantages of the HEIs.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 336.02:338.2

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FISCAL POLICY AS AN ELEMENT OF SOCIO-ECONOMIC TRANSFORMATIONS

Urgency of the research. *The forming-up of public finances effective system involves the improving fiscal policy as an important component of socio-economic transformation.*

Target setting. *Currently, the important tasks are to prove the fiscal policy role in the social and economic reforms, to open its priorities and objectives, to identify ways to implement them.*

Actual scientific researches and issues analysis. *A wide range of scientists publishing by such scientists as T. Boholib, O. Vasylyk, I. Zapatrina, L. Lysyak, I. Lukyanenko, V. Fedosov, I. Chuhunov and others are dedicated to development of fiscal policy formulation and implementation approaches, to define its priorities and directions to implement them.*

Uninvestigated parts of general matters defining. *However, at this stage, despite the numerous important scientific researches it is important to deepen the researches of the fiscal policy role as part of the socio-economic transformations.*

The research objective. *To substantiate the fiscal policy role as a component of socio-economic transformations, to define its priority tasks and directions of their implementations.*

The statement of basic materials. *Fiscal policy is a powerful instrument of socio-economic processes state regulation. Currently, the main objective of fiscal policy is to stabilize public finances. The basic condition is to support the macroeconomic stability, to speed up the economic growth, to implement the effective governance, to strengthen decentralization processes and to reform the public finances system.*

Conclusions. *Effective fiscal policy provides an opportunity to increase the level and quality of life, to create conditions for sustainable economic growth, to modernize the economy and social sphere, to achieve the strategic objectives of socio-economic development.*

Keywords: *fiscal policy; public finances; public finance system; macroeconomic stability; economic growth.*

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ФІНАНСОВО-БЮДЖЕТНА ПОЛІТИКА ЯК СКЛАДОВА СОЦІАЛЬНО-ЕКОНОМІЧНИХ ПЕРЕТВОРЕНЬ

Актуальність теми дослідження. *Побудова ефективної системи державних фінансів передбачає удосконалення фінансово-бюджетної політики як вагомої складової соціально-економічних перетворень.*

Постановка проблеми*. На даний час важливими завданнями є обґрунтування ролі фінансово-бюджетної політики у соціально-економічних перетвореннях, розкриття її пріоритетних напрямів та завдань, визначення шляхів їх реалізації.*

Аналіз останніх досліджень і публікацій. *Розвитку підходів до формування та реалізації фінансово-бюджетної політики, визначення її пріоритетних завдань та шляхів їх реалізації присвячено публікації широкого кола вітчизняних науковців, серед яких Т. Боголіб, О. Василик, І. Запатріна, Л. Лисяк, І. Лук'яненко, В. Федосов, І. Чугунов та ін.*

Виділення недосліджених частин загальної проблеми. *Разом з тим на сучасному етапі попри наявність численних наукових розробок важливим є поглиблення дослідження ролі фінансово-бюджетної політики як складової соціально-економічних перетворень.*

Постановка завдання. *Обґрунтувати роль фінансово-бюджетної політики як складової соціально-економічних перетворень, визначити пріоритетні завдання та шляхи їх реалізації.*

Виклад основного матеріалу. *Фінансово-бюджетна політика є вагомим інструментом державного регулювання соціально-економічних процесів. На даний час основним завданням фінансово-бюджетної політики є стабілізація публічних фінансів. Базовою умовою зазначеного є утримання макроекономічної стабільності, прискорення економічного зростання, впровадження ефективного врядування, посилення децентралізаційних процесів та реформування системи державних фінансів.*

Висновки. *Дієва фінансово-бюджетна політика надає можливість підвищити рівень і якість життя населення, створити умови для сталого економічного зростання, модернізації економіки і соціальної сфери, досягнення стратегічних цілей соціально-економічного розвитку країни.*

Ключові слова: *фінансово-бюджетна політика; публічні фінанси; система державних фінансів; макроекономічна стабільність; економічне зростання.*

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Urgency of the research. Globalization determines the importance of deepening the state role in the regulation of socio-economic processes, improving the management quality level of the fiscal and monetary system with increased effectiveness of their coordination [1]. In order to ensure the effectiveness and efficiency of public finance system transformations, an important task is the formation and implementation of an effective fiscal policy, which influence level will contribute to fiscal sustainability and balance as one of the most complex and multifaceted processes. Deepening of the European integration processes can only be successful if it takes place on the background of the effective governance introduction.

The creating of an effective system of public finances involves improving fiscal policy as an important component of socio-economic transformation. The fiscal policy should be co-ordinated with the strategic goals of socio-economic transformation, aimed at creating the proper conditions for deepening the interaction of the state and society.

Target setting. Currently, the important tasks are to prove the fiscal policy role in the social and economic reforms, to open its priorities and objectives, to identify ways to implement them.

Actual scientific researches and issues analysis. A wide range of domestic scholars' publications including T. Boholib, O. Vasylyk, I. Zapatrina, L. Lysyak, I. Lukyanenko, V. Fedosov, I. Chuhunov and others devoted to the development of approaches to the fiscal policy formation and implementation, definition of its priority tasks and ways of their realization.

Uninvestigated parts of general matters defining. However, at this stage, despite the numerous important scientific researches it is important to deepen the researches of the fiscal policy role as part of the socio-economic transformations.

The research objective. To substantiate the fiscal policy role as a component of socio-economic transformations, to define its priority tasks and directions of their implementations.

The statement of basic materials. Fiscal policy is a powerful instrument of state regulation of socio-economic processes. At present, the main task of fiscal policy is to stabilize public finances. The basic condition for this is the maintenance of macroeconomic stability, acceleration of economic growth, the introduction of effective governance, strengthening decentralization processes and reforming the system of public finances.

In the context of strengthening European integration processes, the issue of improving the mechanism for ensuring macroeconomic stability plays a significant role. The above information determines the necessity of developing an effective fiscal strategy aimed at achieving economic stabilization and economic growth. An important task here is the use of an effective methodology for monitoring macroeconomic instability, the development of a methodological basis for the concept of macroeconomic stabilization by assessing the possibilities of alternative methodological approaches for solving relevant problems in countries with developed and transformational economies, assessing the risks that determine the stability of the macroeconomic system in a globalizing environment.

An important task of accelerating economic growth is the transition to an innovative way of development, which actualizes the issue of strengthening the impact of fiscal policy on creating a favorable investment climate, ensuring the effectiveness of the fiscal component and the stability of tax revenues, seeking additional growth factors.

It is important to note that a significant level of investment activity of the economy is the most important internal factor that stimulates expansion of production and, accordingly, economic growth. At the same time, capital investment contributes to an increase in wages without reducing the competitiveness of enterprises, by allowing other domestic factors to stimulate economic growth. At the same time, the dynamics and structure of capital investment in recent years is heterogeneous. The share of capital investments at the expense of the state budget for 2011-2016 is 3,67%, including 5,21% for 2011-2013, 2,12% for 2014-2016; at the expense of local budgets for 2011-2016, is 4.07%, including 3.02% for 2011-2013, 5.13% for 2014-2016 (Tab. 1).

Table 1

Structure of capital investments by sources of financing for 2011-2016, %

Sources of funding	2011	2012	2013	2014	2015	2016
The funds of the state budget	7,20	5,96	2,47	1,25	2,53	2,58
The funds of local budgets	3,21	3,13	2,72	2,70	5,22	7,47
Own funds of enterprises and organizations	61,16	62,64	66,35	70,47	67,50	69,25
Bank loans and other loans	15,19	14,54	13,90	9,91	7,59	7,55
The funds of foreign investors	2,09	1,79	1,71	2,57	3,00	2,74
Funds for housing construction	7,29	8,26	9,63	10,06	11,71	8,33
Other sources of funding	3,86	3,67	3,22	3,05	2,44	2,09

Source: created on the basis of [2] (excluding the temporarily occupied territory of Crimea and Sevastopol, for 2014-2016, also without part of the anti-terrorist operation zone)

Based on the leading foreign experience, it is expedient to take into account the influence of capital investments on the growth of real gross domestic product. The indicated relationship can be estimated using the regression equation:

$$Y=\alpha+bx$$

$$b=\frac{\overline{x\cdot y}-\bar{x}\cdot\bar{y}}{S^2(x)}=\frac{0.834-0.623(-1.4)}{0.24}=7.1307$$

$$a=\bar{y}-b\cdot\bar{x}=-1.4-7.1307\cdot 0.623=-5.8448 \qquad (1)$$

where:

y – growth of real gross domestic product;

x – the share of capital investments at the expense of the state budget in GDP.

It is also important to take into account the density of interconnection. This indicator is a sample linear correlation coefficient, which is calculated by the formula:

$$r_{x,y}=b\cdot\frac{S(x)}{S(y)}=7.131\frac{0.489}{5.219}=0.669 \qquad (2)$$

Thus, a significant level of direct correlation between the mentioned indicators is noted.

The linear regression equation is following:

$$y = 7.131x - 5.845 \qquad (3)$$

Consequently, with an increase in the capital investments share at the expense of the state budget in the gross domestic product by one percentage point for the period of 2011-2016, the growth of real gross domestic product increases by 7,131 percentage points.

Taking into account the mentioned above methodology, with an increase in the capital investments share at the expense of local budgets in the gross domestic product by one percentage point for the period of 2011-2016, the growth of real gross domestic product increases by 12.598 percentage points.

The linear regression equation is following:

$$y = 12{,}598x - 9{,}128 \qquad (4)$$

In present conditions, it is also worth pointing out that a number of structural problems that restrain the sustainable and balanced development of the domestic economy, in particular, the non-optimal structure of public administration, which manifests itself in the insufficient strategic direction of economic sectors development, remain unsolved; uncertainty and volatility of business conditions, in particular pricing, tariff and currency policy; insufficient level of labor productivity and significant production costs due to weak innovation activity of the real sector of the economy; inefficient system of financial resources distribution in the economy; insufficient volume of foreign direct investment attraction; external debt growth.

In order to ensure the adequacy of the needs of the domestic economy in the financial resources and increase their accessibility, a significant role is played by attracting foreign direct investment, which is a major factor in the modernization of the economy on an indebted basis. At the same time, their decrease is noted in 2015 compared with the previous year by 21.05%, in 2016, compared with the previous year, it is 5.55%.

It is advisable to carry out systematic measures aimed at minimizing the dependence of the domestic economy on the impact of the foreign economic situation. The main efforts in this regard should be focused on increasing the products exports volume with high added value and an increase in the innovative goods exports share.

It is important to note that accelerating economic growth should take place at the expense of economy competitiveness increasing. The mentioned issues actualize the development of an active innovation strategy, which provides the modernization of basic industries and accelerated formation of new high-tech economy sectors. In this case, the most important factor in improving the competitiveness of the basic industries is the widespread introduction of information and communication technologies.

The issues of the effective state governance implementation in modern conditions are of particular importance. The experience of countries with developed economy shows that increasing the efficiency and effectiveness of state governance is carried out by applying an assessment of the public administration effectiveness A key aspect of improving the efficiency and quality of public governance is the creation of a comprehensive and objective system of indicators that reflect the responsibilities fulfillment and the goals achievement degree. The most common approach for both developed and transformational economies is usage of integrated performance and effectiveness indicators that reflect the main economic and political parameters of public administration. In particular, in order to modernize the public administration systems in the countries of Central and Eastern Europe, the Program for Supporting Improvement of Governance and Management was launched.

The purpose of this evaluation program is to assist beneficiary countries in their efforts to improve public administration, which would increase the efficiency of administration and stimulate the observance by the public sector of democratic values, ethics and respect for the law supremacy; assistance in strengthening the countries capacity at the central level, which should contribute to solving the problems of globalization and support the countries integration plans to the European Union; support for European Union and other donors' initiatives aimed at helping beneficiaries carry out public administration reforms [3].

A criterion for the introduction of effective governance should be an effective return on the use of budget funds by strengthening the linkage of budget allocations with the country socio-economic development priorities, directing financial resources to the most socially important directions, in particular, by strengthening decentralization processes that require appropriate legislative support.

At present, a number of normative legal acts have been adopted in this area, among them: the Law of Ukraine "On Voluntary Association of Territorial Communities" dated February 5, 2015, № 157-VIII, aimed at forming an effective basic level of local self-government [4]; The Law of Ukraine "On Cooperation of Territorial Communities" dated June 17, 2014, № 1508-18, aimed at creating a mechanism for solving common problems of communities [5]; The Decree of the Cabinet of Ministers of Ukraine "On Approving the Concept of Reforming Local Budgets" dated May 23, 2007, № 308-p., saying the budget funds management decentralization was determined as the main task for transforming local budgets into an effective instrument of socio-economic development of administrative-territorial units [6]; Order of the Cabinet of Ministers of Ukraine "On Approving the Concept of Reforming Local Self-Government and Territorial Organization of Power in Ukraine" dated January 04, 2014, № 333-p., according to which the achievement of the optimal distribution of powers between local governments and executive authorities on the principles of subsidiarity and decentralization is marked [7].

These legislative acts created the prerequisites for increasing the administrative-territorial units competitiveness, ensuring their development, contributed to strengthening the country's motivation to inter-municipal consolidation and the capable territorial communities formation. At the same time, the issue of the lack of effective mechanism for providing financial support to voluntary associations of territorial communities, in particular the increase in their number, is not accompanied by a proportional increase in the amount of subvention for infrastructure development, remains unresolved; the issue of the responsibilities distribution between local governments and executive authorities, as well as functions and responsibilities between local councils of united territorial communities and district state administrations, is not regulated; it is important to introduce strategic planning and programming of the united territorial communities development; mechanisms improvement for monitoring the local self-government bodies activities.

The implementation of systemic reforms of the public finance system involves increasing its transparency and accountability in management, ensuring the distribution efficiency and financial resources use, effective budget forecasting.

In particular, at present, expenditure on social protection and social security is the largest share of the state budget expenditures (for 2011-2016, the share of these expenditures in the general structure is 27.62%, including 26.97% in 2011-2013, and 26.33% for 2014-2016); expenditures for state functions (for 2011-2016, the share of these expenditures in the overall structure is 15.93%, including 13.8% for 2011-2013, 11.66% for 2014-2016). Expenditures for economic activity are not significant. In particular, for 2011-2016, the share of these expenditures in the overall structure is 8.62%, including 10.63% for 2011-2013, 12.64% for 2014-2016 (Tab. 2).

Table 2

Structure of expenditures of the Consolidated Budget of Ukraine for 2011-2016, %

Functional classification	2011	2012	2013	2014	2015	2016
State functions	11,79	11,00	12,18	14,55	17,23	16,02
Defense	3,13	2,92	2,93	5,18	7,62	7,09
Public order, security and judiciary	7,74	7,39	7,78	8,49	8,05	8,60
Economic activity	14,62	13,26	10,04	9,13	8,64	8,08
Environmental protection	0,93	1,07	1,10	0,66	0,81	0,75
Utilities	2,09	4,11	1,59	3,43	2,32	2,12
Healthcare	11,60	11,79	12,16	10,82	10,40	9,00
Spiritual and physical development	2,56	2,74	2,70	2,62	2,38	2,02
Education	20,48	20,47	20,84	18,96	16,72	15,46
Social protection and social security	25,06	25,25	28,67	26,15	25,84	30,87

Source: created on the basis of [9]

Basad on the regression equation (formula 1), with an increase in the share of expenditures on state functions in gross domestic product by one percentage point for the period 2011-2016, the growth of real gross domestic product decreases by 3,844 percentage points (5); the corresponding indicator of defense expenditures decreases by 4,102 percentage points (6); public order, security and judicial power decreases by 9,080 percentage points (7); for economic activity increases by 3,926 percentage points (8); environmental protection increases by 34,091 percentage points (9); housing and communal services decreases by 3,714 percentage points (10); health care increases by 1,955 percentage points (11); spiritual and physical development decreases by 4,401 percentage points (12); education increases by 2,348 percentage points (13); social protection and social security increases by 0.946 percentage points (14).

Linear regression equations are following:

$$y = 16{,}740-3{,}844x \quad (5)$$

$$y = 5{,}36-4{,}102x \quad (6)$$

$$y = 23{,}459-9{,}080x \quad (7)$$

$$y = 3{,}936x-15{,}624 \quad (8)$$

$$y = 34{,}091x-11{,}744 \quad (9)$$

$$y = 1{,}922-3{,}714x \quad (10)$$

$$y = 1{,}955x-8{,}722 \quad (11)$$

$$y = 2{,}363\text{-}4{,}401x \tag{12}$$

$$y = 2{,}348x\text{-}16{,}486 \tag{13}$$

$$y = 0{,}946x\text{-}10{,}134 \tag{14}$$

Thus, in the context of the limited financial resources, the main strategic objective of fiscal policy should be increasing the using budget funds efficiency and their concentration on the priority directions of country socio-economic development, with increasing of the budget expenditures share on economic development and preserving their social orientation.

In order to ensure the effective formation and execution of different levels budgets, the transition to medium-term budget planning is a major task. In particular, according to the Strategy for Reforming the Public Finance Management System for 2017-2020, the implementation of the medium-term budget planning model, which main element is the three-year budget declaration as an instrument of combining the strategic priorities of the state with the budget possibilities, is identified as an important task. It is substantiated that the budget declaration should contain expenditures limit values for the main spending units which should be considered while planning their activities. In order to strengthen the reliability of the budget in the medium term, the introduction of a system for managing fiscal risks is envisaged [10].

It is also important to build a high-quality system of macroeconomic forecasts, to coordinate budget planning with strategic plans and country development programs, and to justify the principles laid down in the state planning framework.

Conclusions. The fiscal policy is a significant component of socio-economic transformation. It provides an opportunity to raise the level and quality of population's life, create conditions for sustainable economic growth, modernization of the economy and social sphere, achievement of country socio-economic development strategic goals. Strengthening of European integration processes at the present stage of the public finances system development necessitates an increase in the fiscal policy efficiency and the effective financial instruments use that will enable them to react to changes in the external economic situation, maintaining the holistic development parameters and ensuring macroeconomic stability through the use of qualitative financial and economic forecasts and prerequisites laid down in the basis of budget planning.

The introduction of medium-term budget planning will contribute to ensuring the efficiency and effectiveness of budget planning, improving the mechanism for making budget decisions and raising the level of transparency and accountability of the public finance system to society, will create a financial framework for strategic initiatives and a prerequisite for strengthening the fiscal discipline of the participants in the budget process.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 330.34.011:330.567.2

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STRUCTURAL ANALYSIS OF CATEGORY APPARATUS OF CONSUMPTION IN THE SUSTAINABLE DEVELOPMENT SYSTEM

Urgency of the research. *The transition from consumer society to the foundations of sustainable development is an urgent problem of science, especially in the process of European integration of Ukraine, while business entities are most open to the implementation of these principles in the process of transformation.*

Target setting. *Multidimensional category of consumption as a key determinant of sustainable development, its research within the conceptual-categorical apparatus of different disciplines resulted in inconsistencies in the disclosure of its essence because of several related concepts use.*

Actual scientific researches and issues analysis. *Significant contributions to the study of responsible, intelligent, sustainable consumption and production have been made by well-known foreign (J. Gontelos, T. Jackson, A. Deaton, F. Capra, L. Mikaelis, D. Fedrigo) and domestic scientists (O. Grishnov, A. Kotenko, A. Kolot, O. Melnichenko, L. Pogorila, T. Saltevska).*

Uninvestigated parts of general matters defining. *At the same time, structural elements of the conceptual apparatus of consumption remain insufficiently substantiated and established. The issue of consumer safety is all the more acute.*

The research objective *is to explore the structural interrelations between the elements of the conceptual apparatus of the category "consumption" in terms of its focus on ensuring social and economic development, the welfare of the individual and humanity as a whole on the basis of sustainable development.*

The statement of basic materials. *The article deals with the structural-system analysis of the terms "sustainable", "socially responsible", "green", "intelligent", "rational", "ethical" consumption. It has been established that in the majority of them, they are aimed at reducing the negative impact on health, the environment, society, formation of conscious behavior (motivation) of the consumer. The concept of "safe consumption" is suggested.*

Conclusions. *The dialectical connection of related categories of the "consumption" concept has been analyzed; the tetra-like model of the structure of the category apparatus of consumption in the sustainable development system has been proposed.*

Keywords: *sustainable; intelligent; responsible; rational consumption; consumer safety; structural analysis.*

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СТРУКТУРНИЙ АНАЛІЗ КАТЕГОРІАЛЬНОГО АПАРАТУ СПОЖИВАННЯ В СИСТЕМІ СТАЛОГО РОЗВИТКУ

Актуальність теми дослідження. *Перехід від суспільства споживання до засад сталого розвитку є актуальною проблемою науки, особливо в процесі євроінтеграції України, оскільки суб'єкти господарювання є найбільш відкритими до впровадження нових принципів діяльності саме під час трансформації.*

Постановка проблеми. *Багатоаспектність категорії споживання як ключової детермінанти сталого розвитку суспільства, дослідження в межах понятійно-категоріального апарату різних галузей знань обумовило різночитання в розкритті її сутності через використання низки споріднених понять.*

Аналіз останніх досліджень і публікацій. *Значний внесок у дослідження питань відповідального, розумного, сталого споживання зробили відомі зарубіжні (Дж. Гонтелес, Т. Джексон, А. Дітон, Ф. Капра, Л. Мікаеліс, Д. Федріго) та вітчизняні вчені (О. Грішнова, А. Котенко, А. Колот, О. Мельниченко, Л. Погоріла, Т. Салтевська).*

Виділення недосліджених частин загальної проблеми. *Залишаються недостатньо обґрунтованими та встановленими структурні взаємозв'язки елементів понятійного апарату споживання, а також не втрачає актуальності проблема забезпечення безпеки споживання.*

Постановка завдання. *Дослідити структурні взаємозв'язки елементів понятійного апарату категорії «споживання» з точки зору її спрямованості на забезпечення соціально-економічного розвитку, добробуту індивідуума та людства в цілому на засадах сталості.*

Виклад основного матеріалу. *Проведено структурно-системний аналіз понять «стале», «соціально-відповідальне», «зелене», «розумне», «раціональне», «етичне» споживання. Встановлено, що у своїй більшості вони спрямовані на зменшення негативного впливу на здоров'я, довкілля, суспільство, формування свідомої поведінки (мотивації) споживача. Обґрунтовано доцільність використання поняття «безпечне споживання».*

Висновки. *Проаналізовано діалектичний зв'язок споріднених категорій поняття «споживання»; запропоновано тетраподібну модель структури категоріального апарату споживання в системі сталого розвитку.*

Ключевые слова: *стале; розумне; відповідальне; раціональне споживання; безпека споживання; структурний аналіз.*

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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Urgency of the research. Having crossed the 25-year limit of its development, the concept of sustainable development not only does not lose, but is gaining increasing relevance in various aspects. For example, according to the UN Development Program in Ukraine, the relationship between socio-economic development and environmental degradation totals about 75% of the total environmental impacts and 60% of consumer spending [1]. Changing of traditional approaches of consumption to sustainable is economically efficient and contributes to reducing of risks to human health and improving the quality of life.

The transition from consumption society to the sustainable development principles following requires the consolidation of efforts of the population, entrepreneurship and state. Attention of the world's scientific community, public, supra-state entities and business to this issue is resulted in numerous studies, publications, development programs and related events. Thus, one of the goals of sustainable development of mankind for 2016-2030 is the ensurance of transition to rational consumption and production models [2].

Study of economy modernization on the basis of sustainable consumption is, at the present stage, an urgent problem of social, humanitarian and technical sciences. It is timely for Ukraine to study the specifics of implementation of these principles in process of European integration. That is, on the one hand, introduction of principles of sustainable consumption will contribute to sustainable economic development and welfare of population, and, on the other hand, subjects of economic relations are the most open to the providing of these principles precisely during the transformation processes.

Target setting. Multidimensionality of category of consumption as a key determinant of the positive (sustainable) development of society, attention to it by many subjects of the world community, its research within the conceptual-categorical apparatus of various branches of knowledge (economics, sociology, ecology, philosophy, psychology, management, law) and scientific directions caused discrepancies in determination of its essence, interpretation and definition. Existence of a number of related concepts: "steady", "reasonable", "rational", "green", "responsible", "ethical" - in our opinion, complicates the research, scientific discussion and implementation of the obtained results to ensure the well-being of mankind in the long run.

Due to the peculiarities of translation, there is also a mix of these categories. Thus, in the official translation of the 17 Goals of Sustainable Development of Humanity, such conception as "responsible" has been replaced by "steady" and "reasonable" [2].

Actual scientific researches and issues analysis. At the moment, in most of the developed countries, there are researchings on the issues of responsible, reasonable, sustainable consumption and production (F. Capra, D. Fedrigo, J. Gontelos, T. Jackson, L. Mikaelis) and sociological and psycho-emotional factors of consumption (E. Dunn, M. Norton, S. Lyubomyrsky). Nobel Laureate of 2015, A. Diton investigated the relationship between consumer behavior, income and welfare in developing countries, which was estimated using the indicator of change in consumption patterns [3]. Among domestic scientists it is worth mentioning O. Grishnov, A. Kolot, A. Kotenko, O. Melnichenko, L. Pogorila, T. Saltevsky, A. Yermolayenko and others.

Uninvestigated parts of general matters defining. In spite of numerous studies of the mentioned problematics, structural interrelations between elements of conceptual apparatus of consumption on the basis of sustainable development remain insufficiently substantiated and established. Among others, the issue of consumer safety is all the more acute, the relevance of which is confirmed by its inclusion in the EU's 6 tasks and the Rome Club's report.

The research objective. To analyze the structural interrelations between the elements of the conceptual apparatus of the category "consumption" in terms of its focus on ensuring socio-economic development, the welfare of each individual and of mankind in general on the basis of sustainable development; to determine place of safety consumption in the investigated process.

The statement of basic materials. An analysis of approaches to disclosure of essence of "consumption for the future", aimed at satisfying not only short-term needs but also long-term social development imperatives allowed to highlight a number of concepts used in the study of this issue. The most widely used of them are: "sustainable consumption", "responsible (or socially responsible) consumption", "green (organic) consumption", "reasonable consumption", "rational consumption", "ethical consumption". These terms reflect different aspects of the investigated category, while having much in common, sometimes replacing or duplicating each other. In their majority (according to approaches and authors), they are aimed at solving common problems of human development: reducing the negative impact of production and consumption on health, the environment and society, formation of conscious behavior (motivation) of the consumer - which provided the basis for the hypothesis about the possibility of their structural-system analysis (Tab. 1).

Table 1

Structural construction of conceptual and categorical apparatus of the consumption in the system of sustainable development

Element of the structure of consumption	Areas of influence			Consumer motivation	Requirements for manufacturer (seller)
	health	environment	society		
Green / organic	consumption of products which do not (or least) cause harm to health and the environment		without negative impact on other countries	prevention of wastefulness, negative impact on the environment and health	without using a disproportionate amount of funds
Ethic	purchase of goods for environmental beliefs		political beliefs, social initiatives	a way of acquiring and using resources, where attention is focused on the sustainable development and observance of human rights	ethical trademarks, products of ethical origin
Rational	a valid diet is a sign of a healthy lifestyle	rational nature management	a combination of the needs of individuals with the potential of society	rational needs, scientifically grounded consumption limits	*not considered*
Limited (Deconsumption)				conscious, rational restriction of consumption to the minimum satisfaction needs	*not considered*
Intelligent, Conscious	knowledge of indicators of safe and useful products	understanding how consumption affects the environment	realization of social necessity as a prerequisite for the progress of society	understanding of production and consumption processes nature and consequences; knowledge of principles of sustainable development; from the development of personality depends the progress of the society	understanding how production affects indicators of sustainable development
Social-responsible	without harm to health	avoiding and reducing of usage	ensuring social change; development of small and local entrepreneurship	different profiles of consumption on the basis of personally motivations, moral beliefs; the reduction of the volumes of individual consumption; the choice is made not by the imposed information, but by reasonable (the effect of consumption on the society), meaningful needs	avoidance of a entrepreneurship that negatively affects society; taking into account the influence of firms on consumer behavior; social marketing
	maximizing in the long run a beneficial effect on society and environment; taking into account the consequences				
Sustainable	"environmentally friendly" goods and services		economically acceptable	careful and rational formation of needs	close interconnection with the sustainable production
Safe (secure)	safe quality	the least harm	the basis of well-being	understanding of safety as a condition for not survival, but self-reproduction	safety as a consumer, responsibility for the sustainable production

Written by authors using [4-6]

Within the research problem, we consider it necessary to add to the analysis the concept of "safe consumption". On the one hand, safety as a basic category in the hierarchy of needs, which gives way only to physiological needs, should be a priori provided by the participants of the reproduction process. At the same time, the relevance of its research is not reduced due to the emergence of new products, technologies and contradiction in the triumvirate "society - the state - the economy" [7]. For Ukraine, the problem is even more urgent due to mega-integration processes, which are accompanied by the transition from state standards and mandatory certification to technical specifications and regulations, which, in other equal conditions, may be deterioration of the quality and, accordingly, the safety of consumption of goods and services. On the other hand, considering the safety of consumption as a component of national security, then to ensure it, all aspects that are researched in this article, need to be studied. The results of the analysis allow to highlight the interrelationships in the structure of consumption and to hierarchically systematize elements on various aspects of sustainability (Fig. 1).

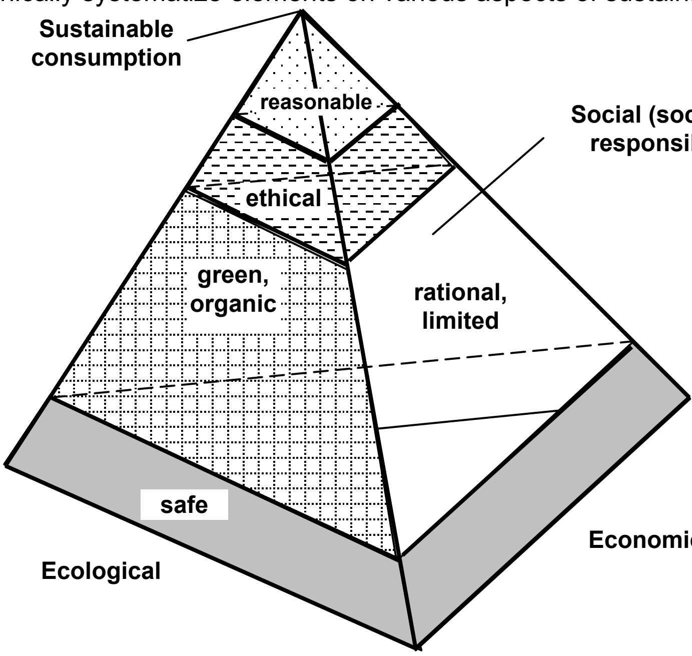

Fig. 1. Tetra-like model of structure of categorical apparatus of consumption in the system of sustainable development

To the ecological component we propose to attribute green and / or organic consumption; to economic - rational and limited as its subspecies; to social - responsible or socially responsible consumption. Regarding the last, we apriori agree with possibility of appearance of a discussion, since a significant number of authors use this category as a generalization or identify it with a sustainable one. At the same time, prevalence of use of the concept of "sustainable consumption" in various fields and various subjects of social reproduction, as well as its interpretation as a condition, means and criterion of ensuring value-rational consumption [6], and, therefore, its clear-cut target orientation substantiate our choice in its favor. As for rational and ethical consumption, we believe that they can be applied to all areas of sustainable development, while safe consumption forms the basis for development of each of them.

Conclusions. According to the results of the research the dialectical connection of related categories of the concept of "consumption" was analyzed; tetra-like model of the structure of categorical consumption apparatus in system of sustainable development is proposed and place of each component is substantiated. In the framework of further research, definition of factors, indicators, and also formation of a model of "sustainable consumption" and "reasonable consumer" is urgent in order to substantiate the leading place of safety of consumption in them.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 330.13+338.24: 624

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METHODOLOGICAL PRINCIPLES OF EVALUATING ECONOMIC POTENTIAL OF INDUSTRIAL ENTERPRISE SUSTAINABLE DEVELOPMENT

Urgency of the research *is determined by the urgent need to increase the competitiveness and improve the financial condition of Ukrainian industrial enterprises on the basis of their transition to sustainable development.*

Target setting. *The implementation of measures for building a sustainable model of enterprise economic development requires a preliminary evaluation of the economic potential of enterprise sustainable development.*

Actual scientific researches and issues analysis. *The study of the principles of enterprise economic development is a key issue for many scientists. In particular, the conditions and mechanisms of building innovative model of economic development of Ukraine were developed, the methods of evaluating economic development potential of enterprises were presented, and the peculiarities of implementation of sustainability measures were analyzed.*

Uninvestigated parts of general matters defining. *The issue of quantitative evaluation of enterprise sustainability development potential remains unresolved.*

The research objective. *The aim of this article is to develop methodological principles for evaluating economic potential of sustainable development of industrial enterprises as a prerequisite for developing scientifically sound sustainability policy.*

The statement of basic materials. *The article presents the typology of enterprise sustainable development kinds. The criteria for the development are suggested. The effect of sustainability measures on the level of economic development of enterprises is analyzed. The method of economic potential evaluation of sustainable development of industrial enterprises using the system of evaluation indicators is presented.*

Conclusions. *The employment of the developed methodological approaches to evaluation of the economic potential of industrial enterprise sustainable development will enhance the efficiency of management decisions on establishing sustainable development programmes in the enterprises.*

Keywords*: evaluation; potential; sustainability; development; enterprise.*

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МЕТОДИЧНІ ЗАСАДИ ОЦІНЮВАННЯ ЕКОНОМІЧНОГО ПОТЕНЦІАЛУ РЕСУРСОЗБЕРІГАЮЧОГО РОЗВИТКУ ПРОМИСЛОВИХ ПІДПРИЄМСТВ

Актуальність теми дослідження *обумовлена нагальною необхідністю підвищення конкурентоспроможності та покращення фінансового стану промислових підприємств України на засадах переходу їх на ресурсозберігаючий тип економічного розвитку.*

Постановка проблеми. *Впровадження заходів з формування ресурсозберігаючої моделі економічного розвитку підприємств потребує попереднього оцінювання економічного потенціалу їх ресурсозберігаючого розвитку.*

Аналіз останніх досліджень і публікацій. *Дослідження закономірностей економічного розвитку підприємств знаходяться у центрі уваги багатьох науковців. Зокрема, науковцями встановлено умови та розроблено механізми формування інноваційної моделі економічного розвитку України, представлено методи оцінювання потенціалу економічного розвитку підприємств, проаналізовано особливості впровадження на них заходів з ресурсозбереження.*

Виділення недосліджених частин загальної проблеми. *Залишається не вирішеним остаточно питання кількісного вимірювання здатності підприємств до свого розвитку на засадах ресурсозбереження.*

Постановка завдання. *Метою статті є розроблення методичних засад оцінювання економічного потенціалу ресурсозберігаючого розвитку промислових підприємств як необхідної передумови формування науково обґрунтованої програми заходів з ресурсозбереження.*

Виклад основного матеріалу. *У статті представлено типологію видів ресурсозберігаючого розвитку підприємств. Запропоновано критерії такого розвитку. Проаналізовано вплив заходів з ресурсозбереження на рівень економічного розвитку підприємств. Запропоновано метод оцінювання економічного потенціалу ресурсозберігаючого розвитку промислових підприємств з використанням системи індикаторів такого оцінювання.*

Висновки. *Використання розроблених у статті методичних підходів до оцінювання економічного потенціалу ресурсозберігаючого розвитку промислових підприємств у практиці їх діяльності дасть змогу підвищити ступінь обґрунтованості управлінських рішень з формування програм ресурсозбереження на цих підприємствах.*

Ключові слова: *оцінювання; потенціал; ресурсозбереження; розвиток; підприємство.*

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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Urgency of the research. At present time, most types of industrial products manufactured by Ukrainian enterprises are characterized by a high level of its resource intensity. In particular, the specific expenditures of energy resources for certain types of domestic products are several times higher than those of producers from developed countries of the world. Consequently, such products become uncompetitive, and the enterprises that produce it find themselves in a difficult financial situation. Under such conditions, it is important to transfer the industrial enterprises of Ukraine to a resource-saving model of their economic development, which, in turn, requires the development of methodology and tools for selecting and justifying measures for resource conservation at the level of individual economic entities.

Target setting. Implementation of measures for the formation of a resource-saving model of its economic development at the enterprise should be preceded by a procedure for evaluating the potential of the implementation of this model. The assessment of the economic potential of resource-saving development of the enterprise should provide the owners and managers of the company with current and reliable information on the directions of resource conservation, in particular, the types of resources, the scale of appropriate measures for their rational use and the expected increase in financial and economic outcomes of economic activity as a result of the implementation of resource conservation program at the enterprise. To this end, it is necessary to form a scientifically substantiated system of indicators for assessing reserves of resource conservation at the enterprise and to develop methods for calculating these indicators.

Actual scientific researches and issues analysis. Investigations of the principles of economic development of enterprises are at the center of attention of many scholars. In particular, such scholars as O. Datsii, V. Heiets, B. Danylyshyn, M. Koretskyi, V. Naidiuk, L. Fedulova and others established conditions and mechanisms of innovative model formation of economic development of Ukraine. A number of scientists, in particular M. Tymoshchuk, R. Feshchur, etc., provided methods for assessing the potential of enterprise economic development. The implementation peculiarities of measures on resource conservation as a priority direction of ensuring economic development of enterprises are analyzed in publications by such scientists as I. Balandin, O. Ivanenko, N. Mykhalitska, L. Nekrasov, A. Khristov and others.

Uninvestigated parts of general matters defining. Despite the significant achievements of scientists in the creation of theoretical and methodological principles for assessing the potential of economic development of industrial enterprises, the question of quantitative measurement of the ability of economic entities to develop on the basis of resource conservation remains unresolved, in particular, the impact of resource conservation measures on the pace and proportion of economic development of enterprises is insufficiently analyzed.

The research objective of the article is to develop methodological principles for assessing the economic potential of resource-saving development of industrial enterprises as a prerequisite for the formation of scientifically grounded program of measures for resource conservation. The main tasks of the research are the definition of types of resource-saving economic development of industrial enterprises, the substantiation of the criteria for such development, the analysis of the impact of measures on resource conservation on the level of economic development of enterprises, the formation of a system of indicators and the development of a method for assessing the economic potential of resource-saving development of industrial enterprises.

The statement of basic materials. In the process of functioning of any enterprise, there are constant changes in its internal environment. These changes may have different nature, in particular, to be reciprocal in time (for example, the circulation of working capital of an enterprise at a constant cost value) and irreversible. Regarding irreversible changes in the enterprise, first of all, it is necessary to distinguish two main types, namely growth (or reduction) of the volume of enterprise resources and increase (or decrease) in the efficiency of their use. In this connection, if such changes cause an increase in the value of certain financial and economic results of the entity's activity (production volumes, net profit, etc.), an economic growth of the enterprise according to the types of these results can be claimed.

The distinction of the concepts of economic growth and economic development of the enterprise has an important theoretical significance. For this purpose, the location of the factors that determine the relevant processes should be taken into account. Economic development of the enterprise occurs due to changes in the internal environment of the enterprise. At the same time, the economic growth of an entity can take place at the expense of both internal and external factors (for example, external factors of economic development of an enterprise may be an increase in the prices of its products and lower prices for the resources used, if such changes are conditioned by the general change in the market conditions in the respective markets). So, the concept of economic growth of an enterprise is wider than the concept of its economic development.

Basing on foregoing, the economic development of the enterprise should be considered as the process of gradual irreversible changes in its internal environment, which leads to a change in the size of financial and economic results of the enterprise's business. In case of an increase of these results, the development should be considered as progressive, and in the case of their reduction - regressive one. In the future only the progressive type of economic development of enterprises will be considered.

It should be noted that in some cases it is impossible to separate the increase in the size of the financial and economic results of the enterprise completely, due to changes in its internal environment, from the growth of these results, which is caused by regarding to the enterprise external (exogenous) factors. For example, the growth of the natural volumes of the company's production of a certain type of its products with the simultaneous increase in prices for it due to improved market conditions for sales at constant cost per unit of production obviously will increase the profit of the enterprise. However, this increase will contain an increase in profits, which is caused both by the growth of production volumes (the effect of the internal factor) and the increase in the level of prices for products (the effect of the external factor).

Taking into account the outlined, it is feasible to allocate such components of economic growth of the enterprise:

- growth due to the exogenous factors in relation to the enterprise of nature. In turn, this growth can be caused by two main reasons: an increase in prices for products of the company and a decrease in prices for the resources that it applies;
- economic development of enterprises;
- combined growth, caused by the joint action of internal and external factors in relation to the enterprise.

In its turn, the economic development of the enterprise can be of three main types, namely:

- resource-cost economic development, which causes an increase in the financial and economic results of the enterprise solely at the expense of resources volumes growth used by them;
- resource-saving economic development, which causes an increase in the financial and economic results of the enterprise solely at the expense of more rational use of its available resources, in particular, due to increased efficiency of their use;
- combined economic development, which causes an increase in the financial and economic outcomes of the enterprise through the joint action of both of these factors, that is, by increasing the volume of resources and improving their use.

It is also possible to allocate resource-saving growth of the company, which is caused by its resource-saving development and lower prices for the resources used by the enterprise.

It should be noted that there are many different types of economic development of the enterprise, which can be classified according to various features, in particular: by types of resources that are stored (resource-saving development in material, energy, labor, technical and other kinds of resources); on the duration of the course (short-term and long-term); by scale (partial, occurring only in one kind of resources, a complex, taking place simultaneously for several types of resources, an all-inclusive, which occurs simultaneously for all types of resources of the enterprise); in terms of content (organizational, product, technical, social, etc.); by the nature of resource saving (resource-saving development, which determines the absolute resource savings, and development, which leads to an increase in the efficiency of the use of resources while preserving their existing volume or even increasing it). At the same time, the allocation of types of resource-saving economic development of the enterprise by the nature of the economy of its resources makes it possible to analyze the cases when the increase in the efficiency of using the resources of the company affects the possible increase in their value. In other words, resource-saving type of development under such conditions does not only leads directly to the growth of financial and economic results of the company's activity, but also indirectly gives an impetus to its resource-cost development.

So, as shown in presented above grouping types of resource-saving economic development of the enterprise, there are many varieties of such development. At the same time it is important to choose the criteria which would make it possible to establish whether the resource-saving development takes place at the enterprise and assess its scale. Such criteria can be either partial (for example, a reduction of the cost of resources), or general. In particular, the general criteria of resource-saving economic development of the enterprise can be attributed to the overall increase in the value of its operating or net income share, due to improved use of available resources of the enterprise. However, there is a case where the increase in the efficiency of using a certain type of resources of an enterprise requires investment costs. For example, reducing the specific costs of energy resources may require upgrading equipment on which products are manufactured. In this case, if the criteria of resource-saving development will be the norms of costs of the corresponding resources, then under such conditions, the economic development of the enterprise will be resource-saving for energy resources, but resource-consuming in the main means. Accordingly, in order to determine whether there are signs of resource-saving development in the aggregate of these processes, the indicator of excess profits should be used instead of the enterprise profit growth indicator, that is, the difference between the amount of profit and the amount of investments in the enterprise at the rate of their profitability. If the excess profits of company have grown as a result of lowering the norms of energy costs while simultaneously investing in modernization of equipment, that means that, in general, the economic development of the enterprise is resource-saving.

A more detailed study of the laws of the resource-saving economic development of the enterprise and the peculiarities of assessing the potential of such development requires taking into account several additional circumstances, namely:

1) allocation of resources of the enterprise, operating in the sphere of production and in the sphere of circulation. From these positions, the finished products of the enterprise are a kind of its resources, because it ensures the implementation of its production activities;

2) establishment of the characteristics of the formation of the needs of the enterprise in certain types of its resources. Such formation takes place depending on certain factors, which determine the need of the enterprise in certain types of resources. Doing so, the experience of management shows that in the vast majority of cases, these factors are certain characteristics of another type of resources or several types of resources used by the enterprise. For example, the need for basic materials is determined by the planned natural volumes of the company's products in terms of its nomenclature and range, the need for energy resources for heating the premises depends on its volume, etc. Note that there is a predominantly direct proportional dependence between the volumes of enterprise needs in resources and factors indicators, which determine this need. In the future, we will call resource relations the parameters of such proportions, which examples are the norms of the cost of production resources for the products production;

3) clarification of the products sale markets nature and its demand formation mechanism. Although resource-saving development of the enterprise is intrinsic, however, the manifestation of this development depends to a large extent on the sales opportunities of the enterprise. In this case, it is appropriate to highlight the following main cases of the implementation of these opportunities: when the demand for enterprise products is clearly limited to a certain value; when the enterprise may increase the volume of sales of its products within certain limits, and its price will not change in the end; when an enterprise, changing the sales volume of its products, causes a change of its prices (in particular, the price decreases with an increase in the supply volume); existing of markets for the company products may potentially enter, but at present it is unprofitable because of too high cost of its products;

4) identification of ways to form the costs value associated with the maintenance and exploitation of certain types of enterprise resources. In particular, one can distinguish cases where these costs are directly proportional to the volumes of products manufactured using the appropriate resources; these costs are directly proportional to the duration of the operation of resources; these costs are directly proportional to certain physical characteristics (in particular, volumes) of resources.

In such conditions it is possible to highlight additional varieties of resource-saving type of economic development of the enterprise, in particular:

• when the volumes of certain types of enterprise resources are reduced, although the corresponding resource ratios do not change (or even increase). This case occurs when an enterprise can influence the price of its products, changing the natural volumes of its production and sales. If at a certain time these volumes are larger than optimal in terms of maximizing the profit of the enterprise, then while reducing them and, accordingly, releasing part of the resources, the company will provide growth of its profit;

• when the value of certain resource ratio decreases, this reduction does not require changes in the organization and technology of production. In fact, this case means that some types of enterprise resources are currently not used in full. Under these conditions, the company has two main alternatives: either to decommission extra resources, or to attract additional volumes of individual types of resources, thereby trying to bring the value of the corresponding resource ratios to their minimum levels at the given level of organization of production and available technologies of values. In the first case, the enterprise will reduce the cost of maintaining the decommissioned resources and may have an economic return on their sale (if these resources are its assets). In the second case, the company will increase the volume of production and may receive additional profit from it, however, it should take into account the possible need for investment in the acquisition of additional resources;

• when the value of certain resource relationships is reduced by improving the organization and technology of production, improving the quality of the resources of the enterprise (including improving the products on the basis of functional and cost analysis). This case, due to its possible consequences of its implementation, is similar to the previous one; however, it usually requires a large-scale program of improving technical and organizational level of the enterprise;

• when the reduction of resource ratios causes the expediency of certain types of enterprise resources volumes growth. This case occurs if the cost per unit of production is reduced as a result of the reduction of resource ratios, which makes it more competitive and it makes sense to increase its production and sales (in particular, by entering new markets). In this described case, the additional need of the enterprise in resources overwhelms the savings of their volumes, resulting from the reduction of the corresponding resource relations. We also note that the reduction of the cost due to the reduction of resource ratios will not occur for resources, which cost of maintenance and operation is directly proportional to the volume of products manufactured by them, since these costs are predetermined per unit of output and they will not depend on the productivity of the resource.

It should be noted that in the process of planning its activities, the company must establish its own possibility for resource-saving development in the planning period. For this purpose, the potential of such development should be assessed, that is, the ability of an enterprise to increase the size of financial and economic indicators of economic activity through more rational use of its resources.

The assessment of the potential of resource-saving economic development of the company should begin with an analysis of the impact of past-period measures on resource conservation on the overall level of its economic development. A similar technique can be used with predictive aims, that is, at the stage of direct measurement of the enterprise resource-saving economic development potential. It foresees the separation of the magnitude of the growth of financial and economic results of the enterprise due to its resource-saving economic development, in the overall increase of these results in the previous period (periods). Obviously, such a distinction requires the construction of an appropriate factor model that takes into account both the volumes of resources used by the company and the efficiency of their use.

The most complete model seems the one with indicators of factors would be presented as corresponding resources volumes of the enterprise and their use efficiency indicators, that is, the ratio of a certain financial-economic result of the enterprise to the value of each type of resources. However, if such model contains more than one kind of resource, it is not correct a priori. This is caused by the fact that in this case one of the indicator factors will be represented as a single function of all others.

However, it is possible to assess the impact of resource-saving development on the growth of financial and economic results of the enterprise quite correct by means of two factor models:

$$P = Q - C - K \cdot r = \left(\frac{Q - C - K \cdot r}{F} \right) \cdot F = \left(Q_F - \sum_{i=1}^{n} L_i \cdot p_i - I_F - K_F \cdot r \right) \cdot F ; \quad (1)$$

$$P = \left(\frac{Q - C - K \cdot r}{Q} \right) \cdot Q = \left(1 - \sum_{i=1}^{n} R_i \cdot p_i - I_Q - K_Q \cdot r \right) \cdot Q , \quad (2)$$

where P – the size of the company's excess profit for a certain period of time; Q – operating income of an enterprise without indirect taxes; C – total amount of operating and financial expenses of the enterprise; K – average value of the enterprise equity over the investigated period of time; r – rate of return on a company's equity in fractions of a unit; F – average original cost of enterprise fixed assets for the investigated period of time; Q_F – capital productivity fixed assets by the size of operating income; n – number of enterprise resources types that are studied; L_i – ratio between the volume of the i-th resources type and the average cost of fixed assets of the enterprise; p_i – maintenance and operation costs for the i-th resources type; I_F – maintenance and exploitation costs of other resources types, except studied ones, per unit of enterprise fixed assets average cost; K_F – ratio of the average value of enterprise equity to the average value of its fixed assets; R_i – ratio of operating income to the volume of the i-th type of its resources; I_Q – the maintenance and operation expenses for other resources types, except studied ones, per unit of enterprise operating income; K_Q – the ratio of the average value of the enterprise equity to its operating income.

So, according to model (1), the level of efficiency of using enterprise resources is estimated by the ratio of excess profits to the value of fixed assets (as the main resource, which determines the production capacity of most industrial enterprises), which, in turn, depends on indicators of capital productivity and the ratio between the volumes of others types of enterprise resources and the value of its fixed assets. According to model (2), the level of efficiency of using enterprise resources is estimated by the ratio of excess profits to operating income, which, in particular, depends on the indicator of operating income ratio to the volumes of various types of its resources. It should be noted that the described indicators of the efficiency of using enterprise resources both simultaneously provide a characteristic and level of its competitiveness. In particular, the greater the ratio between the surplus and operating income of a particular enterprise compared to competitors over a certain type of product, the potentially larger share of the market for these products can be taken by the enterprise (since it will have higher profits with equal income than its competitors). Thus, providing the increase in this ratio, the company creates a precondition for increasing its market share of certain products.

Let us illustrate the proposed models (1) and (2) on the example of assessing the resource-saving economic development level of certain enterprises belonging to the building materials industry (Tab. 1 and Tab. 2).

As it follows from the data presented in the Tab. 2, in terms of the ratio of excess profits to the value of fixed assets for all three considerated companies, the growth of the excess profits in 2016 was caused mainly by resource-saving development, since the share of growth in the excess profits in its overall increase due to the change in the ratio of excess profits to the value of fixed assets exceeded 50% for all enterprises. Regarding the ratio of excess profits to operating income, the level of resource-saving economic development in the investigated enterprises was significantly lower, that is explained by higher rates of growth of considerated enterprises operating income compared to the growth rates of the initial value of their fixed assets.

Table 1

Output data for assessing the level of resource-saving economic development of individual enterprises in Lviv in 2016 compared to 2015

Indicator name	LLC «Zakhidbudservis»		PE «Avtotekhno-budservis»		LLC «Haltransrembud»	
	2015	2016	2015	2016	2015	2016
1. Operating income without indirect taxes, thousand UAH	32609	36532	27851	29760	45097	54212
2. Total amount of operating and financial expenses of the enterprise, thousand UAH	26438	28541	23605	25124	38798	46072
3. Average annual value of equity, thousand UAH	9127	9372	7427	7743	14473	15142
4. Average annual value of fixed assets, thousand UAH	18611	19362	15385	15892	23985	25642
5. Rate of return on equity, fractions of a unit	0,15	0,15	0,15	0,15	0,15	0,15
6. Excess profits, thousand UAH	4802	6585	3132	3475	4128	5869
7. Ratio of excess profits to the cost of fixed assets, %	0,258	0,340	0,204	0,219	0,172	0,229
8. Ratio of excess profits to operating income, %	0,147	0,180	0,112	0,117	0,092	0,108

Table 2

Output data for assessing the level of resource-saving economic development of individual enterprises in Lviv in 2016 compared to 2015

Indicator name	LLC «Zakhidbudsevis»	PE «Avtotekhno-budservis»	LLC «Haltransrembud»
1. Growth of excess profits in 2016 compared to 2015 remunerated from: - changes in the ratio of excess profits to the cost of fixed assets, thousand UAH	1528	232	1361
- changes in the ratio of excess profits to operating income, thousand UAH	1076	120	754
2. Share of growth of s excess profits in its total growth in 2016 compared with 2015 remunerated from: - changes in the ratio of excess profits to the cost of fixed assets, %	85,69	67,57	78,20
- changes in the ratio of excess profits to operating income, %	60,35	34,90	43,30

Taking into account the information above, it seems appropriate to create a method for assessing the potential of enterprise resource-saving economic development, which involves the calculation of the indicators system presented in Fig. 1, and is based on a detailed assessment of the resource relationships value existing at a particular enterprise.

Let us call the ratio of certain types of industrial resources volumes of the enterprise per unit of its finished products by the first-order resource ratios, the ratio of other types of resources volumes per unit of those productive resources, which are calculated per unit of finished product, - resource relations of the second order, etc. So, it is possible to distinguish a set of chains of resource relations at the enterprise. Under these conditions, it is necessary to analyze each resource ratio for possible reduction and assess the feasibility of such a reduction in terms of ensuring the growth of the size of the company's profits, and if such a reduction requires investment costs - the growth of its super profits. At the same time, for the other unchanged conditions, the lower the order of the resource ratio, the greater the economic effect of its reduction, since such a decrease provides a reduction in the volume of more resources that correspond to the next links chain of resource relations.

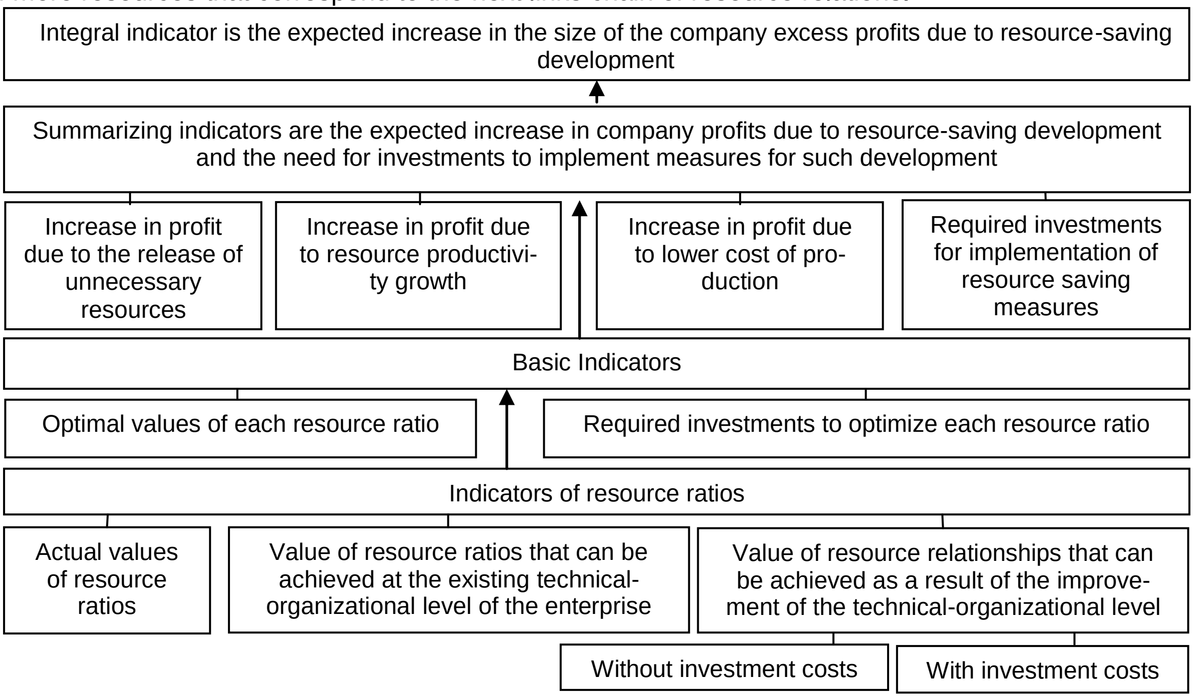

Fig. 1. Hierarchy of indicators for assessing the potential of resource-saving economic development of an industrial enterprise

Conclusions. Resource-saving economic development leads to an increase in financial and economic outcomes of the enterprise through more rational use of its available resources, in particular, due to increased efficiency of their use. The conducted research showed that there is a significant number of types of resource-saving development of enterprises, however, assessment of the potential of each of them should provide for the analysis and improvement of resource relations existing in the enterprise, while creating the corresponding chains of such relations. Using the methodological approaches developed in the article to evaluate the economic potential of resource-saving development of industrial enterprises in the practice of their activities will enable increasing the degree of validity of managerial decisions on the formation of resource conservation programs at these enterprises.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 005: 332.871

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PRINCIPLES OF PROFESSIONAL MANAGEMENT OF MULTI-APARTMENT BUILDINGS

Urgency of the research. *Ukraine is at the stage of transition to market relations in the area of housing stock management.*

Target setting. *For today, the problem of efficient management of multi-apartment buildings remains unresolved. Although the first steps in the reform of this system have been launched, however, however the state has not implemented any active actions. This problem does not acquire a special development in Ukrainian scientists' scientific researches.*

Actual scientific researches and issues analysis. *Housing management has been researched in the scientific works of such scientists as Yu. B. Baklahov, K. O. Vytryshchuk, Ye. M. Heleveria, Z. V. Honcharova, N. I. Oliinyk, H. I. Onyshchuk, H. M. Semchuk, T. V. Serdiuk, S. Yu. Yurieva.*

Uninvestigated parts of general matters defining. *The issues of professional management of multi-apartment buildings are not sufficiently studied.*

The research objective *of the article is to formulate and substantiate the principles of professional management of multi-apartment buildings.*

The statement of basic materials. *The analysis of the authors' approaches to the definition of general management principles and in the sphere of housing and communal services has made it possible to propose an improved systematization of their types in relation to the management of the objects of the housing stock. These principles should be taken into account by the housing owner (co-owners) in the transition to the form of multi-apartment building management that is professional management on the basis of the agreement of the housing cooperative with the manager, since it is the knowledge and taking into account the principles of management in practice are the most important conditions for its effectiveness.*

Conclusions. *Introduction of apartment buildings professional management will give a significant impetus to the creation of a competitive environment in the market for providing housing management services, improving the quality of housing and communal services, increasing the safety and comfort for citizens living.*

Keywords: *housing stock; management principles; manager; housing cooperative; utilities.*

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ПРИНЦИПИ ПРОФЕСІЙНОГО УПРАВЛІННЯ БАГАТОКВАРТИРНИМИ БУДИНКАМИ

Актуальність теми дослідження. *Україна знаходиться на етапі переходу до ринкових відносин у сфері управління житловим фондом.*

Постановка проблеми. *На сьогоднішній день проблема ефективного управління багатоквартирними будинками залишається невирішеною. Хоча перші кроки у сфері реформування даної системи започатковано, проте активних дій з боку держави так і не здійснено. Дана проблематика не набуває особливого розвитку і у наукових дослідженнях українських вчених.*

Аналіз останніх досліджень і публікацій. *Управління житловим фондом досліджено у наукових працях таких вчених, як Ю. Б. Баклагов, К. О. Витрищук, Є. М. Гелеверя, З. В. Гончарова, Н. І. Олійник, Г. І. Онищук, Г. М. Семчук, Т. В. Сердюк, С. Ю. Юр'єва.*

Виділення недосліджених частин загальної проблеми. *Питання професійного управління багатоквартирними будинками є недостатньо дослідженими.*

Постановка завдання. *Метою статті є формування та обґрунтування принципів професійного управління багатоквартирними будинками.*

Виклад основного матеріалу. *Здійснене аналізування підходів окремих авторів до визначення принципів управління загалом та у сфері житлово-комунального господарства зокрема дозволило запропонувати удосконалену систематизацію їх видів стосовно управління об'єктами житлового фонду. Ці принципи повинні враховуватися власником (співвласниками) житла при переході до форми управління багатоквартирним будинком – професійного управління на основі договору ОСББ з управителем, адже саме знання й урахування принципів управління у практичній діяльності є найважливішою умовою його ефективності.*

Висновки. *Запровадження професійного управління житловим будинками дасть істотний поштовх у напрямі створення конкурентного середовища на ринку надання послуг з управління житлом, підвищення якості житлово-комунальних послуг, зростання безпеки та комфортності проживання громадян.*

Ключові слова: *житловий фонд; принципи управління; управитель; об'єднання співвласників багатоквартирного будинку; житлово-комунальні послуги.*

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

Urgency of the research. There is a professional management system for multi-apartment buildings provided by privately owned companies in European countries. Owners of individual apartments take an active part in discussing and making managerial decisions by creating associations of co-owners and passing the implementation of these decisions to competent and qualified managers. In Ukraine, legislation has already determined certain prerequisites for the managers functioning, but the development of a professional management system for multi-apartment buildings has not been achieved yet.

Target setting. After the adoption of the Law of Ukraine "On the ownership right realization peculiarities in a multi-apartment building" [1] a number of innovations have been introduced aimed at providing co-owners of multi-apartment buildings with a mechanism for making decisions on managing their common property. In particular, Article 9 mentions three forms of management: by co-owners, by association of co-owners of a multi-apartment building or by manager. The practice of European countries and scholars has proved that the most effective form of management of multi-apartment buildings is professional management based on an agreement between housing cooperative / co-owners and manager. For the practical implementation of the professional management of a housing stock in the activities of business entities, it is necessary to adopt appropriate regulatory acts. Article 10 of the aforementioned law stipulates that the management of an apartment building by a manager shall be carried out on the basis of an agreement on provision of management services for an apartment building, which conditions should be in accordance with the terms of a standard contract approved by the Cabinet of Ministers of Ukraine [1]. However, for today, a standard contract on the provision of management services for a multi-apartment building between the manager and condominiums / co-owners is not created, which prevents the introduction of this form of management. By law, there are no clear requirements for managers that would provide consumers with the opportunity to receive quality services. In order to ensure the good performance of the manager, it is necessary to define and adhere to the principles of management, which expresses the basic requirements of the system, structure, organization and management process. Accordingly, it is necessary to clarify the basic principles of management of multi-apartment buildings.

Actual scientific researches and issues analysis. The problems of management of multi-apartment buildings are studied in scientific works by Yu. B. Baklahov, O. M. Bilianskyi, K. O. Vytryshchuk, Ye. M. Heleveri, Z. V. Honcharova, L. V. Levkovska, N. I. Oliinyk, H. I. Onyshchuk, H. M. Semchuk, T. V. Serdiuk, S. Yu. Yurieva.

Uninvestigated parts of general matters defining. Scientists' achievements in this field are important, but the problem of management of multi-apartment buildings remains unresolved and requires further research.

The research objective of the article is to formulate and substantiate the principles of professional management of multi-apartment buildings.

The statement of basic materials. The management principles are understood as the rules of conduct, according to which certain tasks of management are implemented, the management potential is increased, and the management object relations organization with the environment of its functioning is improved [2, p. 75-76].

There are several approaches to the classification of management principles. According to scientists [3, p. 75], the most complete interpretation is given by H. Koontz and S. O'Donnell in the book "Principles of Management: Analysis of Management Functions" (sixth edition, translated in 1981 in Russian by the title «Управление: системный и ситуационный анализ управленческих функций»), where the authors consider ten principles of planning, fifteen – of organization, ten – of motivation and fourteen – of control. However, one of the founders of the scientific organization of work, author of the theory of administration H. Fayol believed that the number of management principles is unlimited, since there are very effective forms of management in practice, which are not always based on the well-known theoretical foundations [4, p. 58].

The approaches analysis of individual authors to the definition of the management principles in general and in the utilities sphere in particular made it possible to propose an improved systematization of their types in relation to the management of the housing stock (Tab. 1).

Let us turn to a more detailed consideration of the concept and definition of each proposed governance principles. We believe that one of the main principles of housing stock management is case-by-case principle.

Table 1

Principles of professional management of multi-apartment buildings

Principles	Principles essence
Case-by-case	Management is carried out for each individual apartment building as an independent object
Purposefulness	The owner (co-owners) in relation to each object of management has (have) to identify and fix the target aimed at making managerial decisions which achievement the object serves. A professional manager directs his activities to achieve the goal and fulfillment of the tasks set by the owner (co-owners)
Unity of action	All actions having the same goal must be carried out according to a single plan
Efficiency	Achieving the established by management goal (a certain qualitative activity result or a qualitative object condition) with optimal expenses
Systemicity	Efficient housing stock management system is achieved by dwelling owner (co-owners) and professional manager joint efforts
Professionalism	Personnel qualification and business quality level is a decisive factor for improving the housing stock objects management efficiency
Client orientation	Professional manager activity is characterized by a focus on meeting the needs of the housing owner (co-owners) as clients
Delegation of authority and responsibility	Each owner (co-owner) as well as the professional manager must be delegated with authority sufficient to be responsible for their duties conduction
Optimal combination of state regulation and economic independence in management	Basis of state regulation of activity in the field of housing stock management is the various legislative and regulatory acts that must be known by each participant in the management process and act in accordance with these acts.

Source: created by the authors on the basis of [2-6]

Each apartment building (housing complex) is an individual real estate object, which is determined by the building structures peculiarities, engineering systems, equipment, its level of accomplishment, its level of demolition of building structures, engineering systems and engineering equipment. The object is a land plot with geographic, geological, geodetic features, as well as beautification and landscaping elements. Thus, a housing property is a very complex engineering system and requires an individual approach to its managing.

The necessity and urgency of this principle is confirmed by the author Andrieieva V. M. [5, p. 286], saying on the basis of management object control principle is carried out for each individual apartment building or residential complex, as an independent object of management, taking into account its technical condition, the housing improvement degree, the land condition where the apartment building is located, with the beautification and landscaping elements on the basis of goals determined by the co-owners of the common property of a particular building in the statute and other constituent documents.

We believe that the side-by-side principle refers to administrative, financial-economic, engineering and information support services for managing the housing stock.

The manager is obliged to provide separately for each management object:

- preservation and maintaining the technical and legal documentation for the house and its territory in the proper state; consumers and shares of house separate premises owners in the right of joint ownership accounting; displaying information about the object in the obligatory accounting data;
- formation of a tariff (carrying out calculation of economically justified expenses) for object management and maintenance; keeping records of incomes and expenses, as well as accounting and / or management accounting of operations related to the utilities provision and other services to consumers;

- conducting regular and extraordinary surveys, providing suggestions for assessing the technical condition of construction structures and facility equipment, the possibilities for its reconstruction, overhaul, energy saving and other measures of co-owners interests;
- organization of permanent work with the object co-owners on issues related to the house and its adjoining territory management, etc.

The principle of purposefulness of management - the owner (co-owners) must determine, agree with the manager and fix the specific goals for each object of management, which is guided by the manager in making managerial decisions and which achievement serves the object. The target should be clearly formulated and have time orientation. The goal should be specific and relevant in the given period, measured according to certain criteria and indicators that are peculiar to this goal and achievable during the marked period. In turn, the professional manager directs his activity to achieve the specific goals and tasks fulfillment set by the owner (co-owners). Determining the specific objectives, detailed discussion and final agreement between the co-owners and the manager should take place at the housing cooperative / co-owners' meeting. The manager is required to make strategic and prompt plan of identified management tasks by developing objectives and optimal ways to achieve them. Discussion of plans and their approval is made at the housing cooperative / co-owners' meeting. In case of deficiencies revealing by the co-owners, the plan is returned to the manager for revision, which in turn is obliged to improve the plan within one month from the moment of submission or proposals submission for its correction. The final stage is approval of the plan by the board of housing cooperative or the co-owners (authorized person) meeting in the houses where the association was not created.

The activities of the manager should be directed towards achieving the following objectives: economic - effective use of consumers' funds to maintain and improve the technical condition, aesthetic appearance of the residential building and adjoining territory; social - maximum satisfaction of the consumers' needs, comfortable living and uninterrupted high-quality utilities; technological - providing maintenance on the proper level and improvement of technical condition of a residential building.

The principle of action unity implies that planning in the area of housing stock management, in particular the development of individual long-term, short-term maintenance programs, as well as annual financial and business plans, should be of a systemic nature. The concept of "system" in this case means that all elements of the system that are closely interrelated are oriented in the same direction of development and aimed at achieving the stated goals. The realization of this principle consists in the fact that all actions having the same goal must be carried out according to a single plan.

The principle of the management effectiveness is to achieve the goal of management (a certain qualitative performance or object quality status) with optimal costs. Ensuring effective management at the macro level is achieved by the replacement of administrative relations in the housing economy sphere; formation of entrepreneurship subjects equal rights for all ownership forms; the formation of competitive relations; tariffs regulation and housing services providers performance monitoring.

The multi-apartment buildings management efficiency is achieved by the manager by ensuring maintaining and improving the technical condition of the multi-apartment building, providing the necessary (planned) amount of services to consumers of high quality and optimal use of consumers' funds. An efficiency indicator of the manager's activity should also be the achievement of a certain level of profitability as an entrepreneur.

An efficient housing stock management system is achieved through the joint efforts of its owner (co-owners) and professional manager. The management system of housing specific objects forms the unity of the following main elements:

- activity of the owner (co-owners) in the choice of the professional manager, the form of the agreement, which enters into between the parties, the order of revision of the management objectives and terms of the contract, control over the object of management and the activities of the professional manager should be fully formalized;
- the owner (co-owners) of the object is (are) obliged to create conditions for free choice of the way to achieve the goal set to the professional manager;

- periodic reports by the professional manager on the management decisions taken and the results of their implementation to the owner (co-owners), analysis of the effectiveness of the management decisions taken based on the results of the checks and reporting;
- implementation of constant monitoring of the professional manager activities and the management condition objects by the owner (co-owners);
- functioning of the housing stock management system, the sequence of all entities interaction of this system, should be regulated in detail by the relevant legislative and regulatory acts.

It is the inseparable unity of these elements that makes the governance system principle.

The housing objects management effectiveness depends largely on who is managing them. The level of qualification and business quality of personnel is a decisive factor for improving the efficiency of real estate management.

The principle of professionalism in management is expressed in the professional manager's ability to assist the owner (co-owners) in defining the management objectives and formulating the needs expressed through the service order. In addition, the quality of management services and utilities depends not only on the objects technical condition, but also on manager's experience, special training, personal culture, scientific and creative approach to the solution of the tasks set to him. Taking into account that the manager's activity is multifunctional, complicated and responsible, we consider that the necessary condition for obtaining a permit by an individual to provide housing management services is the availability of an appropriate educational qualification level for them: the acquisition of higher education and the qualification "Manager of a dwelling house (group of houses)". Taking managing decisions, managers are required to have knowledge of the legal, financial, economic, technical and organizational aspects of housing management.

The principle of client orientation is the activity of a professional manager characterized by a tendency to satisfy the requests of the owner (co-owners) of the home as clients. The professional manager acts within the limits of the powers established by the management agreement, reporting to the owner (co-owners) in accordance with the procedure established by the current legislation and the contract. The importance of this principle of management is confirmed by Shevska O. I. [6, p. 145]. According to the author, the interests of all business entities, including users, owners, customers and contractors, should be taken into account in the management of the housing sector, but the interests of departmental services, enterprises and organizations should be secondary to the cities and municipalities population interests.

We believe that the implementation of this principle should be carried out by the manager on the basis of the following actions, which are the principle constituent elements of the customer orientation:

- keeping records of owners, co-owners, tenants and lessees of residential and non-residential premises;
- organization of accessible and most convenient for consumers system of collection of payments for utilities (its payment and recalculation);
- organization of communications with consumers through personal reception of natural persons and representatives of legal entities; targeted mailing of informational materials; placing ads, hits, messages and information leaflets in specially designated places; use of Internet service; holding meetings and general meetings, etc.;
- reporting to the owners, co-owners, tenants and lessees of the residential and non-residential premises of the facility, on the work carried out on the implementation of long-term and short-term home maintenance programs, contracts execution condition, as well as annual financial and economic plans;
- conduct consumer surveys to determine their satisfaction with the level of utilities;
- organization of relations between co-owners;
- coordination of relations between the owner (co-owners), tenants, lessees and other object users and the utilities performers.

The proposed list of manager's possible actions aimed at satisfying the owner's (co-owners') needs, tenants and lessees of residential and non-residential premises in a multi-apartment building is not final. Of course, in practice, it may be necessity in manager's other actions in relation to consumers as clients.

The delegation principle of authority and responsibility is that each owner (co-owners) and the professional manager must be delegated with authorities sufficient to be responsible for the performance of their duties.

The principle of the optimal combination of state regulation and economic independence in management reflects a certain state interference in the economic activity of the housing stock management subjects and lies in combining state regulation and economic independence in management. In the modern market relations the state carries out the legal regulation of the administrative process, determining the degree of business entities independence.

The basis of state regulation of activity in the field of housing stock management is the various legislative and regulatory acts that each participant in the management process must know and act in accordance with these acts. Compliance with this principle stabilizes the management process.

State policy should focus on the introduction and development of professional housing management at all levels of government, taking into account the successful experience in leading European countries in this area. The implementation of this policy should include the development and implementation of targeted housing reform programs, regulatory support and regulation, facilitating entry into the market of professional managers and the development of a competitive environment for their functioning, participation in the financing of targeted programs, and creation of favorable conditions for attracting investments.

All offered principles of housing fund objects management are interconnected. They can not be divided into more and less important ones. Omission or lack of consideration of one of them in the process of housing stock management can lead to a reduction in the effectiveness of management decisions.

Conclusions. For today, the problem of efficient management of multi-apartment buildings remains unresolved. Although the first steps in the reform of this system have been launched, however, the active actions by state have not been implemented. This problem does not acquire a special development in Ukrainian scientists' scientific researches. Introduction of professional management of residential buildings will give a significant impetus to the creation of a competitive environment in the market for providing housing management services, improving utilities quality, increasing citizens' safety and comfort of living.

The following principles of multi-apartment buildings management are formed and substantiated: side-by-side, purposefulness, unity of actions, efficiency, systemicity, professionalism, client orientation, delegation of authority and responsibility, optimal combination of state regulation and economic independence in management. These principles should be taken into account by all subjects of the housing stock management system, regardless of the chosen form of management, since it is the knowledge and consideration of principles in practice that is the most important condition for effective management.

Prospects for further research may be the development of policies for the introduction and development of professional housing stock management.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

UDC 330.35.01

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START-UP: SEARCH OF WAYS OF INVESTMENT SUPPORT FOR DEVELOPMENT OF SMALL BUSINESS

Urgency of the research. *The article is devoted to research of ways of investment support of small business as a driving force of the economy. The generalization of foreign experience has allowed to determine the main condition for the development of small business start-ups. Today, the implementation of startups is the future of an efficient economy.*

Target setting. *Successfully designed and developed technique for evaluating the value of startups are part of the financial success of their implementation.*

Actual scientific researches and issues analysis. *Famous foreign scientists as G. Kawasaki, M. Nijier, D. Wumek, J. Lyker, B. Feld and others have made significant contributions to the development of startups, their emergence in markets, the study of economic instruments for increasing profitability and attracting investments.*

Uninvestigated parts of general matters defining. *At the same time, insufficient scientific works highlight the economic indicators of the effectiveness of the introduction of start-ups. Need additional research on the development of tools for improving the financial success of new projects of small enterprises.*

The research objective. *Defining a system of economic indicators for the effective development of startups and testing tools for the costs of their identification and monitoring.*

The statement of basic materials. *The methods of estimating the projects of the launch of pre-investment investments were analyzed. The calculation of the investment value of the company and the method of returning the venture capital through the final cost is tested. The optimal way of evaluating the Startup Start Cost Index is determined on the basis of the average Startup Cost and Segment Cost Index.*

In order to take into account the costs of implementing the startup it is expedient to use the theory of solving inventive tasks "Lean production", which will allow to build an effective system of management of aggregate expenses and further control over their dynamics.

Conclusions. *The result of the introduction of effective startups is the intensification of investment and innovation activities, the development of small business, solving social problems.*

Keywords: *startup; small enterprises; startup method for assessing project efficiency; factors startup; methods of valuation and startup costs.*

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START-UP: ПОШУК ШЛЯХІВ ІНВЕСТИЦІЙНОГО ЗАБЕЗПЕЧЕННЯ РОЗВИТКУ МАЛОГО БІЗНЕСУ

Актуальність теми дослідження. *Стаття присвячена дослідженню шляхів інвестиційного забезпечення малого бізнесу як рушійної сили економіки. Узагальнення зарубіжного досвіду дозволило визначити головною умовою розвитку малого бізнесу впровадження стартапів. На сьогоднішній день реалізація стартапів це майбутнє ефективної економіки.*

Постановка проблеми. *Успішно розроблений та сформований інструментарій оцінки вартості стартапів є складовою фінансового успіху їх реалізації.*

Аналіз останніх досліджень і публікацій. *Значний внесок у розвиток стартапів, становлення їх на ринках, дослідженні економічних інструментів для підвищення рентабельності та залучення інвестицій зробили відомі зарубіжні вчені: Г. Кавасакі, М. Нейджер, Д. Вумек, Дж. Лайкер, Б. Фелд та інші.*

Виділення недосліджених частин загальної проблеми. *У той же час недостатньо наукових праць висвітлюють економічні показники ефективності впровадження стартапів. Потребують додаткового дослідження формування інструментів покращення фінансової успішності нових проектів малих підприємств.*

Постановка завдання. *Визначення системи економічних показників ефективного розвитку стартапів та апробація інструментарію витрат на їх ідентифікацію та моніторинг.*

Виклад основного матеріалу. *Проаналізовано методи оцінювання проектів запуску попередньо введенних інвестицій. Апробовано розрахунок інвестиційної вартості компанії та способу повернення венчурного капіталу через кінцеву вартість. Визначено оптимальний спосіб оцінки індексу вартості запуску стартапів на основі середнього індексу вартості стартапа та з урахуванням сегменту.*

Для врахування витрат реалізації стартапу доцільно використати теорію розв'язання винахідницьких задач «Lean production», яка дозволить побудувати ефективну систему управління сукупними витратами та подальший контроль за їх динамікою.

Висновки. *Результатом впровадження ефективних стартапів є активізація інвестиційної та інноваційної діяльності, розвиток малого підприємництва, вирішення соціальних завдань.*

Ключові слова: *стартап; малі підприємства; метод оцінки стартап проекту; фактори ефективності стартапа; методи оцінки вартості стартапа та витрат.*

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Urgency of the research. The main task of startup is to transform ideas into products, to evaluate the response of consumers and then decide whether to make a turn or move the former rate. All processes of the project should be directed to the fact that as soon as possible to get feedback from consumers. To improve results of startup and support the responsible of the developers of innovation, it is needed to focus on the economic analysis, in terms of which to measure success, set breakpoints and priorities. The problem startups in Ukraine is the weak economy: 99% of new companies «die» at the start of their business. Difficulties arise in Pre-seed Stage. It seems everybody has (what they consider) a million-dollar idea, but making an idea into reality is very rare. Rarer still is the «great idea» that not only gets off the ground, but finds its perfect audience [1].

The use methodology of economic analysis will improve economic performance, minimize costs that will result the development of small business, solving social problems.

Target setting. Startup is one of the most popular way becoming company at the market, a set of actions the person uses to attract the most investors to rapidly develop scalable business model. A new project in the economic development is becoming increasingly important for improving social and economic problems. In particular: providing people with jobs, attract foreign financial investments for the development of small business, solving social problems.

A startup is a company which aims to solve a problem that's currently not solved. The solution may be not apparent and success is not guaranteed. Startup is the launch of innovations. To be considered a startup, the company must be young (3 – 5 years max), fast-growing and have fewer than 500 employees. Often, these are Internet – projects and IT projects.

Actual scientific researches and issues analysis. Most of the startup learning curve is a smart business strategies for building a technology startup and provides a comprehensive guide to building a financial model of the company. Different aspects of startup are referred in researches conducted by domestic and foreign economists. In the book Tom Y. Sawyer [2] explored smart business strategies for building a technology startup which provide a complete guide to building a financial model for the company. How to start the company and how to raise money are examined in the works Guy Kawasaki [3] and M. Neydzher [4]. Brad Feld [5] reveals major secrets of attracting investment, all legal aspects of doing business and the methods for determining the value of the business. However, contrary the significant amount of researches and basic technique for assessing the costs and the improvement of the financial success of the new projects are insufficiently studied and require further research.

Uninvestigated parts of general matters defining. Economic indicators of the effectiveness of the introduction of startups are not sufficiently highlighted in the scientific works of domestic and foreign scientists. Particularly in need of additional research on the development of tools for improving the financial success of new projects; definition of factors of achievement of economic stability of small enterprises.

The research objective. The purpose of research is the formation of economic indicators for the effective development of start-ups.

To achieve the goal, it is expedient to realize the following tasks:

- formation of technique for evaluating the value of startups;
- a description of the factors and factors that affect the benefits and costs of projects;
- establishing directions for improvement of small enterprises.

The statement of basic materials. First of all, you need to estimate the cost of a startup. In assessing the value of the company is important to understand whether it is prior to receipt of investments (pre-money valuation) or post-investment (post-money valuation) value. A pre-money valuation is a term used in private equity or venture capital that refers to the valuation of a company or asset prior to an investment or financing. Post-money valuation is the value of the company after the investment has been made. This value is equal to the sum of the pre-money valuation and the amount of new equity. It depends on the stage the company is in, as well as the industry the company is entering [6]. The preliminary estimation of the cost depends on:

1. general characteristics of the industry and company (its size), its partners, competitors and customers;

2. financial documents (charter, constituent documents, balance sheet, profit and loss statement), which study is carried out with the help of such instruments: calculation of coefficients of financial stability, liquidity and profitability.

To assess the initial startup cost are two basic methods. The first – is based on the valuation of assets or net assets. The second – the amount of enterprise revenue from its activities (annual sales) or sales (turnover or sales) [7].

It is important to understand how a pre-money valuation affects the investors involved once the investment is made. For example, imagine that a group of investors decide that a new start-up company is worth 100,000 UAH; they decide to invest 50,000 UAH. Adding the pre-money total of 100,000 UAH to 50,000 UAH investment yields a total of 150,000 UAH, which would be the post-money valuation of the company [8].

The cost of the project can be found using the following formula:

$$S = R + D - M,\ R = Sh * St \qquad (1)$$

where S – the company's value;

R – market capitalization of shares;

D – long-term debt;

M – cash and cash equivalents;

Sh – the quantity of shares;

St – the current market value.

The technique of calculating the company value firms demonstrating the best startup attractiveness for investors (Tab. 1).

Table 1

Pre and Post – investment and investment-company value

Indexes	Pre-Money Valuation		Post-Money Valuation	
	Cost, UAH	% property	Cost, UAH	% property
Startup	100000	67	80000	61
Investors	50000	33	50000	39
Total	150000	100	130000	100

Source: created by the authors

So pre-investment and post-investment company value important to determine: the amount of funds attracted by venture capital funding and in establishing market IPO; the price of each share; and the proportion of property [9].

The main method of assessment is a method of investment rate of return using the terminal value [10]. The terminal value may be calculated.

$PV = CF/(r - g)$ where PV – is the present value as at the terminal date (it will have to be further discounted in the DCF itself), CF – is the actual final year cash flow, g – is the growth rate after the final year and, r – is the discount rate. The commonest assumption made for a growth rate used to calculate a terminal value is that it will be the same as long run economic growth.

The easiest way to diagnose a competitor's or similar firm's position is to identify the main indicators that characterize their business activity (number of customers, sales, market share, etc.). For example, if the forecasted net startup revenue in 3 years is $ 250,000, and the average net worth to comparable analog companies is 17, then the estimated value of the company will be $ 425,000 after 5 years. In order to determine the required share investor's investor, it is necessary to divide the future value of investments into the forecasted final value of the company upon withdrawal from the investment.

Both methods of calculating the "Rate of return method" and the pre-investment and post-investment company value are aimed at assessing the effectiveness of investment in the project. To attract investors - this is the main factor.

The best way to assess the value of the index of the cost of startups and main characteristics by determining index value of new projects based on the calculation of the three main types of index value [11]:

1. The average value of the index starting a new project

$$Ist = \sum_{i=1}^{n} p/n \tag{2}$$

where n – the quantity of startups assigned to segments,
p – the cost of the project.

2. The index of the cost of startups depending on the segment

$$Isegm = \sum_{i=1}^{n} p_{segm}/n_{segm} \tag{3}$$

where n_{segm} – the quantity of startups assigned to a particular segment,
p_{segm} – the cost of the project in this segment.

3. Cost index for launching startups participating in specific projects

$$Irvc = \sum_{i=1}^{n} p_{rvc}/n_{rvc} \ , \tag{4}$$

where n_{rvc} – the quantity of startups participating in the projects,
p_{rvc} – the cost of one project that is involved in projects.

The disadvantage of this method is that when assessing the startup it does not include such indicators as the competitiveness of firms in the market, it does not assess the market, plan the costs of creating the project and makes it impossible to write a business plan.

To calculate the costs applied Lean production. Lean production system is the western term for Toyota Production System. The basis of business is production. The advantage of lean production is the rapid dynamics of the transformation results that manifest themselves in a sharp reduction of losses - the muda – the Japanese word, which means losses, waste, that is, any activity that consumes resources, but does not create value [12].

Concept 3M (Muda, Mura, Muri) are the determines the obstacles to the effective operation of the operating system JIT. They are constantly searched and eliminated from the system. These are Japanese words and all of them start from English letter M, i.e. Muda, Mura and Muri [13; 14].

The seven wastes to be eliminated: losses of overproduction, loss due to defects and the need for redistribution, loss during personnel movement, loss during transportation of materials, billets, losses from excess inventory of goods (external and internal), losses from excessive processing, loss of waiting time (reset, etc.).

Optimal theory that best fits into this concept – TSIT – the theory of solving inventive tasks "Lean production". In solving problems of engineering and technology is necessary to focus on increasing the degree ideal – a reliable criterion in setting objectives, assessing and addressing its response. Increasing the ideal technical system can occur both within the existing structural concept, and as a result of radical changes in the design and the very principle of the system [15]. When perfection in TSIT refers to the ratio of useful functions performed by the system (quantity and quality of the functions F), to the amount of reckoning factors (cost, harmful functions f, and the system of fees):

$$I = \frac{F_1 + F_2 + ... + F_n}{f_1 + f_2 + ... + f_n} \to MAX \quad (4)$$

Consider the formula more:

$$I = \frac{\sum F}{\sum f\,(P, V, L, T, E, \$)} \quad (5)$$

where F – useful system functions require the consumer;

f – cost function;

P – the weight of the technical system;

V – the amount of the technical system;

L – the characteristic dimensions of the technical system;

T – time costs;

E – energy consumption;

$\$$ – value;

I – the stage of perfectness.

Each component of the formula describes the factors that impact on the company improves.

$$F/V \to MAX,\ F/P \to MAX \quad (6)$$

The desire to implement as many useful features per unit volume and per unit weight of technical systems (microminiaturization technology).

$$F/\$ \to MAX \quad (7)$$

The essence of the application of functional cost analysis – increasing ideal technical system by increasing the quantity and quality of system functions or reducing their value.

$$F \to MAX \quad (8)$$

Increasing the quantity and quality of products useful functions required to the final consumer.

$$F/T\ \ (storage) \to MAX \quad (9)$$

Storage of raw materials and products in stock not add product value. Japanese technique of «Kanban» ensures the implementation of the principle of «just in time» production is a continuous conveyor then immediately sent product to the consumer.

$$F/T\ \ (transportation) \to MAX \quad (10)$$

Transportation doesn’t add value. The method «just in time» (Just-in-Time) designed to reduce these costs.

$$F/T\ \ (resetting) \to MAX \quad (11)$$

Reducing changeover time sophisticated equipment from hours to minutes, and even a «one touch» - a powerful base of the ideal processes. For this Japanese technique designed SMED: Single Minute Exchange of Dies [16].

$$F/E \to MAX \tag{12}$$

Reducing power consumption technology systems with constant increase in the cost of energy is one of the main ways to improve the ideal equipment.

$$F \to MAX \text{ while } f \to MIN \tag{13}$$

The «Kaizen» techniques – continuous improvement. Any improvement of a technological operation may be a problems in the upstream and downstream operations. There is a need for a comprehensive approach to improving the entire production chain. That should strive to improve the technology ideal throughout, not just its individual components.

Conclusions. The study suggested methods of valuation startup projects using techniques Pre and Post investment value of the company and the method of return method (venture capital) through the terminal value. The method estimates the value of the index launch and main characteristics of startups based index value determination start new projects based on the calculation of the three major indexes value.

Characterized factors influence the company's value, and variants of the factors that contribute to costs.

Established detection tool costs by using the theory of solving inventive tasks "Lean production" that will further develop an effective system to determine the aggregate costs of organizing and taking further control of their dynamics.

The results will improve the effectiveness of startups through attracting investment. The implemented cost management system aims to improve the small of company and deficiencies.

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ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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РЕГІОНАЛЬНІ АСПЕКТИ ФІНАНСУВАННЯ СЕРЕДНЬОЇ ОСВІТИ В УКРАЇНІ

Актуальність теми дослідження. *Конкурентні позиції національного господарства залежать від потужності людського капіталу, фундамент якого формується в системі середньої освіти. Реформа децентралізації бюджетних відносин дозволяє місцевій владі суттєво впливати на фінансове забезпечення Концепції «Нової української школи», виходячи з потреб та інтересів кожного регіону.*

Постановка проблеми. *Концепція «Нової української школи» передбачає, що розподіл фінансових ресурсів відбувається за принципом «гроші ходять за дитиною». Вже з вересня 2018 р. початкова школа переходить на новий зміст навчання та порядок фінансування. Бюджетна децентралізація є потужним інструментом створення нового освітнього середовища.*

Аналіз останніх досліджень і публікацій. *Питання реформування освіти та специфіки її фінансування, досліджували І. Когут, О. Куклін, Є. Стадний, А. Сеїтосманов, Л. Цимбал, О. Фасоля, П. Хобзей, Н. Холявко та інші науковці.*

Виділення недосліджених частин загальної проблеми. *Існує нагальна потреба у проведенні досліджень, присвячених саме регіональним аспектам фінансування середньої освіти в умовах децентралізації бюджетних відносин.*

Постановка завдання. *Обґрунтувати концептуальні підходи до децентралізації фінансування середньої освіти з урахуванням регіональної специфіки.*

Виклад основного матеріалу. *Проаналізовано теоретико-методичні підходи та аналітичні матеріали, що стосуються реформування середньої освіти на сучасному етапі. Виокремлено економічні та політичні передумови забезпечення освітньої реформи в умовах децентралізації.*

Висновки. *Доведено конструктивність імплементації реформи децентралізації фінансування системи середньої освіти та впровадження концепції «Нової української школи», передачі значних повноважень та бюджетів від державних органів влади до органів місцевого самоврядування. Виявлено тенденцію до збільшенню фінансування та конкретизовано напрями покращення надання освітніх послуг.*

Ключові слова: *економіка; бюджет освіти; реформа освіти; децентралізація; регіональні аспекти фінансування середньої освіти; освітня субвенція.*

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REGIONAL ASPECTS OF SECONDARY EDUCATION FINANCING IN UKRAINE

Urgency of the research.*The competitive position of the national economy depends on the power of human capital, the foundation of which is based on the system of secondary education. The reform of the decentralization of budgetary relations allows the local authorities to influence the financial provision of the Concept of the "New Ukrainian School", based on the needs and interests of each region.*

Target setting. *The concept of the "New Ukrainian School" implies that the distribution of financial resources is based on the principle of "money goes after the child." In September 2018 the elementary school moves to a new content of education and financing. Budget decentralization is a powerful tool for creating a new educational environment.*

Actual scientific researches and issues analysis. *Topics of reforming education and the specifics of its financing were investigated by I. Kohut, O. Kuklin, E. Stadnyi, A. Seitosmanov, L. Tsymbal, O. Fasolya, P. Hobzsey, N. Kholyavko and other scholars.*

Uninvestigated parts of general matters defining. *There is an urgent need to research the regional aspects of financing secondary education in the context of budget decentralization.*

The research objective. *To substantiate the conceptual approaches to financing decentralization of secondary education taking into account regional specificity.*

The statement of basic materials. *Modern theoretical and methodological approaches and analytical materials concerning the reform of secondary education are analyzed. The economic and political preconditions of providing educational reform in conditions of decentralization are showed.*

Conclusions. *The constructive implementation of the decentralization reform of the financing of the secondary education system and the implementation of the concept of the "New Ukrainian School", the transfer of significant powers and budgets from state authorities to local has been proved. The tendency to increase financing of education is revealed and specified directions for improving the provision of educational services.*

Keywords: *economy; education budget; education reform; decentralization; regional aspects of secondary education financing; educational subvention.*

Актуальність теми дослідження. Конкурентні позиції національного господарства у глобальному вимірі залежать від потужності людського капіталу, фундамент якого формується в системі середньої освіти. Орієнтація на європейські стандарти якості освіти вимагає нових підходів до її фінансування. Нині в Україні склалась сприятлива інституціональна ситуація, пов’язана з процесами децентралізації влади, які передбачають фінансову та управлінську свободу на місцях, в тому числі – у сфері освіти, яка переживає період докорінних трансформацій.

Найважливішим фактором динамічного розвитку будь-якого суспільства є забезпечення доступності освіти, її конкурентоспроможність в нових економічних та соціокультурних умовах. Освітня реформа, що проводиться в Україні, покликана побудувати суспільство освіченого загалу, в якому формуються рівні шанси на життєвий успіх для кожного громадянина, незалежно від соціального статусу, місця проживання, мови спілкування, фізичних можливостей. Сучасну державну політику у сфері реформування середньої освіти та забезпечення механізму її фінансування визначає Концепція «Нової української школи», яка була схвалена Урядом у грудні 2016 року. Згідно Концепції впроваджуються нові стандарти змісту загальної середньої освіти, засновані на компетентнісному та особистісно-орієнтованому підході до навчання. Концепція "Нова українська школа" передбачає також стимулювання професійного зростання педагога, надання йому академічної свободи та гідного матеріального стимулювання, що неможливо без зміни порядку та обсягів фінансування системи середньої освіти. З впровадженням реформи децентралізації бюджетних відносин відкриваються цілком реальні перспективи вирішення цих завдань, адже місцева влада у містах та об'єднаних територіальних громадах отримала небувалі до цього управлінські й фінансові повноваження.

Постановка проблеми. Концепція «Нової української школи», яка побудована на дитиноцентризмі, передбачає, що розподіл фінансових ресурсів відбувається за принципом «гроші ходять за дитиною». Вже з вересня 2018 р. початкова школа переходить на новий зміст навчання та порядок фінансування, який формує мотиваційний механізм підвищення якості надання освітніх послуг. Проте процеси оновлення порядку фінансування системи освіти є складними й суперечливими, що вимагає концентрації зусиль науковців та представників влади з метою розробки методичних та прикладних засад таких перетворень. Бюджетна децентралізація є потужним інструментом створення нового освітнього середовища, адаптованого до сучасних потреб економіки України та зростаючого покоління її громадян, що особливо важливо з огляду на активізацію академічної мобільності молоді та загострення конкуренції на європейському ринку освітніх послуг.

Аналіз останніх досліджень і публікацій. Питання реформування освіти та специфіки її фінансування, досліджували І. Когут, О. Куклін, Є. Стадний, А. Сеїтосманов, Л. Цимбал, О. Фасоля, П. Хобзей, Н. Холявко та інші науковці. Проте аналіз регіонального зрізу бюджету освіти та специфіки її фінансування в умовах децентралізації влади не були предметом спеціального наукового дослідження.

Для Міністерства освіти і науки України та обласних й місцевих органів влади моніторинг фінансування освітньої галузі став справжнім викликом. Вдалим прикладом аналітичного дослідження та інформаційно-методичного забезпечення освітньої децентралізації є шведсько-український проект «Підтримка децентралізації в Україні», який реалізує SKL International за підтримки Департаменту освіти і науки Хмельницької обласної державної адміністрації, як пілотного регіонального партнера. Продуктом співпраці став посібник з ефективного управління освітою в об'єднаних територіальних громадах «Нова школа у нових громадах», окремий розділ якого присвячений саме регіональним аспектам фінансування середньої освіти в Україні [1, С. 6-13, 40-46]. Регіональний зріз фінансування середньої освіти в Україні можна проаналізувати на основі щорічних звітів департаментів та управлінь освіти [2; 3; 4] та порівнявши їх з досвідом децентралізації у питаннях фінансування освіти в інших країнах [5].

Виділення недосліджених частин загальної проблеми. У той же час, дуже мало наукових та аналітичних досліджень, присвячених освітній децентралізації й регіональним аспектам фінансування середньої освіти після запровадження концепції «Нової української школи». Зазвичай науковці керуються усталеною традицією аналізувати бюджет освіти загалом, не враховуючи актуальні виклики освітньої реформи на місцях – розширену автономію навчальних закладів та фінансові можливості кожного регіону.

Постановка завдання. Обґрунтувати концептуальні підходи до децентралізації фінансування середньої освіти з урахуванням регіональної специфіки в контексті Концепції «Нової української школи».

Виклад основного матеріалу. Закон України «Про освіту», прийнятий 05.09.2017 р., започаткував процеси освітньої децентралізації. До повноважень Міністерства освіти і науки належить лише визначення стандартів освітніх послуг, забезпеченням якості освіти й питаннями акредитації освітніх закладів та їх фахового інспектування опікується Державна служба якості освіти. Ключові ж рішення управлінського та організаційно-економічного характеру приймаються місцевими органами влади, які регулюють питання оптимізації мережі закладів освіти та забезпечення їх територіальної доступності, створення опорних шкіл, освітніх округів, забезпечення державно-громадського управління закладами освіти тощо.

Одним з ключових векторів реформи децентралізації стало впорядкування фінансування освітньої сфери. Серед причин, що негативно впливали на розвиток системи освіти в Україні, були визначені низький чи залишковий принцип фінансування освітньої сфери та нераціональне використання наявного потенціалу й фінансових можливостей, через неврахування місцевої специфіки. Протягом останніх років в Україні на фінансування освітньої сфери витрачається з бюджету різних рівнів (включно із спеціальними фондами) приблизно 5,3% валового внутрішнього продукту (далі – ВВП), а видатки на освіту з Державного бюджету не перевищують 3% ВВП. Якщо враховувати інфляційні процеси, пов'язані з поглибленням кризових явищ в економіці країни, реальний рівень фінансування освітньої сфери знижується, попри те, що номінально обсяги фінансування цієї сфери зростають. Так, у 2013 р. бюджетна забезпеченість одного учня школи склала 8,1 тис грн. (у доларовому еквіваленті – близько 1000 дол США), тоді як у 2016-2017 рр. цей показник у національній валюті зріс до 10 тис грн, проте у доларовому еквіваленті – знизився більше, ніж вполовину (близько 400 дол США). Для порівняння, у розвинутих країнах ЄС ця ж стаття видатків передбачає близько 6,8 тис євро [5].

На рівень місцевих бюджетів перекладено всі видатки (крім видатків на оплату праці педагогічних працівників) по закладам загальної середньої освіти. Окремі міста взяли на себе додаткові фінансові зобов'язання – компенсацію благодійних внесків батьків. Збільшення дохідної частини місцевих бюджетів та прямі бюджетні стосунки з громадами дають можливість враховувати індивідуальні потреби кожного навчального закладу. Для обласних та районних бюджетів передбачається компенсаційний фінансовий ресурс у вигляді додаткової дотації на утримання закладів освіти.

Бюджет на 2018 р. забезпечує всі сфери, що є ключовими для реалізації концепції «Нової української школи» (далі – НУШ) та її імплементації у 2018-2019 навчальному році. Формула НУШ складається з наступних ключових компонентів: 1) формування компетентностей; 2) умотивований учитель; 3) наскрізний процес виховання, що формує цінності; 4) децентралізація, що сприятиме шкільній автономії; 5) орієнтація на потреби учня – дитиноцентризм; 6) нова структура школи; 7) справедливий розподіл публічних коштів, що сприяє рівним можливостям в отриманні якісної освіти; 8) модерне освітнє середовище.

На проведення реформи загальної середньої освіти в Україні у 2018 р. планується витратити 2,714 млрд грн (із них 1,814 млрд грн передбачено Державним бюджетом на підтримку НУШ та 0,9 млрд грн – обсяг нерозподілених видатків освітньої субвенції Донецької та Луганської областей). Зокрема, йдеться про закупівлю підручників та електронних підручників (373,3 млн грн), обладнання закладів загальної середньої освіти (1000 млн грн), навчання вчителів (386,6 млн грн) та створення електронної платформи (54,6 млн грн). Оснащення закладів загальної середньої освіти має на меті створення нового навчального середовища: оновлення меблів, закупівлю дидактичних матеріалів та комп'ютерного обладнання. В контексті цього Наказом Міністерства освіти та науки України затверджено примірний перелік засобів навчання та обладнання навчального і загального призначення для навчальних кабінетів початкової школи. Варто зауважити, що при закупівлі оснащення для НУШ передбачається співфінансування місцевих органів влади та державного бюджету.

Загалом бюджет освіти та науки України 2018 р. передбачає суттєве збільшення видатків на середню освіту – освітню субвенцію збільшено з 52 до 61 млрд грн, тобто на 16 % [6]. Саме з неї виділяються кошти на оплату праці педагогічним працівникам закладів загальної середньої освіти. Крім того, зарплати вчителів піднімаються на один щабель вище по тарифній сітці та підвищуються на 25%. Проте оплата праці технічних працівників, оплата комунальних послуг та інші видатки на утримання закладів освіти – це сфера відповідальності місцевих бюджетів [7].

У 2018 р. введено спеціальну формулу для розрахунку освітньої субвенції, що стимулюватиме місцеву владу до реорганізації освітньої мережі [8]. Неоптимальне чи неконтрольоване формування класів, якщо наповнюваність буде нижчою за розрахункову, призведе до дефіциту коштів.

$$У \times 1/РНК \times НП \times 1/18 \times ЗП,$$

де У – кількість учнів;

РНК – розрахункова наповнюваність класів (тобто скільки учнів у середньому вчаться в класах у середніх школах певної адміністративно-територіальної одиниці);

НП – навчальний план (кількість годин на тиждень);

18 – кількість годин на тиждень на одну ставку;

ЗП – заробітна плата (на одну ставку вчителя на рік з нарахуванням).

Нагадаємо, що до 2018 р. освітня субвенція розподілялася за іншими принципами – на основі нормативу фінансового забезпечення, який встановлював Мінфін: кількості учнів у школах, що підпорядковані розпоряднику коштів, типу школи і типу населеного пункту. Як зазначають фахівці, наведена формула базуватиметься на сумі реальних витрат на оплату праці педагогічних працівників. Кошти, які отримає розпорядник (місцевий бюджет), будуть залежати від кількості класів із розрахунковою наповнюваністю (різною для міста і села) та навантаження вчителів відповідно до типових навчальних планів (кількості годин на кожен предмет). Наприклад, якщо в місті є 1000 учнів, розрахункова наповнюваність класу становить 25 дітей, навчальний план передбачає 32 години на тиждень, а ставка вчителя складає 18 годин, то в бюджет прийдуть кошти на 41 ставку (заробітні плати вчителів є фіксованими відповідно до Єдиної тарифної сітки) [7].

Зважаючи на актуальність питання своєчасної виплати заробітної плати вчителям та в контексті фінансової децентралізації окремі органи самоврядування вказали на зменшення суми освітньої субвенції, доведеної на початок 2018 р. Проте у Міністерстві освіти і науки України прокоментували, що освітня субвенція передбачає кошти на збільшення оплати праці освітянам, а якщо порівняти 61,7 млрд грн освітньої субвенції 2018 р. з фактичними витратами 2017 р. (48,5 млрд грн), то простежується зростання на 27%. А це свідчить, що підвищення зарплати вчителям в цьому році на 25% є фінансово забезпеченим [9]. Чернігів, на жаль, став прикладом міста, де у 2018 р. було виділено освітньої субвенції на 3167700,00 грн менше, незважаючи на те, що збільшилася кількість учнів (2018 р. – виділено освітньої субвенції 270981400,00 грн; 2017 р. – профінансовано 274149100,00 грн.).

Слід відмітити використання Україною позитивного європейського досвіду оцінки якості освіти – створення Державної служби якості освіти України (далі – ДСЯО), яка утворена на базі Державної інспекції навчальних закладів України (далі – ДІНЗ). Ця принципово нова інституція дозволить перейти від контролю за якістю до її забезпечення, на що передбачені потужні фінансові ресурси [6]. Так, бюджетом освіти та науки України на 2018 р. передбачає 30 млн грн на забезпечення ефективного функціонування ДСЯО. Для порівняння, видатки на ДІНЗ у 2017 р. складали лише 7,8 млн грн. Інституційна розбудова Служби якості має бути остаточно завершеною протягом 2018 р., відповідно до рішення, прийнятого на Стратегічній сесії «Система забезпечення якості шкільної освіти. Завантаження» (20 березня 2018 р.), організаторами якої виступили Державна служба якості освіти України, Міністерство освіти і науки України, офіс Координатора ОБСЄ в Україні, Чеський фонд розвитку, Європейський центр імені Вергеланда.

Зміни до Бюджетного кодексу пов'язані також з переглядом загальної концепції навчання дітей з особливими потребами. Зокрема, виділена субвенція у розмірі 504 млн грн., яка розрахована на заклади загальної середньої освіти для дітей, які потребують корекції фізичного та/або розумового розвитку, навчально-реабілітаційні центри, інклюзивно-ресурсні центри. Планується реорганізація інтернатної системи та розповсюдження практики створення інклюзивно-ресурсних центрів. Для прикладу, у Чернігові в 2017 р. субвенція на дітей з особливими потребами, за принципом «гроші ходять за дитиною», становила 4923888 грн, а на 2018 р. планується виділити 5224064 грн. для навчання 213 дітей.

Крім того, суттєво збільшилося стимулювання наукової діяльності молоді та її фізичної активності на загальнодержавному рівні. Зросло фінансування Малої академії наук та позашкільних заходів (на 24 млн грн, до 91,5 млн грн) і спортивної та фізичної підготовки молоді (на ту ж суму, до 124 млн грн) [7].

Отже, ми спостерігаємо переплетення реформування двох важливих сфер: 1) децентралізації місцевого самоврядування і 2) зміни підходів до організації освітнього процесу та його фінансового забезпечення. Перенесення управлінських акцентів у розподілі фінансових ресурсів на місця має усунути негативну практику нівелювання особливостей кожного регіону. Визначимо проблеми, які слід враховувати при реформуванні фінансування системи середньої освіти, обумовлені регіональною специфікою Чернігівської області, зокрема:

1) складна демографічна ситуація. Протягом тривалого періоду часу Чернігівська область мала значний спад народжуваності, що відбилось на кількості учнів закладів загальної середньої освіти. Справедливо зауважити, що нині ситуація дещо покращується в силу природніх причин. Можна констатувати певний сплеск народжуваності протягом 2009-2013 рр., але це стосується переважно м. Чернігова, а не області в цілому;

2) негативні тенденції в зміні територіальної та організаційної структури економіки регіону, пов’язані з проявами кризових тенденцій в національному господарстві, що призвело до економічного занепаду та стагнації окремих територій (особливо стосується сільських районів, віддалених від центрів промислового виробництва та міст). Це спровокувало різке збільшення кількості малокомплектних шкіл та, відповідно, зниження якості освіти, оскільки викладання в таких школах були змушені проводити непрофільні вчителі, охоплюючи кілька предметів;

3) ситуація з рівномірністю забезпечення якості освіти по області набула загрозливого характеру у зв’язку з катастрофічним станом доріг та дорожньої інфраструктури (особливо враховуючи, що Чернігівська область є другою за площею території після Одеської в Україні). Це ускладнює застосування практики оптимізації закладів середньої освіти на основі впровадження моделі «опорних шкіл»;

4) екологічні проблеми регіону, в тому числі пов’язані з наслідками Чорнобильської катастрофи, що провокують зростання захворюваності учнів, а в окремих випадках збільшення кількості дітей-інвалідів та дітей з особливими потребами;

5) якість науково-педагогічних кадрів. Старіння населення відбивається на віковій структурі освітян області. З іншого боку, близькість столиці обумовлює відтік талановитої молоді, при чому, як кваліфікованих педагогів, так і потенційних абітурієнтів педагогічних університетів регіону.

Безумовно, вирішення окреслених проблем виходить далеко за межі реформи середньої освіти. Проте, в умовах децентралізації управління фінансовими ресурсами виникає реальна можливість компенсації гостроти прояву негативних явищ. Стають зрозумілими пріоритети цільового призначення розподілу обмежених ресурсів, виходячи з потреб регіону.

Ми можемо констатувати, що децентралізація в системі фінансування освіти, на прикладі Чернігова, вже зараз дає надію на успішність проведення реформ. Так, загальний Кошторис управління освіти Чернігівської міської ради відбиває позитивну динаміку надходження коштів: 2015 р. – 418,7 млн грн, 2016 р. – 507, 9 млн грн, 2017 р – 734, 1 млн грн, та 2018 р. (план) – 733,8 млн грн (враховуються освітня субвенція та кошти з міського бюджету). За рахунок надходження додаткових коштів, збільшилися капітальні видатки по бюджету розвитку, що на практиці означає можливість придбання додаткових засобів навчання та обладнання, а також збільшення обсягів коштів на проведення капітальних ремонтів та реконструкцій. Зокрема, у 2015 р. було використано 13,2 млн грн, 2016 р. – 23,7 млн грн, 2017 р. – 89,2 млн грн, у 2018 р. планується освоїти 99 млн грн. Слід відмітити, що починаючи з 2017 р. до касових видатків управління освіти додалися видатки по управлінню капітального будівництва Чернігівської міської ради, як виконавця ремонтних робіт.

В цілому, у 2017-2018 рр., за даними управління економіки Чернігівської міської ради, бюджет освіти становить понад 40% загальноміського. Для порівняння, у країнах Балтії, де реформу децентралізації було успішно реалізовано раніше, видатки на освіту теж складають дуже вагому частку місцевих бюджетів: в Естонії – 35%, Литві – 37%, Латвії - 38%.

Збільшення рівня фінансової самостійності системи освіти дала можливість по м. Чернігову змінити пострадянську традицію «благодійних внесків»: зборів з батьків грошей на потреби шкіл та дошкільних закладів освіти. Так, відповідно до розпорядження міського голови Чернігова від

24 січня 2017 р., заборонено ініціювати збір коштів на проведення капітальних та поточних ремонтів у школах та дошкільних закладах міста. Слід зауважити, що таку практику впроваджено далеко не у всіх містах України. У 2017 р. видатки на покриття благодійних внесків склали суму 6,2 млн грн з розрахунку 300,00 грн на одну дитину в садочку й 100 грн. на учня школи. Ця сума була використана з розрахунку 70% - придбання (видатки на підкріплення матеріально-технічної бази закладу, а саме на закупівлю миючих засобів, фарби, канцелярського приладдя, господарчих, будівельних та електротоварів та інших вкрай необхідних товарів та матеріалів) і 30 % видатків – на послуги (поточний або аварійний ремонт закладу). Сума загалом склала: 4375630 грн – закупівля необхідних матеріалів та засобів, 1875270 грн – поточний ремонт. У 2018 р. на покриття благодійних внесків виділено 7,3 млн грн (80% – придбання матеріалів, 20% – послуги) із розрахунку: на одного вихованця дитячого садочка – 340 грн, учня середньої школи – 120 грн.

Враховуючи старіння інфраструктури закладів освіти гостро стоїть питання її підтримки у належному стані. При цьому слід враховувати, що інфраструктура закладів освіти – це сукупність матеріальних об'єктів у навчальному закладі, які забезпечують якісну реалізацію соціальних та освітніх функцій, створюють комфортні умови для перебування та діяльності всіх учасників навчально-виховного процесу. Така інфраструктура, згідно європейських стандартів, має відповідати трьом ключовим вимогам: надійності, доступності, безпечності [10; 11]. У 2017 р. в м. Чернігів було використано значну суму коштів на поточні ремонти закладів освіти та усунення їх аварійного стану – 4148614,12 грн. По закладам дошкільної освіти ця сума складає – 2444 571,27 грн, по закладам загальної середньої освіти – 1904042,85 грн.

Загалом підсумки фінансово-господарської діяльності управління освіти та закладів освіти у 2017 р. та пріоритети фінансування останніх виглядають наступним чином (Таб. 1).

Таблиця 1

Фінансово-господарська діяльність управління освіти Чернігівської міської ради та закладів освіти у 2017 р.

	Бюджет на 01.01.2017, грн *696 287 633+30 004 000 УКБ =728 210 633*	*Бюджет на 31.12.2017, грн* *755 455 650+30 004 000 УКБ =785 459 650*	*Відхилення (+/-) +57 249 017*
Заклади дошкільної освіти (далі - ЗДО)	241 403 397	262 371 139*	+20 967 742
Заклади загальної середньої освіти (далі - ЗЗСО)	366 125 006	370 609 729*	+4 484 723
Вечірня школа	2 759 190	2 759 190	-
Навчально-реабілітаційні центри	17 636 315	18 100 706	+464 391
Туристичний центр	3 816 545	4 099 685	+283 140
Професійно-технічні училища (далі - ПТУ)	49 322 443	78 964 920	+29 642 477
Методичний центр	1 901 749	2 040 244	+138 495
Централізована бухгалтерія	6 275 328	6 290 328	+15 000
Господарча група	2 757 780	3 034 280	+276 500
Логопедичні пункти	93 237	132 710	+39 473
Виплата дітям сиротам	83 260	90 500	+7 240
Спортивні школи	3 926 383	4 331 143	+404 760
Управління освіти	1 919 000	2 444 076	+525 076
Громадський бюджет	187 000	187 000	-

*Бюджет ЗДО, ЗЗСО складається з батьківською платою за харчування та сумою благодійних внесків (надходження у натуральній формі)

Джерело: Фінансова звітність централізованої бухгалтерії Управління освіти Чернігівської міської ради

Отже, ми спостерігаємо динаміку суттєвого збільшення фінансування на розвиток закладів професійно-технічної освіти (Табл. 1), оскільки з 2016 р. вони фінансуються з місцевого бюджету; а також відчутне збільшення коштів на забезпечення потреб ЗДО та ЗЗСО, що дозволило покращити матеріальну базу та перекрити потребу у благодійних внесках батьків. За рахунок видатків з місцевого бюджету придбано нове обладнання та проведено поточні ремонтні роботи у туристичному центрі міста та спортивних школах. Варто відзначити, що з місцевого бюджету у 2017 р. виділено окреме фінансування на створення навчального середовища для дітей з особливими потребами та інклюзивну освіту: придбано обладнання для дітей з вадами слуху та розвитку для реабілітаційних центрів; відкрито 4 медіатеки у ЗЗСО міста із сучасним корекційним оснащенням.

Позитивно відобразилася фінансова децентралізація й на динаміці вартості виховання чи навчання однієї дитини по м. Чернігову (Таб. 2).

Таблиця 2

Динаміка вартості виховання чи навчання однієї дитини по м. Чернігову у 2015-2018 рр.

Показники	2015, факт	2016, факт	2017, факт	2018, план
Всього видатків по ЗДО, грн	164022792,97	165115534,45	237593127,98	275335138,00
Кількість вихованців ЗДО	11442	11585	11611	11600
Вартість одного вихованця ЗДО, грн	14335,15	14252,53	20462,76	23735,79
Всього видатків по ЗЗСО, грн	208592297,00	223240053,80	344684573,11	368184673,00
Кількість вихованців ЗЗСО	25007	25869	26713	27244
Вартість одного вихованця ЗЗСО, грн	8341,36	8629,64	12903,25	13514,34

Джерело: Фінансова звітність централізованої бухгалтерії Управління освіти Чернігівської міської ради

Отже, ми бачимо стійку тенденцію до збільшення фінансування на одну дитину як у дошкільних закладах, так і закладах середньої освіти (Табл. 2). Це актуалізує цілий комплекс проблем, пров'язаних з ефективним використанням таких коштів і вимагає комплексних підходів до реформування організаційної платформи забезпечення навчального процесу.

Висновки. Відповідно до концепції Уряду України результатом реформ щодо децентралізації має стати продуктивна система місцевого самоврядування, в тому числі – у сфері фінансових відносин, що ґрунтується на базовому принципі євроінтеграції – принципі субсідіарності, яка здатна забезпечити мешканцям усіх населених пунктів комфорт в ключових сферах життя. На часі освітня реформа, яка, на прикладі Чернігова, доводить переваги фінансової децентралізації.

Результати дослідження засвідчують конструктивність імплементації реформи децентралізації та впровадження концепції «Нової української школи». Вивчення регіональних аспектів фінансування освіти на прикладі Чернігова доводить, що покращення матеріально-технічної бази, достойна оплата праці педагогів, покриття благодійних внесків, сприяння у розвитку здібностей талановитих дітей, підтримка молоді з особливими освітніми потребами та принцип «гроші ходять за дитиною» дають змогу поставити дитину у центр уваги та створити умови для її гармонійного розвитку, що в кінцевому підсумку закладає фундамент конкурентоспроможності людського капіталу національної економічної системи.

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РЕГІОНАЛЬНА ЕКОНОМІКА

UDC 332.1:614.215

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SANATORIUM AND HEALTH RESORTS IN UKRAINE: VIEW CHARACTERISTIC, REGIONAL SPECIFICITY AND DYNAMICS OF DEVELOPMENT

Urgency of the research. *The problem of preserving human health in modern conditions is of growing importance in an environment. The main role of solving this problem is played by institutions of sanatorium-resort type. Proceeding from this, there is a need for expanding the spectrum of theoretical-applied researches of the indicated subjects of management.*

Target setting. *To attract the attention of society and academics to the specifics of the sanatorium and resort institutions activities will focus a glance to the problems that can reduce the loss of human capital.*

Actual scientific researches and issues analysis. *The significant contribution to the research of this topic was done by such respected scholars as A. Mazaraki, N. Vedmid, V. Gumenyuk, and others.*

Uninvestigated parts of general matters defining. *On the background of a significant circle thorough scientific researches of the domestic sanatorium and resort area, the need for new research remains high, because, first of all, certain aspects of the regional dimension fell out of the scientists sigh, secondly, it requires deepening the theoretical basis for structuring the subjects of production sanatorium, health and wellness services.*

The research objective*. Based on the purpose of the work, the following tasks are defined: generalize the typology of sanatorium, health and wellness services; to conduct an integrated assessment of the activities of sanatorium and health resorts establishments in the regions of Ukraine; to study the dynamics of sanatorium and health resorts of Ukraine.*

The statement of basic materials. *The article generalizes approaches to the selection of sanatorium and resort activity types. A system of metrics has been formed and used for integrated assessment of their activity. The dynamics of sanatorium and health resorts establishments network is analyzed for the period 2001-2016.*

Conclusions. *Sanatorium and health resorts are important element to ensure the preservation and development of human potential. The public institutions approaches to the typology of these institutions may vary. Regional markets for sanatorium and resort services develop disproportionately, and the network of institutions is decreasing.*

Keywords: *sanatorium and health resorts; typology; system of indicators; integral evaluation; trend.*

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САНАТОРНО-КУРОРТНІ І ОЗДОРОВЧІ ЗАКЛАДИ В УКРАЇНІ: ВИДОВА ХАРАКТЕРИСТИКА, РЕГІОНАЛЬНА СПЕЦИФІКА ТА ДИНАМІКА РОЗВИТКУ

Актуальність теми дослідження. *Проблема збереження здоров'я людини в сучасних умовах набуває все більшої актуальності. Стрижневу роль у її вирішенні відіграють заклади санаторно-курортного типу. Це зумовлює необхідність розширення спектру досліджень вказаних суб'єктів господарювання.*

Постановка проблеми. *Привертання уваги суспільства та науковців до специфіки діяльності закладів санаторно-курортної сфери дозволить сфокусувати погляд на проблемах, подолання яких забезпечуватиме зменшення втрат людського капіталу.*

Аналіз останніх досліджень і публікацій. *Вагомий внесок у дослідження санаторно-курортної справи в Україні зробили такі відомі науковці як А. Мазаракі, Н. Ведмідь, В. Гуменюк, та інші.*

Виділення недосліджених частин загальної проблеми*. На фоні значного кола наукових розвідок вітчизняної санаторно-курортної сфери, потреба в нових дослідженнях залишається високою, оскільки, по-перше, окремі аспекти регіонального виміру випали із поля зору науковців, по-друге, вимагає поглиблення теоретичний базис структуризації вказаних суб'єктів.*

Постановка завдання. *Виходячи з мети роботи, визначені наступні завдання: узагальнити типологію суб'єктів продукування санаторно-курортних і оздоровчих послуг; провести інтегральне оцінювання діяльності санаторно-курортних і оздоровчих закладів у регіонах України; дослідити динаміку санаторно-курортних і оздоровчих закладів України.*

Виклад основного матеріалу. *У статті узагальнено підходи до виокремлення типів суб'єктів санаторно-курортної сфери, сформовано та апробовано систему показників для інтегрального оцінювання їх діяльності. Проаналізовано динаміку мережі санаторно-курортних і оздоровчих закладів за період 2001-2016 рр.*

Висновки. *Санаторно-курортні та оздоровчі заклади є важливим елементом забезпечення збереження та розвитку людського потенціалу. Підходи суспільних інституцій до типології цих закладів різняться. Регіональні ринки послуг санаторно-курортної сфери розвиваються диспропорційно, а мережа закладів тенденційно скорочується.*

Ключові слова: *санаторно-курортні і оздоровчі заклади; типологія; система показників; інтегральне оцінювання; тенденція.*

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Urgency of the research. Qualitative parameters of the country's human potential determine its socio-economic security. They are formed in the process of consumption of a wide range of products, in which the focus is on services aimed at recovery, rehabilitation and vitality restoration. Satisfaction of public needs in services of this kind is promoted by sanatorium and resort sphere. The mentioned issues actualize the scientific study of this sphere.

Target setting. The development of the country's sanatorium and resort affairs serves as a guarantee of its human development and helps to prevent the loss of human capital. The significance of therapeutic, preventive and rehabilitation services for the community is traced in programmatic documents of strategic nature, which refer to the basic principles of sustainable development. In particular, the Strategy for the Development of Tourism and Resorts of Ukraine for the period up to 2026 brings up the need for the concentration of public resources on priority tasks of the sanatorium and resort services sphere. The latest research on the specifics of activities of sanatorium and resort sphere allows outlining the problems to be solved, which will strengthen the country's socio-economic security.

Actual scientific researches and issues analysis. The importance of health services as a factor in the formation of human capital, sustainable development and the security of social systems is substantiated by the leading scholars, including O. Honta [2], O. Grishnova, V. Ilchuk and S. Scarlet [6]. The latest works by N. Vedmid [1], V. Humeniuk [4], A. Mazaraki [6] are devoted to the study of the specifics of the sanatorium and resort area considering theoretical positions on the sanatorium and resort complex as a system object of scientific knowledge, structural parameters of its development and market situation of sanatorium and resort services.

Uninvestigated parts of general matters defining. The analysis of recent scientific studies has shown that the problems of the activity of sanatorium and resort area institutions are constantly in need of deepening. So, they require further elaboration of approaches to the specific composition of these institutions. Due to the fact that regional analysis of the sanatorium and resort activity in Ukraine is mostly limited to the assessment at the level of individual regions, it is expedient to carry out a comprehensive study. It is also necessary to investigate the network trends of sanatorium and resort area institutions in the modern realities.

The research objective. The aim is to study the specific composition of sanatorium and health resorts and to estimate parametrically their activity in regional and dynamic dimensions.

The statement of basic materials. The unique natural and climatic potential of Ukraine forms a basis for the production of services aimed at preventing the loss of human capital, providing them with treatment, health improvement, disease prevention and medical rehabilitation. The market of such services should be positioned not only as a motive for economic processes, but in the context of an important component of sustainable social development on the basis of strengthening the highest social value – the health of population.

In the updated Ukrainian legislation on health care, sanatorium and resort services are positioned in two functional sections: 1 – sanatorium and resort treatment; 2 – improvement of health (rest). Therefore, the consideration of the subjects of production and trade of these services goes far beyond the medical sphere. This is facilitated by the activation of the private sector, which has no economic subordination, and the development of corporate structures that are multiple-discipline and carry out various activities, and are actually present in different markets. Whereas the CTEA [KVED] 2005 (Classification of Types of Economic Activity) regulated the "activity of sanatorium and resort institutions" at the level of the sub-class defined by Code 85.11.3, which included balneological hospitals, mud clinics, resort polyclinics, sanatoria, sanatoria-preventive clinics, children's health centers, in the CTEA [KVED] 2010, the functioning of sanatorium and resort institutions, children's recreation camps of the sanatorium type is reflected as "the activity of hospitals" (Code 86.10).

Data on the subjects of the production of sanatorium and resort services in Ukraine are published by the State Statistics Service in two ways: both as institutions and means of accommodation (Tab. 1).

On the web-portal in the rubric "Statistical Information" and in the publication of the "Statistical Yearbook of Ukraine", sanatorium and health resorts are emphasized. Herewith, the typology of these institutions differs. In the yearbook there are six types: sanatoria; boarding houses with treatment; sanatoria-preventive clinics; holiday resorts and boarding houses; holiday camps and other recreation institutions; 1-2 day stay establishments. Instead, there are five types of them on the web-portal in the rubric “Statistical Information”. It combines the data of sanatoria and boarding houses with treatment, as well as holiday camps and other recreation establishments of 1-2 day stay. Moreover, additional information is provided on children’s recreation institutions. In the group “Specialized Means of Accommodation” of the statistical Bulletin “Collective Means of Accommodation”, the State Statistics Service of Ukraine publishes the information on ten positions (1 – sanatoria, 2 – children’s sanatoria, 3 – boarding houses with treatment, 4 – children’s institutions for the improvement of year-round activity, children centers; 5 – sanatoria-preventive clinics; 6 - balneological hospitals, mud clinics, balneological and mud hospitals (including children’s); 7 – rest houses; 8 – boarding houses; 9 – holiday camps, other recreation establishments (except for tourist holiday camps); 10 – health improvement establishments of 1-2 day stay).

Table 1

Typology of subjects of production of sanatorium-health and recreation services according to the data of the State Statistics Service of Ukraine*

<table>
<tr><th>Title</th><th>Source</th><th colspan="11">Types</th></tr>
<tr><td rowspan="2">Sanatorium-health and recreation institutions</td><td>Web-site rubric “Statistical Information”</td><td colspan="3">Sanatoria and boarding houses with treatment</td><td rowspan="3">Sanatoria- and preventive clinics</td><td colspan="2" rowspan="2">Rest and boarding houses</td><td colspan="4">Holiday camps and other recreation establishments</td><td>Children’s health-improving establishments</td></tr>
<tr><td>Statistical Yearbook of Ukraine</td><td rowspan="2">Sanatoria</td><td>including children’s</td><td rowspan="2">Boarding houses with treatment</td><td colspan="3">Holiday camps and other recreation establishments</td><td rowspan="2">Recreation establishments of 1-2 day of stay</td><td rowspan="2">-</td></tr>
<tr><td>Specialized means of accommodation</td><td>Statistical Bulletin “Collective means of accommodation in Ukraine”</td><td>Children’s sanatoria</td><td>Rest houses</td><td>Boarding houses</td><td>Children’s institutions for the improvement of year-round activity, children’s centers</td><td>Balneological hospitals, mud clinics, balneologica and mud hospitals(including children’s);</td><td>Holiday camps, other recreation establishments (except for tourist holiday camps)</td></tr>
</table>

* Made up by the authors according to the data of the State Statistics Service of Ukraine

The National Standard of Ukraine “Travel Services. Accommodation Means. Terms and Definitions” (UNS [DSTU] 4527: 2006) subjects of the production of sanatorium and resort services are means of accommodation – this document does not contain the Allocation of specialized means, but provides a general list of thirty one positions. The analysis of the content of this list revealed that accommodation means, which, besides rest, provide health promotion services, include the following ones: rest houses – services of healing and preventive nature; children’s camps – health improvement services for children; resort hotels – health improvement services; boarding houses – health services; boarding houses with treatment – medical, preventive and treatment services; preventive clinics – services for general health, preventive treatment of occupational diseases; sanatoria – treatment services. At the same time the National Standard of Ukraine “Tourist Services. Accommodation Means. General Requirements” (UNS [DSTU] 4268: 2003) distinguishes a group of specialized means as part of collective means, and the type of “health-improving means of accommodation” includes medical and health-improving establishments. On the condition of providing health-improving means for hotel services (at least including daily making beds, cleaning of rooms and bathrooms) they are classified as hotels.

The interaction of demand and supply in the market of sanatorium and resort services is a complex and multiform process of market functioning. The supply is formed in the process of multifunctional technological manufacturing of the following types of services: medical and therapeutic, therapeutic and preventive, physical and rehabilitation, etc., which include the potential of restoring health capital, increasing work duration, improving the population's quality of life; those aimed at restoring vital forces of human potential due to diet, rational and balanced nutrition; those that provide customers with safe and comfortable accommodation; on organizing meaningful consumer leisure: engaging in physical activity and cultural development, maintaining a healthy lifestyle, etc. [4, p. 9].

Within the scope of this study, the authors analyze the activities of the producers of sanatorium and health and recreation services in the regions of Ukraine. For this purpose, the method of integral estimation, which involves the construction of a system of indicators, their standardization and averaging, is used. On the basis of processing the data of the Statistical Bulletin "Collective Means of Accommodation" for 2016, the authors have developed the system of indicators (x_1– x_{14}) of the activity of specialized means of accommodation (SMA), integrated into five subsystems. The importance of each subsystem and component indicators within its limits is predetermined (Tab. 2).

Table 2

Integral assessments of SMA activity in the regions of Ukraine, 2016

Regions	Subsystem				
	of network indicators	of labor force indicators	of business activity indicators	of social role indicators	of external economic activity indicators
Vinnytsia	0.4780	2.5853	0.7300	0.5860	0.8271
Volyn	0.6798	0.4116	0.4310	0.8430	0.0164
Dnipropetrovsk	1.6058	1.2381	1.5620	1.9500	0.0000
Donetsk	1.6250	0.8063	0.5860	0.8950	0.0006
Zhytomyr	0.1853	0.4859	0.3990	0.4650	0.0507
Zakarpattia	0.6125	1.5566	0.7460	0.4850	0.6879
Zaporizhzhia	3.4259	1.5408	1.7250	3.0220	0.0277
Ivano-Frankivsk	0.4189	0.9419	0.5330	0.8530	0.0039
Kyiv	0.9982	1.0002	0.5840	1.1190	0.0144
Kirovohrad	0.2728	0.1811	0.2780	0.0880	0.0134
Luhansk	0.0697	0.1288	0.3300	0.0740	0.0000
Lviv	1.1980	3.4346	1.2060	2.8030	8.2560
Mykolaiv	2.5718	0.5707	1.0400	1.3580	2.0463
Odesa	4.6693	3.3142	2.2270	4.6120	12.0151
Poltava	0.5107	1.6391	0.7580	1.3360	0.7455
Rivne	0.2179	0.2995	0.2950	0.4880	0.0257
Sumy	0.2417	0.2512	0.2330	0.2380	0.0000
Ternopil	0.1788	0.3991	0.2720	0.1980	0.0353
Kharkiv	0.8954	1.0762	0.4940	0.4650	0.0208
Kherson	2.2060	0.7101	1.1100	1.3580	0.1507
Khmelnytskyi	0.2229	0.4561	0.3170	0.2900	0.0144
Cherkasy	0.5100	0.3772	0.3420	0.7030	0.0000
Chernivtsi	0.1048	0.1959	0.1800	0.0330	0.0000
Chernihiv	0.2187	0.1870	0.2300	0.2880	0.0000
City of Kyiv	0.8769	1.2126	0.5100	0.4490	0.0481

The first subsystem, (weight – 0.3), combines three indicators characterizing the network of institutions: the number of existing SMAs, units (x_1); total area of SMAs (x_2); number of beds (accommodations) in SMAs (x_3). The weights within the first subsystem are 0.4; 0.1; 0.5 respectively. The second subsystem, the weight of which is 0.2, includes three characteristics of the SMA labor potential (the average number of staff members (x_4); the average number of doctors in SMAs (x_5); the average number of medical staff (x_6), which corresponds to the following weights: .0.25; 0.40, 0.35. The third subsystem (weight – 0.3) includes: revenues from the services provided by SMAs (x_7); visitors served by SMAs (x_8); the factor of SMA capacity utilization (x_9); the number of days actually spent in SMAs

(x_{10}). Their weights make 0.3; 0.3; 0.2; 0.2. The fourth subsystem characterizes the social dimension of SMA activities and includes the data on the provision of SMA services to people who have suffered as a result of Chernobyl accident (x_{11}) and children aged 0-17 (x_{12}). The fifth subsystem includes the indicators related to the external economic component of the SMA activity: the number of foreigners serviced (x_{13}); the days actually spent by foreigners (x_{14}). The weights of each of the last two subsystems are 0.1 each, and within their limits, the indicators are 0.35; 0.65 and 0.6; 0.4 respectively. On the basis of the studied system of indicators, the integrated assessments of the development of the SMA services market within each subsystem are identified. On the basis of them the integral estimation of the general complex of indicators (*IO*) is calculated according to the following formula:

$$IO = \sum_{i=1}^{5} \left(\sum_{j=1}^{k_i} S_{ij} \times w_{ij} \right) \times w_i , \qquad (1)$$

where S_{ij} is the standardized value of *j*-indicator of *i*-subsystem;
w_{ij} is the weight of *j*-indicator of *i*-subsystem;
k_i is the volume of *i*-subsystem.

The range of the variation of the integral index of SMA activity is 3.065, and the quadratic coefficient of variation is 88.17%. This indicates the asymmetry of the regional development of the sanatorium and resort area. The results of ranking the regions according to the obtained integral estimate and ranks within each subsystem of the indicators are shown in Fig. 1. The network of sanatorium and resort complex institutions and their capacity is characterized by a declining trend (Tab. 3).

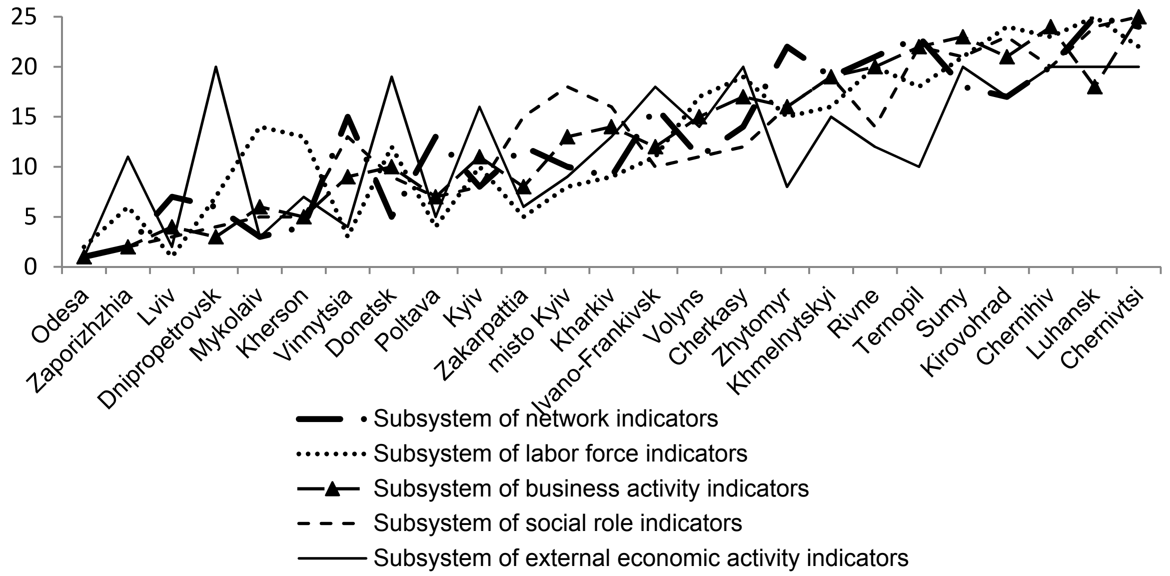

Fig. 1. Ranking of Ukraine's regions by the integral assessment of SMA activity and their ranks in terms of subsystems of the studied indicators, 2016

The narrowing of social infrastructure began in the period of the formation of market relations. After privatization, some institutions of the sanatorium and resort sphere changed the field of activity, some went bankrupt. The lack of financial resources forced industrial giants to adjust the network of departmental institutions. Most of this was the case of sanatoria-preventive clinics. After the occupation of the Crimea and parts of Donetsk and Luhansk regions, the direction of the dynamics of the indicators given in Tab. 3 has not changed.

Table 3

Analysis of the dynamics of the number and capacity of sanatorium-resort and health-improving establishments of Ukraine for 2001-2016

Indicators	2016			Trend for 2001-2016	
	value	change, % on		equation	R^2, %
		2001	2014		
1	2	3	4	5	*6*
Sanatoria and boarding houses with treatment, total	291	-47.57	-9.06	-15.1t+60.7	67.0
including beds, thous.	70	-53.64	-11.39	$-0.679t^2+6.87t+135.6$	86.5
Sanatoria-preventive clinics, total	63	-82.35	-46.61	$-0.922t^2-2.62t+342.6$	98.4
including beds, thous.	10	-65.52	-41.18	-1.109t+29.9	95.1
Rest and boarding houses, total	73	-73.26	-18.89	$-2.683t^2+32.85t+224.4$	85.3
including accommodations, thous.	14	-77.05	-17.65	$-0.543t^2+6.38t+49.2$	83.4
Holiday camps and other recreation establishments, total	1,295	-35.73	-7.50	-39.6t+2185.6	69.3
including accommodations, thous.	146	-38.14	-7.01	-5.418t+257.1	77.4

Conclusions. Sanatorium and health resorts produce a number of socially significant services, providing human development, increasing the labor force capacity and improving the population's life quality. Approaches to the typology of sanatorium and health resorts in Ukraine differ in various regulatory and legal acts, and the institutions themselves belong both to the sphere of health care and to the sphere of tourism. The territorial closeness to the seaside (Odesa, Zaporizhzhia, Dnipro, Mykolaiv, Kherson regions) and the developed network of sanatorium complexes (Lviv, Vinnytsia, Poltava, Kyiv, and Zakarpattia regions) serve as engines of the development of sanatorium and health resort services market. The downward trend in the development of institutions of the sanatorium and resort area, rooted in the time of transformational changes in the economy towards the market relations formation has not changed the direction in recent years.

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APPLICATION OF CLUSTER ANALYSIS TO DETERMINE THE LEVEL OF THE BUDGET POTENTIAL OF THE UKRAINIAN REGIONS

Urgency of the research. *Today's realities of financial relations prove the increasing role of regions in ensuring the social and economic development of the country. Therefore, there is a necessity to assess the budget potential and develop directions for its strengthening*

Target setting. *It is expedient to determine the level of the budget potential of the Ukrainian regions and to develop directions for its strengthening.*

Actual scientific researches and issues analysis. *An analysis of published scientific work has shown questions of budgetary potential are investigated by such scientists as S. V. Boiko, A. Ye. Buriachenko, N. S. Pedchenko, L. D. Safonova, V. Yu. Strilets, Ye. O. Malik, S. M. Frolov and others. Taking into account the considerable level of scientific research by these authors, it is necessary to continue research on the application of economic and mathematical methods in the study of financial processes, in our case, the use of cluster analysis to determine the level of budget potential of the regions.*

Uninvestigated parts of general matters defining. *Despite a significant level of theoretical development of budget potential, the following aspects remain unresolved: the methodology for assessing the budget potential of the region, determining the level of budgetary potential, and developing directions for strengthening of budgetary capacity. Therefore, the problem has not lost its relevance today.*

The research objective. *The object of the article is to study the theoretical issues of the budget potential of the Ukrainian regions and methods for its evaluation, the definition of the Ukrainian regions clusters in terms of budget potential.*

The statement of basic materials. *The article substantiates the application of cluster analysis for determining the level of budget potential of the Ukrainian regions, clusters of Ukrainian regions are determined by the level of budget potential using cluster analysis and directions for strengthening the budget potential of regions are developed.*

Conclusions. *One of the priority directions of the Ukrainian regions' budget study should be statistical and mathematical methods, where a special place should be occupied by cluster analysis.*

Keywords: *budget; budget potential; valuation; method; cluster; region.*

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ЗАСТОСУВАННЯ КЛАСТЕРНОГО АНАЛІЗУ ДЛЯ ВИЗНАЧЕННЯ РІВНЯ БЮДЖЕТНОГО ПОТЕНЦІАЛУ РЕГІОНІВ УКРАЇНИ

Актуальність теми дослідження. *Сьогоденні реалії фінансових відносин свідчать про підвищення ролі регіонів у забезпеченні соціально-економічного розвитку країни. Тому виникає необхідність у оцінці бюджетного потенціалу та розробці напрямів його зміцнення.*

Постановка проблеми. *Доцільним є визначення кластерів регіонів України за рівнем бюджетного потенціалу та розробка напрямів його зміцнення.*

Аналіз останніх досліджень і публікацій. *Аналіз опублікованих наукових праць показав, що питання бюджетного потенціалу досліджують такі вчені: С. В. Бойко, А. Є. Буряченко, Н. С. Педченко, Л. Д. Сафонова, В. Ю. Стрілець, Є. О. Малік, С. М. Фролов та інші. Беручи до уваги значний рівень наукових досліджень вказаних авторів, слід продовжувати дослідження з питань застосування економіко-математичних методів при вивчені фінансових процесів, застосування кластерного аналізу для визначення кластерів регіонів України за рівнем бюджетного потенціалу.*

Виділення недосліджених частин загальної проблеми. *Незважаючи на значний рівень теоретичної розробки бюджетного потенціалу, залишаються невирішеними такі аспекти: методика оцінки бюджетного потенціалу регіону, визначення рівня бюджетного потенціалу, розробка напрямів зміцнення бюджетного потенціалу. Тому проблема не втратила своєї актуальності й сьогодні.*

Постановка завдання. *Метою статті є дослідження теоретичних питань бюджетного потенціалу регіонів України та методів його оцінки, визначення кластерів регіонів Україні за рівнем бюджетного потенціалу.*

Виклад основного матеріалу. *У статті обґрунтовано застосування кластерного аналізу для визначення рівня бюджетного потенціалу регіонів України, визначено кластери регіонів України за рівнем бюджетного потенціалу з застосуванням кластерного аналізу та розроблені напрями зміцнення бюджетного потенціалу регіонів.*

Висновки. *Одним з пріоритетних напрямів дослідження бюджетного потенціалу регіонів Україні мають бути статистико-математичні методи, серед яких особливе місце має посідати кластерний аналіз.*

Ключові слова: *бюджет; бюджетний потенціал; оцінка; метод; кластер; регіон.*

Urgency of the research. The present realities of financial relations indicate an increase in the regions role in ensuring socio-economic development of the country. In Ukraine, there are disproportions between the links of the budget system, which limits the ways of increasing the local budgets funds. Therefore, there appears a need to assess the budgetary potential and develop directions for its strengthening.

Target setting. It is expedient to define the Ukrainian regions clusters by the level of budgetary potential and directions development for its strengthening.

Actual scientific researches and issues analysis. The analysis of published scientific papers showed the questions of budget potential are investigated by such scientists as S. V. Boiko, A. Ye. Buriachenko, N. S. Pedchenko, Ya. Ya. Pushak, L. D. Safonova, V. Yu. Strilets, Ye. O. Malik, S. M. Frolov and others. In the writings by the majority of Ukrainian scholars, this issue was considered from the view of the theoretical aspects, that is, the definition of the term "budget potential of the region", its classification, indicators of its evaluation. Taking into account the considerable level of mentioned authors' scientific research, it is necessary to continue the research on the application of economic and mathematical methods in the study of financial processes, in our case, the application of cluster analysis to determine the Ukrainian regions clusters by the level of budgetary potential.

Uninvestigated parts of general matters defining. Taking into account the considerable level of mentioned authors' scientific research, it is necessary to continue the research on the application of economical and mathematical methods in the study of financial processes, the application of cluster analysis to determine the Ukrainian regions clusters by the budgetary potential level.

The research objective of the article is to study the theoretical issues of the budget potential of Ukrainian regions and methods of its estimation, to define the Ukrainian regions clusters in terms of the budget potential.

The statement of basic materials. There are different approaches to the definition of the essence of the "budget potential of the region" concept in the domestic scientific literature.

From S. M. Frolov's position, the budgetary potential of the border area is characterized by available resources and reflects the ability of local authorities to fulfill their tasks in accordance with the law, that is, the budgetary potential can be interpreted as a balance between the needs of the territory and its capabilities [6].

According to the foregoing, it can be claimed that the region's fiscal capacity is the ability to accumulate financial resources to finance the functions of the state delegated to the local level.

Systematization of scientific achievements in the development of theoretical approaches to budget capacity has allowed us to distinguish the main indicators of the budget potential: the amount of income per inhabitant, the share of tax revenues in the total revenue, the share of non-tax revenues in the total revenue, the share of income from capital operations in the total income, the share of official transfers in the total amount of income, the amount of transfers, which averagely accounts for 1 resident, the share of transfers in the total amount of received income, the share of transfers from the special fund of budget revenues in the total income received and others [2].

Discussions about the definition of the term "budget potential of the region", indicators of its evaluation, continue to this day.

In our opinion, while developing indicators for assessing budgetary potential, we should remember that the regional budget potential is an integral part of the region's financial potential. But, considering the key feature of "budget", it should have specific evaluation indicators that reveal its essence. Therefore, the budget potential should be characterized solely by indicators that can be calculated from the budget, while it is possible to use budget figures per person. That is, other indicators characterizing the financial potential in general, do not allow assessing the budgetary potential of the region with a sufficient degree of objectivity [1; 4].

As for today, there are a number of scientific methodological approaches and methods for assessing the budgetary potential of the region. Let us have a look at some of them.

So, according to S. M. Frolov, four groups of methods are used to assess the budgetary potential: methods based on the use of macroeconomic indicators; methods for calculating the budgetary potential, based on official forms of tax reporting based on actually collected tax payments data; method based on regression analysis; method based on the construction of a representative tax system [6].

According to N. S. Pedchenko ta V. Yu. Strilets, the main methods of researching the budget potential of the region include: the methods of theoretical and empirical research, which include the retrospective analysis, the classification method, the system method, the economic-mathematical and statistical methods, including the coefficient method, factor analysis, correlation-regression analysis, forecasting, cluster analysis, qualimetric analysis [5].

One of the methods for studying financial phenomena is cluster analysis. Cluster analysis is a system of mathematical procedures that allows on basis of a indicators plurality that characterize a set of objects, group them into classes in such a way that objects belonging to the same class are more homogeneous, more similar in comparison with the objects included in other classes. And it is better to use cluster analysis using software products, such as STATISTICA.

For conducting cluster analysis, we selected the following indicators: local budget revenues (without transfers) per 1 person, UAH, share of income in financing expenditures (without transfers), tax revenues per person, UAH, local taxes and fees per person, UAH, which, in our opinion, are the most characteristic and reveal the essence of the region budget potential.

Output data for cluster analysis is shown in Tab.1.

Table 1

Indicators for assessing the regions budgetary potential

Region	Revenues of local budgets (without transfers) per 1 person, UAH	Share of revenue in financing expenditures, % (without transfers)	Tax revenues per 1 person, UAH	Local taxes and fees per 1 person, UAH
Vinnitsia	3540,4	41,21	2969,52	863,68
Volyn	2968,2	32,87	2413,1	527,81
Dnipropetrovsk	5534	57,96	4997,69	1519,55
Donetsk	2060	55,57	1797,52	288,32
Zhytomyr	3232,9	36,43	2783,13	652,2
Transcarpathian	2467,8	31,12	2108,14	429,7
Zaporizhzhia	4968,6	55,92	4432,46	1197,92
Ivano-Frankivsk	2651,9	30,25	2292,69	563,48
Kyiv	5321,5	57,64	4500,47	1203,1
Kirovohrad	3676,4	42,09	3281,38	1020,11
Luhansk	1126,7	40,79	991,98	194,28
Lviv	3929	44,11	3418,38	768,52
Mykolaiv	3759,4	45,7	3278,35	926,28
Odesa	4506,5	54,66	3841,64	1270,5
Poltava	4837,4	49,72	4181,74	1188,54
Rivne	2686,5	30,88	2327,47	560,83
Sumy	3606,2	40,23	3129,05	916,84
Ternopil	2420,4	27,88	2033,81	544,68
Kharkiv	4172	51,24	3633,95	1163,52
Kherson	3116	39,75	2603,34	850,33
Khmelnytskyi	3232,8	37,11	2703,18	812,53
Cherkassy	3759,4	41,57	3236,24	1104,46
Chernivtsi	2783,2	34,44	2249,18	535,22
Chernihiv	3513,5	41,85	2981,8	899,88
City of Kyiv	10036,5	87,5	8452,71	2957,71

Source: created and calculated by the authors on the basis of [3]

In order to determine the level of regions budgetary potential, we made calculations in the STATISTICA package, and the cluster identification for the four indicators.

Tab. 2 shows the results of cluster analysis in the STATISTICA package, where the cluster number is specified.

Table 2

Regions clusters by budgetary potential level

Region	1 Var1	2 Var2	3 Var3	4 Var4	5 CASE_NO	6 CLUSTER	7 DISTANCE
Vinnitsia	3540,4	41,21	2969,52	863,68	1	3	70,61
Volyn	2968,2	32,87	2413,1	527,81	2	4	347,27
Dnipropetrovsk	5534	57,96	4997,69	1519,55	3	2	411,73
Donetsk	2060	55,57	1797,52	288,32	4	4	219,96
Zhytomyr	3232,9	36,43	2783,13	652,2	5	3	269,92
Zakarpattia	2467,8	31,12	2108,14	429,7	6	4	55,96
Zaporizhzhia	4968,6	55,92	4432,46	1197,92	7	2	54,88
Ivano-Frankivsk	2651,9	30,25	2292,69	563,48	8	4	192,42
Kyiv	5321,5	57,64	4500,47	1203,1	9	2	158,29
Kirovohrad	3676,4	42,09	3281,38	1020,11	10	3	117,41
Luhansk	1126,7	40,79	991,98	194,28	11	4	829,02
Lviv	3929	44,11	3418,38	768,52	12	3	243,59
Mykolaiv	3759,4	45,7	3278,35	926,28	13	3	124,63
Odesa	4506,5	54,66	3841,64	1270,5	14	2	380,61
Poltava	4837,4	49,72	4181,74	1188,54	15	2	149,89
Rivne	2686,5	30,88	2327,47	560,83	16	4	215,74
Sumy	3606,2	40,23	3129,05	916,84	17	3	19,80
Ternopil	2420,4	27,88	2033,81	544,68	18	4	46,55
Kharkiv	4172	51,24	3633,95	1163,52	19	3	416,11
Kherson	3116	39,75	2603,34	850,33	20	3	343,30
Khmelnytskyi	3232,8	37,11	2703,18	812,53	21	3	269,87
Cherkassy	3759,4	41,57	3236,24	1104,46	22	3	147,33
Chernivtsi	2783,2	34,44	2249,18	535,22	23	4	226,98
Chernihiv	3513,5	41,85	2981,8	899,88	24	3	68,67
City of Kyiv	10036,5	87,5	8452,71	2957,71	25	1	0,00

Source: created and calculated by the authors

Tab. 3 shows the mathematical characteristics of clusters.

Table 3

Average cluster metrics

Cluster Means (Spreadsheet58)

Variable	Cluster No. 1	Cluster No. 2	Cluster No. 3	Cluster No. 4
Var1	10036,50	5033,600	3594,364	2395,587
Var2	87,50	55,180	41,935	35,475
Var3	8452,71	4390,800	3092,574	2026,736
Var4	2957,71	1275,922	907,123	455,540

Source: created and calculated by the authors

On the basis of calculations (Tab. 2 and Tab. 3), we can form 4 clusters, presented in Tab. 4.

Table 4

The clusters composition and their meanings

	Revenues of local budgets (without transfers) per 1 person, UAH	Share of revenue in financing expenditures, % (without transfers)	Tax revenues per 1 person, UAH	Local taxes and fees per 1 person, UAH
Cluster 1	10036,5	87,5	8452,71	2957,71
City of Kyiv				
Cluster 2	5033,600	55,18	4390.80	1275,922
Dnipropetrovsk				
Zaporizhzhia				
Kyiv				
Odesa				
Poltava				
Cluster 3	3594,364	41,935	3092,574	907,123
Vinnitsa				
Zhytomyr				
Kirovohrad				
Lviv				
Mykolaiv				
Sumy				
Kharkiv				
Kherson				
Khmelnitskyi				
Cherkassy				
Chernihiv				
Cluster 4	2395,587	35,475	2026,736	455,540
Volyn				
Donetsk				
Zakarpattia				
Ivano-Frankivsk				
Luhansk				
Rivne				
Ternopil				
Chernivtsi				

Source: created and calculated by the authors

The highest level of budgetary potential belongs to the cluster 1, its indicators exceed almost twice the indicators of the cluster 2, and almost 4 times the indicators of the cluster 4. In order to answer the question whether the highest level of budgetary potential corresponds to the highest level of socio-economic development of regions, we calculated the average indicators of socio-economic development of regions, presented in Tab. 5 and Tab. 6.

Tables 5

Average indicators of regional economic development per 1 person by clusters in 2016

	Available population income in the calculation per 1 person, UAH	Population expenditures in the calculation per 1 person, UAH	Average monthly salary, UAH	Direct investments per capita by regions of Ukraine, USD
Cluster 1	91356,6	105214	8648	6756,3
Cluster 2	39775,86	54084,8	4962,8	759,14
Cluster 3	32715,53	45410,19	4220,64	219,68
Cluster 4	24770,9	33985,35	4382,5	248,25

Source: created and calculated by the authors on the basis of [3]

The data in Table 6 indicate that the highest level of budgetary potential of the cluster corresponds to the highest indicators of socio-economic development. The difference between the indicator of the disposable income of the population per 1 person according cluster 1 and the corresponding indicator in the cluster 4 is 66585.7 UAH. The following indices in the clusters 1 and 4 also differ significantly: according to the indicator of population expenditure per 1 person - in the cluster 1 it is three times more than in the cluster 4; according to the average monthly wage - in the cluster 1 it is almost twice as much as in the cluster 4 and according to the indicator of direct investments per 1 person - in the cluster 1 it is twenty-seven times more than in the cluster 4.

Indicators of the regions economic characteristics in terms of clusters confirmed the above statement, but the trend distortion occurred only in the cluster 4, compared with only the cluster 3 for the following indicators: export of goods and imports of goods, direct investments, average monthly wages. This explains that most of these areas have borders with the country cord, so exports and imports of goods are more than in the third cluster.

Table 6

Average indicators of regions economic characteristics by clusters in 2016

	The volume of sold industrial products, UAH million	Agricultural Products, UAH million	Exports of goods, USD million	Import of goods, USD million	Direct investment, USD million
Cluster 1	389401,4	-	8568,8	16137	19296
Cluster 2	159768,58	13949,98	2563,84	1893,54	1723,24
Cluster 3	53072,20	12428,16	716,32	581,36	395,19
Cluster 4	48248,94	6022,60	874,49	595,51	486,91

Source: created and calculated by the authors on the basis of [3]

Conclusions. One of the priority directions of the Ukrainian regions budget potential study should be the use of statistical and mathematical methods, among which a special place should be cluster analysis. We used a cluster analysis in the study of the budgetary potential of the Ukrainian regions, which resulted in identifying 4 clusters of Ukrainian regions at the level of budgetary potential. The city of Kyiv refers to the cluster 1, which has the highest budget capacity indicators, the cluster 2 - the regions of Dnipropetrovsk, Zaporizhzhia, Kyiv, Odesa, Poltava, which have the highest indicators both budgetary potential and socio-economic development among the regions. The cluster 4 covers areas that require the greatest support from the state.

To justify strengthening directions of the budget capacity of the cluster 4 regions, it is necessary to select the priority spheres for the development of these regions and to develop appropriate budget programs taking into account the climatic and socio-economic conditions that will create additional working places in perspective sectors, reduce unemployment, increase the gross regional product, increase tax revenues to the budget.

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РЕГІОНАЛЬНІ ДИСПРОПОРЦІЇ МАЛОГО БІЗНЕСУ В УКРАЇНІ ТА ШЛЯХИ ЇХ УСУНЕННЯ

Актуальність теми дослідження. *Вивчення регіональних диспропорцій малого бізнесу є актуальним напрямком дослідження у сфері забезпечення державної підтримки підприємницького сектору в Україні для стимулювання економіки, підвищення ефективності економічного розвитку регіонів та країни в цілому.*

Постановка проблеми. *Малий бізнес потенційно здатен забезпечити вагомий внесок у валовий внутрішній продукт України, вирішити питання зайнятості населення, підвищення рівня його життя та наситити внутрішній ринок конкурентоздатною продукцією.*

Саме тому, в сучасних економічних умовах, важливим завданням для України є забезпечення рівномірності розташування та ефективності функціонування малого бізнесу по всій території країни, а також подолання диспропорцій, які сформувались на сьогоднішній день.

Аналіз останніх досліджень і публікацій. *Значний внесок у розвиток теорії, методології та історії малого бізнесу, його державного регулювання та нерівномірності розвитку регіонів зробили відомі вчені: В. Базилевич, В. Бакуменко, З. Варналій, П. Єщенко,Т. Клебанова, Т. Пономаренко, В. Савчук, А. Чухно та інші.*

Виділення недосліджених частин загальної проблеми. *У той же час у науковій літературі недостатньо висвітлена тема особливостей розвитку малого бізнесу та регіональних диспропорцій його функціонування. Дана стаття відображає результати досліджень авторами цих питань.*

Постановка завдання. *Проведення дослідження стану розвитку малого бізнесу у різних регіонах України, пошук шляхів ліквідації виявлених диспропорцій з метою покращення мезо- та макроекономічних показників.*

Викладення основного матеріалу. *В статті визначена роль та місце малого бізнесу в економічній системі держави; за допомогою запропонованої авторами методики розраховані інтегральні показники, які відображають рівень розвитку та ефективність функціонування малого бізнесу в різних регіонах України в розрізі видів економічної діяльності.*

Висновки відповідно до статті. *Виявлені диспропорції розвитку малих підприємств у регіонах України, запропоновані шляхи їх подолання з метою покращення стану національної економіки.*

Ключові слова: *малий бізнес; регіональні диспропорції; державна підтримка.*

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REGIONAL DISPROPORTIONS OF SMALL BUSINESS IN UKRAINE AND APPROACHES TO THEIR ELIMINATION

Urgency of the research. *Study of regional disproportions of small business is up-to-date sector of research in the field of state support provision to entrepreneurship in Ukraine aimed at economy priming, enhancing the efficiency of regional and national economic development.*

Target setting. *Small business may significantly contribute to the Ukraine's GDP, solve employment issues, increase welfare and living standards of residents and satiate domestic market with competitive products.*

Thus, an important task for Ukraine, under the present economic conditions, is to provide proportional location and effective functioning of small business all over Ukraine, along with already formed disproportions eliminating.

Actual scientific research and issues analysis. *Considerable contribution to the development of theory, methodology and history of small business, its state regulation and disproportional regional development is made by the well-known scientists: V. Bazylevych, V. Bakumenko, Z. Varnaliy, P. Yeschenko, T. Klebanova, T. Ponomarenko, V. Savchuk, A. Chukhno and others.*

Uninvestigated parts of general matters defining. *At the same time, the peculiarities of small business development and regional disproportions of its functioning are not thoroughly outlined in research literature. In the article, the authors present their results of these issues studies.*

The research objective. *To study the condition of small business development in different regions of Ukraine, to find the approaches for the defined disproportions elimination in order to improve meso- and macroeconomic indices.*

The statement of basic materials. *The article describes the role and place of small business in the state economic system; integral indices, which reflect level of development and efficiency of small business functioning in different regions of Ukraine depending on types of economic activity, are calculated using the methods offered by the authors.*

Conclusions. *Disproportions of small businesses development in different regions of Ukraine are identified; the approaches to their elimination for considerable facilitating socioeconomic development of the country are offered.*

Keywords: *small business; regional disproportions; state support.*

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Актуальність теми дослідження. Найважливішою ознакою ринкової економіки, найбільш динамічним елементом її структури, який усуває диспропорції в окремих товарах на ринку, пропонує додаткові робочі місця та сприяє скороченню безробіття, активізує інноваційні процеси, створює конкурентне середовище, дає початок розвитку середньому класу, є малий бізнес.

Проте необхідно мати більш детальне розуміння тенденцій його розвитку та ефективності функціонування у різних регіонах України у відповідності до місця розташування малих підприємств, ринків та каналів збуту продукції, природничих та кліматичних умов, складу та рівня доходу населення тощо.

Постановка проблеми. За рівнем розвитку малого бізнесу будь-якої країни оцінюють стан національної економіки, оскільки саме суб'єкти малого підприємництва здатні швидко створювати робочі місця, оновлювати і збагачувати ринок конкурентними товарами та послугами, забезпечувати швидке збільшення дохідної частини бюджетів всіх рівнів та покращити найважливіші макроекономічні показники розвитку країни. Малий бізнес виступає необхідним елементом реалізації економічних реформ на шляху до ефективної соціально-орієнтованої економіки.

Функціонування малого бізнесу значною мірою забезпечує розвиток регіонів, прискорює інвестиційні процеси, впливає на структуру національної економіки. Крім того, динамічний розвиток суб'єктів малого підприємництва є індикатором сприятливих умов подальшого формування та активізації розвитку підприємств середнього та великого бізнесу.

Об'єктом дослідження є регіональні диспропорції розвитку малого бізнесу в Україні, метою – формування висновків та пропозицій щодо усунення диспропорцій в секторі малого бізнесу, в разі їх виявлення, що є важливим завданням, враховуючи потенційний вплив мікроекономіки на покращення макроекономічних показників.

Аналіз останніх досліджень і публікацій. Значний внесок у розвиток теорії, методології та історії малого бізнесу, його державного регулювання, нерівномірності розвитку регіонів зробили відомі вчені: В. Базилевич, В. Бакуменко, З. Варналій, П. Єщенко, Т. Клебанова, Т. Пономаренко, В. Савчук, А. Чухно та інші.

Виділення недосліджених частин загальної проблеми. У той же час в науковій літературі недостатньо висвітлені особливості розвитку малого бізнесу в Україні, серед яких – формування регіональних диспропорцій в його функціонуванні. Тому, виявлення реального масштабу цієї тенденції та розробка пропозицій щодо можливих напрямів протидії її посиленню шляхом застосування економічних важелів впливу на державному та регіональному рівнях, є своєчасним та важливим аспектом підтримки суб'єктів малого підприємництва в Україні.

Постановка завдання. Завданням наукового дослідження є виявлення регіональних диспропорцій розвитку малого бізнесу в Україні, якщо такі є, та порівняння ефективності функціонування малого бізнесу у різних регіонах України з метою пошуку шляхів їх усунення в майбутньому.

Викладення основного матеріалу. Для України, з її особливим географічним положенням, різноманітною інфраструктурою транспортних сполучень, питання недопущення формування суттєвих регіональних диспропорцій у малому бізнесі та активне сприяння їх подоланню є актуальним завданням сучасної державної економічної політики.

Такі причини, як висока імпортозалежність, достатньо низький рівень диверсифікації виробництва, обмеженість доступу до кредитних ресурсів для початку діяльності та їх висока вартість, порівняно низький рівень доходів населення та високий – безробіття, що спричиняє міграцію працездатного населення у країни Західної Європи та Росію, призводять до необхідності формування системного підходу до державної підтримки розвитку малого бізнесу на основі балансу інтересів підприємців, регіональних органів влади та країни в цілому.

Відомо, що розвиток малого бізнесу позитивно впливає на економічний стан країни, створює широку платформу для нових робочих місць, певною мірою вирішує питання зайнятості соціально незахищених верст населення (молоді, жінок, пенсіонерів тощо) та набуття ними досвіду для подальшої самореалізації. Підприємства малого бізнесу традиційно характеризуються високою ефективністю капіталовкладень порівняно з підприємствами великого бізнесу, чому сприяє обмежена потреба у фінансових ресурсах та потенціал швидкої окупності. Саме малі підприємства в короткий термін мають можливість налагоджувати виробництво різних конкурентоспроможних товарів за рахунок можливості мобільного реагування на зміни зовнішнього та внутрішнього ринків товарів та послуг, легше проникають у порожні ринкові ніші, які не завжди є привабливими для підприємств великого бізнесу, та виступають платформою для розвитку середнього підприємства. Крім того, як правило, психологічна атмосфера в малому бізнесі сприяє творчості та активності, оскільки власний бізнес всіляко сприяє відповідальному ставленню до праці.

Світовий досвід відводить провідну роль малому бізнесу в формуванні показників економіки країн. Перевагами цього підприємницького сектору, окрім зазначених вище, є відносно невисокі витрати на управління процесами, низька потреба у первинному капіталі та висока його оборотність, оперативність прийняття рішень та здатність швидко вносити зміни у виробничих процес тощо.

Як правило, в забезпеченні сталого розвитку малого бізнесу та його ефективного функціонування значну роль відіграє відповідна національна економічна політика з елементами державної підтримки. Стандартами ЄС передбачено, що частка малих та середніх підприємств в загальній їх кількості в країні має складати більше 99% – це одна з умов вступу країни – кандидата до Європейського Союзу [1]. В Україні малі підприємства становлять 95% від загальної кількості суб'єктів господарювання та забезпечують зайнятість 27% населення. За статистикою, малий та середній бізнес в середньому створює 50-70% ВВП розвинутих країн світу, забезпечує зайнятість населення на рівні 70% та 2/3 виробленої доданої вартості. Треба відзначити, що більшість малих підприємств в країнах ЕС працює в сферах торгівлі, будівництва, харчової промисловості та в сфері послуг [1]. В Японії – загальновизнаній країні приватного підприємництва, малі підприємства є типовими також для сегменту машинобудування [2]. Більшість країн, серед яких США, Японія, Франція, Німеччина, Швеція, Південна Корея, не відокремлює малий бізнес від середнього та використовує з метою регулювання та ведення статистичної звітності поняття «мале і середнє підприємництво», «малий і середній бізнес». В Табл. 1 наведені переліки діючих критеріїв віднесення підприємств до вищеназваної категорії у деяких провідних країнах світу.

Таблиця 1

Кількісні критерії малого бізнесу в різних країнах

Країна	Термін, що використовується	Критерій
Україна	мікропідприємства, мале підприємство	кількість працівників, річний дохід від діяльності
США	малий і середній бізнес	кількість власників число зайнятих розмір активів річний прибуток
Японія	мале і середнє підприємництво	чисельність зайнятих статутний капітал
Франція	суб'єкти малого та середнього підприємництва	чисельність працівників річний оборот частка власного капіталу
Індія	малий бізнес	розмір основного капіталу
Росія	суб'єкти малого підприємництва	частка статутного капіталу кількість працівників
Німеччина	мале та середнє підприємництво	чисельність зайнятих річний обіг
Швеція	мале та середнє підприємництво	чисельність зайнятих
Велика Британія	суб'єкт малого підприємництва	річний обіг або активи або середня чисельність зайнятих
Південна Корея	мале і середнє підприємництво	чисельність зайнятих сума активів обсяг щорічного продажу
Польща	суб'єкти малого бізнесу мікропідприємець малий підприємець	чисельність працівників обсяг продажу вартість активів
Туреччина	малі підприємства	кількість працюючих

Джерело: складено самостійно за даними: [2; 4; 5]

В цілому, у якості найпоширеніших критеріїв віднесення підприємств до категорії малого (або малого та середнього) бізнесу використовуються показники кількості працівників та капітал підприємства. У той же час, при визначенні малого бізнесу відмічається різниця наявних методологічних підходів, відсутність єдиних кількісних та якісних критеріїв віднесення підприємств до цього сектору. Так, за даними Всесвітнього банку, загальна кількість показників, які використовуються у міжнародній практиці, за якими підприємства відносяться до суб'єктів малого підприємництва (бізнесу), перевищує п'ятдесят. Відсутність єдиних критеріїв у визначенні малого бізнесу в різних країнах породжують певні труднощі і ускладнюють порівняльний аналіз макроекономічних показників, роблячи його дещо умовним. Тому, можливим виходом з цієї ситуації може бути використання одного загального показника, наприклад, річного обороту в еквіваленті в звітності міжнародних фінансових організацій.

За даними аналізу, на даний час в Україні малий бізнес представлений суб'єктами малого підприємництва – фізичними особами, зареєстрованими у встановленому законом порядку як суб'єкти підприємницької діяльності та юридичними особами – суб'єктами підприємницької діяльності будь-якої організаційно-правової форми та форми власності з річною чисельністю зайнятих не більше 50 осіб та розміром річного валового доходу не більше 10 млн. євро за середньорічним курсом НБУ [3; 9].

Виконане дослідження особливостей та закономірностей територіального розподілу малих підприємств України за видами економічної діяльності та аналіз основних економічних показників дає підставу для висновку про наявність суттєвих відмінностей в стані та напрямках розвитку малого бізнесу в регіонах та ступеня впливу на загальнонаціональні економічні тенденції. Поглиблений аналіз окремих територій, стан розвитку яких відзначаються особливою гостротою тих чи інших проблем регіональної економіки, сприяє виявленню резервів для поліпшення економічної ситуації на цих територіях, обґрунтуванню пріоритетів у вирішенні завдань регіональної підтримки малих підприємств, підвищенню ефективності регуляторної політики, що має практичне значення для розробки прогнозів розвитку регіонів.

При формуванні системи показників підприємств малого бізнесу в цілях проведення досліджень наявності диспропорцій (нерівномірності) розвитку регіонів важливо забезпечити відповідний базис для коректного порівняльного аналізу: методичний та інформаційний. У якості первинної інформації використані дані Державної служби статистики за 2016 рік (проведення аналізу за 2017 рік ускладнюється фрагментарністю наявних офіційних показників).

З метою вивчення стану розвитку малого бізнесу в регіонах України доцільно проведення кластеризації (групування) областей у відповідності до розробленої авторами системи показників:

1. Інтегральний показник 1 відображає розвиток та потенціал малих підприємств (МП) кожного регіону і визначається розрахунковим методом на базі значень групи статистичних показників: питома вага МП у загальній кількості підприємств області, кількість МП регіону на 10 тис. осіб наявного населення, кількість МП на 10 тис. осіб економічно активного населення, рівень зайнятості в малому бізнесі, середньомісячна заробітна плата найманих працівників, галузева структура зайнятих на МП.
2. Інтегральний показник 2 відображає параметри діяльності малих підприємств і визначається на базі статистичних показників: операційні витрати на одиницю реалізованої продукції, частка підприємств, які одержали прибуток у звітному періоді, витрати на інформатизацію на одне МП регіону, обсяги реалізованої продукції МП в загальному обсязі реалізованої продукції області, питома вага капітальних інвестицій МП у загальному обсязі інвестицій регіону, середньорічний виробіток одного найманого працівника;
3. Інтегральний показник 3 відображає ефективність діяльності малого бізнесу і визначається на основі: фінансового стану (показники ділової активності, фінансової стійкості, ліквідності) та результатів діяльності (показники рентабельність продажу, капіталу, необоротних активів, прибутковості операційної діяльності).

Кластерний аналіз дозволяє виконати багатомірне дослідження та класифікувати об'єкти за декількома ознаками (класифікаційними параметрами) одночасно. Автоматизація статистичних розрахунків відбувалася з використанням StatSoft Statistica 7.0. У цій програмі реалізовано алломеративні методи мінімальної дисперсії: joining (tree clustering) – деревовидна кластеризація, two-way – двоходова кластеризація, а також k-means – дивізійний метод k-середніх. Метод деревоподібної кластеризації передбачає різні правила ієрархічного об'єднання в кластери: одиночного зв'язку (single Linkage), повного зв'язку (complete Linkage), незваженого попарного середнього (unweighted pair-group average), зваженого попарного середнього (weighted pair-group average), незваженого центроїдного (unweighted pair-group centroid), зваженого центроїдного (weighted pair-group centroid), метод Уорда (Ward's method) [7].

За сформованою авторами системою інтегральних показників, які розраховані з використанням офіційних статистичних даних стосовно приватних підприємців та малих підприємств, які утворюють організаційну основу малого бізнесу в Україні, методом стандартизації та використання так званої «багатовимірної середньої» проведено розрахунок інтегральних показників, кінцевою метою якого було виявлення регіональних відмінностей в стані розвитку малого бізнесу в різних областях України та ранжування отриманих значень за територіальним принципом та за видами економічної діяльності. Нижче наведені отримані результати (Табл. 2).

Таблиця 2

Середні значення сукупності інтегральних показників розвитку та діяльності малих підприємств України в територіальному розрізі у 2016 р.

Перелік областей	Кількість областей	Рівень значення сукупності інтегральних показників
Луганська, Донецька, Кіровоградська, Волинська, Чернігівська, Хмельницька	6	низький (0,21 ÷ 0,25)
Рівненська, Черкаська, Полтавська, Сумська, Херсонська, Івано-Франківська, Закарпатська, Житомирська	8	нижче середнього (0,28 ÷ 0,31)
Харківська, Тернопільська, Миколаївська, Одеська	4	середній (0,35 ÷ 0,43)
Дніпропетровська, Запорізька, Київська, Чернівецька, Львівська, Вінницька	6	високий (0,45 ÷ 0,58)
м. Київ	1	максимальний (0,8)

Джерело: складено авторами за результатами розрахунків

Типізація отриманих значень інтегрального показника розвитку та ефективності функціонування малих підприємств дозволила виділити п`ять груп областей України та зробити наступний висновок: до регіонів з найбільш сприятливим діловим кліматом, порівняно високим рівнем розвитку малого бізнесу та рівнем його економічної ефективності відносяться – місто Київ, яке є центром усіх політичних, економічних та міжнародних зв'язків, Вінницька, Львівська, Чернівецька, Дніпропетровська, Київська та Запорізька області, на території яких зосереджені промисловість, торгівля, сфера послуг та туризм. Отримані результати свідчать, що на показники розвитку та ефективності діяльності малих підприємств суттєвий вплив має місце розташування відповідного регіону та традиційна структура господарства. До регіонів з порівняно низьким рівнем розвитку малого бізнесу відносяться Луганська, Донецька, Кіровоградська, Волинська, Чернігівська та Хмельницька області, що свідчить про беззаперечну наявність на їх територіях проблем, які гальмують розвиток.

Результати аналізу демонструють наявність суттєвих регіональних відмінностей в кількості, пріоритетних сферах діяльності та кінцевій ефективності малого бізнесу в Україні. Так, у 2016 році найменша кількість малих підприємств у розрахунку на 10 тис. осіб наявного населення зареєстрована у Луганському (15) та Донецькому (23) регіонах, середня кількість малих підприємств – в Чернівецький області (37), практично втричі більша – в Київській області (97) і максимальна – у місті Київ (250). У Запорізькій області на кожні 10 тис. осіб наявного населення припадає 74 малих підприємства, обсяг реалізованої продукції становить 39685,7 млн. грн. або 18,2% від загального обсягу реалізованої продукції підприємствами регіону, що дорівнює 925, 57 тис. грн. у розрахунку на одне МП. В той же час, у Чернівецькій області на 10 тис. осіб наявного населення припадає 37 підприємств малого бізнесу, які забезпечують 7941,1 млн. грн. або

38,4% загального обсягу реалізованої продукції регіону, що дорівнює 2374,02 тис. грн. на одне МП. В місті Київ зареєстровано та функціонує 250 малих підприємств на кожні 10 тис. осіб наявного населення, які продукують 389282,8 млн. грн. або 15,6% реалізованої продукції регіону, що дорівнює 5340,76 тис. грн. в розрахунку на одне МП [10; 11].

Наведені дані підтверджують існування нерівномірності та диспропорцій у розвитку малих підприємств у регіональному розрізі, вирівнювання яких з орієнтиром на покращення можна розглядати як суттєвий резерв поліпшення мезо- та макропоказників української економіки.

Важливими, з точки зору розуміння структури малого бізнесу в країні, є дані, отримані за результатами розрахунку інтегральних показників, у розрізі окремих видів економічної діяльності (Табл. 3).

Таблиця 3

Середні значення сукупності інтегральних показників розвитку та ефективності діяльності малих підприємств України за видами економічної діяльності у 2016 р.

Рівень сукупного інтегрального показника	Кількість областей	Перелік видів діяльності
низький (0,10 ÷ 0,22)	5	транспорт, складське господарство, поштова та кур'єрська діяльність; освіта; охорона здоров'я та надання соціальної допомоги; діяльність у сфері адміністративного та допоміжного обслуговування; надання інших видів послуг
Середній (0,45 ÷ 0,58)	5	сільське, лісове та рибне господарство; промисловість; будівництво; операції з нерухомим майном; мистецтво, спорт, розваги та відпочинок
високий (1,25 ÷1,40)	3	фінансова та страхова діяльність; оптова та роздрібна торгівля; ремонт автотранспортних засобів і мотоциклів

Джерело: складено за даними проведених розрахунків

Таким чином, станом на кінець 2016 р. в Україні найбільш високим рівнем значень інтегральних показників, що відображають рівень розвитку та ефективність малого бізнесу, характеризуються торгівельна, фінансова та страхова діяльності, а також послуги з ремонту автомобілів, а найменшим – транспорт, складське господарство, поштова та кур'єрська діяльність, охорона здоров'я та надання соціальної допомоги, надання інших послуг та освіта. Ці напрями потребують особливої уваги з боку державних органів влади та додаткових цільових програм підтримки їх розвитку.

Необхідно відзначити, що переважна більшість підприємств малого бізнесу за організаційно-правовим статусом – це фізичні особи-підприємці, кількість яких щорічно збільшується, що пов'язано, в першу чергу, зі спрощеним порядком реєстрації та функціонування цього сектору. У фізичних осіб-підприємців кількість найманих працівників складає близько 59% від загальної кількості працюючих, що свідчить про тяжіння до сімейної форми ведення бізнесу. Більша частка найманих працівників залучена до сфери здійснення операцій з нерухомим майном та надання послуг. Наприклад, у сфері діяльності, пов'язаної з транспортом, задіяна третина найманих працівників малих підприємств країни, які виробляють майже 35% продукції цієї галузі [10].

За статистичними даними, 41% найманих робітників припадає на малі підприємства, які здійснюють діяльність у формі юридичної особи. Аналіз територіальної нерівномірності розподілу фонду оплати праці серед працівників, зайнятих на малих підприємствах, дозволяє зробити висновок про відносну рівномірність рівня оплати праці з певною локалізацією оплати праці на міських малих підприємствах.

В ході досліджень виконана оцінка потенціалу збільшення річних обсягів реалізованої продукції в сегменті малого бізнесу за рахунок вирівнювання наявних диспропорцій між регіонами за фактором ділової активності, що можливо при наявності системної підтримки розвитку суб'єктів малого підприємництва шляхом впровадження відповідних цільових державних і регіональних програм та механізмів стимулювання. Результати оцінки потенціалу збільшення обсягів реалізації продукції, товарів та послуг наведені в Табл. 4 та на Рис. 1.

Таблиця 4

Прогноз потенціалу збільшення обсягу реалізованої продукції малими підприємствами в розрізі областей України за рахунок фактору збільшення їх кількості (до середнього по областях з високим рівнем розвитку малого бізнесу) , млн. грн.

Області	Обсяг реалізованої продукції малими підприємствами у регіоні	Потенціально можливий обсяг реалізації продукції малими підприємствами
Вінницька	34340,9	34340,9
Волинська	15968,4	45149,4
Дніпропетровська	104759,7	104759,7
Донецька	26317,9	35607,5
Житомирська	16517,5	39871,4
Закарпатська	11669,9	32542,0
Запорізька	39685,7	39685,7
Івано-Франківська	18209	37001,3
Київська	71172,9	71172,9
Кіровоградська	29320,4	57217,3
Луганська	9227,1	37391,7
Львівська	55048,1	55048,1
Миколаївська	28867,6	39809,7
Одеська	75589,7	75589,7
Полтавська	33030	52450,7
Рівненська	14101,2	42808,9
Сумська	16657,9	45355,2
Тернопільська	15416,7	51369,8
Харківська	80385,4	80385,4
Херсонська	21846,6	42490,1
Хмельницька	18801,5	42908,5
Черкаська	26626,1	46862,6
Чернівецька	7941,1	7941,1
Чернігівська	16601,1	45478,0
м. Київ	389282,8	389282,8
Разом	1177385,2	1552520,274

Джерело: складено за даними [8] та Табл. 2

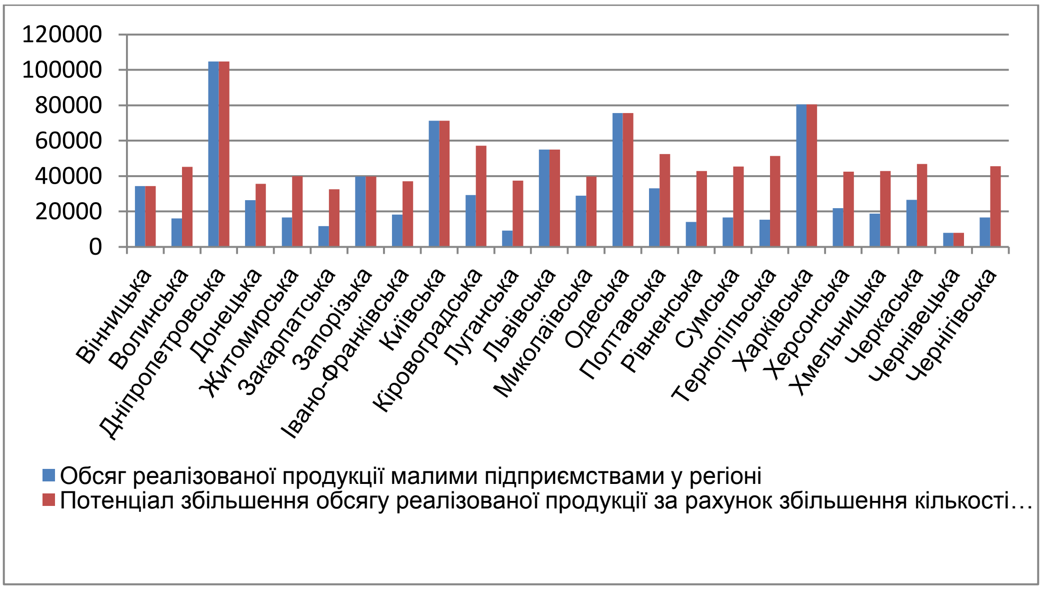

Рис. 1. Прогнозовані можливості збільшення обсягів реалізованої продукції малими підприємствами України у розрізі регіонів

Джерело: складено за даними [8] та Табл. 2

Загальний приріст реалізації продукції малими підприємствами в Україні тільки за рахунок одного з багатьох факторів впливу, а саме, збільшення їх кількості у кожному регіоні до рівня, середнього по групі областей з високим рівнем розвитку малого бізнесу (Табл. 2), за попередньою оцінкою може становити 375135,1 млн. грн. або 31,86 % від досягнутого обсягу реалізації продукції та послуг. В загальному обсязі реалізованої в Україні продукції в секторах великого, середнього та малого бізнесу – це 5,58 %.

Оцінка потенціалу розвитку малого бізнесу в регіонах України за принципом наближення рівня розвитку та ефективності до кращих із досягнутих на внутрішньому ринку показників за обсягами реалізації, свідчить про великий економічний потенціал сектору за умов створення сприятливих можливостей для діяльності.

Вдалий досвід країн з високим рівнем розвитку малого бізнесу підтверджує необхідність системної державної підтримки цього сектору економіки в Україні. Виявлені в ході досліджень регіональні нерівномірності розвитку та функціонування малих підприємств призводять до висновку про необхідність посилення ефективності методів державної та регіональної підтримки малого підприємництва для прискорення його розвитку, подолання існуючих проблем та ліквідації диспропорцій. Завдання полягає у тому, щоб суттєво розширити роль і місце малого бізнесу в економічних процесах, забезпечити зайнятість у його структурах 30-35% працездатного населення країни. Подальший розвиток малого бізнесу є надійним потенціалом України в подоланні негативних соціально-економічних процесів, таких як, відтік працездатного населення за кордон, низький рівень якості життя, високий рівень тінізації економіки, низька конкурентоспроможність частини вітчизняних виробництв.

Дієвими формами підтримки малого бізнесу на державному та регіональному рівнях, які одночасно із забезпеченням загального розвитку цього сегменту української економіки сприятимуть подоланню диспропорцій та нерівномірності розвитку в окремих регіонах України, вважаємо:

- впровадження цільових комплексних державної та регіональних програм розвитку і підтримки малого підприємництва з відповідним фінансовим, правовим та організаційним забезпеченням;
- використання державних банків для відкриття цільових кредитних ліній підтримки малого підприємництва із зазначенням обсягу фінансування, прийнятної відсоткової ставки та секторів кредитування за умов створення нових робочих місць;
- створення умов щодо підвищення рівня зацікавленості комерційних банків у активізації співпраці з малими підприємствами за рахунок впровадження пільгового оподаткування обсягів прибутку, одержаного по операціях з обслуговування фінансових потреб малого бізнесу;
- стимулювання малих підприємств до підвищення фінансової стійкості шляхом використання інструменту податкових пільг у разі формування ними страхових резервів задля попередження банкрутства;
- розробка та використання широкого спектру інструментів підтримки стартапів та підприємців – початківців;
- сприяння залученню коштів донорів та міжнародних фінансових організацій у формі грантів та співфінансування для розвитку на території України перспективних видів економічної діяльності в організаційно-правових формах малого бізнесу;
- забезпечення процесу якісної освіти, набуття компетенцій працівниками малого бізнесу та організація доступної консультаційної підтримки.

Висновки. В ході досліджень виявлено, що розвиток і функціонування малого бізнесу у різних регіонах України має особливості, які проявляються в різниці рівня ділової активності, структури по видах економічної діяльності та економічної ефективності, а також місця та ролі, яку відіграє малий бізнес у формуванні обсягів виробництва та реалізації товарів та послуг в регіоні. Найбільш розвинутий рівень малого бізнесу за значенням сукупності інтегральних оціночних показників відмічається в 6 регіонах та м. Києві, серед яких – Дніпропетровська, Запорізька, Київська, Чернівецька, Львівська, Вінницька області. (Табл. 2). Суттєво менші масштаби і показники розвитку та ефективності функціонування малого бізнесу спостерігаються в інших областях України (Табл. 2). Потенціал покращення рівня ділової активності в цих регіонах України мінімально оцінюється в

375135,1 млн. грн., що становить 31,86 % приросту досягнутого обсягу реалізації продукції малими підприємствами та 5,58% загальних обсягів реалізації продукції в країні в 2016 р.

В Україні спостерігається також нерівномірність розвитку малого бізнесу розрізі видів економічної діяльності. Так, аналіз результатів розрахунків сукупності інтегральних показників (Табл. 3) доводить, що найбільш розвинутими в сегменті малого бізнесу є фінансова та страхова діяльність; оптова та роздрібна торгівля; ремонт автотранспортних засобів і мотоциклів, менш розвинуті – транспорт, складське господарство, поштова та кур'єрська діяльність; освіта; охорона здоров'я та надання соціальної допомоги; діяльність у сфері адміністративного та допоміжного обслуговування; надання інших видів послуг. Удосконалення структури малого бізнесу в напрямку пріоритетного розвитку більш ефективних видів економічної діяльності є шляхом розвитку економіки регіонів і, як наслідок, покращення якості життя населення.

Сталий розвиток малого бізнесу в Україні та подолання диспропорцій між регіонами та видами економічної діяльності можливе шляхом адаптованого використання досвіту розвинутих країн Євросоюзу та країн світу за умов прийняття та ефективної реалізації комплексної державної та регіональної політики підтримки підприємництва, основу якої складають: вдосконалення правової бази з питань малого підприємництва, фінансово-кредитна, матеріально-технічна та інноваційна підтримка малого бізнесу, міжнародна фінансова та технічна допомога малим підприємствам, кадрове, наукове та консультаційне забезпечення їх розвитку.

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РЕГІОНАЛЬНА ЕКОНОМІКА

UDC 330.101.5:338.24.01

Yu. V. Diatlova, Candidate of Economics, Associate Professor

ASSESSMENT METHODOLOGY OF FOOD COMPONENT ECONOMIC SECURITY: REGIONAL ASPECT

Urgency of the research. *In the terms of globalization and integration processes, there is an urgent need for scientific research on the problem of ensuring the state security in the economic sphere.*

Target setting. *The issues of measuring the ensuring economic security system at the state and regional levels remains unresolved because of the inconsistency of thought about its components and approaches as for assessing. It raises the need for their research and scientific justification.*

Actual scientific researches and issues analysis. *Issues related to the economic security of the state are highlighted in the writings of such scholars as T. Vasyltsiv, O. Vlasyuk, A. Kachinsky, O. Liashenko, V. Marhasova, L. Shevchenko and others.*

Uninvestigated parts of general matters defining. *Despite the attention of scientists to the problems of state economic security, the issues of the security components in the economic sphere at the regional level and the methodology of their assessment need further research.*

The research objective. *The purpose of the article is to provide scientific substantiation of the assessment methodology of food component economic security at the regional level.*

The statement of basic materials. *The differences in the list of security components in the economic sphere have been shown in the article. The methodology of assessment the level of food component economic security has been improved. The stages of its implementation have been determined. It is proposed to use an expanded nomenclature for group and individual indicators for assessment; their hierarchy is substantiated. It is recommended to use differential and integral methods to calculate the complex indicator. Gradations of its level have been proposed. The functionality of the assessment methodology of the food component economic security level has been proved via approbation.*

Conclusions. *The application of a justified methodological approach and an improved methodology of assessment the individual security components in the economic sphere in practice will allow formulating effective influence mechanisms at the state and regional levels.*

Keywords: *security in economic sphere; components; security level assessment methodology; indicators nomenclature; gradations of complex indicator level.*

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МЕТОДИКА ОЦІНКИ ПРОДОВОЛЬЧОЇ СКЛАДОВОЇ ЕКОНОМІЧНОЇ БЕЗПЕКИ: РЕГІОНАЛЬНИЙ АСПЕКТ

Актуальність теми дослідження. *В умовах глобалізаційних та інтеграційних процесів виникає нагальна потреба в наукових дослідженнях проблеми забезпечення безпеки держави в економічній сфері.*

Постановка проблеми. *Питання виміру стану системи забезпечення економічної безпеки на рівні держави і регіонів все ще залишаються не вирішеними через неузгодженість думки щодо її складових та підходів до оцінки. Це зумовлює необхідність їх дослідження та наукового обґрунтування.*

Аналіз останніх досліджень і публікацій. *Питання, що стосуються економічної безпеки держави висвітлені в працях таких науковців, як Т. Васильців, О. Власюк, А. Качинський О. Ляшенко, В. Маргасова, Л. Шевченко та інших.*

Виділення недосліджених частин загальної проблеми. *Незважаючи на увагу вчених до проблем економічної безпеки держави, питання складових безпеки в економічній сфері на рівні регіону та методики їх оцінки потребують подальших досліджень.*

Постановка завдання. *Метою статті є наукове обґрунтування методики оцінки продовольчої складової економічної безпеки регіональному рівні.*

Виклад основного матеріалу. *У статті показано відмінності в переліку складових безпеки в економічній сфері. Удосконалено методику оцінки рівня продовольчої складової економічної безпеки. Визначено етапи її проведення. Запропоновано для оцінки застосовувати розширену номенклатуру групових і одиничних показників, обґрунтовано їх ієрархію. Рекомендовано для розрахунку комплексного показника використовувати диференційний та інтегральний методи. Запропоновано градації рівня комплексного показника. Апробацією доведено функціональність методики оцінки рівня продовольчої складової економічної безпеки.*

Висновки. *Застосування обґрунтованого методичного підходу і удосконаленої методики оцінки окремих складових безпеки в економічній сфері на практиці дозволить сформувати ефективні механізми впливу на державному та регіональному рівнях.*

Ключові слова: *безпека в економічній сфері; складові; методика оцінки рівня безпеки; номенклатура показників; градації рівня комплексного показника.*

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Urgency of the research. In the terms of globalization and integration processes, there is an urgent need for scientific research on the problem of ensuring the state security in the economic sphere. The search of tools for identifying the effective mechanisms to control the security system of the state is a key factor of economic growth, which the National Security Strategy of Ukraine is aimed at.

Target setting. The issues of measuring the ensuring economic security system at the state and regional levels remains unresolved because of the inconsistency of thought about its components and approaches as for assessing. It raises the need for their research and scientific justification of security components in the economic sphere and methodology of their assessment.

Actual scientific researches and issues analysis. Significant contributions to the study of security in the economic sphere have been made by outstanding scientists of research institutes and higher education, in which at the theoretical and methodological levels the various security aspects have been discussed, including the issues of its components and evaluation. So, issues related to the economic security of the state are highlighted in the writings of such scholars as T. Vasyltsiv [1], O. Vlasyuk [2], A. Kachinsky [3], O. Liashenko [4], V. Marhasova [5], L. Shevchenko [6] and others.

Uninvestigated parts of general matters defining. Scientists and practitioners are making efforts to develop and improve mechanisms for ensuring of state economic security. Despite the attention of scientists to the problems of economic security, the issues of the security components in the economic sphere at the regional level and the methodology for their assessment need further research.

The research objective. The purpose of the article is to provide scientific substantiation of the assessment methodology of food component economic security at the regional level.

The statement of basic materials. The foregrounding of the issue of security in the economic sphere is stipulated due to their variety in amount and essence. Thus, most of the researchers believe that the main components of security in the economic sphere are: raw material resources, energy, financial, social, and technological innovation, food, foreign economic. Methodological recommendations outline such components as investment, innovation, finance, energy, foreign trade, social, demographic [7], and the Methodological of calculating of its level consists of nine positions [8]: macroeconomic, industrial, financial, investment, foreign trade, scientific and technological, social, demographic, energy, food. So, first of all, to establish the level of security in the economic sphere the broad discussion in the scientific circles to develop the range of its components is required.

The financial and foreign securities are being investigated to a greater extent, which is quite understandable, given the openness of the national economy and the influence of the global financial crisis. However, the food supply security is an issue that is recognized worldwide and the significance is greater than foreign economy, according to the «Methodological of calculating the level of the economic security of Ukraine» [8], and considering the specific food supply security in the regions, it is the one that requires adaptation of calculations for the assessment at regional level. This has led to the choice of food security as a safety component in the economic sphere in order to substantiate the methodology for its assessment at the regional level.

In order to develop the methodology for assessing food security of industrial regions the «Methodology of calculating the level of economic security of Ukraine» [8], the «Methodology of determining the key indicators of food security» [9], the «Methodical recommendations for calculating the level of economic security of Ukraine» [10] have been used. The analysis of methodological and scientific literature has shown the need for determination of regional level indicators recommended to identify the level of food security. Moreover, it is also essential to include to the list of indicators the ones that characterize features of regional food security and take into account the current requirements for food.

Thus, to determine the level of food security the evaluation methods such as differential, comprehensive (integral) and mixed can be applied. When using the differential method it can be specified, at which exact indicators the subject's performance is lower or higher. This is the method used in the «Methodology of determining the key indicators of food security», which allows assessing the food security in regions or state by each individual indicator. At the same time the complex method allows characterizing the object using the set of indicators and provides a comparison of regions, but without individual assessment of every indicator. Therefore, a more appropriate approach is to assess the food security using a mixed method that combines the advantages of integrated and differentiated ones, which presupposes the assessment of every single and complex indicator. This method is used in «Methodology of calculating the level of economic security of Ukraine», which allows to generally describe the food security of the region and to compare individual performance with standards. However, food security as a social and economic phenomenon is characterized by multiple measures, according to which the more complex system of indicators – individual indicators included in the group that are integrated into a composite index – ought to be to applied.

The algorithm for calculating the complex indicator of food security in industrial region in conjunction with the development of appropriate measures to enhance its implementation, includes three phases according to which individual indices (first stage), group (second stage) and complex (third stage) ones are calculated. The results of each stage allow taking decisions concerning food security, for example, reviewing the list of performance statistics or monitoring, which are necessary for the calculation (first stage), as well as more effective instruments for the mechanism of improving the level of services in accordance with the results for the single, group and complex indicator (first, second and third stages). At every step the corresponding approach to calculate individual, group and composite indicator is developed, the method which will be used while calculating and the regulation value of the indicator (optimum or threshold) are defined.

The hierarchy of indicators' nomenclature of food supply security in industrial region has been developed (Fig. 1). It contains 7 groups of indicators, which include 47 single ones. The nomenclature is different from those contained in previous methodologies proposed as the group of indicators and an individual list.

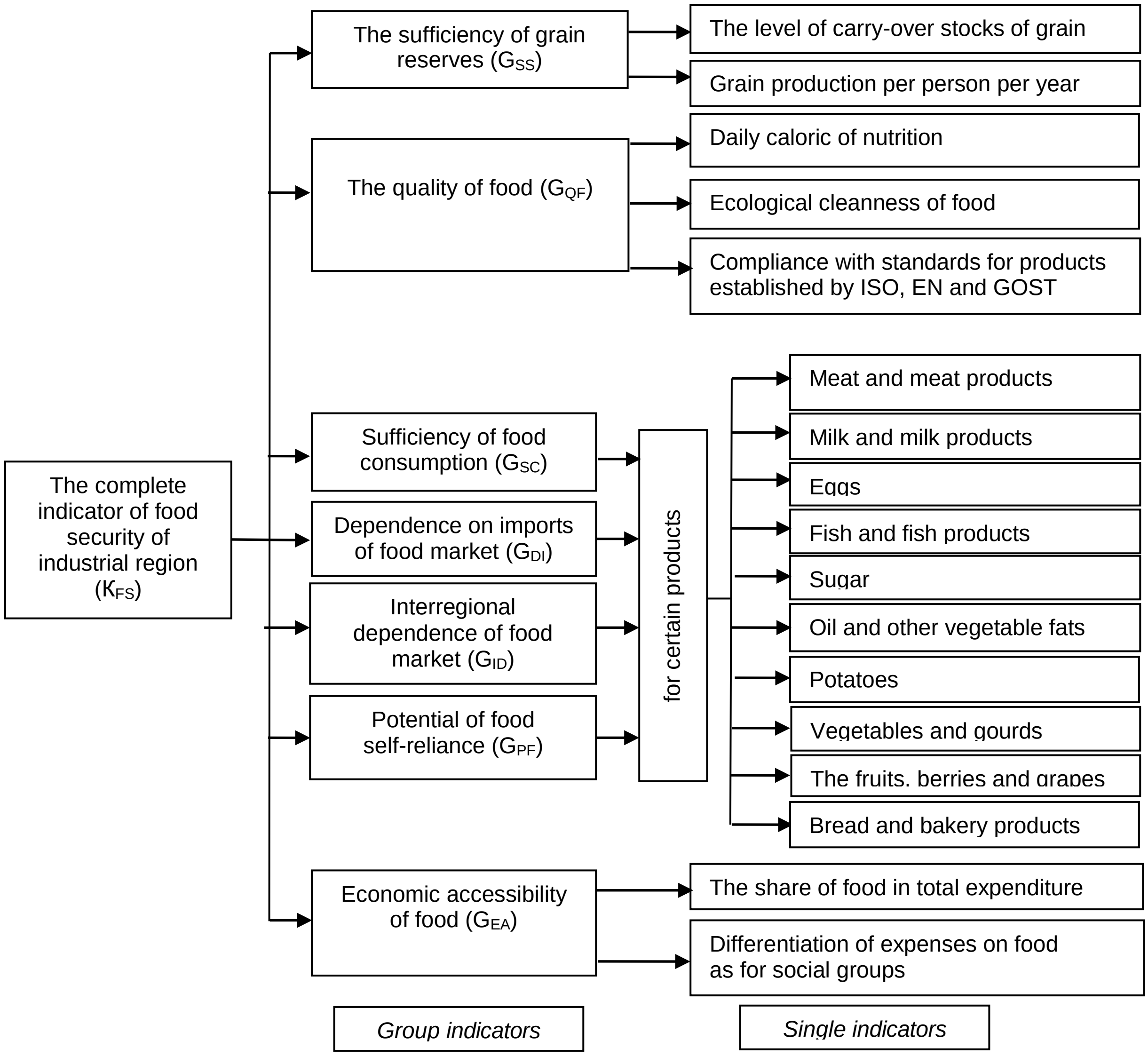

Fig. 1. Hierarchy of nomenclature indicators of food security of industrial region

Thus**,** the following groups of indicators can be denoted:

the sufficiency of grain reserves (that is calculated using two single indicators contained in «Methodology of calculating the level of economic security of Ukraine», the indicator of the level of carry-over stocks of grain is contained in the «Methodology of determining the key indicators of food security», but is treated as sufficiency of stocks; indices are calculated as unit value of the actual value of the norm, the norms are set);

the quality of food (indicator was not previously used, for specification the new individual indicators have been introduced: the ecological safety of food products and compliance with standards on production with established standards like ISO, EN and GOST, and measure to calculate the daily caloric of nutrition that was used in both previous methodologies; the individual indicators are calculated as the ratio of the actual value to the norm; the norm is set only for the last indicator);

the adequacy of food consumption (used in both previous methodologies with different nomenclature; the individual indicators are calculated as the ratio of the actual value (F_{ij}) to the norm (Nij), if Fij < Nij, and as the ratio of the actual norm to actual value, if Fij > Nij; the norms are established for each type of food);

the dependence on imports in food market (in the «Methodology of determining the key indicators of food security» the term «food independence» is used; the individual indicators as the ratio of the actual value to normal, if Fij < Nij, and the ratio of norms to actual value, if Fij > Nij, because the indicator is destructive, are calculated; the integrated norm on all foods is established, but it is different in both methodologies);

the economic availability of food (as a unit is calculated by both methodologies, but has such varieties as «the share of expenditure on food in total expenditure» and «differentiation of food expenditures for social groups», which are used for group rate; the individual performance as correlation of norms to the actual value, because the indicator is destructive and Fij > Nij, are calculated; the norms are established in the «Methodology of calculating the level of economic security of Ukraine» but only for the indicator «the share of expenditure on food in total expenditure» taking into account the international experience that is: in the USA it comprises 10%, Japan – about 20%, in European countries – 20-25%);

the interregional dependence of food market (introduced for determination of such dependence from interregional supply);

the potential of food self-reliance (introduced for the determination the possibility, provided consumption of foods under rational norms).

The last two groups of indicators as well as the quality of food are novations, so they require justification to calculate and establish rational regulations (optimum, threshold).

The group indicator of «quality food» has been proposed to calculate using three single indicators: daily calorie food (the best indicator value is a reasonable rate – 3000 kcal, adopted by the International Food and Agriculture Organization, and the minimum threshold rate is 2500 kcal, established by the Ministry of Health in Ukraine), ecologically clean food and compliance of standards for products norms to the established standards by ISO, EN and GOST (i.e. the level of harmonization).

The level of daily caloric of nutrition is calculated as a ratio to the norm, if Fij < Nij and as the ratio to the share norm to interregional supply, if Fij > Nij because the considerate dependence on interregional supply is negative. Normative values of indicator are established in «Methodology of calculating the level of economic security of Ukraine» and «Methodology of determining the key indicators of food security».

Concerning the ratios of ecological cleanness of food it ought to be noted that in Ukraine adherence to the norms is quite problematic because the area of relatively clean areas is approximately 7% of the total land, little polluted areas is 15%, contaminated areas is 40% and very polluted ones is 30%. For the actual values of the indicator the part of the relatively clean and little polluted areas of the total land that comprises 22% is taken. It is calculated as the ratio of the actual value to the norms which the maximum threshold value is 100%.

The third single indicator of group parameter is the «quality of food» which means the compliance with standards with production norms established at international and regional levels and is included because of the importance of safety and quality of food. The single indicator as the ratio of the share of national standards, which takes into account the international and regional requirements as ISO, EN, GOST (such standards for all types of food are 55%, including harmonized with ISO and EN – 35% and GOST – 75%), to the norms which threshold the maximum value is 100%, is calculated.

The group indicator «interregional dependence on food market» includes individual ones that describe the inter-regional supplies of separate products. The indicator of interregional supply share (in %) is the ratio of the actual capacity to inter-regional market supply. The indicator of interregional dependence is calculated as the ratio to the norm, if Fij < Nij and the ratio to the norm of interregional supply share, if Fij > Nij because the indicator is destructive. The best indicator is the value which equals to 25%.

The group indicator «potential food self-sufficiency» includes characterization of the possibility of providing the population with basic food (all kinds that are relevant to the food safety), provided consumption under rational norms. The potential food self-sufficiency (in %) is calculated as the ratio of production per person per year to rational standards of consumption per person per year. The indicator of potential food self-sufficiency (for certain types) is calculated as the ratio of capacity to norms, if Fij < Nij and the ratio of norms to potential, if Fij > Nij, which threshold maximum value is 100% (for a types of food).

The methodology of assessing the food security of industrial region is based on the calculation of the complex indicator including the group and individual indicators and is based on the differential and integral methods.

Complex (K_{FS}) and group (Gj) indicators are calculated as follows:

$$K_{FS} = \sum_{j=1}^{n} G_j \cdot K_j, \qquad G_j = \sum_{i=1}^{m} E_{ij} \cdot k_{ij},$$

where K_j – weight ratio of group index;
n – number of group indexes;
k_{ij} – weight single indicator;
m – number of individual indicators;
E_{ij} – value of a single indicator.

Herewith $0 < K_{FS} \le 1$, $0 \le G_j \le 1$, $0 \le K_j \le 1$,

$$\sum_{j=1}^{n} K_j = 1, \; k_{ij} = \frac{1}{m}, \; \sum_{i=1}^{m} k_{ij} = 1.$$

The single indicators (E_{ij}) are calculated according to the formulas:

$$E_{ij} = \frac{F_{ij}}{N_{ij}}, \text{ if } F_{ij} \le N_{ij}, \qquad E_{ij} = \frac{N_{ij}}{F_{ij}}, \text{ if } F_{ij} > N_{ij},$$

where F_{ij} – actual value of single indicator;
N_{ij} – regulation value of the indicator.
Herewith $0 \le F_{ij} \le 1$, $0 \le E_{ij} \le 1$.

To determine the rate of food security in industrial region the following graduations have been established: 0-0.25 – critical level; 0.25-0.5 – low one; 0.5-0.75 – average level; 0.75-1 – high one. As for the calculations in accordance with established gradations in the Donetsk region an average level of food security has been achieved, with the lowest value of group indicator marked on dependence on imports in food market, which indicates the need to increase it (Tab. 1).

Table 1

The comprehensive and group indicators of food security in Donetsk region

Elements of calculation	G_{SS}	G_{QF}	G_{SC}	G_{DI}	G_{ID}	G_{PF}	G_{EA}
The total value of individual indicators	1,64	1,76	8,18	2,91	3,53	5,60	1,00
The weight ratio of individual indicators	0,5	1/3	0,1	0,1	0,1	0,1	0,5
The value of group indicators	0,820	0,587	0,818	0,291	0,353	0,560	0,500
The weighting factor of group indicators	0,178	0,189	0,214	0,087	0,082	0,092	0,158
The value of the complex indicator (K_{FS})	0,617						

Conclusions. Thus, in order to establish the level of security in the economic sphere, it is necessary, first of all, to determine the list of its constituent because of differences in scientific and methodological literature. Weighting factors of components in order to calculate the complex indicator need clarification. The methodology of assessment the level of security components in the economic sphere is improved on the example of food security. The assessment stages are determined. It is proposed to use an expanded nomenclature for group and individual indicators for assessment and their hierarchy is substantiated. It is recommended to use differential and integral methods to calculate the complex indicator. Gradations of its level are proposed. The application of a justified methodological approach and an improved methodology for assessing the individual security components in the economic sphere in practice will allow formulating effective influence mechanisms at the state and regional levels.

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РЕГІОНАЛЬНА ЕКОНОМІКА

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ECONOMIC SUFFICIENCY HOUSEHOLD AS THE FOUNDATION OF HUMAN CAPITAL

Urgency of the research. *Taking into account the growth of the economic independence of households, the issues of forming their economic sufficiency, backgrounds for the accumulation of human capital, as the preconditions for the accumulation of human capital, becomes relevant. Relating to this, the most important task for households was the accumulation, use and reproduction of their human capital.*

Target setting. *In modern conditions insufficient attention is paid to the question of the accumulation of human capital of households, which is why it is necessary to direct scientific research into the search for effective methods and mechanisms for its further growth.*

Actual scientific researches and issues analysis. *Significant contributions to the development of the households theory were made by representatives of various trends of economic and financial science, in particular G. Becker, J. M. Keynes, F. Quesnay, T. Maltus and others.*

Uninvestigated parts of general matters defining. *Investigation of economic adequacy of households, in the context of the analysis of the volume and structure of their human capital.*

The research objective. *Evaluate and analyze the economic sufficiency of households as a prerequisite for the accumulation of human capital.*

The statement of basic materials. *The article investigates the economic sufficiency of households in the context of the main indicators of the living standard of the population; opportunities for free consumption of tangible and intangible goods; the ability to maintain and maintain a sufficient level of health; ensuring an adequate level of purchasing power; the ability to withstand the migratory movement of the population.*

Conclusions. *As a result of the study of the households' economic sufficiency, their main characteristics have been identified, which have a certain impact on the character and quality of the accumulation process of human capital: demographic, social and financial and economic.*

Keywords: *economic sufficiency; household; resource; costs.*

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ЕКОНОМІЧНА ДОСТАТНІСТЬ ДОМОГОСПОДАРСТВ ЯК ПЕРЕДУМОВА НАГРОМАДЖЕННЯ ЛЮДСЬКОГО КАПІТАЛУ

Актуальність теми дослідження. *З огляду на ріст економічної самостійності домогосподарств набувають актуальності питання щодо формування їх економічної достатності, як передумови нагромадження людського капіталу. У зв'язку із цим найважливішим завданням для домогоспо-дарств стало нагромадження, використання та відтворення їх людського капіталу.*

Постановка проблеми. *В сучасних умовах недостатньо уваги приділяється питанню нагромадження людського капіталу домогосподарств, саме тому необхідно спрямувати наукові дослідження на пошук ефективних методів і механізмів подальшого його нарощення.*

Аналіз останніх досліджень і публікацій. *Вагомий внесок у розвиток теорії домогосподарств зробили представники різних течій економічної та фінансової науки, зокрема Г. Беккер, Дж. М. Кейнс, Ф. Кене, Т. Мальтус тощо.*

Виділення недосліджених частин загальної проблеми. *Дослідження економічної достатності домогосподарств, в контексті аналізу обсягу і структури їх людського капіталу.*

Постановка завдання. *Оцінити та проаналізувати економічну достатність домогосподарств як передумову нагромадження людського капіталу.*

Викладення основного матеріалу. *У статті досліджено економічну достатність домогосподарств, в контексті основних показників життєвого рівня населення; можливості вільного споживання матеріальних і нематеріальних благ; здатності збереження та підтримання достатнього рівня здоров'я; забезпечення належного рівня купівельної спроможності; здатності протистояти міграційному руху населення. Визначено основні загрози та напрямки вдосконалення економічної достатності домогосподарств.*

Висновки. *В результаті дослідження економічної достатності домогосподарств виявлено їх основні характеристики, що забезпечують певний вплив на характер та якість процесу нагромадження людського капіталу: демографічні, соціальні та фінансово-економічні.*

Ключові слова: *економічна достатність; домогосподарство; ресурси; витрати.*

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Urgency of the research. Financial sufficiency of households is an economic basis for reproduction and development of human capital, which forms as a result of accumulation by human of a certain amount of health, knowledge, skills, abilities, motivations, that are being used in one or another sphere of social production and contributes to increase in productivity. Therefore, the issue of assessment and analysis of it's basic aspects and scientific justification of management decisions regarding its accumulation.

Target setting. An important factor in the preservation and accumulation of human capital is ensuring of economic sufficiency of households, which is solved by creating favorable conditions for the growth of their investment capacity. The main types of investments in households in this context include investments in education, professional development, health improvement, spiritual and cultural development, free consumption of public goods, etc. Unfortunately, today there are significant threats and imbalances in the formation of the economic potential of households, so this issue will require a detailed study.

Actual scientific researches and issues analysis. Among Ukrainian scholars who investigated the incomes and expenditures of households, poverty of the population and its causes, social provision of the population are L. Kovalenko, M. Tugan-Baranovsky, S. Yury, T. Kizima, O. Chuprina, V. Novikov, G. Becker and others.

Uninvestigated parts of general matters defining. Applied aspects of household economic sufficiency in context of reproduction, formation, growth, preservation, and increase of efficiency of usage of human capital rewmain insufficiently developed.

The research objective. The purpose of this article is to study the conditions for the formation of economic potential of households and the impact of their economic sufficiency on the formation of the quality of human capital.

The statement of basic materials. The household is an unique socio-economic entity, the basis of the life of any society. It collects all aspects of human life: biological, social, economic, and especially family - based on marriage and blood-line association of people associated with common way of life and mutual responsibility. In many cases, the term "household" intersects with the term "family", but they are not identical to the fact that households are wider in their composition because of people who are managing common household with a family but are not related to it's members by kinship.

Economic science for a long time did not pay enough attention to the problems of the family economy, and only through the research of the famous American scientist, Nobel laureate in economics (1992) G. Becker [1] the family economy became a subject of a thorough study. He describes family as a factory, which, with the help of production factors (means and tools of labor, skills, market), produces material goods both for own consumption and for sale on the market.

In modern science, the household is regarded as an economic system that covers following subsystems: *economic* (distribution of income for consumption and savings, realization of certain types of property rights); *economical and domestic* use of resource and property potential, implementation of production activities); *reproductive* (accumulation of human capital); *legal* (distribution of responsibilities among members of a household); *primary social control* (socialization of household members, economic support for minors, disabled household members); *recreational* (revitalisation, provision of active recreation) [2, p. 92].

Households are the main element of the system of accumulation of human capital, which is characterized by a combination of formed and developed as a result of investments productive abilities, personal traits and motivations of every member of the household, contributes to the growth of labor productivity and affects the growth of household incomes and national income in general.

The main purpose of households is to ensure an adequate level of economic sufficiency for the full development of each member of the household - the direct owners and carriers of human capital.

The main task of economic sufficiency of households is to satisfy the material and spiritual needs of its members, which is achieved through the fulfillment by the household of a complex of important functions of the resource-generating, reproducing, regulating, distributing, investment, consolidating and function of "life support", disclosed in the "real conditions of existence" of household members.

The main aspects of household economic sufficiency are the ability of constant maintenance at the level above the minimum allowable norms, basic readings of the living standard of the population (income and expenditures, wages, pensions, etc.), which allows them to ensure their sustainable socio-economic development; the ability of free consumption of public goods, namely, tangible and intangible goods and services that contribute to the full development of personality; the ability to maintain a sufficient health level and prevent the spread of socially dangerous diseases in the territory.

In our opinion, the household should be economically capable, socially protected, socially active, aimed by economic freedom to engage in business, promote human capital and improve it's quality.

According to the data of the State Statistics Service of Ukraine, the demographic trends that have developed in the society in 2010-2017 led to a decrease in the number of households and their members (in 2010 - 17050.3 thousand, in 2016 - 15033.4 thousand, and in 2017 - 14985.6 thousand) [3].

The state of health as an important asset of human capital is characterized by negative trends, deterioration of its objective and subjective indicators. According to the self-estimation of the population of Ukraine, it was established that in 2017 93-98%[4] of households were requiring medical examinations, visits to the dentist, receiving medical treatment, purchasing medical supplies and prosthetics, but were forced to refuse these types of medical care, because of their high cost. The explanation is that in 2017, 51.1% of citizens had a cumulative monthly income, lower than the actual living wage (factual average monthly living wage per person - UAH 2646.4 in 2016; 2257,0 UAH - in 2015; 1357.6 - 2014) [5]. There is also a tendency to increase the number of families with children, but without one or both parents (18.9% - 2017) and households consisting exclusively of children and pensioners (1.4% - 2017), identified as a restriction of economic sufficiency and relative loss of human capital [3].

It is in the childhood that the foundations of the knowledge, skills, abilities needed in adult life are formed. In regard to that fact, rural households with three or more children, with very low economic sufficiency, are in the most difficult situation. The gap in the size of rural households' income against urban is substantially increasing, as the decline in employment in rural areas is much faster than in urban areas. Negative processes in the socio-cultural sphere are closely linked to the insufficient development of the productive sector and the low level of welfare of rural inhabitants. They are caused by a chronic shortage of funds in local budgets, almoust complete cessation of state financing of social infrastructure of villages, as well as low demand for paid services.

The growth of inflation facilitates rapid deterioration of the population. Consumer price indices change annually and tend to increase. The index of inflation has increased over the last years due to three components, such as food, housing and communal services and alcoholic beverages and tobacco products.

According to a sample household survey conducted in January 2017, households in Ukraine that could be considered as wealthy were absent, as well as a small number of middle-income households were identified (only 0.5% in 2017). Most households consider themselves poor (74%), with rural households having a higher poverty rate.

An important component of the economic sufficiency of households as a prerequisite for the accumulation of human capital is the income that households receive in the course of their economic activity. Household incomes serve as an important foundation for the country's economic development, and their volume and structure are one of the important factors generating the quality of life.

During 2010-2016, in the structure of total household incomes, about 86% were cash income, and the largest share of 46.7% was wage labor (Tab. 1).

Table 1

Structure of household resources [5]

Year	2011	2012	2013	2014	2015	2016
1	**2**	**3**	**4**	**5**	**6**	**7**
Average resources per month per household, UAH	**3853,9**	**4144,5**	**4470,5**	**4563,3**	**5231,7**	**6238,8**
Structure of household resources, %						
Cash income	88,9	91,0	90,8	91,2	89,4	86,0
wage labor	48,9	50,8	50,6	48,8	47,2	46,7
income from entrepreneurship and self-employment	4,6	4,1	4,1	5,2	5,5	5,2
income from the sale of agricultural products	3,1	2,8	2,8	3,2	3,4	2,9
pensions, scholarships, social benefits provided in cash	25,5	27,1	27,1	27,0	25,2	23,1

Continuation of Table 1

1	2	3	4	5	6	7
cash assistance from relatives	6,8	6,2	6,2	7,0	8,1	8,1
Cost of consumed products received from personal auxiliary farms	4,8	3,8	3,9	4,6	5,1	4,8
Benefits and subsidies	0,6	0,6	0,4	0,4	1,3	4,7
Non-cash benefits to pay for goods and services	0,5	0,5	0,5	0,4	0,4	0,4
Other incomes	5,2	4,1	4,4	3,4	3,8	4,1

The second place after wages is occupied by various social payments received by households at the expense of the state budget, which account for 23.1% of all incomes, but social standards are so low that this does not solve the problems of financial sufficiency of households. To solve the problem of impoverishment of the population of the country is possible only with an integrated approach to reforming the socio-economic sphere of society. The main purpose of this reform should be to create conditions and incentives for the development of entrepreneurial activity of the population, the formation of the middle class. The criterion for success in achieving this goal is the reduction in the absolute and relative size of the contingent of people in need of social assistance [2].

However, the share of income from entrepreneurship reached its maximum value of 5.5% in 2015, and in 2016 it decreased to 5.2%. This dynamics shows that the potential of the household is not used sufficiently through administrative barriers, unfavorable business climate and lack of financial and credit resources.

The share of products grown independently in private subsidiary farms was 2.9% in total revenue for 2016. This suggests that households have actually departed from the natural form of the economy, which allows them to provide only the needs of their family members. 43.3% of households were constantly denied the most necessary, except for food, compared to a scanty share of 6.6% of households whose income allowed them to make savings.

Decrease of the economic sufficiency of households also affects the acceleration of negative demographic changes associated with population decline (for 11 months of 2017, the population decreased by 181.6 thousand people), its aging, migration outflow of occupationally active population outside the country. In Ukraine there are now 12 million pensioners, and this is almost a third of the population. One in five Ukrainians crossed the 60-year-old border [7]. According to World Bank experts, in the next 15 years the number of people of working age in Ukraine will decrease by 16%.

Disappointing statistics on the mortality rate: 14.7% deaths against 10.3% of births in 2016 [7]. This result became the antirecord of Ukraine, as it provided the 3rd place in terms of mortality among European countries and 4th place in the global ranking.

To improve longevity, health care reform and the introduction of a public health insurance system, wage and pension system reform, etc. are needed. An increase in birth rate is a source of improvement in the demographic situation. The stimulus for this may be: increased childbirth financial assistance, the availability of preschool institutions, reduced child mortality, improved medical care, housing for young and large families.

The increase in total household resources, respectively, also affected the increase in average monthly total expenditures. Household expenditures are a set of payments made by a household in the reporting period in order to ensure their livelihoods. According to Tab. 2, the average monthly total household expenses during the analyzed period also increased, but more rapidly than the average monthly aggregate resources.

Table 2

Structure of household expenses

	2011 р.	2012 р.	2013 р.	2014 р.	2015 р.	2016 р.
1	**2**	**3**	**4**	**5**	**6**	**7**
Average cost per month per household, UAH.	**3458,0**	**3592,1**	**3820,3**	**4048,9**	**4952,0**	**5720,4**
Structure of household expenses, %						
Total Consumer Expenses	**90,1**	**90,8**	**90,2**	**91,6**	**92,9**	**93,2**
food and alcoholic beverages, tobacco products	54,7	53,6	53,6	55,3	56,4	52,7
non-food products and services	35,4	37,2	36,6	36,3	36,5	40,5

Contonuation of Table 2

1	2	3	4	5	6	7
including:						
clothing and footwear	5,7	6,1	5,9	6,0	5,7	5,6
housing, water, electricity, gas	9,6	9,9	9,5	9,4	11,7	16,0
household items	2,2	2,3	2,3	2,3	2,0	1,7
health care	3,2	3,4	3,4	3,6	3,7	4,2
transport and communications	6,6	7,1	7,1	7,1	6,1	5,9
rest and culture	1,9	2,0	2,1	1,8	1,5	1,4
education	1,3	1,3	1,2	1,1	1,1	1,0
restaurants and hotels, various goods and services	4,9	5,1	5,1	5	4,7	4,7
Non-Consumer Expenses	**9,9**	**9,2**	**9,8**	**8,4**	**7,1**	**6,8**

This is explained by the rapid depreciation of the national currency, and, as a consequence, a significant rise in prices for goods and services. More than 90% of the average monthly total expenses accounted for consumables, more than 50% are food, alcohol and tobacco products. On the clothes and footwear the household may spend only 5.6% of its monthly income, or it's 320 UAH a month, this amount can only be enough for a secondhand apparel.

On household items households spend 100 UAH, or 1.7% of the average monthly total cost, but in the modern world, to feel a sense of satisfaction, you need to have a refrigerator, a washing machine, a computer, a mobile phone and much more. Our research shows the low capacity of households to influence the formation of the quality of human capital, as the financial sufficiency of households is unsatisfactory. The main threats for building sufficient economic potential of households are:

– an irrational structure of household expenses and incomes, which is directly dependent on the financial and economic state of the country's economy, which results in a low cost of labor; високий податковий тиск на доходи працюючих; lowered social standards, ineffective redistribution of income in society;

– low birth rate, high mortality rate, worsening of the health of the nation, and virtually inaccessibility of good medical examination and treatment, due to high costs;

– inaccessibility of qualitative education, due to financial insolvency of households, which leads to low competitiveness in the labor market and downward social mobility (social degradation);

– The war in the East, the likelihood of terrorist attacks within the country, the ineffective legal and law enforcement system, as well as the lack of prospects for professional growth, determine the significant dynamics of migratory growth of household members who are beginning to seek work outside the country. According to the State Employment Service, more than 5.5 million Ukrainians are working abroad. It negatively affects the demographic situation, causes loss of intellectual capital and labor resources of the country;

– the excessive gap between the incomes of the rich and the poor (25-45 times) in Ukraine and the growth of social and economic inequality, are the main factor of social instability, social tension and conflict.

In order to increase the economic sufficiency of households, on March 16, 2016, the government approved a Poverty Reduction Strategy, which identified poverty alleviation mechanisms and key challenges for addressing this problem for the period up to 2020. Among the strategic directions of poverty reduction was proposed - promoting the growth of incomes of the population from employment and payments in the system of state social insurance; ensuring access of the population to social services regardless place of residence, minimizing the risks of social exclusion of the rural population; preventing the emergence of centers for chronic poverty and social exclusion among internally displaced persons [8].

However, in our opinion, there is a great risk that this Strategy will remain a mere declaration, since it does not provide clear mechanisms for implementation and control over its implementation, nor does it specify the sources of funding for the measures envisaged.

Conclusions. The study of economic adequacy of households and their impact on the formation of the quality of human capital shows that the solution to the problem lies not only in the sphere of the economy, but also in the field of social relations. Therefore, at the state level, it is necessary to solve an urgent problem of strengthening the economic potential of households by increasing labor costs, equalizing structural disproportions in income, creating prerequisites for efficient employment of household members, improving the system of taxation of incomes, and increasing the investment function of households.

The second direction of the strategic actions of the state should be raising the level of financial literacy of household members, which not only strengthens their self-awareness, but also helps them to protect their rights by raising their standard of living, namely: to promote the creation of centers for the development of the intelligence of adolescents and young people, to involve well-known specialists in the field of financial and economic relations for the development of educational game programs, business training, for example, "Family Budget", "Stock Exchange", "Investor-novice"; create a hotline to advise citizens on current issues of financial legislation, business organization, taxation, etc unrestricted and accessible implementation of Infirmation Technologies in education, family business, etc.

The third line of action involves providing access to cultural and spiritual goods, by preserving and developing the basic network of cultural and recreational establishments, spiritual development in cities and united territorial communities, strengthening their personnel and material basis, etc.

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APPROACH TO ANALYTICAL SUPPORT FOR ASSESSING THE SECURITY OF HUMAN DEVELOPMENT

Urgency of the research. *In the conditions of instability and uncertainty of the processes that affect people's security and human development, the importance of preventing and avoiding negative environmental impacts highlighted the issue of assessing the human development security.*

Target setting. *The formation of human development security is carried out under the influence of various factors, which are difficult to prevent in a timely manner, but with the help of a comprehensive assessment of this process it becomes possible to develop of a mechanism for anticipating and preventing the losses of human development.*

Actual scientific researches and issues analysis. *The issue of developing methodological support for measuring human development and human security was considered by foreign scientists: Mahbub ul Haq and A. Sen, M. Peleah and A. Ivanov, David A. Hastings and others; and Ukrainian scientists: O. Vlasyuk, T. Ivashchenko, E. Libanova, O. Makarova and O. Gladun and others.*

Uninvestigated parts of general matters defining. *Based on the work of foreign and domestic scientists, the issue of a comprehensive assessment of the human security development process has not been investigated.*

The research objective. *To develop a sequence for the development of a scientific and methodological approach to analytical support for the assessment of human development security.*

The statement of basic materials. *In the article a critical analysis of existing methodological approaches to the assessment of human development and human security was systematized and conducted. The methodical approach to the analytical support for assessing the security of human development, which will provide the most complete measurement of the process, is substantiated.*

Conclusions. *Taking into account the advantages and disadvantages of methodological approaches to the assessing of human development and human security has allowed to form a sequence of development of a scientific and methodological approach to analytical support for assessing the security of human development.*

Keywords: *human development; human security; assessment; analytical support.*

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ПІДХІД ДО АНАЛІТИЧНОГО ЗАБЕЗПЕЧЕННЯ ОЦІНЮВАННЯ БЕЗПЕКИ ЛЮДСЬКОГО РОЗВИТКУ

Актуальність теми дослідження. *В умовах нестабільності та невизначеності процесів, що впливають на безпеку людей і людський розвиток, необхідність попередження та запобігання їх негативного впливу актуалізують питання щодо оцінювання безпеки людського розвитку.*

Постановка проблеми*. Формування безпеки людського розвитку здійснюється в умовах впливу різних чинників, яким складно своєчасно запобігати, але за допомогою комплексного оцінювання цього процесу стає можливим вироблення механізму передбачення та запобігання втрат людського розвитку.*

Аналіз останніх досліджень і публікацій. *Над питаннями розробки методичного забезпечення вимірювання людського розвитку і людської безпеки займалися і займаються зарубіжні: Махбуб уль Хак і А. Сен, М. Пелях і А. Іванов, Д. Хастінг та ін., та вітчизняні учені: О. Власюк, Т. Іващенко, Е. Лібанова, О. Макарова, С. Пирожков.*

Виділення недосліджених частин загальної проблеми. *Спираючись на праці закордонних та вітчизняних учених, питання комплексного оцінювання процесу безпеки людського розвитку раніше не досліджувалось.*

Постановка завдання. *Розробка послідовності формування науково-методичного підходу до аналітичного забезпечення оцінювання безпеки людського розвитку.*

Виклад основного матеріалу. *У статті систематизовано та проведено критичний аналіз існуючих методичних підходів до оцінювання людського розвитку та людської безпеки. Обґрунтовано методичний підхід до аналітичного забезпечення оцінки безпеки людського розвитку, який забезпечить найбільш повне вимірювання процесу.*

Висновки. *Врахування переваг і недоліків методичних підходів до оцінювання людського розвитку і людської безпеки дозволило сформувати послідовності розробки науково-методичного підходу аналітичного забезпечення оцінювання безпеки людського розвитку.*

Ключові слова: *людський розвиток; людська безпека; оцінювання; аналітичне забезпечення.*

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Urgency of the research. In the conditions of instability and uncertainty of social, economic, ecological, political and other processes that affect people's security and human development, the importance of preventing and avoiding negative environmental impacts at both macro and micro levels highlighted the issue of assessing the human development security.

The value of the assessment work of the complex and measurable processes is not only in ranking countries and their comparisons on a single scale of assessment, but also in determining the high countries' results in the respective aspect of assessment, studying their experience in achieving high results; development or adjustment of national development strategies of the countries, etc.

Target setting. In practice the formation of human development security is carried out under the influence of various factors, which are difficult to prevent in a timely manner, but with the help of a comprehensive assessment of this process it becomes possible to determine the level of human development security, taking into account the probable risks and threats from the occurrence of such factors, determining the degree of their impact, which will further contribute to the development of a mechanism for anticipating and preventing the losses of human development.

Actual scientific researches and issues analysis. The literature review shows that the issue of developing methodological support for measuring human development and human security was considered by foreign scientists (Mahbub ul Haq and A. Sen, M. Peleah and A. Ivanov, David A. Hastings and others) and Ukrainian scientists (O. Vlasyuk, T. Ivashchenko, E. Libanova, O. Makarova and O. Gladun and others), expert groups of international organizations: UNDP specialists, the experts of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), groups of scientists from domestic and foreign research institutes and government agencies.

Uninvestigated parts of general matters defining. The results of the analysis of scientific literature show that in particular no study, to our knowledge, has considered the development of a methodological approach to measuring the security of human development, therefore we consider it to be quite reasonable and relevant to conduct a thorough search and study of the peculiarities of existing methodological approaches to assessing the processes of human development and human security separately and to formulate a sequence of development of a scientific and methodological approach to analytical support for assessing the security of human development.

The research objective. To develop a sequence for the formation of a scientific and methodological approach to analytical support for assessing the security of human development.

The statement of basic materials. Among the most popular methods for assessing complex and difficult formalized processes (including the process of human development) in world practice use a single indicator (integral indicator or composite index). The idea of the importance and popularity of the use of such an indicator is reinforced by the research of R. Bandura (2011) about the phenomenal growth of the number of developed integral indicators which used for the comprehensive assessment of countries by economic, social, environmental, political and other criteria. R. Bandura notes that only from 2007 to 2011 formed 130 (45%) of 290 existing, according to the UN, aggregate indicators by 2011. Most international organizations: the UN, the World Bank, the International Monetary Fund and others are constantly working on the development of integrated indicators in various spheres of society development.

So, the methodical approaches to human development assessment, presented by the international method of measuring human development. This method has rapidly gained global significance and widespread use, but in addition has become the most discussed and criticized. Undoubtedly developed methodical approach has given significant impetus to research in the direction of improving, filling new characteristics, rethinking and developing new approaches to human development assessment at the regional level (UNDP, 1990; UNDP, 2010).

In our opinion interesting is the study of T. Ivashchenko (2014), who argues that the calculation of the HDI makes it possible to determine the level of human development already achieved human development for a specific period of time and «the HDI does not take into account a number of factors which limit the development opportunities to subsequent generations» Ivashchenko (2014), depends on factors such as stability of generation reproduction and environmental stability.

Another attempt to improve HDI is presented at the Conference of European Statisticians «Affordable Human Development Index» in 2013. As a result of joint research by M. Peleah and A. Ivanov (2013) in Armenia, the index of sustainable human development has been developed.

Ukrainian scientists O. Vlasyuk (1995), in his own methodological approach to assessing human development, described in detail the main shortcomings of the international methodology: limited number of indicators; not taking into account negative indicators (dissimulators) of human development; an urgent need to use qualitative characteristics in assessing human development.

The substantiated comments and reasonable arguments and also the inappropriateness of the application of human development index in calculating its value at the meso level motivate Ukrainian scientists to develop national methods. Further solid research in the direction of developing a national methodological approach was carried out by scientists of Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine under the leadership of Ella M. Libanova and with the participation of specialists of the State Statistics Service of Ukraine in 2000. The national methodology for measuring regional human development was updated in 2012 and was approved by the Resolution of the Joint Meeting of the Presidium of the National Academy of Science of Ukraine and the State Statistics Service of Ukraine, which confirms the high level of elaboration and practical importance of the methodology (Method of measuring regional human development, 2012).

Overall, the above results of the analysis presented by the developers of the methodological approaches to assessing human development indicate that the issue of security during its assessment is ignored. Although, the topicality of human development security is objective, and is proved by scientists on the international level. The Human Development Report 1994 is the first international document that justifies the importance of human security. The provisions formulated by UNDP specialists are the basis for the formation of the concept of human security.

According to the results of the analysis of the concepts of «human development» and «human security» it is determined that the essential content of human development is more broader, which purpose is «the empowerment of choice and freedom of people» (UNDP, 1994), but human security «... promotes the strengthening of human rights and strengthens development of human potential», HS Now report (2003); the essence of human security is to ensure the priority of freedom, so that a person has the opportunity to make a choice safely and freely. Consequently, human development is mainly long-term, and the main goal is strategic, but its achievement is «stretched» over time; instead, human security is directed, primarily, to the urgent elimination of threats, Markova, N. Demyanenko A. (2017).

Thus, the concept of human security is a rather new system of views that is of a comprehensive nature, besides, the formulation of the basic methodological guidelines for assessing the security of human development has continued throughout the last decade. Thus, David A. Hastings, the experts of the United Nations Economic and Social Commission for Asia and the Pacific, as well as participants of the International Conference on GeoInformatics for Spatial-Infrastructure Development in Earth and Allied Sciences have greatly contributed to the development of a methodology for assessing the integral index of human security.

Consequently, as a result of inter-categorical analysis of the concepts of human development and human security, it has been determined that human security complements the concept of human development in terms of the safe freedom of choice options; promoting security at the level of prosperity and progress, and not at the level of survival. So, in our opinion, these provisions are the foundation of the concept of human development security. That is, the concept of human development security (HDS) is at the same time an element of both the concept of human development and human security.

On the basis of systematization of scientific sources, by summarizing the experience of scientists who investigated the problems of security and human development, an author's definition of the security of human development was suggested. So, in our opinion, the human development security is the state of stable dynamic equilibrium of the process of empowerment and human freedoms in order to meet the growing needs, as well as the realization of the potential that is constantly being acquired in the process of development to achieve a decent living standard.

Undoubtedly, the process of human security development is dynamic, and the assessment procedure requires the availability of a large amount of data and information, their continuous updating in order to comprehensively determine the level of human security, taking into account its problematic aspects, priorities for the formation, identification of promising directions for development and further monitoring of the state. Thus, the study of the issue of appropriate analytical support becomes necessary in the conduct of a continuous effective assessment of the human development security and its aspects.

The first stage of the given sequence implies the necessity of setting the purpose and formulating the hypothesis of the study. The key purpose of development and application the methodological approach of HDS assessment is to establish the level of human development security, identify the problem areas and prospective directions for further secure and sustainable human development in the future at the interregional level.

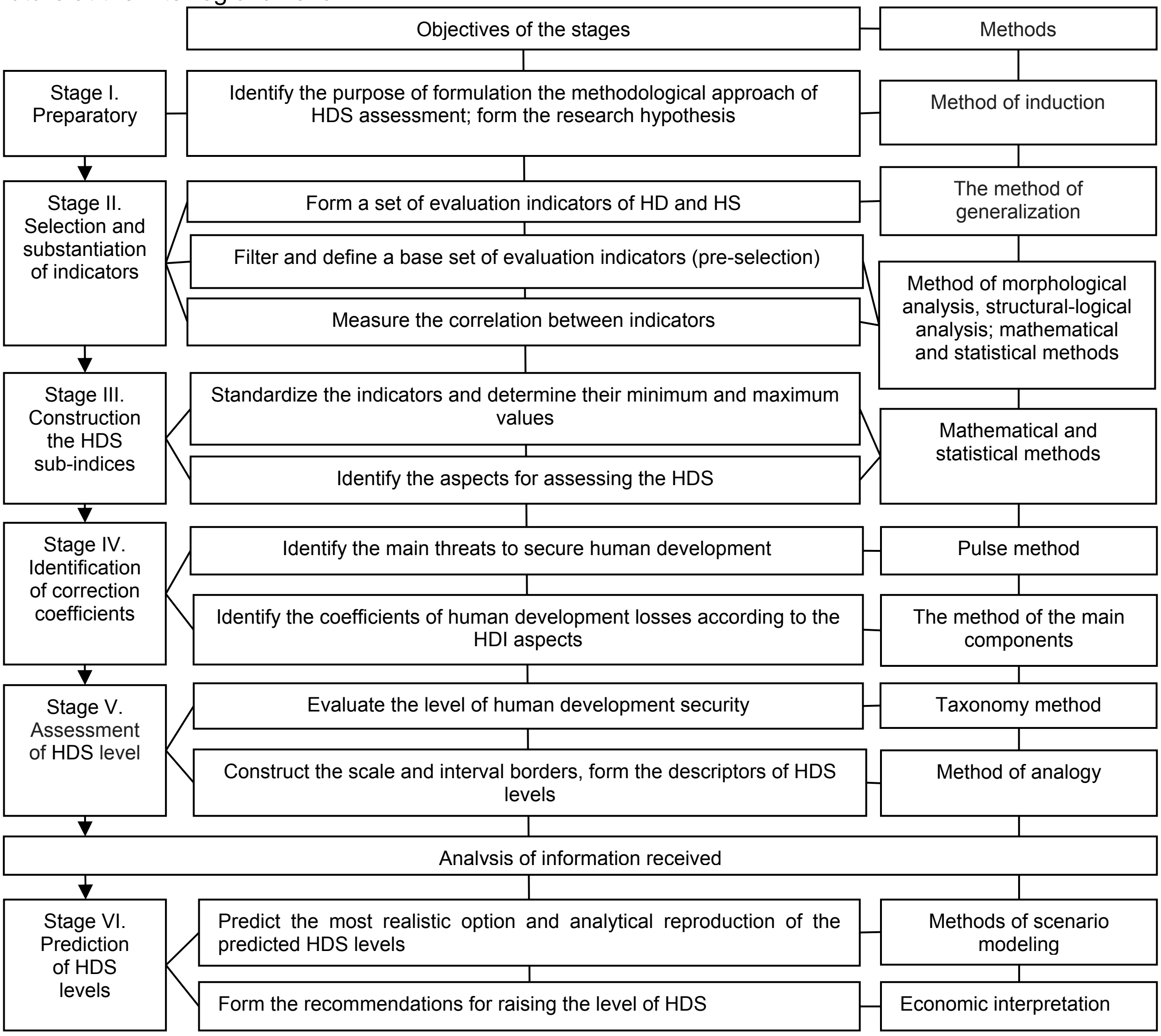

Fig. 1. Sequence in the formulation of a scientific and methodological approach to analytical support for assessing the security of human development

The first hypothesis of the study is: assess the human development security process by possibly taking into account all aspects of human development and human security, the threats and factors that affect them. In other words, when assessing the security of human development, a number of indicators are used that characterize the quantitative and qualitative aspects of human development, as well as threats and factors that impede safe development.

The second hypothesis is that the effectiveness of the HDS evaluation process will increase if the model of analytical support is applied. That is, the system of analytical support will greatly simplify and unify the process of evaluating and analyzing the results of the methodological approach of assessing the HDS, and the developed model of analytical support will allow modeling of possible scenarios for improving the security of human development, depending on changes in factors.

The next stage provides for the selection and substantiation of indicators for HDS assessment. The main goal is to select the largest base of indicators that it is possible and worthwhile to involve in building an integral index of human development security in its aspects by morphological analysis. So the views of domestic and foreign scientists on the composition and number of indicators significantly differ. In the process of assessing the level of human development and human security, developers of methodological approaches are distinguished from 4 to 92 indicators. According to morphological analysis, the most important areas in assessing the level of human development, the authors distinguish: the state of health of the population; the state of education; the welfare of the population and the standard of living and the state of the environment. In addition, taking into account the domestic conditions for the development of Ukrainian society, it is necessary to include such aspects that impede secure development: food security, personal safety, external and internal migration, development of information and communication technologies and cyber-security. For the final determination the quality of the indicators system, we need to form the data space and formalize the available indicators in order to use the economic and mathematical procedures for the selection of indicators.

The formation of general indicators for each aspect of HDS is the third stage of the presented methodological approach, which involves determining the parameters for calculating sub-indices.

The fourth stage is to identify the correction coefficients for each aspect of human development security. The implementation of this stage of the sequence involves the search and classification of factors that affect the security of human development, the identification of cause-effect relationships that influence the change of specific indicators of HDS using the heuristic methods (pulse method).

The next stage is the formation of an integral HDS indicator, which consists of all sub-indices and correction coefficients. According to the results of the analysis, the necessary conclusions will be drawn regarding the level of the HDSI of a certain region, the identification of region's «weaknesses».

Based on the comprehensive assessment of the HDS, within the sixth stage, a model for analyzing the provision of HDS assessment is planned, taking into account the change in the impact of factors contributing to the emergence of threats to human development security, which will allow predicting the most realistic levels of HDS and outline the directions for developing measures for raising HDS.

Conclusions. Summing up the above, the lack of a methodology for measuring the security of human development have objectively increased the researches in the direction of developing an approach to assessing the human development security and formulating a comprehensive analytical support for its implementation, which involves its problematic aspects, formation priorities, and identifying promising directions of development.

Based on the results of the critical analysis of existing methodological approaches of human development and human security assessment, it was possible to identify the main disadvantages of measuring these processes, which mainly relate to the selection of indicators, their low informatively and quality. Consequently, the consideration of the positive and negative factors of the methods for assessing human development and human security has allowed us to formulate a sequence to develop a scientific and methodological approach to analytical support for the assessment of human development security. Thus, the prospects for further research are the implementation of a methodical approach to analytical support for the assessment of human development security in practice.

The particular value of a methodological approach to analytical support for assessing the security of human development lies in taken into consideration the aspect of security that allows assessing the level and identifying the factors which threaten human development and the level of meet basic human needs (that is not only at the survival level but at development). And the powerful analytical support will allow us to take into account the dynamic nature of the process of human development security and predict the most realistic option of the HDS.

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УДК 330. 341. 1

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ОЦІНКА ФАКТОРІВ, ЩО ВИЗНАЧАЮТЬ УСПІХИ І НЕВДАЧІ ІННОВАЦІЙНИХ ПРОЕКТІВ

Актуальність теми дослідження. *Важливість аналізу факторів успішної реалізації інноваційних проектів обумовлюється впливом інновацій на сучасну високотехнологічну економіку.*

Постановка проблеми: *невизначеність комплексу факторів, що впливають на реалізацію інноваційних проектів.*

Аналіз останніх досліджень. *Виявлені такі причини невдач проектів: поверхневий аналіз ринку, виробничі проблеми при переході від зразка до серійних партій, дефіцит фінансових ресурсів, проблеми комерціалізації.*

Виділення недосліджених частин проблеми. *Закордонні дослідження спираються на обстеження інноваційних проектів, що має для України інтерес, однак малокорисно внаслідок несхожості макроекономічних і бізнесових умов. Актуальним є дослідження вітчизняних інноваційних проектів на великому масиві даних.*

Постановка завдання. *Метою є аналіз бізнес-планів інноваційних проектів для виявлення залежності між характеристиками проектів і шансами на успішну ринкову реалізацію.*

Виклад основного матеріалу. *Спирачись на бізнес-плани, були визначені три групи показників: - вихідні характеристики проекту (оригінальність, ресурсне забезпечення, готовність виконавців, обсяг робіт тощо); - очікувані проблеми виконання проекту; - ймовірність ринкової реалізації проекту. Запропонована шкала для визначення кількісних оцінок показників і схема обробки. Проаналізовано 24 бізнес-плани інноваційних проектів. Тематика проектів охоплює пріоритетні науково-технічні напрями: машинобудування, приладобудування, паливно-енергетичний комплекс, енергозаощадження, нові матеріали, агротехнології.*

Висновки. *Аналіз ресурсних складових проектів показує високий рівень технічних можливостей виготовлення запланованої продукції. Однак, потенційно високий рівень значимості, інноваційності та технічної завершеності проектів не знаходить втілення на етапах ринкового впровадження продукції з причин нехтування маркетинговим плануванням.*

Ключові слова: *інноваційні проекти; фактори успішної реалізації проектів*

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EVALUATION OF FACTORS THAT DETERMINE THE SUCCESSES AND FAILURES OF INNOVATIVE PROJECTS

Urgency of the research. *The importance of analyzing the factors of successful implementation of innovative projects is determined of innovations roles in the high-tech economy.*

Target settings: *uncertainty in the set of factors of the implementation of innovation projects.*

Actual scientific researches and issues analysis. *The researchers found the following reasons for the failure of the projects: surface market analysis, production problems, lack of financial resources, problems of commercialization.*

Uninvestigated parts of general matters defining. *Foreign studies are based on the survey of innovative projects, which has interest for Ukraine, but is inappropriate due to inadequate macroeconomic and business conditions. An actual study of domestic innovation projects on a large array of data is relevant.*

The research objective *is to study the business plans of innovative projects to identify the relationship between the characteristics of projects and the chances for market implementation.*

The statement of basic materials. *Three groups of indicators were identified based on business plans: - initial characteristics of the project (originality, resource support, readiness etc.); - expected problems of project implementation; - probability of successful implementation of the project. A scale was developed to determine the quantitative estimates of the detected indicators. There were analyzed 24 business plans of projects by described method. The topics of the projects include such priority scientific and technical directions as machine building, instrumentation, fuel and energy complex, energy saving, new materials, agrotechnologies.*

Conclusions. *Analysis of the resource components of the implementation of projects indicates a high potential level of technical capabilities for the production of planned products. However, potentially high level of significance, innovation and degree of technical completeness can not be realized at the stages of market introduction of innovations due to neglect of marketing.*

Keywords: *innovative projects; factors of successful implementation of projects.*

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Актуальність теми дослідження. Важливість аналізу і оцінки факторів успішної реалізації інноваційних проектів обумовлюється визначальним впливом інновацій на сучасну високотехнологічну економіку [1]. У розвинених країнах сформувалась інноваційна модель економічного розвитку, яка базується на інтенсивному продукуванні та застосуванні нових знань, за рахунок втілення яких в освіті, технологіях, виробництві досягається від 70% до 85% приросту ВВП. Серед країн Європейського Союзу відносно низькі показники інноваційної активності мають Португалія – 26% та Греція – 29%, але й вони у два рази вищі, ніж в Україні. У порівнянні з країнами-лідерами, такими як Австрія (67%), Німеччина (69%), Данія (71%) та Ірландія (74%), відставання України складає 3-4 рази [2]. До цього слід додати вирішальну роль інновацій у забезпеченні конкурентоспроможності [3].

Постановка проблеми. Історичний досвід і сучасні статистичні дані свідчать, що не всі інноваційні рішення доводяться до успішного втілення. Велика частка інноваційних проектів не завершуються запланованим результатом. Усереднена статистика по багатьох країнах за останні 50 років засвідчує, що з кожних 100 проектів, що передбачали втілення інноваційної ідеї, до успішної комерційної реалізації доводилося менше десяти проектів [4]. Наприклад, одне з обстежень показало, що із 100 зафіксованих ідей до стадії розробок було доведено 26,6% проектів, до стадії випробувань - 12,4%, завершеними і комерційно успішними виявилось 9,4% проектів [5]. Незважаючи на останні досягнення в теорії і практиці управління проектами, які спрямовані на мінімізацію смертності інноваційних ідей, частка незавершених проектів на протязі останніх десятиліть залишається вагомою.

Отже, існує проблема невизначеності повного комплексу факторів, що впливають на реалізацію інноваційних проектів.

Аналіз останніх досліджень і публікацій. Багато дослідників аналізували фактори успішності реалізації інноваційних проектів з метою підвищення їхньої ефективності [2; 6]. Зокрема, Твісс Б. доводив, що найбільш важливими є наступні фактори: наявність джерела творчих ідей; схильність організації до нововведень; досконала система відбору та оцінки проектів; ефективне управління проектами і контроль; орієнтація на ринок [6]. Купером Р. була розроблена схема оцінки нових проектів під назвою модель "НовТов". Вона охоплює 30 питань до експертів, які оцінюють характеристики проектів за 10-бальною шкалою. Отриманий профіль проекту порівнюється з профілями сотень відомих проектів, інформація щодо яких введена у базу даних. В результаті порівняння визначається ймовірність успіху та виявляються слабкі і сильні сторони нового проекту [7]. Аналіз, що був виконаний службою економічних досліджень Національної каси державних ринків Франції, виявив такі причин невдач проектів: поверхневий аналіз ринку (недооцінка затримок у поширенні товару на ринку; переоцінка розмірів потенційного ринку), виробничі проблеми (складнощі при переході від дослідного зразка до серійних партій, недосягнення заданих параметрів), недостатність фінансових ресурсів, проблеми комерціалізації [8].

Дослідження Буза, Аллена и Хемілтона у США показали, що головними факторами успіху інновацій є, з одного боку, товар, що відповідає вимогам ринку, а, з іншого боку, можливості фірми, серед яких технологічні переваги та здатність адаптувати багатостадійну розробку до сприйняття її ринком [9]. Американські експерти засвідчують, що 32% комерційних невдач інновацій є наслідком помилкової оцінки вимог ринку, 13% — наслідком помилок у сфері збуту, 14% — занадто високих цін, 10% — несвоєчасного початку продажу, 8% — активної протидії конкурентів і лише 23% новинок зазнають невдачі із суто технічних причин [2].

Як зазначає Краснокутська Н. В., невдачі — це невід'ємна частина інноваційного процесу, менеджерам необхідно постійно аналізувати причини, які призводять до фіаско нововведень, що дасть змогу уникнути багатьох проблем або значно знизити ризики [10]. Дослідник Калюжний В. В. наполягає на неможливості подолання проблеми «провалів» проектів засобами, що пропонуються сучасною методологією управління проектами [11].

Багато аналітиків вважають, що відсоток невдалих нововведень з часом зростатиме внаслідок дії таких чинників:

- скорочення життєвого циклу товарів;
- зростання витрат на дослідження та розробки;
- глобалізація конкуренції;
- зростання сегментованості ринків;
- збільшення пропозицій нових товарів;
- зволікання з моментом старту інноваційного проекту [4].

На думку П. Микитюка частка невдач інновацій може бути істотно зменшена, якщо проаналізувати чинники ризику, кількісно оцінити їх вплив у вартісному вимірі (можливі втрати) і розробити заходи щодо їх зниження. Таку оцінку доцільно вести шляхом послідовного аналізу стадій розробки нового товару і виведення його на ринок. Це дасть можливість дослідити фактори ризику на кожному з етапів виконання інноваційного проекту. За результатами опитувань керівників промислових підприємств серед основних причин, що перешкоджали успіху інновацій, була недостатність інформації про ринки збуту і характеристики попиту [5].

Виділення недосліджених частин загальної проблеми. Незважаючи на значні здобутки досліджень з управління інноваційними проектами якісь обставини процесу виконання проектів залишаються поза увагою виконавців та дослідників, що і призводить до «провалів» значної частки проектів. Більшість закордонних досліджень за цією тематикою спирається на дані конкретних обстежень інноваційних проектів, що має для України концептуальний інтерес, однак малокорисне для пошуку шляхів мінімізації невдач інноваційних проектів внаслідок неадекватності макроекономічних і бізнесових умов інших країн. Вітчизняні дослідники оперують або вузько вибірковими даними, або case-прикладами, що не дозволяє робити широких узагальнень. Тому актуальним є дослідження характеристик вітчизняних інноваційних проектів на достатньо великому масиві даних.

Постановка завдання. Метою статті є дослідження бізнес-планів інноваційних проектів для виявлення залежності між характеристиками проектів, що визначають ступінь їх готовності до реалізації, і шансами на успішну ринкову реалізацію проектів.

Виклад основного матеріалу. Методика аналізу полягала в наступному:

- спираючись на інформаційну структуру бізнес-плану, були визначені три групи показників: а) вихідні характеристики проекту (оригінальність, ресурсне забезпечення, готовність виконавців, обсяг робіт тощо); б) очікувані проблеми виконання проекту; в) ймовірність успішної ринкової реалізації проекту;
- далі була розроблена шкала для визначення кількісних оцінок виявлених показників (Табл. 1);
- по кожному бізнес-плану експертною оцінкою визначалися значення характеристик проекту;
- отримані дані оброблялися за певною схемою розрахунків і на основі значень кінцевих показників робились висновки щодо умов виконання проектів.

Таблиця 1

Визначення характеристик інноваційних проектів та їхніх значень

№	Характеристики	Значення характеристик			
1	Предмет проекту	За даними бізнес-плану			
2	Галузь	Відповідно класифікатора			
3	Тип кінцевого продукту	Механізм	Матеріал	Процес	Метод
4	Масштабність проекту	Світовий 1	Національний 0,8	Регіональний 0,6	Галузевий 0,4
5	Рівень інноваційності	Фундаментальний 1	Принциповий 0,6	Частковий 0,3	Невизначений 0
6	Ступінь оригінальності	Абсолютний 1	Відносний 0,7	Удосконалення 0,3	Модернізація 0,1
7	Ринок збуту	Світовий 1	Національний 0,7	Локальний 0,3	Цільовий 0,1
8	Стратегія маркетингу	Системна 1	Комплексна 0,7	Окремі елементи 0,3	Необґрунтована 0,1
9	Ефекти проекту	Комплексні і масштабні 1	Масштабні, але некомплексні 0,7	Локальні 0,3	Незначні 0,1
10	Завершеність робіт	Висока 1 - 0,8	Суттєва 0,7 - 0,5	Низька нижче 0,4	-
11	Спроможність виконавця	Висока по всіх складових 1	Висока по вирішальних складових 0,7	Загалом невисока 0,3	Явно недостатня 0,1
12	Ступінь обґрунтованості інфомації	Найвища 1	Висока 0,7	Задовільна 0,3	Незадовільна 0,1
13	Формальні недоопрацювання	Відсутні 1	Незначні 0,6	Значні 0,3	-
14	Свідомі прогалини	Неважливі 1	Суттєві 0,6	Важливі 0,3	-
15	Об'єктивні прогалини	Відсутні 1	Непринципові 0,6	Принципові 0,3	-

Якісна інтерпретація кількісних значень характеристик здійснюється за наступним принципом. Для блоку «Вихідні характеристики»: 1 – найвищий/найкращий рівень; 0.5 (інтервал 0.4 –

0.6) – посередній рівень; 0.3 і нижче – недостатній рівень. Для блоку "Проблемні моменти": 1 - рівень проблемності є мінімальним тобто не виявлено проблем, які б заважали реалізації ІП; 0.5 (інтервал 0.4 – 0.6) – виявлені проблеми, які можуть ускладнити реалізацію ІП, але вона можлива; 0.3 і нижче – такий рівень проблемності показує, що реалізувати (завершити) проект практично неможливо.

Для блоку «Успішність виконання»: якщо значення всіх 5 характеристик блоку знаходяться в інтервалі від 0,9 до 1, то це буде найвищий рівень, який відповідає досягненню двох результатів: а) матеріалізації інноваційної продукції тобто виготовлення запланованих виробів; б) позитивний економічний ефект на ринку тобто прибутковий продаж продукції в певних обсягах (згідно критерію «точки беззбитковості»). Для нижчих значень характеристик блоку «Успішність виконання» просте додавання (усереднення) не може бути застосоване.

За описаною методикою проаналізовано 24 бізнес-плани інноваційних проектів, які були підготовлені великими організаціями на кшталт науково-виробничих комплексів, установ Національної академії наук, технопарків тощо. Ці бізнес-плани подавалися до Українського державного центру науково-технічної та інноваційної експертизи Міністерства освіти і науки України з метою отримання державної підтримки та фінансування. Це не були проекти типу "start up" - всі проекти були доведені до фінішних стадій циклу "дослідження — виробництво" тобто до дослідно-конструкторських розробок, виготовлення промислових зразків або виробництва продукції. Це засвідчується, зокрема, даними, що представлені в Табл. 2: характеристика *"Завершеність робіт по етапах"* має середнє значення 0.8 за винятком проекту по LCD телевізорам. Тематика проектів охоплює такі пріоритетні науково-технічні напрями як машинобудування та приладобудування, паливно-енергетичний комплекс та енергозаощадження, нові матеріали, методи їх з'єднання та обробки, прогресивні агротехнології та інші.

У Табл. 2 представлені характеристики п'яти з проаналізованих проектів. Продемонструємо інтерпретацію отриманих даних на прикладі одного з проектів. Газопаротурбінна установка призначена для спільного виробництва теплової та електричної енергії з високим ККД на енергогенеруючих підприємствах житлово-комунальної та виробничої сфери. Одним із важливих напрямів є її використання у якості приводів газоперекачувальних агрегатів компресорних станцій газотранспортної системи. Проектом передбачається випуск дослідно-промислової партії інноваційної продукції. Порівняння трьох інтегральних показників засвідчує, що *вихідні характеристики* мають досить високий рівень – 0,65. Серед *проблемних моментів* (рівень – 0,36) виявлено, що заявники роблять ставку на техніко-економічні переваги, не приділяючи належної уваги стратегії виводу продукції на ринок (рівень – 0,1), тому закономірною виявилася низькою оцінка *успішності виконання* проекту саме з причини непевності комерційної реалізації (вихід на ринок - 0,2; фіксація ринкової позиції - 0,1). Аналіз ресурсних складових (завершеність робіт, спроможність виконавця, визначеність постачальників, організація виробництва) засвідчує наявність високого рівня технічних можливостей виготовлення продукції. Це підтверджується високими оцінками «ступеню виконання запланованих робіт» (0,9) та «отримання заявленого продукту» (0,9). Але проблемним моментом проекту є недостатній рівень інноваційності – 0,6, внаслідок чого продукція може не сприйматися потенційними споживачами як принципово відмінна від наявних аналогів, що може призвести до менших ніж заплановані обсягів реалізації продукції, а отже недосягненням позитивних економічних результатів. Таким чином, даний проект за наведених умов немає перспектив успішної комерційної реалізації.

Представлені в Табл. 2 характеристики п'яти проектів репрезентативно показують картину по всіх 24 проаналізованих проектах, тому висновки мають широкий узагальнювальний характер. Аналіз ресурсних складових виконавців інноваційних проектів свідчить про високий потенційний рівень технічних можливостей виготовлення запланованої продукції. Щодо компаній, організацій, технопарків, то можна констатувати той факт, що ступінь наявності технічного, технологічного і кадрового потенціалу є дуже високим. Інтегральний показник спроможності виконання завдань проекту для шести виконавців знаходиться в межах 0,7 – 1, що згідно Табл. 1 є цілком достатнім для успішного виконання запланованих робіт проекту. Це ж стосується показника ступеня завершеності робіт, який знаходиться в межах 0,73 – 0,85 для більшості проектів.

Таблиця 2

Зведені дані по інноваційних проектах *(фрагмент)*

Скорочена назва проекту	Газотурбінні установки	LCD телевізори	Струминні протитечійні млини	Стінові блоки	Біодизельне паливо
Предмет проекту	Випуск дослідно-промислової партії	Розробка і серійне виробництво	Впровадження на теплових ел. станціях	Організація виробництва	Створення технологічного циклу виробництва
Кінцевий продукт	Механізм	Механізм	Механізм	Матеріал	Процес
ВИХІДНІ ХАРАКТЕРИСТИКИ					
Масштабність проекту	0,4	0,4	0,4	0,4	0,4
Масштаб ринку збуту	0,7	0,3	0,3	0,3	0,1
Ефекти проекту	1	0,3	0,7	0,3	0,3
Рівень інноваційності	0,3	0,3	0,6	0,3	0,3
Ступінь оригінальності	0,3	0,3	1	0,6	0,3
Завершеність робіт	0,85	0,52	0,75	0,73	0,8
Спроможність виконавця	1	0,7	0,7	1	0,3
Середнє значення вихідних характеристик	**0,65**	**0,40**	**0,64**	**0,56**	**0,36**
ПРОБЛЕМНІ МОМЕНТИ					
Ступінь обґрунтованості інформації	0,8	0,7	0,7	0,7	0,3
Стратегія маркетингу	0,1	0,3	0,3	0,7	0,1
Формальні недоопрацювання	0,7	0,6	0,7	0,7	0,3
Свідомі прогалини	0,6	0,6	0,6	0,6	0,6
Об'єктивні недоліки	0,3	0,3	0,3	0,3	0,3
Середня оцінка проблемних моментів	**0,36**	**0,36**	**0,52**	**0,60**	**0,32**
Доринкові етапи	0,9	0,7	0,8	0,7	0,3
Ринкові етапи	0,2	0,2	0,3	0,3	0,2

Зважаючи, що проекти розраховані в середньому на 5 років, стартовий рівень робіт і потенціал виконавців були б достатніми для впевненого завершення запланованого обсягу робіт, якби не очікувані проблеми з реалізацією (блок "Проблемні моменти" в Табл. 2). Серед показників, що характеризують проблемні моменти, ступінь обґрунтованості інформації та формальні недоопрацювання (некоректне заповнення позицій бізнес-плану) не виходять за межі позитивних значень. Натомість, два інших показники характеризуються негативними значеннями: - свідомі прогалини — значення 0,6, тобто "суттєві"; - об'єктивні недоліки — 0,3, тобто "важливі".

Наступні приклади дають розуміння, що криється за показниками "свідомі прогалини" та "об'єктивні недоліки".

У проекті "Стінові блоки" зазначено, що технологічні «ноу-хау», які застосовуються в даному виробництві, будуть захищені патентами, проте не гарантовано, що пошук на патентну чистоту виявиться позитивним.

У проекті "LCD телевізори" показник обсягів реалізації продукції підмінений на показник обсягів виробництва, але в ринковій економіці це не тотожні поняття: не вся кількість виробленої продукції може бути реалізована.

У проекті "Струменні протитечійні млини" присутній фінансовий ризик, що пов'язаний із можливим постачанням на ринок аналогічних установок іноземних фірм за демпінговими цінами.

Звертаючись у підсумку до двох нижніх рядків Табл. 2, отримуємо наступні висновки: реалізація доринкових етапів проектів характеризується високим рівнем успішності, тоді як реалізація ринкових етапів, яка передбачає вихід з продукцією на ринок і надійну фіксацію ринкової позиції, є провальною. Таким чином, потенційно високий рівень значимості, інноваційності та ступеню технічної завершеності проектів не знаходить втілення на етапах ринкового впровадження інноваційної продукції з причин нехтування маркетинговим плануванням.

Висновки. Отримані за допомогою запропонованого методу аналізу характеристик інноваційних проектів дані дають змогу виявити типові проблемні моменти, що стають на заваді успішному виконанню інноваційних проектів. Аналіз історії як успішних проектів, так і причин невдач незавершених проектів є джерелом інформації для виявлення типових прорахунків та їх запобіганню при плануванні виконання майбутніх проектів.

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UDC 330.341.1

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THE ENTREPRENEURIAL UNIVERSITY AS IMPERATIVE FOR IMPLEMENTATION OF THE STRATEGY OF INTEGRATION INTO THE SYSTEM OF EUROPEAN KNOWLEDGE TRANSFER: THE UKRAINIAN EXPERIENCE

Urgency of the research. *An important direction of activity of modern universities is the science-intensive enterprise, which is actualized in Ukraine in the context of the formation of an innovation-investment model of the economy and the implementation of the European integration strategy.*

Target setting. *The integration of Ukrainian education and science into the European transfer of knowledge is gaining momentum, but in our country, high-tech business has not become popular yet.*

Actual scientific researches and issues analysis. *Ponderable contribution into the theory of "entrepreneurial university" was made by G. Itskovits, B. Clark, J. Krisman, J. Rypke, G. Dmitriyev, A. Romanovsky, S. Sloter, P. Schult and othersl.*

Uninvestigated parts of general matters defining. *The role and ways of forming of the entrepreneurial university in Ukraine have not been determined yet.*

The research objective. *The aim of the article is to study the possibilities of forming the entrepreneurial universities in Ukraine.*

The statement of basic materials. *The transformation of the scientific and educational sphere of Ukraine has been shown under the conditions of market relations and the development of international cooperation. The main achievements and miscalculations of Ukrainian universities in the way of formation of academic entrepreneurship have been set out and recommendations on the elimination of the difficulties of European integration of knowledge have been given.*

Conclusions. *European integration policy in the educational and scientific sphere of Ukraine is accompanied by institutional changes, which have become the catalysts of the essential transformation of universities by formation an entrepreneurial movement. However, discrepancies, risks and mistakes impede it.*

Keywords: *entrepreneurial university; Euro-integration; technology transfer; commercialization of research results; Ukraine.*

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ПІДПРИЄМНИЦЬКИЙ УНІВЕРСИТЕТ ЯК ІМПЕРАТИВ РЕАЛІЗАЦІЇ СТРАТЕГІЇ ІНТЕГРАЦІЇ В СИСТЕМУ ЄВРОПЕЙСЬКОГО ТРАНСФЕРУ ЗНАНЬ: ДОСВІД УКРАЇНИ

Актуальність теми дослідження. *Важливим напрямком діяльності сучасних університетів є розвиток наукоємного підприємництва, яке у контексті формування інноваційно-інвестиційної моделі економіки та реалізації стратегії євроінтеграції актуалізується й в Україні.*

Постановка проблеми. *Інтеграція української освіти та науки у європейський трансфер знань набуває обертів, однак у нашій країні наукоємний бізнес популярністю не користується.*

Аналіз останніх досліджень і публікацій. *Вагомий внесок у розвиток теорії «підприємницького університету» зробили Г. Іцковіц, Б. Кларк, Дж. Крісман, Й. Рьопке, Г. Дмитриев, О. Романовський, Ш. Слотер, П. Шульт та ін.*

Виділення недосліджених частин загальної проблеми. *Невизначеними є роль та шляхи формування підприємницького університету в Україні.*

Постановка завдання. *Метою статті є дослідження можливостей формування підприємницьких університетів в Україні.*

Виклад основного матеріалу. *Показано трансформацію науково-освітньої сфери в Україні в умовах дії ринкових відносин та розвитку міжнародного співробітництва. Виокремлено основні досягнення та прорахунки українських університетів на шляху становлення академічного підприємництва та надано рекомендації відносно усунення складнощів євроінтеграції знань.*

Висновки. *Євроінтеграційна політика в освітньо-науковій сфері України супроводжується інституційними змінами, які стали каталізаторами сутнісної трансформації університетів зумовивши підприємницький рух. Однак невідповідності, ризики та прорахунки гальмують його.*

Ключові слова: *підприємницький університет; євроінтеграція; трансфер технологій; комерціалізація результатів наукових досліджень, Україна.*

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Urgency of the research. Now, in the context of the formation of the information society, the rapid pace of development of advanced national economy is built thanks to the action of the knowledge economy. Human knowledge has long been recognized as the most powerful factor of economic growth, as its share among other factors (total capital and natural resources), according to expert estimates, is more than 60%. The drivers of the growth of post-industrial economies are modern universities, which accumulate the results of intellectual activity and quickly implement advanced achievements into the science and technology in production. The effectiveness of this model of the innovation cycle, better known as the "triple helix", depends on the degree of constructive interaction between universities, business and the state. Within the framework of the implementation of the European integration strategy, which has gained momentum in Ukraine in recent years, it is also planned to integrate Ukrainian education and science into the European transfer of knowledge, since this is the most promising way of preserving and modernizing the scientific and technical potential. The opportunities that the Ukrainian scientific community will receive from this process should be appreciated. After all, this is not the only chance to join the developed sociocultural platform on equal footing, but also a real prospect of overcoming educational and scientific isolation, which will have a positive impact on the image of the Ukrainian scientists and on the opportunities for the commercialization of Ukrainian developments on international markets. Therefore, the task of Ukrainian universities, for the near future, is equitable access to the European and world educational and scientific space. In the context of intensification of international scientific and technological cooperation, there arises the need to develop a theoretical and practical basis for the management of knowledge transfer.

Target setting. In the context of deepening of international innovative cooperation, the integration of Ukrainian education and science into the European transfer of knowledge is gaining momentum, but in our country the high technology business has not become popular yet, so it is advisable to analyze the situation.

Actual scientific researches and issues analysis. The essence of the concept of "entrepreneurial university" attracted the attention of many famous scientists. A significant contribution to the study of the phenomenon of university entrepreneurship and the development of the theory of "entrepreneurial university" was made by G. Iskovits, B. Clark, J. Krisman, J. Rypke, G. Dmitriyev, A. Romanovsky, S. Sloter, P. Schult et al.

Uninvestigated parts of general matters defining. However, the available theoretical results do not provide answers to important practical questions. The real ways of forming of the entrepreneurial universities in the Ukrainian economy are remained vague.

The research objective. The purpose of the study is to determine the essence of the entrepreneurial university and its role in the formation of the innovation and investment economy in the context of increasing the importance of commercially attractive knowledge and implementing the strategy of the European development vector in Ukraine.

The statement of basic materials. The notion of "entrepreneurial university" began to appear in the theory of the economy of education from the 80s of XX century. In the late 1990s the theory of "entrepreneurial university" received wide practical content. After all, the consequence of economic crises and shocks of that period in many leading countries of Europe and the world was the reduction of social programs, in particular in education and science. The laws of the market, for which the higher education institutions had to learn to live, dictated their own rules, which provided the need to maximize the commercialization of university activities. For few decades the definitions of the phenomenon of "entrepreneurial university" has gathered a lot. However, in general, an "entrepreneurial university" should be understood as a higher educational institution, in which educational, scientific and entrepreneurial potentials are successfully combined, corporate culture and entrepreneurial methods and management are introduced.

In modern European universities education and science have become more associated not with the social good, but with a powerful economic resource that is the locomotive of the economic development of countries. Now the level of productivity of the entrepreneurial way of university development is constantly increasing. So, the income from the transfer of knowledge and technologies of Cambridge (Cambridge Enterprise) during the penultimate fiscal year (from 1.08.2015 to 31.07.2016) was £ 22.5 million. The total costs (for academic exchange of experience, £ 18.4 million, as well as staff and other operating expenses, £ 3.8 million) were £ 22.2 million. Investments in intellectual assets (patents and utility models) were £ 792 000. In addition, within one year 127 commercial and research licenses were signed for £ 35.3 million, as well as 14 companies received new or additional investments totaling £ 5.3 million. Currently Cambridge Enterprise manages of 1473 active projects in the field of IP, licensing and consulting and 74 mutual contracts, with 1605 researchers involved in all stages of the commercialization process [1]. Such indicators could be achieved due to the successful management of the scientific and technical university potential, which primarily implies the existence of an institution for the commercialization of the results of intellectual work (technology transfer centers and science parks, highly qualified managers of the relevant specification, etc.), of the organization of specialized funds (for example, in Oxford University), as well as the establishment of effective interaction between the main participants of progress – science, education, business / production and the state.

In Ukrainian universities the conquest of new intellectual and business peak was undertaken with the introduction of the norms of the new Law of Ukraine "On Higher Education" s. Now acknowledgment of the achievements of the university community of Ukraine should receive international recognition, which will be displayed in worthy places of the world's most famous university ratings. So, in 2018 Taras Shevchenko National University of Kyiv took the 411-420 position in the world university rating QS (England), and in the influential rating of Times Higher Education was 801+. In 2016, the Clarivate Analytics, the owner of one of the world's most respected resources for access to publications and to science-metric analysis, the Web of Sciences database, recognized the University as the most effective university in Ukraine in terms of the number of publications (more than 11,000) in this database.

In the field of education. The excessive supply and unfair competition that takes place in the market of educational services in Ukraine makes higher educational institutions look for the new efficient ways of keeping the positions won earlier. For real reflection of the situation, which is formed according to the moods of potential entrants, the administrations of universities periodically conduct anonymous sociological studies among entrants and students. Thus, the results of a survey conducted at the Lviv University in 2015 showed that more than 30% of respondents chose this educational institution because of the wide choice of specialties, for others, the main determining factor was positive feedback on the quality of the education, the professionalism of teachers and the prestige of the university. The main motivational factors for the selection of specialties by the entrants of that year were: the prospect of finding work after the completion of training (30.7%), the prestige of the university (27.1%) and the opportunity to show initiative (24.4%) [2, p. 6].

The work over the adjustment of the choice of specialties is being actively carried out in other universities of the country as well. In particular, in the Taras Shevchenko National University of Kyiv in the academic year 2017/18, more than 470 new professional and educational programs were developed and approved as well as special requirements for the assignment of professional qualifications that would help to increase the trust level of labor market to the qualification certificates of the university [3; 4]. Such actions of the management of this educational institution were due to the fact that the obsolete specialties irretrievably lost their attractiveness, and even the brand of the main university of the country did not save from the decline (and often complete absence) of demand for them from the entrants. After all, those times when young people received the education for the very fact of its receiving have already passed. Now everyone is trying to gain knowledge that will become a pledge of one's own well-being in the near future, such that in the long run they necessarily transform into inexhaustible long-term profits sufficient for the life of a person with higher education. So, during the introductory campaign of 2016 at this university on the specialty of the bachelor's degree "Economic theory and economic policy" (rebranding the former "Economic theory", 15 state seats were allocated, the license volume was 60 seats, and the original documents were submitted by only 4 (!) persons who were accepted subsequently. Obviously, this situation when all financial risks should be endured by the university is very dangerous! [4]. Total number of students is influenced by the state policy of allocation of budgetary places and cost of training[1]. Young people who graduated from the budget "bachelor" program are not in a hurry to continue their studies on the contract for "magistracy" in their native alma mater. The consequence of this is a significant reduction in the number of students (Tab. 1).

As of the beginning of 2017/18 academic year, 1329964 students were studying in Ukrainian universities, academies and institutes (against 2066667 in the 2010/11 school year), of which 608 625 at

[1] The cost of studying at the Taras Shevchenko National University of Kyiv is the most expensive in Ukraine and during the introductory campaign of 2017, depending on the specialty; it was 26.25-54.6 thousand UAH per year, while the average salary of the population is only 5380 UAH in month.

the expense of the state budget, 12 944 at the expense of local budgets, 6968 at the expense of funds of legal entities and 701 427 at the individuals' funds (in the academic year 2010/11: 798571, 14486, 8374 and 1245236, respectively) [10].

Table 1

Dynamics of the number of students[2] enrolled in the leading universities in Ukraine

Relevant academic years	Enrolled students during the introductory campaign in the relevant academic years								
	To the Taras Shevchenko National University of Kyiv			To the Ivan Franko National University of Lviv			To the Odessa I.I. Mechnikov National University		
	license volume	state seats	on the contract	license volume	state seats	on the contract	license volume	state seats	on the contract
2012/13	-	5 204	3 114	-	-	-	-	5 097	6 055
2013/14	20 551	4 939	2 955	29 138	3 859	4 468	12 265	4 948	5 785
2014/15	19 252	5 193	2 775	18 765	4 178	4 416	9 186	4 766	5 573
2015/16	-	4 391	2 255	-	3 958	3 553	-	4 301	4 911
2016/17	-	2 541	2 403	-	3 949	2 667	-	3 970	4 774
2017/18	-	4 500	3 077	-	-	-		-	-

Source: compiled based on statistical data [2-3; 5-6; 7-8]

Taking into consideration the complicated market laws in Ukrainian universities, in particular at the National Taras Shevchenko University of Kyiv, here gradually began to focus on foreigners (Fig. 1).

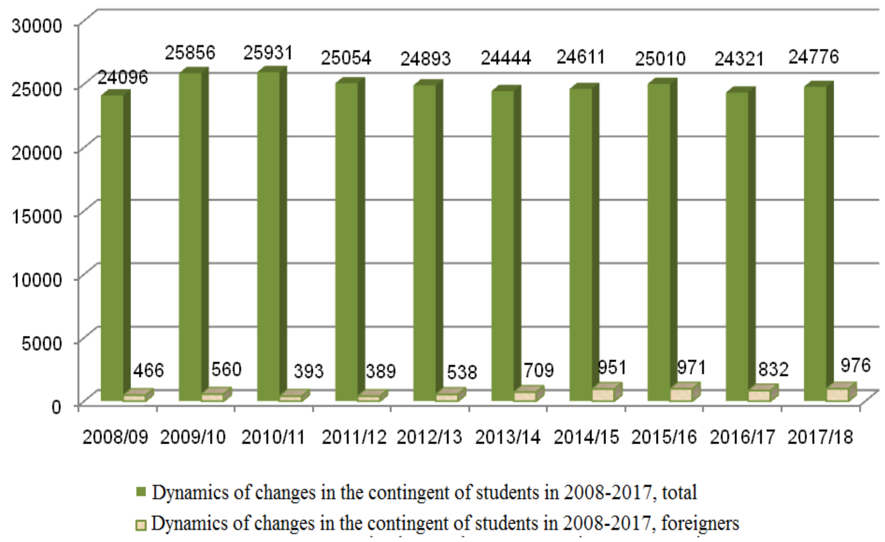

Fig. 1. Dynamics of changes in the contingent of students in 2008-2017 academic years at the Taras Shevchenko National University of Kyiv

Source: compiled from [3, p. 6]

Thus, in the 2016/17 academic year there were 183 foreigners from 24 countries (Azerbaijan, Belarus, Georgia, Egypt, Iran, China, South Korea, Lithuania, Libya, Germany, Pakistan, Russia, the USA, Turkmenistan and etc.) at the preparatory department of this university and this is in 1.8 times more than in the 2014/15 academic year (101 people from 22 countries)[3] [3, p. 12], and in general 976 people studied in various specialties whereas in the 2008/09 academic year there were only 466 foreign students. The training of foreigners mainly takes place on humanitarian, economic, engineering, technical and medical-biological directions. Strengthening the orientation toward a foreign consumer is

[2] Here are the students of all qualification levels ("junior specialist", "bachelor", "specialist", "master").

[3] In connection with geopolitical instability in 2014/15 academic year the outflow of foreign entrants was observed throughout the country.

primarily due to the introduction of popular English-language educational programs such as "Medicine", "International Law", etc. [9]. The total number of foreign students in universities of Ukraine in the beginning of 2017/18 academic amounted to 48836 people, of which 8013 were enrolled in this academic year [10].

Therefore, leading universities are actively working to improve the qualifications of teachers in the direction of increasing the proficiency in foreign languages. In addition, with the aim of significantly improving of university positions in the world-known rankings, university administrations encourage the faculty to work intensively to publish the results of their research in journals included into international databases. However, the compulsory availability of such works became a serious obstacle for PhD students, because this requires the preparation of high-quality material and involves burdensome financial costs (200-500 €). So, in year 2017 the average efficiency of the PhD course of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" was only 10%, on the whole in Ukraine was 23.6% for PhD study and 28.2% for Doctoral study[4] [10]. In the Taras Shevchenko National University of Kyiv in 2017, due to the impossibility and reluctance to continue working in the PhD direction, the 87 PhD students were dismissed, in 2016 - the 140, in 2015 - the 117[5] [11, p. 99].

Complicating factors in the introduction of competitive educational activities in Ukraine are: increased competition in the market of educational services, access to quality higher education outside Ukraine; negative trends in the development of the economy; gaps in the norms of the new educational laws; lack of effective mechanisms that would allow financially-unsecured students to pay for themselves for training; changes in the area of public procurement and education financing, as well as the introduction of new standards of higher education, new procedures for licensing and accreditation procedures, and the like.

Recommendations. Consequently, in the context of the implementation of the European integration policy, prior educational tasks should be: increasing the attractiveness of certain specialties by creating new educational programs and specializations that would take into account the requirements and needs of employers, including the international labor market; introduction of a broader cross-entry in the magistracy with the aim of preventing the outflow of graduates of primary universities to other educational institutions (including outside Ukraine); attracting to the teaching of actual training special courses not only the best own teachers, but also professors of leading foreign universities (including on-line); perfection of forms and methods of selection of talented young people for admission to PhD study; the introduction of English-language educational and scientific programs for the training of PhDs, as well as the formation of a system of internal and external evaluation of the quality of the educational and scientific components of the preparation of the PhDs; providing of the decent material and moral assessment of the work of the faculty.

In the field of science. Reforms in recent years in the field of science in Ukraine have emphasized the collective nature of scientific research. Now the scientific teams consist of groups of researchers working on joint project on the basis of a certain structural subdivision of the organization. The motivational factor of the group's activity should be the success of the commercialization of its research results. However, this approach contains certain risks. After all, in the world, the market nature in scientific research has caused significant changes in its normative-value system. After all, the main stimulus in scientific work has become a competitive relationship between teams that force them to deal with actual problems for the market and issue results with a clear periodicity the value of which at least "visually" will respond for the resources invested into the research. At the same time, the social direction of science completely disappeares, since a concrete scientist can no longer afford the luxury of disinterestedly engaging in science for the sake of understanding "truth" [12, p. 16-17].

Intensive integration of practical research, technological developments and innovative activities of groups of people into a single production process of goods and services has resulted from transfor-

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[4] As of January 1, 2018, the total number of the PhD students in Ukraine was 24786 people, and the Doctoral students - 1 646. Graduation of the PhD studies in Ukraine in 2017 was 6087 people, out of them were only 1438 (or 23.6%) with protection, of the Doctoral studies - 543, with protection - 153 (or 28.2%)

[5] While the 282 students joined the PhD school of the University in 2017 and in 2016 - 287.

mation of science in the modern society. This determines the leading role of scientific teams in the socio-economic development of national economies, as well as the vector of scientific and technological policies of countries. Scientific research rapidly takes on an international character, which significantly increases the importance of information technology and communication in a scientific society. As a result, the functions of research teams are significantly expanded, and the qualification requirements for their members are increased, their structure and the nature of the relationship are changing, since the leading role is played by technology and managers. These transformations are superimposed on the Ukrainian scientific community in the process of its integration into the European transfer of knowledge.

Now, the market transformation of the scientific and research industry in Ukraine is taking place through the establishment of an effective process of commercializing the results of scientific and technical work of university research teams. However, the formation of the foundations of academic entrepreneurship requires the adoption of important decisions that would ensure a unified approach to the improvement of the mechanism "from idea to practical result". In this connection, the directions, boundaries and degrees of international technological cooperation are expanding, in particular, an institutional infrastructure is being created that will engage in the professional promotion of innovative technological products to the market. In the civilized world, the centers of technology transfer are the main institutional units linking science and business and that professionally carry out the commercialization of inventions and developments. These structural units for the transfer of technology to production operate at every powerful university in the US, Europe and Asia. Now the corresponding centers are being established at the leading scientific (National Academy of Sciences of Ukraine) and educational institutions in Ukraine (National Technical University of Ukraine "Kiev Polytechnic Institute", Kiev National University of Technology and Design, Kiev National Economic University named after Vadim Getman and others).

The development of the technology transfer network is also being carried out at the leading university of the country – the Taras Shevchenko National University of Kyiv. The technology transfer system at the University is created on the basis of the Patent and Licensed Department which is a separate structural subdivision of the Research Department of the University. The main objectives of the Patent and Licensed Department are: advice on design of patents or certificates on intellectual property rights; execution and support of applications for inventions (utility models), record keeping concerning patents, certificates; preparation, registration and maintenance of contracts between the University and the inventors, execution and maintenance of license agreements, intellectual property protection in administrative and judicial procedure. In the structure of the Patent and Licensed Department there is a group of support of international projects, the main task of which is the aid in the preparation and maintenance of international projects and grants, including the European framework program, i.e. the Horizon 2020. In addition, specialists of the Department are involved in other aspects of the technology transfer, including the popularization of University research products at various exhibitions, business conferences, business negotiations and also work with the EEN and so on.

In 2017 Ukraine became a full member of the European Union Program - Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME). After the Program, the project «Innovation capacity building in Ukrainian SMEs and enhancing cooperation with European SMEs» was won, in the performance of which the main attention will be focused on work of the Consortium EEN-Ukraine and which provides additional financial resources for the development of the technology transfer at the University.

The primary practical task of the University technology transfer is a continuous update of database of projects that have commercial potential. At the 2017 this base has more than 140 proposals. These proposals are presented in Ukrainian market, mainly through participation in annual national and international exhibitions, as well as in the three key technology markets of the world - the EU, US and China. Presentation of the proposals in these markets mainly takes place through electronic networks. For instance, in the EEN since 2014 with the participation of the University there were presented more than 50 technical and business proposals. In 2017 the four Partnership Agreement were signed within the framework of the EEN. In the Chinese market the job is primarily consists in presentation of the proposals on core activities in China and cooperation in joint projects. Currently, negotiations on the organization of several joint Ukrainian-Chinese research groups in the fields of energy, radio physics, biotechnology and medicine are conducted. Considerable attention is paid to the application of projects and participation in competitions in various international and European programs. In particular, within the framework of the Horizont 2020 program, 6 scientific projects are being implemented at the University [11, p. 60-62]. However, the prior tasks for the University remain issues of security, energy efficiency, defense capacity and support of Ukraine's critical infrastructure.

The effectiveness and cost-effectiveness of research work at the University is indicated by indicators of the analysis of the effectiveness of the use of funds provided by the state (Fig. 2). Efficiency was defined as the ratio of funds earned by research teams to the amount of funds allocated by the state to finance budgetary topics. Thus, in 2017 the effectiveness of scientific research at the University was 0.86.

The University is actively working to improve the efficiency of using budget funds. In this regard, active work is underway to conclude dozens of agreements on scientific and technical cooperation, the design of grant agreements and patenting the results of intellectual work.

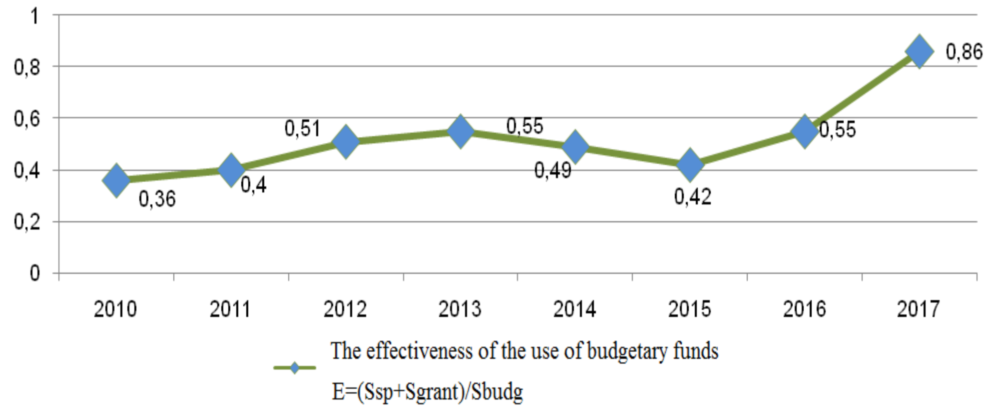

Fig. 2. Dynamics of the effectiveness of the use of budgetary funds in Taras Shevchenko National University of Kyiv
Source: compiled from [11, p. 2]

In the beginning of 2017, the University owned of 155 documents on intellectual property rights, of which more than 100 patents for inventions that constituted 65% of all documents, 33 patents for utility models - 22%, 1 patent for industrial design - 0.65%, 2 patents for varieties of plants - 1.3%, 2 certificates trademarks - 1.6%, 14 certificates of registration of copyright for a work - 9% of the total number of objects of intellectual property. [11, p. 66].

Now the University's portfolio of intellectual property is 90% of patents for inventions and patents for utility models relating to industrial property, of which almost 80% are patents with a 20-year validity, which is evidence of the significant research potential of the University for solving of complex scientific and technical problems. It should be noted the increase in the number of applications for obtaining certificates of registration of copyright for official work, in particular, for computer programs developed based on the University. This testifies to the understanding by the University staff of the importance of state registration and protection of intellectual property. The University is actively working to attract investors and partners to jointly implement their own research and development (R & D) in order to successfully commercialize the research results in the domestic and international intellectual property market.

Thus, the foregoing demonstrates the high level of the University's scientific potential, as well as the priority of implementing the integration strategy into the European knowledge transfer system of the university's scientific community, which, through stimulating applied research, will increase the share of extra-budgetary funding from international sources.

In general, in Ukraine, the important evolutionary steps of the R&D sector are: bringing the activities and structural organization of the scientific and research sphere in line with the current Law of Ukraine "On Science and Scientific and Technical Activities"; support of scientific projects that increase the competitiveness of Ukrainian goods and services in international markets and meet the requirements of the country's defense capability; increasing the level of scientific research by providing new scientific equipment and infrastructure in universities, as well as stimulating the creation of scientific results of worthy international science-based databases; deepening of cooperation of university scientists with scientific parks with the aim of commercializing the results of scientific research and interaction of science and business, as well as ensuring the continuous operation of small innovative enterprises; orientation on the innovative significance of scientific developments and the possibility of commercializing the results of scientific research, as well as their alignment with international standards and current needs in Ukraine; expansion of international scientific cooperation in the framework of mobility programs, as well as in joint international scientific projects within the framework of the EU program the Horizon 2020 and other international grant programs.

Miscalculations. However, the development and implementation of new strategies and techniques, to increase the effectiveness of research achievements, in Ukraine is full of risks. Now the decision on the state financing of these or other scientific projects is made thanks to a transparent procedure common to all collectives, the results of which are published in open network access. However, a loss in such a competition can automatically lead to a significant reduction in the staff of scientific workers, because basic funding for the submitted projects in our country is not yet provided. In addition, the decision on the MES research programs is usually delayed, even for several months. Meanwhile, all researchers must be dismissed in the end of previous topics and are in the status of the unemployed for a period of time. This negatively affects the activity and efficiency of scientific teams, many of which are disintegrating.

Recommendations. In addition, at the state level, it is necessary: to finance the creation of separate technological zones in the leading universities or one large zone for individual regions, but with the obligatory allocation of their own sectors in such zone for leading universities; to stimulate the formation of targeted investment funds; differentiate taxes; provide other interesting preferences for the development of innovative business.

Conclusions. So, the European integration policy which is carried out in the educational and scientific sphere of Ukraine in recent years, accompanied by significant institutional changes, i.e. formally (at the level of adoption of legislative and normative documents of fundamentally new impact) and informally (the transformation of mentality: a different attitude to education and science, the definition of their role for the state, business and the individual, strengthening the integration movement by organizing joint conferences with European universities, forums, scientific and educational etc.). This ultimately can become catalysts of the substantial transformation of the domestic universities and defined the entrepreneurial movement. However, the changes occurring in the top Ukrainian universities are characterized by certain inconsistencies, risks and miscalculations. However, it is obvious that integration into the system of European knowledge transfer in the context of increasing of their commercial attractiveness will contribute to the formation of a successful innovation-investment model of the economy. In this regard, the main tasks in the organization of educational and scientific activities should be the following:

- conducting interdisciplinary fundamental and applied scientific research, having innovative character and containing innovative technologies;
- introduction of international research and innovation and training programs, links, standards for the internationalization of education, the implementation of mobility schemes;
- optimization of the network of scientific specialties, which provides training of highly qualified personnel and the creation of integrated programs for the transition from the preparation of masters to the preparation of PhDs, based on the scientific and innovative components of training;
- effective use of the scientific potential the scientists who have defended their dissertations in other countries;
- activation of the implementation and commercialization of postgraduate scientific research;
- attraction of grants to support promising, commercially attractive innovative projects;
- activation of PhD students' participation in international fund programs (Horizon-2020, Erasmus, Humboldt Foundation, German Academic Exchange Service DAAD, USID, "Revival" Foundation, etc.);

- ensuring proper payment of labor for researchers and knowledge transfer specialists in accordance with the current legislation, as well as organization of raising their skills at the expense of the state to increase the level of knowledge in the field of scientific and innovative entrepreneurship, in particular, exchange of experience with foreign partners.

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ЕКОНОМІКА ПРАЦІ

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ECONOMIC AND LEGAL ANALYSIS OF PREMIUMS AND INCREMENTS TO STAFF

Urgency of the research. *In modern conditions of development of economic relations in Ukraine the issues of proper material incentives and increase of labor motivation of employees by paying them additional payments and surcharges remain relevant.*

Target setting. *Violation of laws – non-payment or untimely/incomplete payment of premiums/increments to staff – is one of basic reasons for the most of labor disputes and conflict situations. Insufficient motivation of staff negatively affects the growth rate of production, leads to decreased labor productivity, and low performance of staff.*

Actual scientific researches and issues analysis. *At different times, problem of applying the premiums and increments was studied by D. D. Hordiyenko, I. V. Zhyhley, G. T. Zavinovska, A. V. Kalyna, A. M. Kolot, M. V. Koryahin, P. O. Kutsyk, O. V. Lyshylenko, M. B. Makhsma, G. A. Semenovand othes.*

Uninvestigated parts of general matters defining. *Despite the significant scope of theoretical and practical developments made by scientists, issue of enhancing the role of premiums/increments, as material incentive for improved performance and productivity, remains open and requires further scientific research.*

The research objective. *Identifying the economic and legal content of premiums and increments, on the basis of research, and generalization of normative acts regulating the remuneration issues in Ukraine.*

The statement of basic materials. *Premiums and increments, paid for labor success, ingenuity, and special terms of work, form an integral component in variable part of wages. By their intended purpose, they should be considered as compensatory and incentive payments.*

Conclusions. *Premiums and increments form an essential tool of material incentives for staff – to maximize the quality, productivity, and efficiency of work. So far, there is an urgent need for legislative framework of "premium" and "increment" terms – for their proper understanding and application in practice.*

Keywords: *remuneration; salary; cash security; position salary; premium; increment.*

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ЕКОНОМІКО-ПРАВОВИЙ АНАЛІЗ ДОПЛАТ І НАДБАВОК ПРАЦІВНИКАМ

Актуальність теми дослідження. *В сучасних умовах розвитку економічних відносин в Україні актуальними залишаються питання належного матеріального стимулювання та підвищення трудової мотивації працівників шляхом виплати їм доплат і надбавок.*

Постановка проблеми. *Порушення законодавства щодо невиплати доплат і надбавок працівникам або їх виплати несвоєчасно чи не в повному обсязі є однією з головних причин більшості трудових спорів та конфліктних ситуацій. Недостатня мотивація працівників негативним чином впливає на темпи зростання виробництва, призводить до зниження продуктивності праці й ефективності використання персоналу.*

Аналіз останніх досліджень і публікацій. *Дослідженням проблеми застосування доплат і надбавок у різний час займалися Д. Д. Гордієнко, І. В. Жиглей, Г. Т. Завіновська, А. В. Калина, А. М. Колот, М. В. Корягін, П. О. Куцик, О. В. Лишиленко, М. Б. Махсма, Г. А. Семенов та інші.*

Виділення недосліджених частин загальної проблеми. *Незважаючи на значну кількість теоретичних і практичних розробок науковців, питання підвищення ролі доплат і надбавок як матеріального стимулу до поліпшення результативності та продуктивності праці залишається актуальним і потребує подальших наукових досліджень.*

Постановка завдання. *Визначити економіко-правовий зміст доплат і надбавок на основі дослідження та узагальнення нормативних актів, що регулюють питання оплати праці в Україні.*

Виклад основного матеріалу. *Невід'ємною складовою змінної частини заробітної плати є доплати і надбавки, які виплачуються за трудові успіхи та винахідливість і за особливі умови праці. За цільовим призначенням їх варто розглядати в якості компенсаційних та стимулюючих виплат.*

Висновки відповідно до статті. *Доплати і надбавки є суттєвим інструментом матеріального стимулювання працівників до якомога якісної, результативної та продуктивної праці. Наразі назріла нагальна потреба в законодавчому закріпленні термінів «доплата» і «надбавка» задля правильного їх розуміння та застосування на практиці.*

Ключові слова: *оплата праці; заробітна плата; грошове забезпечення; посадовий оклад; надбавка; доплата.*

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Urgency of the research. In actual conditions of developing the economic relations in Ukraine, arrangement of effective remuneration system for employees is one of critical issues, including the proper material incentives, increased labor motivation, and monetary compensation of additional labor costs (under current legislation on terms and size of these payments). Now, important forms of labor motivation at enterprises, institutions, and organizations include premiums and increments, as integral element of additional wages. Setting the premiums and increments is appraisal of employee's achievements, encouraging the most active, initiative, and skilled staff. Presence of such payments initiates the employee's sense of maximum responsibility for performance of duties, while contributing to increased labor productivity and improved quality of products (services).

Target setting. Violation of laws in the field of remuneration, including the inadequate payment of premiums and increments, is main cause of the most labor disputes/conflict situations. They include untimely (incomplete) payments, absence of premiums to minimum wage, employer's annulment of premiums for work in harmful and hard conditions, at night, etc. Such and other violations are massive – in private businesses and in state organizations. As a result, insufficient motivation of staff negatively affects the growth rate of production, leads to decreased labor productivity and low performance of staff. Employees have a rhetorical question: why work better, if wages are the same? So, it appears that ensuring of production efficiency is only possible by solving a problem of material incentives for each party in production process. Decent remuneration of staff, with full payment of premiums/increments, guarantees stability and prosperity of enterprise.

Actual scientific researches and issues analysis. At different times, problem of applying the premiums and increments was studied by such well-known economists and lawyers as L. O. Andrushchenko, D. P. Bohynya, V. M. Bozhko, A. V. Valetska, D. D. Hordiyenko, I. V. Zhyhley, G. T. Zavinovska, A. V. Kalyna, G. A. Kaplina, S. S. Karinskyi, O. S. Korovchenko, A. M. Kolot, M. V. Koryahin, Ya. V. Krasko, P. O. Kutsyk, O. V. Lyshylenko, R. Z. Livshyts, M. B. Makhsma, G. A. Semenov, et al.

Uninvestigated parts of general matters defining. Despite the significant scope of theoretical and practical developments made by scientists, issue of enhancing the role of premiums/increments, as material incentive for improved performance and productivity, remains open and requires further scientific research.

The research objective. Purpose of the article is to determine the economic and legal content of premiums and increments, on the basis of research, and generalize the normative acts regulating the remuneration issues in Ukraine.

The statement of basic materials. Relations between staff and employer are always characterized by such criterion as remuneration of labor. This is one of fundamental principles in social-labor relations meaning that any labor shall have fair remuneration ensuring the sufficient standard of living, i.e., adequate meals, clothing, housing, etc. This principle is consistent with concept of "wages" in Part 1, Clause 1, Law of Ukraine "On Labor Remuneration" [1]. The concept is understood by legislators as reward, usually calculated in monetary terms and paid by employer to staff for performed work (under labor contract) [1].

Structurally, the wages are divided in 3 parts: 1) basic salary; 2) additional salary; 3) other incentives and compensation payments. 2-part classification is also well-known: 1) constant part of salary (basic tariffs and rates), which serves as guaranteed and stable amount of remuneration for work; 2) variable part of salary, mostly used to improve the labor motivation of staff. Premiums and increments, paid for labor success, ingenuity, and special terms of work, form an integral component in variable part of wages. They are characterized by stable payment and usually assumed for particular employee.

According to Part 1, Clause 15, Law of Ukraine "On Labor Remuneration" [1], terms of implementation and size of premiums/increments are set by enterprise in collective agreement, following the norms and guarantees assumed by laws, general, sectoral (inter-sectoral), and territorial contracts. In case if collective agreement is not concluded at the enterprise, employer has to agree the issues with elective body of primary trade-union organization representing the interests of the most employees; in the absence thereof – with another authorized representative body [1]. Specific size of premiums/increments is defined regarding the above requirements. According to some Russian experts, it is reasonable to set the premiums/increments for a certain period, as changes may occur: a) in attitude of staff to work; b) in terms of work; c) in financial sources for labor remuneration [2, p. 253].

It must be noted that, as of today, Labor Code of Ukraine [3] and laws of Ukraine "On Labor Remuneration" [1], "On Collective Contracts and Agreements" [4] have no definition of concepts "premium" and "increment". Besides, legislators do not differentiate the above categories and usually use them in unity, i.e., see no difference between them. Completely different opinion is expressed by scientists, who believe that each of the above terms has certain semantic load and special purpose.

Thus, N. Ovsyuk notes that premiums are intended to compensate the additional labor costs caused by objective difference in terms and complexity of labor. In turn, increments stimulate fair attitude to work, professional development, labor intensity, discharge of labor duties in certain conditions, and initiative in fulfillment of tasks and assignments [5, p. 270]. According to V. I. Prokopenko, increment is individual reward to staff for high skills, and purpose of premium is to compensate the staff in case of deviation from normal working conditions [6, p. 357]. N. L. Shevchenko states that premium shall be understood as monetary payment to staff for additional job duties, increasing the labor intensity, night/overtime work, and other cases established by law. Increment is monetary payment to staff for complex and intense work, job experience (years of service), special nature of work, level of skills, and other cases established by law [7, p. 187]. N. B. Bolotina states that purpose of premium is to stimulate the improved business skills and qualification of staff, long-term discharge of labor duties in certain area of work; increment is generally used to compensate the increased labor intensity and stress [8, p. 408].

Given the above opinions of scientists, premiums/increments shall be reviewed by target use as compensatory and incentive payments. This point of view is also supported by I. I. Demko, according to whom, compensation payments must ensure compensation of potential losses (working capacity, productive use of work hours, full use of professional and qualification potential) for staff, due to circumstances beyond control. And incentive payments are intended to form the incentive motives to work, as well as to higher labor productivity [9, p. 492]. M. B. Makhsma also notes that compensatory payments (for terms of work, night work, etc.) are independently determined by enterprise, but not lower than size established by law; incentive payments (premiums/increments for high qualification, professional skills, work by minimum staff, awards, rewards, etc.) are provided by enterprise within its financial capabilities and also determined independently [10, p. 101].

As seen, compensatory premiums/increments, in contrast to incentive ones, are imperative (supported by state guarantees) and aim to reimburse the efforts for work under special conditions. In turn, incentive premiums and increments are, in most cases, established by employer. They are paid to encourage the staff and contribute to more efficient use of labor potential, while causing a wish to improve professional qualities. For example, Decree of Cabinet of Ministers of Ukraine "Remuneration of staff at state bodies" [11], No. 15 of January 18, 2017 assumes that heads of public service at state body have the right to establish additional incentive payments for public servants – within the savings of wage fund [11]. This decree clarifies that additional incentive payments to public servants include the increments:

1. For labor intensity. Provided to public servants regarding such criteria: 1) quality and complexity of prepared documents; 2) urgency of tasks, processing and preparing the documents; 3) initiative in work.

2. For especially important work. Provided to public servants regarding such criteria: 1) implementation of tasks and functions related to priorities of state policy, participation in drafting the normative legal acts, expertise of such acts; 2) performance of work requiring special organizational-executive skills and responsibility of staff, which results in increased management efficiency [11]. Tab. 1 shows limit size of monthly increment for particularly important work – to specialists on reformation issues (Tab. 1).

Getting back to compensatory premiums and increments, let's note that, in turn, they are also divided in two groups: 1) premiums without restrictions by sphere of work – usually, obligatory for enterprises of any ownership (work on weekends, holidays, and overtimes; work of under-aged staff, regarding their reduced work day; work of staff below assigned wage grade); 2) premiums in certain field of work. Some of them are established to compensate the additional work (not directly related to main functions of staff); others – for unfavorable terms of work [10, p. 101-102].

Table 1

Limit size of monthly increment for particularly important work – to specialists on reformation issues

Position	Size, UAH
State Secretary of Cabinet of Ministers of Ukraine, state secretary of ministry, head of state body	40,000-55,000
First Deputy of State Secretary of Cabinet of Ministers of Ukraine, first deputy head of state body	36,200-50,000
Deputy of State Secretary of Cabinet of Ministers of Ukraine, deputy head of state body	36,500-50,000
General director of directorate, director of general department, General Director of Government Office for Coordination of European and Euro-Atlantic Integration	37,570-50,000
Head of expert group in directorate, general department, Government Office for Coordination of European and Euro-Atlantic Integration	33,000-45,000
State expert of directorate, general department, Government Office for Coordination of European and Euro-Atlantic Integration	28,300-40,000

Source: [11; 12]

Item 2.2.1, Instruction No. 5 of January 13, 2004 [13], as normative act applied to legal entities and separate subdivisions, regardless of ownership and organizational-legal management, assumes a list of basic premiums/increments to tariff rates (wages, position salaries). First of all, these are premiums and increments for: combining of professions (positions); extended service area or increased scope of work; discharge of duties for temporarily absent staff; work in hard/harmful and extra hard/harmful conditions; labor intensity; night work; foremanship; high professional skill; category of drivers; labor achievements (to public servants as well); critical work within certain period; knowledge and use of foreign language in work; clearance to state secrets; diplomatic rank, special rank of official, rank of public servant, qualification category of judge; academic degree; normative time of stay in mine (shaft to work place and back, for staff constantly involved in underground work); work in radioactively contaminated territory; other premiums/increments assumed by current legislation, including the premium to minimum wage [13].

Regarding this list, the following shall be noted: *first*, it does not cover all premiums and increments, just main ones, as other spheres of work may have other additional monetary rewards – depending on nature of work performed by staff; *second*, size of such premiums/increments is not indicated. Their size and terms of provision are contained in other regulatory acts. For example, in Decree of Cabinet of Ministers of Ukraine “Remuneration of staff on the basis of unified tariff system and remuneration ratios of staff at institutions, facilities, and organizations in specific sectors of budget sphere”, No. 1298 of August 30, 2002 [14], General Agreement regulating the basic principles and norms of implementing the socio-economic policy and labor relations in Ukraine dated August 23, 2016 [15], sectoral (inter-sectoral) and territorial agreements, collective agreements of enterprises, institutions, organizations, and in special laws establishing some features of labor regulation for certain categories of staff; *third*, as we see, legislators do not differentiate premiums and increments, but place them in one list. Instead, the above Decree of Cabinet of Ministers of Ukraine, No. 1298 of August 30, 2002, and General Agreement of August 23, 2016 place increments and premiums for staff to individual groups; *fourth*, attention shall be paid to the fact that legislators include premium to minimum wage in general list of premiums and increments traditionally understood as payments over basic rate (salary) of staff. Such premium also refers to remuneration fund within the additional wage fund; it is calculated and paid at the end of month, along with wage for second half of the month. Premium to minimum wage is subject to Unified Social Contribution, personal income tax, and military fee. Premium to minimum wage is considered during calculation of average wage. Features of calculating and paying the premium to minimum wage depend on work schedule, terms of labor contract, compliance with labor standards, etc. [16, p. 97]; *fifth*, we consider provisions of Instruction No. 5, January 13, 2004, outdated (on premium for qualification category of judge). Today, qualification categories of judges are not assigned any more. According to Part 2, Clause 52, Law of Ukraine “On Judiciary and Status of Judges”, judges in Ukraine have uniform status, despite the court position in judiciary system or administrative position of judge in court [17]. Quite logically, Clause 135 “Judicial remuneration” of this Law also does not assume such premium. Situation with premium to diplomats, for diplomatic rank, is the same. Indeed, prior to entry of new Law of Ukraine "On Public Service" [18] (No. 889-VIII, December 10, 2015) into force, Clause 35, Law of Ukraine "On Diplomatic Service" [19] assumed such premiums. However, current conditions of remuneration to diplomats, including premiums/increments, are set according to Law of Ukraine "On Public Service", i.e., on general basis (with payment of premium exactly for rank of public servant).

We believe that Tab. 2 shall provide the size of basic premiums and increments regarding the relation between Decree of Cabinet of Ministers of Ukraine, No. 1298 of August 30, 2002 [14], which assumes the size of premiums and increments to staff of institutions, facilities, organizations in certain sectors of *budget sphere*, and General Agreement of August 23, 2016, which assumes the list and size of premiums/increments to tariff rates, wages, and position salaries of staff at enterprises, institutions, organizations of inter-sectoral nature (*except for budget sphere*) [15; 20] (Tab. 2):

Table 2

Size of basic premiums and increments for staff

Premiums and increments	Size of premiums and increments	
	under Decree of Cabinet of Ministers of Ukraine, No. 1298 of August 30, 2002	under General Agreement of August 23, 2016
1	2	3
PREMIUMS:		
• For discharge of duties of temporarily absent staff	up to 50% of position salary (tariff rate)	up to 100% of tariff rate (wage, position salary) of absent staff
• For combined professions (positions)	up to 50% of position salary (tariff rate)	premium per employee is not limited by maximum size and set within the savings of wage fund – at tariff rate/salary of combined position
• For extended service area or increased scope of performed work	up to 50% of position salary (tariff rate)	size of premium per employee is not limited and determined by presence of savings on tariff rates and salaries, which could be paid subject to compliance with normative number of staff
• For night work	up to 40% of hourly rate (position salary), if higher amount is not determined by law – for every hour of work 10 p.m. to 6 a.m.	35% of hourly rate (position salary) – for every hour of work at that time
• For work in the evening – 6 p.m. to 10 p.m. (multi-shift work)	—	20% of hourly rate (wage, position salary) for every hour of work at that time
• For academic title	- professor – within 33% of position salary (wage rate); - associate professor, senior researcher – within 25% of position salary (wage rate)	—
• For academic degree	- doctor of science – within 25% of position salary (wage rate); - candidate of science, doctor of philosophy – within 15% of position salary (wage rate)	—
• For work in hard / harmful and extra hard / harmful conditions	—	- for work in hard/harmful conditions – 4, 8, 12% of tariff rate (salary); - for work in extra hard/harmful conditions – 16, 20, 24% of tariff rate (salary)
• For use of disinfectants and to staff involved in cleaning of toilets	10% of position (monthly) salary	—

Continuation of Table 2

1	2	3
• For irregular work day – to drivers of vehicles	25% of tariff rate for hours worked	—
• For intensity of work	—	up to 12% of tariff rate (salary)
• During mastering the new norms of labor costs	—	- increase of unit rates up to 20%; - increase of tariff rates up to 10%
• For foremanship (to foreman still involved in main work)	—	the premium is differentiated depending on number of staff in the team (up to 10, over 10, over 25). Exact size of the premium is determined by sectoral (regional) agreements, depending on rate of grade assigned to foreman. If number of staff in the crew is over 5, crew foreman is provided with premium – up to 50% of relevant foreman's premium
INCREMENTS:		
• For achievements in work	up to 50% of position salary (wage rate, tariff rate)	up to 50% of position salary
• For critical work (during its execution)	up to 50% of position salary (wage rate, tariff rate)	up to 50% of position salary
• For work complexity, intensity	up to 50% of position salary (wage rate, tariff rate)	—
• For honorary titles of Ukraine, USSR, USSR republics	"people's" – 40%, "honored" – 20% of position salary (wage rate)	—
• For sport titles	"honored coach", "honored master of sport" – 20%, "master of sport of international class" – 15%, "master of sport" – 10% of position salary (wage rate)	—
• For knowledge and use of foreign language in work	one European language – 10%, one Eastern, Finno-Ugric or African language – 15%, two or more languages – 25% of position salary (wage rate)	—
• For category of driver	driver of 2nd category – 10%, driver of 1st category – 25% of set tariff rate for hours worked	driver of 2nd category – 10%, driver of 1st category – 25% of set tariff rate for hours worked
• For category of electric locomotive, diesel locomotive, electric train, diesel train driver	—	up to 25% of set tariff rate for hours worked by driver
• For high professional skills	—	differentiated premiums to tariff rates (salaries) of staff: III grade – 12%, IV grade – 16%, V grade – 20%, VI grade and above – 24% of tariff rate (salary)

Source: [14; 15; 20; 21]

In addition to these premiums/increments and their size, special statutory legal acts, regulating certain spheres of labor activity, may set other (specific for this profession only) premiums/increments – with indication of relevant size. For example, we can cite some of them.

Premium *for prestige of pedagogical work*. It is set up to 30% of position salary (wage rate), but no less than 5% – to pedagogical staff of preschool, extracurricular, general secondary, vocational, and higher education institutions, as well as the other institutions and facilities, regardless of their subordination [22]. Pedagogical and scientific-pedagogical staff is also provided with monthly increments *for years of service*: over 3 years – 10%; over 10 years – 20%; over 20 years – 30% of position salary [23; 24].

Public servants are also entitled to such increment: in other circumstances and of different size. Thus, increment for years of public service is set as 3% of public servant's salary – for each calendar year of public service, but no more than 50% of position salary. Also, they are provided with increments to position salaries *for rank of public servant:* 9th rank – 200 UAH, 8th rank – 300 UAH, 7th rank – 400 UAH, 6th rank – 500 UAH, 5th rank – 600 UAH, 4th rank – 700 UAH, 3rd rank – 800 UAH, 2nd rank – 900 UAH, 1st rank – 1,000 UAH [11].

Staff of legislative, executive, and judicial bodies, prosecutor's office, and other state bodies, Verkhovna Rada of Autonomous Republic of Crimea, Council of Ministers of Autonomous Republic of Crimea, local self-government bodies, enterprises, institutions, organizations, which, under their professional activity, constantly work with data forming *a state secret*; besides, increment to position salaries (tariff rates) is set depending on sensitivity of information: data and carriers classified as "critical" – 20%, "top secret" – 15%, "secret" – 10%.

Significant amount of increments/premiums is paid to National Police officers by Decree of Cabinet of Ministers of Ukraine "On Funding of National Police Officers" [25], No. 988 of November 11, 2015. In particular, these are the increments for *years of service in police, functions of state expert on secrets, service under regime restrictions, continuous experience of cryptographic work, "honorary" title*; premium *for night service, academic degree, academic title* [25]. It is also noted that the above Decree of Cabinet of Ministers of Ukraine, No. 988 of November 11, 2015 [25], in addition to terms "increment" and "premium", also operates such concept as "raising the position salary". For example, cadets are provided with 25% <u>increase</u> of position salary for excellent study or getting the relevant number of points under ECTS (by results of exam session). Besides, persons directly involved in ensuring the public order and security of citizens (special police service) may be provided with <u>increase</u>, up to 100% of position salary [25]. This, in turn, enables a statement that legislators do not identify a term "raising the position salary" with "increment" or "premium".

Meanwhile, some normative acts use definition "special increments". For example, they are set and paid to officers, privates, sergeants, and petty officers serving under contract – in command/military units of Special Forces, Armed Forces of Ukraine (in percentage of living wage for able-bodied persons).

Conclusions. Based on the above, let's note that premiums/increments form an essential tool for material stimulation of staff to the most high-quality, productive, and effective work.

Scientific circles still have no unity of views in understanding the terms "premium" and "increment". This is mostly due to absence of legal definition for such categories in Labor Code of Ukraine and Law of Ukraine "On Labor Remuneration". Thus, there is an urgent need to formalize this terminology – for proper understanding and application in practice. Concepts "premium" and "increment" are closely related, but cannot be identified, as they have different purpose.

Ratio between size of basic premiums and increments (paid to staff of institutions, facilities, and organizations in certain sectors of budget sphere and to staff of inter-branch enterprises, institutions, and organizations – except for budget sphere) formed an important part of the study. Premiums and increments set in certain spheres of labor activity were investigated as well.

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APPROACHES TO BALANCE LABOR MARKET BY ELIMINATING EXCLUSION FACTORS

Urgency of the research. *In society, there is a continuous process of rejection of certain types of relationships, which require the formation of new tools for balancing elements of market relations.*

Target setting. *A decisive factor in the development process is the progress on the principles of social partnership and the leveling off the processes of rejection of market mechanisms. There is a need to identify approaches to reconciling the interests of market participants with provision from forecast balancing.*

Actual scientific researches and issues analysis. *Publications by such authors as I. Gorlenko, L. Rudenko, V. Zolotarev demonstrate the necessity of eliminating the imbalance in the labor market; However, Kuzminov Y. I. emphasizes the priority task of identifying the degree of influence of the factors of exclusion on the carrier of labor relations.*

Uninvestigated parts of general matters defining. *At present, not all modern methods can be used to ensure a balance of the labor market, taking into account the effect of exclusion factors.*

The research objective. *Development of approaches to balancing the labor market in the face of manifestations of exclusion factors, which allows monitoring the manifestation of the factors of exclusion and, through their elimination, equalize the disparities between demand and supply labor force.*

The statement of basic materials. *The article empirically identifies the important factors in relation to current demand, current supply and satisfied current demand. The crisis in the labor market is explained by the devaluation of labor values, that labor does not fulfill its functions, which is expressed in the aggravation of manifestations of the phenomenon of exclusion. A system of criteria has been proposed, the use of which allows consistently identify the dominant external influences on the functioning of the aggregate labor market.*

Conclusions. *In the course of research it has been proved that elimination of the negative influence of rejection factors can balance the labor market, bring it to the newest stage of development, and ensure the sustainable socio-economic development of local communities.*

Keywords: *balance; labor market; exclusion factors; demand; supply; algorithm.*

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ПІДХОДИ ЗАБЕЗПЕЧЕННЯ ЗБАЛАНСОВАНОСТІ РИНКУ ПРАЦІ ЗАВДЯКИ УСУНЕННЮ ФАКТОРІВ ВІДТОРГНЕННЯ

Актуальність теми дослідження. *У суспільстві постійно відбувається процес відторгнення певних видів взаємовідносин, які вимагають формування нових інструментів забезпечення балансування елементів ринкових відносин.*

Постановка проблеми. *Визначальним фактором процесу розвитку є прогрес на принципах соціального партнерства та нівелювання процесів відторгнення ринкових механізмів. Виникає необхідність визначити підходи щодо узгодження інтересів учасників ринку праці із забезпеченням їх прогнозного балансування.*

Аналіз останніх досліджень і публікацій. *Публікації таких авторів як І. Горленко, Л. Руденко, В. Золотарьова доводять необхідність усунення дисбалансу на рику праці; проте Кузьмінов Я. І. першочерговим завданням підкреслює виявлення ступеня впливу факторів відторгнення на носія трудових відносин.*

Виділення недосліджених частин загальної проблеми. *Наразі не всі сучасні методики можуть бути використані щодо забезпечення збалансованості ринку праці з урахуванням дії факторів відторгнення.*

Постановка завдання. *Розробка підходів до забезпечення збалансованості ринку праці за умов проявів факторів відторгнення, що дає змогу здійснювати моніторинг прояву факторів відторгнення та завдяки їх усуненню вирівнювати диспропорцій між попитом та пропозицією робочої сили.*

Виклад основного матеріалу. *У статті емпірично встановлено важливі чинники стосовно поточного попиту, поточної пропозиції та задоволеного поточного попиту. Кризовий стан ринку праці пояснюється девальвацією трудових цінностей, труд не виконує покладених на нього функцій, що виражається в загостренні проявів феномену відторгнення. Запропоновано систему критеріїв, використання яких дозволяє послідовно визначити домінанти зовнішнього впливу на функціонування сукупного ринку праці.*

Висновки. *В ході дослідження доведено, що усунення негативного впливу факторів відторгнення здатне збалансувати ринок праці, вивести його на новітній етап розвитку та забезпечити сталий соціально-економічний розвиток місцевих громад.*

Ключові слова: *збалансованість; ринок праці; фактори відторгнення; попит; пропозиція; алгоритм.*

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ЕКОНОМІКА ПРАЦІ

Urgency of the research. Ensuring the balance of the labor market requires the implementation of a number of interrelated conditions and factors within the socio-economic system between production of goods and services, the education system, the budget system and the labor market. Thus, the sphere of production creates external conditions and restrictions, is characterized by certain factors of action, and sets requirements to the workforce. The balance-of-payments mechanism under such conditions consists of some components: the development of a long-term development strategy and specific target indicators; identification of priority sectors for the time being and for the future; performance of educational standards taking into account the requirements of employers. All elements of this mechanism are under constant influence of exclusion factors. Exclusion as a phenomenon of socio-economic reality is manifested in the limited number of sections of the population in obtaining quality medical, educational services, insufficient income, poor living conditions, and especially - low status in the labor market.

The system of education, taking into account the requirements of the national economy, provides conditions (adapted) for the training / retraining of personnel of a certain level of qualification of the planned quantity. The appropriate mechanism involves: the modular principle of building a system of education, the possibility of adaptation / adaptation depending on current / future demand in the labor market; modern educational standards that do not prevent the introduction of progressive elements.

The budget system provides funding for training for priority sectors of economic development; implements the principle of "outcome budget". The appropriate implementation mechanism involves: normative-personal financing in accordance with the control digits of reception; employment of graduates in the specialty (will mean their demand and effectiveness of budget expenditures).

Target setting. Exclusion as a phenomenon of socio-economic reality is manifested in the limited number of sections of the population in obtaining quality medical, educational services, insufficient income, low quality of quality, poor living conditions, and especially – low status in the labor market.

The labor market adopts trained personnel in accordance with the current demand for skilled personnel, participates in the "feedback", improves professional standards. Monitoring the satisfaction of current and future demand for the labor market for skilled personnel is advisable to carry out on the basis of the use of such indicators: employment by profession; level of satisfaction of employees and employers; the compliance of educational programs with the requirements of employers and the conditions of an innovative economy, etc. Since the labor market balance is multidimensional in nature, ensuring the market-spatial balance of the local labor market should be based on a scenario analysis using the synthesis of theoretical and empirical approaches.

The peculiarity of the current stage of development of socio-economic relations is ensuring the implementation of the newest requirements for the labor force (qualification, mobility, innovation, moral and ethical qualities, ability to assume responsibility), aimed at achieving a certain level of adequacy of the development of material and technical base, the technological process, the organization of production and the general tendencies of the transformation of society under the pressure of globalization. The crisis in the labor market is explained by the devaluation of labor values, that is, that labor does not fulfill its functions, which is expressed in the aggravation of manifestations of the phenomenon of exclusion. According to certain indicators, the exclusion of labor has already reached critical significance, as evidenced by close attention to corporate social responsibility and relevant government programs [1; 2].

That is why balanced and progressive development of the labor market is impossible without developing scenario-empirical approaches to eliminating the negative influence of the factors of exclusion or redirection of their actions into a vector of self-sufficient development with the use of available resources. The presence of empirically predictive approaches will enable the use of practical experience in modeling situations in the labor market, which in a certain situation can serve as a lever to regulate its direction of development and create a catalytic impulse with the phased launch of the loop of the inverse positive communication [3, p. 270-275].

Actual scientific researches and issues analysis. The theoretical and methodological basis of the study was the fundamental works of domestic and foreign scientists and economists on labor market and employment issues. In the works of scientists: I. Gorlenko, L. Rudenko [4], V. Zolotarev [5] -

the starting positions of the conceptual foundations of the balance of the labor market are presented. The problematic situation of the labor market imbalance in the occupational-occupational structure of the employed was researched in the writings of D. Vishnevsky, who studied the experience and prospects of the vocational qualification structure of the workforce in the countries with a developed market economy; Y. Marshavina [6], which defines ways of regulating the professional qualification imbalance in the labor market.

Modern researchers of the exclusion's problem of labor focus on mastering the content of the category of "exclusion", the causes and consequences of exclusion, forms of exclusion, dehumanization of the labor process. Kuzminov Ya. I., Nabyullina E. S. [7], Radaev V. V. [8] indicate an aggravation of the need to eliminate the manifestations of exclusion and dehumanization of the labor process in the conditions of production informatization and postindustrial society.

The synthesis and analysis of the published works of domestic and foreign scientists in order to ensure the balance of the labor market through the elimination of the factors of exclusion indicate that approaches to the interpretation, in particular scenario-empirical, this problem are not sufficiently defined in both theoretical and methodical aspects, respectively, require further study. In connection with this, there is a need for a detailed analysis of such approaches to ensure the balance of the labor market by eliminating the manifestations of exclusion factors.

Uninvestigated parts of general matters defining. The results of theoretical and practical study of the characteristics of the labor market have shown the existence of a certain list of various scientific and methodological approaches, the application of which allows the level of labor market balance. However, not all developed techniques can be used to ensure a balanced labor market taking into account the effects of exclusion factors. This is due, firstly, to the concept of the balance of the labor market, and, secondly, with the peculiarities of the manifestation of the factors of socio-economic exclusion in the labor market. Not neglecting the value of existing scientific and methodological approaches, taking into account the specifics and problems of the study, the development of scenario-empirical approaches to ensure the balance of the labor market by eliminating the factors of exclusion is becoming relevant.

The research objective of the paper is to develop approaches to ensure the market-spatial balance of the labor market in the face of manifestations of exclusion factors based on the allocation of causal relationships between the main components of aggregate and current demand in the labor market, which makes it possible to monitor the manifestation of the factors of exclusion and through their eliminating disparities between demand and supply of labor.

The statement of basic materials. Ensuring the market-spatial balance of the labor market is complex, so achieving a scientific goal is possible through a set of methods that are used to solve the problems of theoretical-methodological, methodological, diagnostic-analytical, correctional and forming units (Fig. 1).

Theoretical and methodological block was implemented in the process of theoretical substantiation of the stage of development of the labor market through the methods of theoretical knowledge: the method of scientific generalization for the systematization of theories of economic thought regarding the development of the labor market, analysis and synthesis - in the disclosure of the content load of the concepts of "labor market", "local market labor", "balance of the labor market", methods of induction and deduction to distinguish the factors of exclusion in the multi-level system of functioning of the labor market of the action of factors of exclusion.

The task of the methodological block was solved using the methods of theoretical knowledge - abstract-logical, analysis and synthesis, system analysis - for the study of the natural-evolutionary process of formation and development of the local labor market, the development of conceptual foundations of its balance.

Theoretical methods are closely intertwined with the empirical methods of scientific knowledge, which are used in the next stages of the study, presented in the diagnostic-analytical unit and partly in the correction. In the diagnostic-analytical unit, the nature of the functioning of the local labor market is determined by means of economic analysis methods, and the influence of different-directional exogenous and endogenous factors of its functioning is established [9, p. 20], the phenomenon of formation of professional qualification clusters in the local labor market by means of cluster analysis.

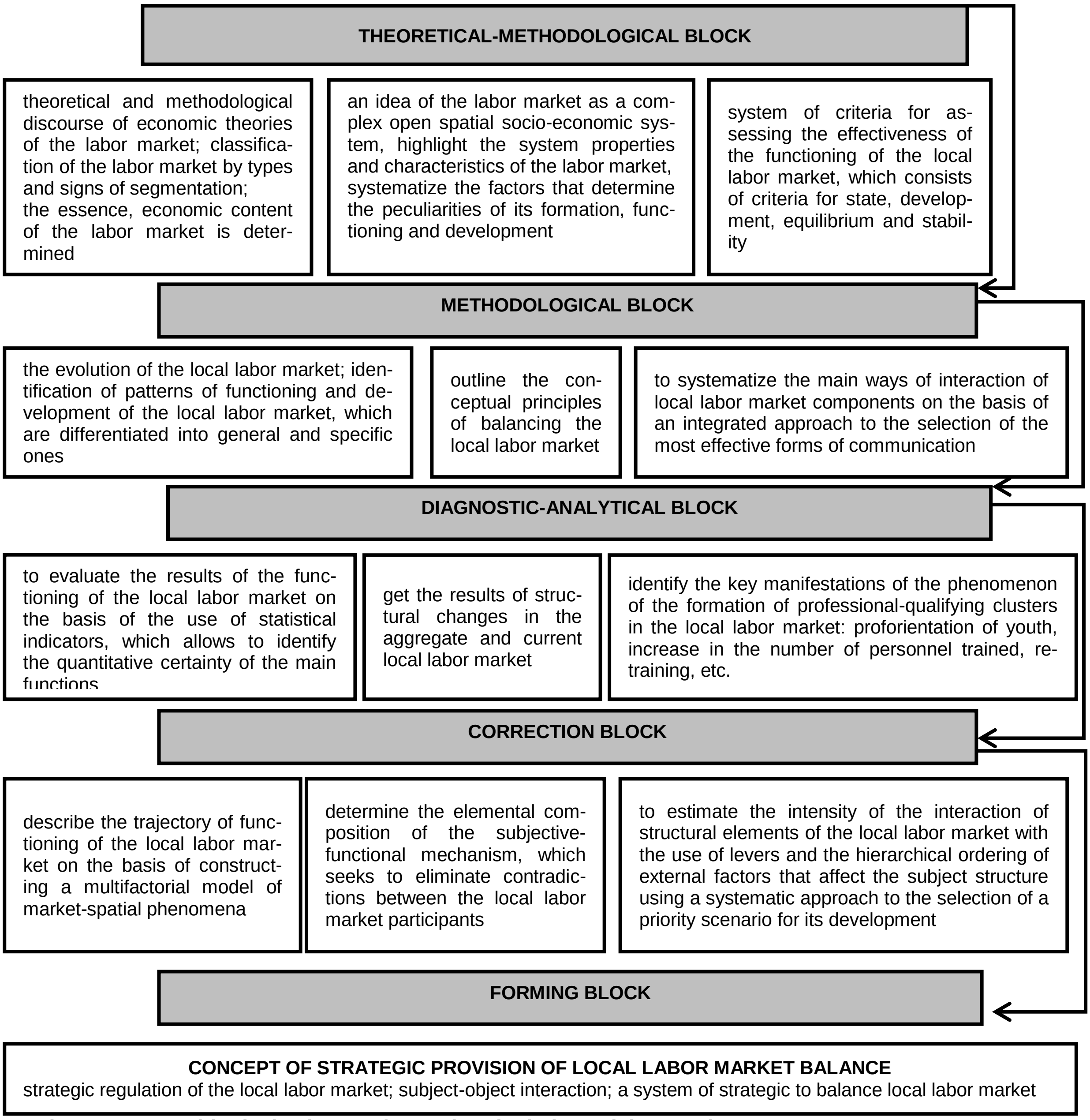

Fig. 1. Structural-logical scheme of ensuring the balance labor market

External factors are determined by the peculiarities of the functioning the city and cannot be changed by the labor market itself. Factors of external influence on the offer of the local labor market were formed under the influence of historical, geographical, social, environmental aspects, and factors of external influence on the demand for labor – by the influence of economic and geographical aspects, natural conditions and resources.

The exclusion of labor, as a socio-economic category, is a systemic feature of a higher level that allows a detailed justification of the current state of the labor market. Under current conditions, exclusion in the labor market is reflected in the following characteristics: no alternative, depleted motivation to work, dependency of employees on the subjective opinion of the employer, various forms of limited access to increase their own competence. The vast majority of such characteristics are the result of the influence of external socio-economic factors.

Proceeding from this, the authors proposed a system of criteria that allow consistently identify the dominant external influences on the functioning of the aggregate labor market and identify the most powerful of them. According to the authors, in order to identify such dominants, it is expedient to use a number of indicators that are divided into directions (factors) of economic, social, environmental and institutional domination, and the quantitative indicators are divided into absolute and relative. Also, quality indicators are introduced into the database, which are evaluated expertly.

Correctional and forming blocks use the synthesis of theoretical and empirical methods that are implemented to determine the scenario development of the local labor market (method of analysis of hierarchies); to establish the educational and professional advantages of city school graduates (questionnaires); for differentiation of functions of local self-government bodies (functional approach). In the correctional block, there is a need to determine how and under the influence of which factors will develop and achieve the balance of the local labor market in the future, that is, the transition to the stage of forecasting and modeling the balance of the local labor market.

The combination of the above theoretical and empirical approaches leads to the logical regularity that the category of exclusion is interpreted through the essence of the concept, and the manifestation of its external characteristics is reflected in aspects of behavior, namely, opportunistic behavior. A "panoramic" approach is needed to determine the essence of labor exclusion in the labor market. Such author's statement makes it possible to interpret the exclusion of labor as an external property of labor, which is manifested in the absence of an employee means of production to meet their own needs, the lack of interest in ensuring efficient and productive work, and the lack of the right to dispose of the result of their work. That is, the rejected work is a work that performs a labor function without the function of its owner (according to the classical political economy definition); work, which is characterized by impoverished motivation and forced character.

The process of transformation currently taking place in the socio-economic environment has a direct impact on the system of formation and use of labor, the imperfection of which manifests itself because an employee can’t fully realize his own potential as a specialist and as a person. The inadequacy of the system of labor utilization to modern informative production is manifested in the fact that, on the one hand, significant pronunciation of the necessary skills and qualifications of workers is put forward, and on the other hand, the status of the hired person leads to the fact that he is not able to master all the opportunities provided to him scientifically -technical development.

Consequently, ensuring the balance of the labor market is possible under the conditions of elimination of the mentioned negative influences, formation of the system of adequacy of labor use according to the proposed algorithm (Fig. 2). It should be noted that the processes of exclusion can appear at any stage or step of the algorithm, but the tools for its elimination power can only be applied at the intersection of the second and third steps of the algorithm.

Completion of statistical indicators is based on the use of statistical sources. Retrospective analysis of the local labor market data implies an assessment of the dynamics of aggregate and current local labor market indicators [10]. The results of the retrospective analysis are the basis for applying forecasting methods and determining the type of econometric model. The next step is to analyze the effect of the exogenous factors desired on the components of the aggregate and current local labor market, which reveals the most important factors and the dominant (variables) functioning of the labor market. With the help of mathematical methods, the optimal predictive function for the aggregate and current demand, the supply of satisfactory demand, on the basis of which is the average annual forecast of the functioning of the local labor market and its balance, is selected.

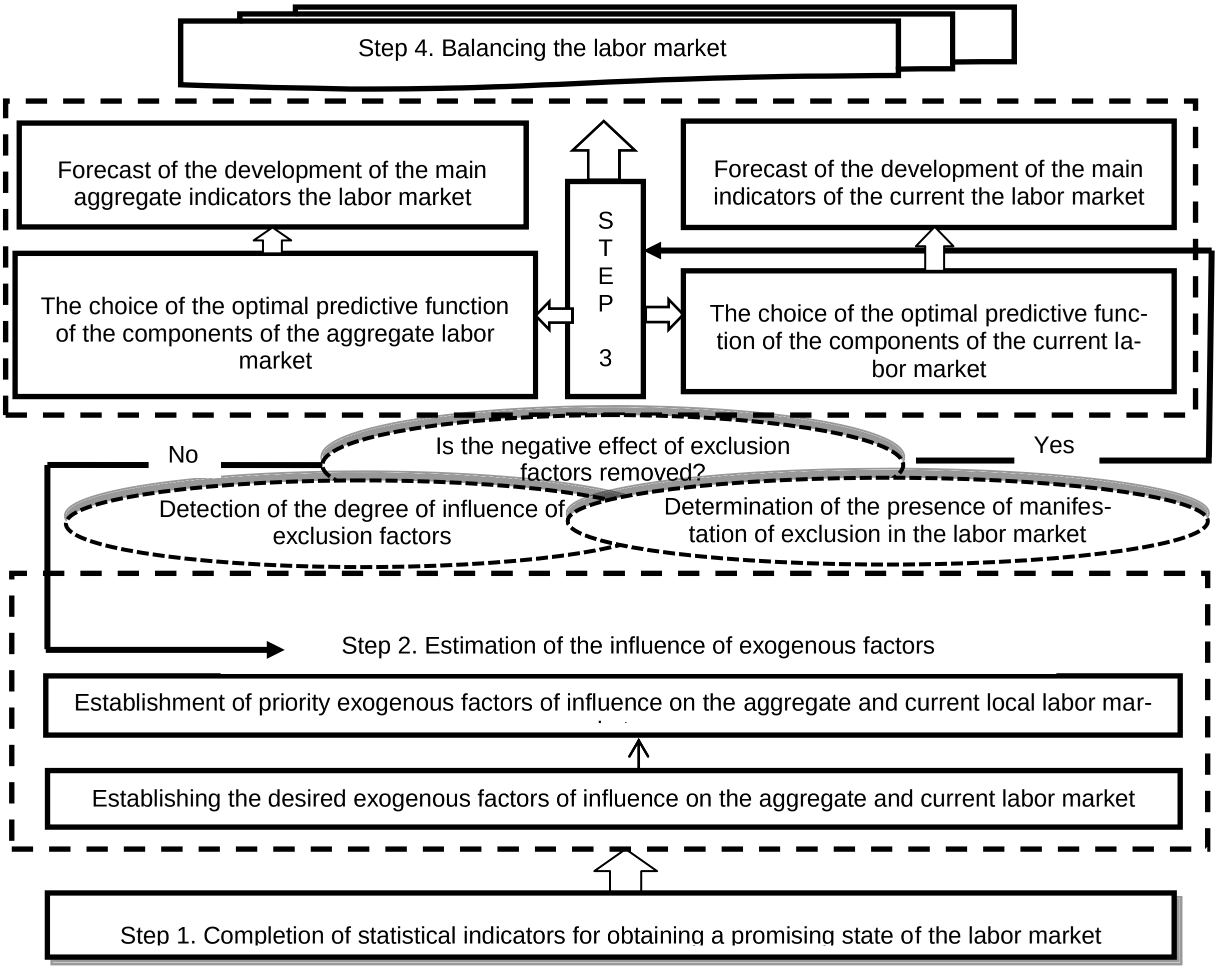

Fig. 2. An algorithm for balancing the labor market through eliminating the factors of exclusion

In Tab. 1 presents the results of the medium-term forecast of the aggregate local labor market.

Medium-term projections of the aggregate local labor market (Tab. 1) show aggregate demand growth in 2020 compared to 2017. for 1984 people, or by 1,11%; the aggregate supply for 1476 people, or by 0,81%; Satisfied demand - by 8619 people, or by 5,02%. In the long run, there is a positive dynamics, which is reflected in a decrease in the level of aggregate imbalances by 0.4% in 2020.

The growth of aggregate demand reflects the promising socio-economic development of the city, the neutralization of the factors of exclusion of labor, which in turn will be an impetus for improving the structure of jobs and increasing their number. Such changes will take place at the expense of sustainable development of enterprises, growth of labor productivity and average monthly wages, increase of housing stock, overcoming of technological lag and creation of decent working conditions at the expense of investment investments of business, which in the future will positively affect the financial results of the city. The growth of the aggregate supply will be influenced by the improvement of the demographic situation in the city, in particular the reduction of the number of the deceased, the reduction of foreign direct investment and changing business conditions, with the prevailing factor being the increase in the number of people employed in the city's economy, the promising growth of labor productivity and the introduction of labor-saving technologies, which confirms the results of the medium-term forecast of satisfactory demand. Forecasting of the aggregate labor market can be represented as a generalized algorithmized model through the system of influence of factors of exclusion on aggregate demand and supply.

Table 1

Forecast of the labor market Kremenchug and its further imbalances*

Indexes	Equation type	Years			
		2017	**2018**	**2019**	**2020**
The aggregate labor market					
Aggregate demand, people	$YP_c = 183386 - \frac{1273647}{x_4} - \frac{27454779}{x_{11}} - \frac{46083823}{x_{12}} + \frac{735718490}{x_{17}} + \frac{72732949}{x_{18}}$	178919	179606	180195	180903
Aggregate offer people	$YP_{res} = 284945{,}9901 - 3{,}9 \cdot x_4 - 364{,}82 \cdot x_5 - 20{,}80 \cdot x_{14} - 0{,}20 \cdot x_{17}$	182525	183174	183392	184001
Satisfied aggregate demand, people	$YP_z = 300120{,}4 + 5{,}465 \cdot x_4 - 52{,}97 \cdot x_{14}$	171550	175790	178130	180169
The level of aggregate imbalances, %	$(YP_{res} - YP_c) / YP_z$	2,1	2,0	1,8	1,7
Current labor market					
Current demand of the local labor market, people (Y_{Cd})	$Y_{Cd} = -875{,}4 + 0{,}099 \cdot \alpha_1 + 3{,}066 \cdot \alpha_{13}$	512	579	646	713
Current offer of the local labor market, people (Y_{Co})	$Y_{Co} = 3205{,}149 + 0{,}498 \cdot \beta_8 + 1{,}551 \cdot \beta_{11}$.	5839	5605	5370	5136
Satisfied with the current demand of the local labor market, people (Y_{Sco})	$Y_{Sco} = 110565 - \frac{39389370}{\gamma_1} + \frac{812115}{\gamma_{10}} - \frac{4667064}{\gamma_{19}}$	77546	77747	77946	78142
The level of current imbalance,%	$(Y_{Co} - Y_{Cd}) / Y_{Sco}$	6,87	6,46	6,06	5,66

* YP_c - aggregate demand, persons; YP_{res} - aggregate supply, persons; YP_z - satisfactory aggregate demand, persons; x_4 - financial result of ordinary activity before taxation, UAH million; x_5 - volume of direct foreign investments at a growing sum, mln. USA; x_{11} - the subsistence minimum per person per month, UAH; x_{12} - total expenses on average per month per household, UAH; x_{14} - the number of deceased persons; x_{17} - commissioning of housing, m_2; x_{18} - average monthly salary, UAH; α_1, γ_1 - gross value added, million UAH; α_{13} - labor productivity, ths. UAH; β_8 - freed by their own will, persons; β_{11} - dismissed for economic reasons, persons; γ_{10} - volume of realized innovative production, UAH million; γ_{19} - volume of harmful emissions, thousand tons

The level of current imbalance in the labor market (Tab. 1) is decreasing in the perspective period, but very slowly, as a result of the imbalances accumulated in the retrospective period of the current labor market, namely, the low number of vacancies corresponds to the large number of unemployed. It is precisely the factors of exclusion that ensures the emergence of such a situation, namely the disequilibrium of the relationship between labor and capital. In other words, the maximum possible wage is directly independent of the maximum efficiency of capital, which can receive own means of production.

In order to confirm the correctness of the constructed econometric models and the obtained predictive values of the components of the aggregate and current local labor market, the verification of predictive values by the inverse method was performed, that is, verification of the model's fidelity based on the values of the relevant factors in the retrospective period. The calculation error does not exceed 5%, which confirms the adequacy of models and forecasts.

Thus, summing up the foregoing, it can be noted that during the theoretical generalization and empirical testing of economic and mathematical models that establish the relationship of the labor market with the indicators of other types of markets and factors of exclusion, it was revealed a stronger influence of economic and socio-ecological indicators on components of the aggregate and current labor market. Such a phenomenon can be caused by the heterogeneous nature of market fluctuations, which increases the relevance of the forecast, and can be tracked by adapting and approbating scientific methods (methods of mathematical economics, methods of regulation) while ensuring the spatial and market equilibrium of the local labor market. It is proved that elimination of the negative influence of exclusion factors can balance the labor market, bring it to the newest stage of development and ensure the further sustainable socio-economic development of local communities. The combination of the used scientific methods of forecasting the possibility of balancing the labor market and the proposed empirical instruments for eliminating the factors of exclusion allows us to create new scenario-empirical approaches to ensure a balanced labor market.

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ЕКОНОМІКА ПРАЦІ

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Druzhynina, V. V. Approaches to balance labor market by eliminating exclusion factors / V. V. Druzhynina, G. S. Likhonosova, L. P. Davidyuk // Науковий вісник Полісся. – 2018. – № 2 (14). Ч. 1. – С. 242-250.

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РЕФЕРАТИ

УДК 336.76:338.46

Шкарлет, С. М. Концептуальні положення розробки та впровадження механізму формування інституту довіри на ринку фінансових послуг / С. М. Шкарлет, М. В. Дубина, О. С. Жук // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 8-15.

Анотація. Визначено важливість розробки та впровадження механізму формування довіри на ринку фінансових послуг для подальшого розвитку такого ринку. Описуються основні елементи такого механізму, зв'язки між ними та визначається їх сутність і роль у процесі розбудови такого ринку.

У межах механізму ідентифіковано його мету, принципи, функції, блоки забезпечення, методи та інструменти. Зазначено, що механізм повинен діяти з метою отримання конкретних результатів, види яких визначено. Іл.: 1. Бібліогр.: 5 назв.

Ключові слова: довіра; інститут довіри; механізм; принцип; ринок фінансових послуг.

УДК 330.354(477)

Савченко, В. Ф. Теоретичні і практичні складові економічної безпеки в Україні / В. Ф. Савченко, В. О. Стойка, С. О. Стойка // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 16-21.

Анотація. У статті проведено аналіз з питань забезпечення економічної безпеки на сучасному етапі розвитку держави і суспільства. Охарактеризовано світовий досвід сьогодення, коли економіка все більше інтегрується у глобальні процеси. Досліджено внутрішні та зовнішні загрози економічній безпеці. Визначено основні завдання економічної безпеки в Україні. Табл.: 1. Іл.: 1. Бібліогр.: 8 назв.

Ключові слова: економічна безпека; національна економіка; глобалізація; макрорівень; загрози; менеджмент; суспільство; Європейський Союз.

УДК 330.341.018

Верхоглядова, Н. І. Атрибутивна модель розвитку систем синергетичного типу / Н. І. Верхоглядова, Д. Л. Левчинський, І. В. Кононова // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 22-27.

Анотація. У статті досліджено взаємозв'язки між категоріями розвитку, адаптивності соціально-економічної системи та регулювання розвитку. Побудовано атрибутивну модель синергетичного типу, особливістю якої є оптимальна широта охоплення соціально-економічних систем. В рамках побудованої моделі виділено атрибути часу та взаємодії з поділом останніх на атрибути простору руху та впливу. Іл.: 2. Бібліогр.: 8 назв.

Ключові слова: соціально-економічна система; розвиток; атрибут; рівень розвитку; характер розвитку; стійкість; мінливість; адаптивність, регулювання.

УДК 338.439:631.147](447)

Коломицева, О. В. Формування та розвиток ринку органічної продукції в Україні / О. В. Коломицева, Л. С. Васильченко, С. М. Пепчук // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 28-33.

Анотація. У статті розкрито фактори, які дають пріоритет для розвитку органічного виробництва в Україні та причини, що його стримують. Наведено пропозиції щодо ефективного розвитку виробництва органічної продукції в Україні в умовах ринкових трансформацій економіки.

ABSTRACTS

UDC 336.76:338.46

Shkarlet, S. M. Conceptual provisions on the development and implementation of the mechanism of the institute of trust formation in the financial services market / S. M. Shkarlet, M. V. Dubyna, O. S. Zhuk // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. – P. 8-15.

Abstract. The importance of developing and implementing a mechanism of trust building in the financial services market for the further development of such a market is determined. The main elements of such a mechanism, the relationship between them are described and their essence and role in the process of building such a market are determined.

Within the mechanism, its purpose, principles, functions, security units, methods and tools are identified. It is indicated that the mechanism should act in order to obtain concrete results, the types of which are defined. Figs.: 1. Refs: 5 titles.

Keywords: trust; institute of trust; mechanism; principle; financial services market.

UDC 330.354(477)

Savchenko, V. F. Theoretical and practical compositions of economic security in Ukraine / V. F. Savchenko, V. O. Stoika, S. O. Stoika // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. – P. 16-21.

Abstract. The article analyzes the issues of ensuring economic security at the present stage of state and society` development. Characterizes the world`s experience of the present, when the economy is increasingly integrated into global processes. The paper also investigates the internal and external threats to economic security and determines The main tasks of economic security in Ukraine. Tabl.: 1. Figs.: 1. Refs: 8 titles.

Keywords: economic security; National economy; globalization; macro level; threats; management; society; European Union.

UDC 330.341.018

Verkhoglyadova, N. I. Attributive model of synergetic type systems development / N. I. Verkhoglyadova, D. L. Levchyns'kyy, I. V. Kononova // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. – P. 22-27.

Abstract. The article investigates the interrelations between the categories of development, the adaptability of the social and economic system and the regulation of development. An attributive model of synergetic type has been constructed, the feature of which is the optimal breadth of coverage of social and economic systems. Within the framework of the constructed model, the attributes of time and interaction with the division of the latter on the attributes of the space, motion and influence have been highlighted. Figs.: 1. Refs: 8 titles.

Keywords: social and economic system; development; attribute; development level; character of development; stability; variability; adaptability, regulation.

UDC 338.439:631.147](447)

Kolomytseva, O. V. Formation and development of organic production of the Ukrainian market / O. V. Kolomytseva, L. S. Vasilchenko, S. M. Pepchuk // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. – P. 28-33.

Abstract. The article contains the factors that describe priority of organic production development in Ukraine and the reasons that restrain it. The suggestions on effective development of organic production in Ukraine under conditions of economic changes are presented. Tabl.: 4. Refs: 8 titles.

Табл.: 4.Бібліогр.: 8 назв.

Ключові слова: ринок органічної продукції; органічне виробництво; розвиток ринку.

Keywords: organic production market; organic production; market development.

УДК 336.14:353(1-43)

Рекова, Н. Ю. Геостратегічна матриця переорієнтації прямих іноземних інвестицій / Н. Ю. Рекова, І. Л. Долозіна, А. О. Пінчук // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 34-42.

Анотація Опрацьовано статистичні матеріали для оцінки бюджетних надходжень. Проаналізовано динаміку структурних змін доходів бюджетів регіонального рівня державного управління федеративних держав, а також подібність та відмінності розподілу доходів регіональних бюджетів у федеративних державах. Табл.: 6. Іл.: 1. Бібліогр.: 12 назв.

Ключові слова: бюджет; доходи; розподіл; регіональний рівень; федеративні країни; структурні зміни; порівняльний аналіз.

UDC 336.14:353(1-43)

Rekova, N. Yu. Budgetary revenue breakdown at regional level of public administration in the federal countries / N. Yu. Rekova, I. L. Dolozina, A. O. Pinchuk // Scientific bulletin Polissia. - 2018. - № 2 (14), P. 1. - P. 34-42.

Abstract. Statistical materials for assessment of budgetary revenue breakdown is processed. Dynamics of revenue's structural changes for budgets of regional level of public governance at federal states as well as similarity and distinctions of revenue's breakdowns of regional budgets in federal countries are analyzed.Tabl.: 6. Figs.: 1. Refs: 12 titles.

Keywords: budget; revenue; breakdown; regional level; federal countries; structural change; comparative analysis.

УДК 330.3:008

Чубукова, О. Ю. Актуальні концепції розбудови інформаційного суспільства в умовах nbic-конвергенції / О. Ю. Чубукова, Н. В. Раллє, Ю. В. Зимбалевська // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 42-46.

Анотація. У статті визначено основні складові NBIC-конвергенції та результати їх взаємозалежного розвитку, які формують новітню технологічну основу інформаційного суспільства. Обґрунтовано необхідність розвитку когнітивних технологій в соціально-економічній сфері в їх синергії з інформаційними технологіями. Запропоновано гіпотетичні напрями розвитку суспільства в постінформаційну епоху. Іл.: 1. Бібліогр.: 10 назв.

Ключові слова: NBIC-конвергенція; інформаційне суспільство; когнітивні технології; інформаційні технології.

UDC 330.3:008

Chubukova, O. Yu. Topical conceptions of the development of information society under conditions of NBIC-convergence / O. Yu. Chubukova, N. V. Rallie, Yu. V. Zimbalevska // Scientific bulletin Polissia. - 2018. - № 2 (14), P. 1. - P. 42-46.

Abstract. The article defines the main components of NBIC-convergence and the results of their interdependent development, which form the latest technological basis of the information society. It is substantiated the necessity of development of cognitive technologies in the socio-economic sphere in their synergy with information technologies. It is offered hypothetical directions of development of society in the post-informational era. Figs.: 1. Refs: 10 titles.

Keywords: international experience; economic security; rural areas; risk; state policy.

УДК 339.97

Білан, Ю. В. Глобальні домінанти розвитку торговельної політики китаю: можливості та загрози для співпраці з Україною Частина 2. Модернізація торговельної політики Китаю / Ю. В. Білан, О. М. Яценко, В. С. Ніценко // Науковий вісник Полісся. – 2018. - № 2 (14). ч. 1. – С. 49-57.

Анотація. Торговельна політика країни реалізується за допомогою тарифних і нетарифних інструментів. Митний тариф Китаю складається зі ставок РНС, договірних тарифних ставок, спеціального пільгового тарифу, загальних тарифних ставок, ставок тарифної квоти та тимчасових мит. Серед нетарифних інструментів торговельної політики Китаю важливе місце займають ліцензування імпорту та експорту. Слід також зазначити, що Ки-тай вводить загальні обмеження на експорт, а також залежно від країни призначення. Іл.: 1. Табл.: 2. Бібліогр.: 17 назв.

Ключові слова: Китай; торгова політика; тарифні і нетарифні інструменти.

UDC 339.97

Bilan, Yu. V. Global dominents for the development of China's trade policy: opportunities and threats for cooperation with Ukraine (Part 2. Modernization of China's trade policy) / Yu. V. Bilan, O. M. Yatsenko, V. S. Nitsenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 49-57.

Abstract. Trade policy of the country is characterized by the use of tariff and non-tariff instruments. The customs duty of China includes the MFN rates, contractual tariff rates, special fares, general tariff rates, tariff quota rates, and temporary duties. Import and export licensing holds an important place among the non-tariff instruments of China's trade policy. It should be noted that China also introduces general restrictions on export and those which are country-specific. Figs.: 1. Tabl.: 2. Refs: 17 titles.

Keywords: China; trade policy; tariff and non-tariff instruments.

УДК 338:601:608:339.9

Вдовічен, А. А. Синергетична взаємодія принципів біоекономіки у структурі глобальної господарської системи / А. А. Вдовічен, О. Г. Вдовічена // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 58-63.

Анотація. У статті досліджено вплив рівня та структури Біоекономіка розглядається як економічний механізм реалізації біотехнологій. Цінність такого підходу полягає у врахування триєдиного поєднання принципів сталого розвитку: економічного, соціального, біологічного, в основі яких лежать чотири фундаментальні основи:

UDC 338:601:608:339.9

Vdovichen, A. A. Synergetic interaction of the bioeconomics principles in the global economic system structure / A. A. Vdovichen, O. G. Vdovichena // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 58-63.

Abstract. Bioeconomy is considered as an economic mechanism for the biotechnology implementation. The value of this approach is to take into account the triple combination of the sustainable development principles: economic, social, biological, based on four fundamental foundations: gene technology and industry engineering; resource-restoration production; research-scientific integration; practical bioclast orientaгенна технологія та галузева інженерія; ресурсно-відновлювальне виробництво; дослідницько-наукова інтеграція; практична біокластерна орієнтація. Іл.: 1. Табл.: 1. Бібліогр.: 10 назв.

Ключові слова: біоекономіка; біотехнології; біоекономічні процеси; біоресурси; синергетична взаємодія.

УДК 656.6:338.47

Мінакова, С. М. Загрози та переваги інституційного підґрунтя що обумовлюють асиметрію ринку транспортних послуг України / С. М. Мінакова, О. А. Липинська, В. М. Мінаков // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 64-69.

Анотація. Зміст інституційного підґрунтя якій створює наявність асиметрії транспортних ринків які впливають, головним чином, на створення штучних перешкод на шляху вільного прасування товарів внутрішніми водними шляхами України. Аналізуя ситуацію що склалася на внутрішньому ринку транспортних послуг в України та два основних законопроекту про внутрішній водний транспорт що представлені на розг-ляд до Верховній раді України, які й будуть визначати та регулювати подальшу ситуацію. Визначаються недоліки та неврахування де яких моментів у цих законопроектах. Це дозволить створити одинакові умови здійснення перевезень річковим транспортом для національних та іноземних перевізників. Що знизити рівень асиметрії на внутрішньому транспортному ринку України. Іл.: 2. Бібліогр.: 8 назв.

Ключові слова: асиметрія транспортних ринків; асиметрія у транспортній сфері; інституційне підґрунтя; зовнішні та внутрішні чинники асиметрії.

УДК 339.9 : 338.439(100)

Стежко, Н. В. Розробка модельних сценаріїв прогнозу виробництва та споживання продовольства у контексті вирішення глобальної продовольчої проблеми / Н. В. Стежко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 70-78.

Анотація. Досліджено перспективи вирішення глобальної продовольчої проблеми шляхом використання трендових, адаптивних та інтегрованих авторегресійних моделей (моделей Бокса-Дженкінса та ОЛІМП). Розрахунки виконано за окремими частинами світу: Африка, Америка, Азія, Європа, Океанія. Табл.: 10. Бібліогр.: 10 назв.

Ключові слова: глобальна продовольча проблема; продовольче забезпечення; продовольча безпека; нормативи харчування; дефіцит продовольства.

УДК 330.341.1

Хаустова, В. Є. Енергетична безпека національного господарства на основі системного підходу / В. Є. Хаустова, Т. І. Салашенко, О. В. Лелюк // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 79-92.

Анотація. Досліджено особливості функціонування енергосистем та запропоновано системну концепцію енергетичної безпеки. В якості складових авторами пропонується розглядати підсистеми енергозабезпечення, енергоперетворення та енергоспоживання, оцінка якості функціонування яких на методичному рівні проводиться за системними індикаторами енергозалежності, енергоефективності та енергозбереження. Стале існування енергосистеми забезпечує така складова енергетичної безпеки як енергодостатність. В роботі проведено апробацію запропонованого методичного підходу до оцінки енергетичної безпеки в Україні. Табл.: 5. Іл.: 5. Бібліогр.: 26 назв.

Ключові слова: енергетична безпека; енергетична

tion. Figs.: 1. Tabl.: 1. Refs: 10 titles.

Keywords: bioeconomics; biotechnology; bioeconomic processes; bioresources; synergistic interaction.

UDC 656.6:338.47

Minakova S. M. Threats and advantages of institutional basis that determined the asymmetry of the market of Ukraine's transport service / S. M. Minakova, O. A. Lypynska, V. M. Minakov // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 64-69.

Abstract. Considers the content of the institutional basis work that creates the asymmetry of transport markets, which mainly affect the creation of artificial barriers to the free-of-charge ironing of goods in inland waterways of Ukraine. So, analyzed the situation on the domestic transport services market in Ukraine in comparison with other countries of the world. As well as analyzing two major draft laws on inland water transport presented to the Verkhovna Rada of Ukraine, which will determine and regulate the further situation. Deficiencies and failure to take into account some of the pointsare identified. This will allow the creation of the same conditions for the transport of river transport for national and foreign carriers. What to reduce the level of asymmetry in the domestic transport market of Ukraine. Figs.: 2. Refs: 8 titles.

Keywords: asymmetry of transport markets; asymmetry in the transport sector; institutional basis; external and internal factors of asymmetry.

UDC 339.9 : 338.439(100)

Stezhko, N. V. Development of model scenarios for food production and consumption forecasts in terms of solving global food problem / N. V. Stezhko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 70-78.

Abstract. Prospects for tackling the global food issue by using trend, adaptive and integrated autoregressive models (Box-Jenkins and OLYMPUS models) have been analysed. The calculations herein have been provided by different parts of the world: Africa, America, Asia, Europe, and Oceania. Tabl.: 10. Refs: 10 titles.

Keywords: global food problem; food support; food security; food standards; food deficit.

UDC 330.341.1

Khaustova, V. Ye. Energy security of the national economy based on a systems approach / V. Ye. Khaustova, T. I. Salashenko, O. V. Lelyuk // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 79-92.

Abstract. The article studies the features of functioning of energy systems and proposes a system concept of energy security. The authors suggest considering the subsystems of energy supply, energy conversion and energy consumption as its components, the assessment of energy security of which at the methodological level is performed using the corresponding system indicators: energy dependency, energy efficiency and energy conservation. The stable existence of an energy system is ensured by such a component of energy security as energy self-sufficiency. In the work, the approbation of the proposed methodological approach to the assessment of energy security in Ukraine has been carried out. Tabl.: 5. Figs.: 2. Refs: 26 titles.

система; енергозалежність; енергоефективність; енергозбереження.

УДК 338.439.6: 34

Гафурова, О. В. Економіко-правові аспекти забезпечення продовольчої безпеки / О. В. Гафурова, В. М. Єрмоленко, Л. М. Степасюк // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 93-97.

Анотація. У статті розглянуто стан правового забезпечення продовольчої безпеки в Україні. Проаналізовано відносини у сфері забезпечення продовольчої незалежності, економічної доступності та якості й безпечності продуктів харчування. Бібліогр.: 9 назв.

Ключові слова: продовольча безпека; продовольча незалежність; індикатори продовольчої безпеки; якість і безпечність продуктів харчування

УДК 352.07

Грищенко, І. М. Розвиток спроможності територіальних громад / І. М. Грищенко, М. М. Кулаєць // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 98-104.

Анотація. В статті проведено аналіз діяльності органів місцевого самоврядування на рівні об'єднаних територіальних громад шляхом дослідження оціночних критеріїв визначення їхньої організаційної спроможності, параметрів втручання у їх діяльність та готовності до реформування. З'ясовано, що основними проблемами, які заважають розвитку спроможності є: низький рівень організаційної спроможності органів місцевого самоврядування, відсутність організаційної стратегії й організаційних процесів, низький рівень зацікавленості та обізнаності процесами реформування місцевого самоврядування, слабке співвідношення між організаційною структурою та стратегічними цілями і завданнями тощо. Табл.: 1. Іл.: 1. Бібліогр.: 4 назв.

Ключові слова: спроможність; територіальна громада; органи місцевого самоврядування.

УДК 338.124.4, 519.865.7

Стрельченко, І. І. Нейромоделювання фінансово-економічної безпеки регіону / І. І. Стрельченко, В. В. Комірна, І. О. Аракелова // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 105-116.

Анотація. В роботі розроблено алгоритм використання апарату теорії нейронних мереж для оцінки економічної системи регіонів. Отримана економіко-математична модель дозволяє виконувати кластеризацію територіальних одиниць за обраними індикаторами економічної безпеки. Тестування розробленого алгоритму проведено на основі даних про стан економічного розвитку регіонів України. Табл.: 1. Іл.: 5. Бібліогр.: 9 назв.

Ключові слова: економічна безпека; регіон; нейронна мережа; кластеризація; індикативний підхід

УДК 339.9

Тарасович, Л. В. Розвиток сільської економіки: конвергенція до Європейської сучасності / Л. В. Тарасович, М. І. Яремова, А. М. Слободяник // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 117-123.

Анотація. Модель окреслює основні пріоритети та цілі розвитку через призму конвергенції до європейської сучасності, зокрема забезпечення належних умов життєдіяльності населення в сільській місцевості, поліпшення якості людського капіталу, підвищення ефективності аграрного виробництва та активізації участі в ньому сільського социуму, збереження довкілля. Табл.: 1. Іл.: 2. Бібліогр.: 10 назв.

Keywords: energy security; energy system; energy dependency; energy efficiency; energy conservation.

UDC 338.439.6: 34

Hafurova, O. V. Economic end legal aspects of ensuring food security / O. V. Hafurova, V. M. Yermolenko, L. M. Stepasyuk // Scientific bulletin Polissia. - 2018. - Vol. 2(14), P. 1. - P. 93-97.

Abstract. The article examines the legal status of food security in Ukraine. The relations in the sphere of ensuring food self-sufficiency, economic availability, food quality and safety have been analyzed. Refs: 9 titles.

Keywords: Food security; food independence; indicators of food security; quality and safety of food.

UDC 352.07

Gryshchenko, I. M. Development of the capacity of territorial communities / I. M. Gryshchenko, M. M. Kulaiets // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 98-104.

Abstract. The article analyzes the activity of local self-government bodies at the level of the united territorial communities by studying the evaluation criteria for determining their organizational capacity, parameters of intervention in their activity and readiness for reform. It was revealed that main problems hindering the development of the capacity are: the low organizational capacity of local governments, lack of organizational strategy and organizational processes, low level of interest and awareness of local government reform processes, the weak correlation between organizational structure and strategic goals and tasks, etc. Табл.: 1. Figs.: 1. Refs: 4 titles.

Keywords: capacity; territorial community; local self-government bodies.

UDC 338.124.4, 519.865.7

Strelchenko, I. I. Neuromodelling of financial and economic security of the region / I. I. Strelchenko, V. V. Komirna, I. O. Arakelova // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 105-116.

Abstract. In this work an algorithm for using the apparatus of the theory of neural networks for the estimation of the economic system of the regions is developed. The obtained economic-mathematical model allows to perform clusterization of territorial units according to selected indicators of economic security. Testing of the developed algorithm is conducted on the basis of data on the state of economic development of the regions of Ukraine. Tabl.: 1. Figs.: 6. Refs: 9 titles.

Keywords: economic security; region; neural network; clusterization; indicative approach.

UDC 339.9

Tarasovych, L. V. The development of the rural economy: convergence to European modernity / L. V. Tarasovych, M. I. Yaremova, A. M. Slobodyanyk // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 117-123.

Abstract. The model defines the main priorities and objectives of development via convergence with European modernity, in particular by providing proper conditions of life of the population in rural areas, improving the quality of human capital, the efficiency of agricultural production, enhancement of participation of rural society in it, and preservation of environment. Tabl.: 1. Figs.: 2. Refs: 10 titles.

Keywords: development of rural economy; rural development; convergence with European modernity; integration.

Ключові слова: розвиток сільської економіки; сільський розвиток; конвергенція до європейської сучасності; інтеграція.

УДК 378:005:339.137.2(477)

Цимбаленко, Н. В. Управління конкурентоспроможністю закладів вищої освіти України / Н. В. Цимбаленко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 124-128.

Анотація. У статті досліджено сутність та запропоновано визначення категорії конкурентоспроможності ЗВО. Сформовано послідовність етапів управління КС ЗВО, що передбачає вибір конкурентної стратегії ЗВО за результатами оцінювання чинників зовнішнього середовища та факторів КС ЗВО. Іл.: 1. Бібліогр.: 8 назв.

Ключові слова: конкурентоспроможність ЗВО; фактори конкурентоспроможності; конкурентні переваги; управління конкурентоспроможністю.

УДК 336.02:338.2

Макогон, В. Д. Фінансово-бюджетна політика як складова соціально-економічних перетворень / В. Д. Макогон, І. П. Адаменко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 129-135.

Анотація. Фінансово-бюджетна політика є вагомим інструментом державного регулювання соціально-економічних процесів. На даний час основним завданням фінансово-бюджетної політики є стабілізація публічних фінансів. Базовою умовою зазначеного є утримання макроекономічної стабільності, прискорення економічного зростання, впровадження ефективного врядування, посилення децентралізаційних процесів та реформування системи державних фінансів. Табл.: 2. Бібліогр.: 10 назв.

Ключові слова: фінансово-бюджетна політика; публічні фінанси; система державних фінансів; макроекономічна стабільність; економічне зростання.

УДК 330.34.011:330.567.2

Антонюк, К. І. Структурний аналіз категоріального апарату споживання в системі сталого розвитку / К. І. Антонюк, Д. А. Антонюк, Л. М. Бухаріна // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 136-140.

Анотація. Проведено структурно-системний аналіз термінів «стале», «соціально-відповідальне», «зелене», «розумне», «раціональне», «етичне» споживання. Встановлено, що у своїй більшості вони спрямовані на зменшення негативного впливу на здоров'я, довкілля, суспільство, формування свідомої поведінки (мотивації) споживача. Запропоновано використовувати поняття «безпечне споживання». Табл.: 1. Іл.: 1. Бібліогр.: 7 назв.

Ключові слова: стале; розумне; відповідальне; раціональне споживання; безпека споживання; структурний аналіз.

УДК 330.13+338.24:624

Ємельянов, О. Ю. Методичні засади оцінювання економічного потенціалу ресурсозберігаючого розвитку промислових підприємств / О. Ю. Ємельянов, О. Б. Курило, Т. О. Петрушка // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 141-149.

Анотація. У статті представлено типологію видів ресурсозберігаючого розвитку підприємств. Запропоновано критерії такого розвитку. Проаналізовано вплив заходів з ресурсозбереження на рівень економічного розвитку підприємств. Запропоновано метод оцінювання економічного потенціалу ресурсозберігаючого розвитку промислових підприємств з використанням системи індикаторів такого

UDC 378:005:339.137.2(477)

Tsymbalenko, N. V. Competitiveness management of Ukrainian higher educational institutions / N. V. Tsymbalenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 124-128.

Abstract. The article studied the essence and proposes the definition of the category of HEIs competitiveness. A sequence of management stages of HEIs CL is formed, which involves the choice of a competitive strategy for HEIs on the environment factors evaluation results and factors of the HEIs CL. Figs.: 1. Refs: 8 titles.

Keywords: HEIs competitiveness; competitiveness factors; competitive advantages; competitiveness management.

UDC 336.02:338.2

Makogon, V. D. Fiscal policy as an element of socio-economic transformations / V. D. Makogon, I. P. Adamenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 129-135.

Abstract. Fiscal policy is a powerful instrument of socio-economic processes state regulation. Currently, the main objective of fiscal policy is to stabilize public finances. The basic condition is to support the macroeconomic stability, to speed up the economic growth, to implement the effective governance, to strengthen decentralization processes and to reform the public finances system. Tabl.: 2. Refs: 10 titles.

Keywords: fiscal policy; public finances; public finance system; macroeconomic stability; economic growth.

UDC 330.34.011:330.567.2

Antoniuk, K. I. Structural analysis of category apparatus of consumption in the sustainable development system / K. I. Antoniuk, D. A. Antoniuk, L. M. Bukharina // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 136-140.

Abstract. The article deals with the structural-system analysis of the terms "sustainable", "socially responsible", "green", "intelligent", "rational", "ethical" consumption. It has been established that in the majority of them, they are aimed at reducing the negative impact on health, the environment, society, formation of conscious behavior (motivation) of the consumer. The concept of "safe consumption" is suggested. Tabl.: 1. Figs.: 1. Refs: 7 titles.

Keywords: sustainable; intelligent; responsible; rational consumption; consumer safety; structural analysis.

UDC 330.13+338.24:624

Yemelianov, O. Yu. Metodologikal principles of evaluating economic potential of industrial enterprise sustainable development / O. Yu. Yemelyanov, O. B. Kurylo, T. O. Petrushka // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 141-149.

Abstract. The article presents the typology of enterprise sustainable development kinds. The criteria for the development are suggested. The effect of sustainability measures on the level of economic development of enterprises is analyzed. The method of economic potential evaluation of sustainable development of industrial enterprises using the system of evaluation indicators is presented. Tabl.: 2. Figs.: 1. Refs: 9

оцінювання. Табл.: 2. Іл.: 1. Бібліогр.: 9 назв.

Ключові слова: оцінювання; потенціал; ресурсозбереження; розвиток; підприємство.

УДК 005: 332.871

Мороз, Н. В. Принципи професійного управління багатоквартирними будинками / Н. В. Мороз, Л. П. Бондаренко, О. М. Чубка // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 150-156.

Анотація. Здійснене аналізування підходів окремих авторів до визначення принципів управління загалом та у сфері житлово-комунального господарства зокрема дозволило запропонувати удосконалену систематизацію їх видів стосовно управління об'єктами житлового фонду. Ці принципи повинні враховуватися власником (співвласниками) житла при переході до форми управління багатоквартирним будинком – професійного управління на основі договору ОСББ з управителем, адже саме знання й урахування принципів управління у практичній діяльності є найважливішою умовою його ефективності. Табл.: 1. Бібліогр.: 6 назв.

Ключові слова: житловий фонд; принципи управління; управитель; об'єднання співвласників багатоквартирного будинку; житлово-комунальні послуги.

УДК 330.35.01

Биба, В. В. Start-up: пошук шляхів інвестиційного забезпечення розвитку малого бізнесу / В. В. Биба, В. Б. Васюта, І. В. Міняйленко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 157-163.

Анотація. Проаналізовано методи оцінювання проектів запуску попередньо введенних інвестицій. Апробовано розрахунок інвестиційної вартості компанії та способу повернення венчурного капіталу через кінцеву вартість. Визначено оптимальний спосіб оцінки індексу вартості запуску стартапів на основі середнього індексу вартості стартапа та з урахуванням сегменту.

Для врахування витрат реалізації стартапу до-цільно використати теорію розв'язання винахідницьких задач «Lean production», яка дозволить побудувати ефективну систему управління сукупними витратами та подальший контроль за їх динамікою. Табл.: 1. Бібліогр.: 16 назв.

Ключові слова: стартап; малі підприємства; метод оцінки стартап проекту; фактори ефективності стартапа; методи оцінки вартості стартапа та витрат.

УДК 378:338.46

Казимір, В. А. Регіональні аспекти фінансування середньої освіти в Україні / В. А. Казимір, О. І. Гонта // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 164-171.

Анотація. Проаналізовано теоретико-методичні підходи та аналітичні матеріали, що стосуються реформування середньої освіти на сучасному етапі. Виокремлено економічні та політичні передумови забезпечення освітньої реформи в умовах децентралізації. Табл.: 2. Бібліогр.: 11 назв.

Ключові слова: економіка; бюджет освіти; реформа освіти; децентралізація; регіональні аспекти фінансування середньої освіти; освітня субвенція.

УДК 332.1:614.21

Карий, О. І. Санаторно-курортні і оздоровчі заклади в Україні: видова характеристика, регіональна специфіка та динаміка розвитку / О. І. Карий, Л. І. Гальків, Л. В. Галаз // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 172-178.

Анотація. У статті узагальнено підходи до виокрем-

titles.

Keywords: evaluation; potential; sustainability; development; enterprise.

UDC 005: 332.871

Moroz, N. V. Principles of professional management of multi-apartment buildings / N. V. Moroz, L. P. Bondarenko, O. M. Chubka // Scientific bulletin Polissia. - 2018. - Vol. 1 (13), P. 1. - P. 135-141.

Abstract. The analysis of the authors' approaches to the definition of general management principles and in the sphere of housing and communal services has made it possible to propose an improved systematization of their types in relation to the management of the objects of the housing stock. These principles should be taken into account by the housing owner (co-owners) in the transition to the form of multi-apartment building management that is professional management on the basis of the agreement of the housing cooperative with the manager, since it is the knowledge and taking into account the principles of management in practice are the most important conditions for its effectiveness. Tabl.: 1. Refs: 6 titles.

Keywords: housing stock; management principles; manager; housing cooperative; utilities.

UDC 330.35.01

Byba, V. V. Star-up: search of ways of investment support for development of small business / V. V. Byba, V. B. Vasiuta, I. V. Miniailenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 157-163.

Abstract. The methods of estimating the projects of the launch of pre-investment investments were analyzed. The calculation of the investment value of the company and the method of returning the venture capital through the final cost is tested. The optimal way of evaluating the Startup Start Cost Index is determined on the basis of the average Startup Cost and Segment Cost Index.

In order to take into account the costs of implementing the startup it is expedient to use the theory of solving inventive tasks "Lean production", which will allow to build an effective system of management of aggregate expenses and further control over their dynamics. Tabl.: 1. Refs: 16 titles.

Keywords: startup; small enterprises; startup method for assessing project efficiency; factors startup; methods of valuation and startup costs.

UDC 378:338.46

Kazymir, V. A. Regional aspects of secondary education financing in Ukraine / V. A. Kazymir, O. I. Gonta // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 164-171.

Abstract. Modern theoretical and methodological approaches and analytical materials concerning the reform of secondary education are analyzed. The economic and political preconditions of providing educational reform in conditions of decentralization are showed. Tabl.: 2. Refs: 11 titles.

Keywords: economy; education budget; education reform; decentralization; regional aspects of secondary education financing; educational subvention.

UDC 332.1:614.21

Karyy, O. I. Sanatorium and health resorts in Ukraine: view characteristic, regional specificity and dynamics of development / O. I. Karyy, L. I. Halkiv, L. V. Halaz // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 172-178.

Abstract. The article generalizes approaches to the selection of sanatorium and resort activity types. A system of

лення типів суб'єктів санаторно-курортної сфери, сформовано та апробовано систему показників для інтегрального оцінювання їх діяльності. Проаналізовано динаміку мережі санаторно-курортних і оздоровчих закладів за період 2001-2016 рр. Табл.: 3. Іл.: 1. Бібліогр.: 6 назв.

Ключові слова: санаторно-курортні і оздоровчі заклади; типологія; система показників; інтегральне оцінювання; тенденція

metrics has been formed and used for integrated assessment of their activity. The dynamics of sanatorium and health resorts establishments network is analyzed for the period 2001-2016. Tabl.: 3. Figs.: 1. Refs: 6 titles.

Keywords: sanatorium and health resorts; typology; system of indicators; integral evaluation; trend.

УДК 336.13

Міщенко, Д. А. Застосування кластерного аналізу для визначення рівня бюджетного потенціалу регіонів України / Д. А. Міщенко, Л. О. Міщенко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 179-185.

Анотація У статті обґрунтовано застосування кластерного аналізу для визначення рівня бюджетного потенціалу регіонів України, визначено кластери регіонів України за рівнем бюджетного потенціалу з застосуванням кластерного аналізу та розроблені напрями зміцнення бюджетного потенціалу регіонів. Табл.: 6. Бібліогр.: 6 назв.

Ключові слова: бюджет; бюджетний потенціал; оцінка; метод; кластер; регіон.

UDC 336.13

Mishchenko, D. A. Application of cluster analysis to determine the level of the budget potential of the Ukrainian regions / D. A. Mishchenko, L. O. Mishchenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 179-185.

Abstract. The article substantiates the application of cluster analysis for determining the level of budget potential of the Ukrainian regions, clusters of Ukrainian regions are determined by the level of budget potential using cluster analysis and directions for strengthening the budget potential of regions are developed. Tabl.: 6. Refs: 6titles.

Keywords: budget; budget potential; valuation; method; cluster; region.

УДК 338.1

Худолей, В. Ю. Регіональні диспропорціїмалого бізнесу в Україні та шляхи їх усунення / В. Ю. Худолей, Т. В. Пономаренко, Т. М. Іванова // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 186-195.

Анотація. В статті визначена роль та місце малого бізнесу в економічній системі держави; за допомогою запропонованої авторами методики розраховані інтегральні показники, які відображають рівень розвитку та ефективність функціонування малого бізнесу в різних регіонах України в розрізі видів економічної діяльності. Табл.: 4. Іл.: 1. Бібліогр.: 15 назв.

Ключові слова: малий бізнес; регіональні диспропорції; державна підтримка.

UDC 338.1

Khudolei, V. Yu. Regional disproportions of small business in Ukraine and approaches to their elimination / V. Yu. Khudolei, T. V. Ponomarenko, T. N. Ivanova // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 186-195.

Abstract. The article describes the role and place of small business in the state economic system; integral indices, which reflect level of development and efficiency of small business functioning in different regions of Ukraine depending on types of economic activity, are calculated using the methods offered by the authors. Tabl.: 4. Figs.: 1. Refs: 15 titles.

Keywords: small business; regional disproportions; state support.

УДК 330.101.5:338.24.01

Дятлова, Ю. В. Методика оцінки продовольчої складової економічної безпеки: регіональний аспект / Ю. В. Дятлова // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 196-202.

Анотація. У статті показано відмінності в переліку складових безпеки в економічній сфері. Удосконалено методику оцінки рівня продовольчої складової економічної безпеки. Визначено етапи її проведення. Запропоновано для оцінки застосовувати розширену номенклатуру групових і одиничних показників, обґрунтовано їх ієрархію. Рекомендовано для розрахунку комплексного показника використовувати диференційний та інтегральний методи. Запропоно-вано градації рівня комплексного показника. Апробаці-єю доведено функціональність методики оцінки рівня продовольчої складової економічної безпеки. Табл.: 1. Іл.: 1. Бібліогр.: 10 назв.

Ключові слова: безпека в економічній сфері; складові; методика оцінки рівня безпеки; номенклатура показників; градації рівня комплексного показника.

UDC 330.101.5:338.24.01

Diatlova, Yu. V. Assessment methodology of food component economic security: regional aspect / Yu. V. Diatlova // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 196-202.

Abstract. The differences in the list of security components in the economic sphere have been shown in the article. The methodology of assessment the level of food component economic security has been improved. The stages of its implementation have been determined. It is proposed to use an expanded nomenclature for group and individual indicators for assessment; their hierarchy is substantiated. It is recommended to use differential and integral methods to calculate the complex indicator. Gradations of its level have been proposed. The functionality of the assessment methodology of the food component economic security level has been proved via approbation. Tabl.: 1. Figs.: 1. Refs: 10 titles.

Keywords: security in economic sphere; components; security level assessment methodology; indicators nomenclature; gradations of complex indicator level.

УДК 331.101.262

Сіренко, К. Ю. Економічна достатність домогосподарств як передумова нагромадження людського капіталу / К. Ю. Сіренко, Г. М. Чепурда, І. В. Безуглий // Науковий вісник Полісся. - 2018. - № 2(14), ч. 1. - С. 203-209.

Анотація. У статті досліджено економічну достатність домогосподарств, в контексті основних показників життєвого рівня населення; можливості вільного споживання

UDC 331.101.262

Sirenko, K. Y. Economic sufficiency household as the foundation of human capital / K. Y. Sirenko, G. M. Chepurda, I. V. Bezugliy // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 203-209.

Abstract. The article investigates the economic sufficiency of households in the context of the main indicators of the living standard of the population; opportunities for free con-

матеріальних і нематеріальних благ; здатності збереження та підтримання достатнього рівня здоров'я; забезпечення належного рівня купівельної спроможності; здатності протистояти міграційному руху населення. Визначено основні загрози та напрямки вдосконалення економічної достатності домогосподарств. Табл.: 2. Бібліогр.: 9 назв.

Ключові слова: economic sufficiency; household; resource; costs.

УДК 330.3:612.6-049.5

Назарова, Г. В. Підхід до аналітичного забезпечення оцінювання безпеки людського розвитку / Г. В. Назарова, Н. К. Назаров, А. А. Дем'яненко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 210-215.

Анотація. . У статті систематизовано та проведено критичний аналіз існуючих методичних підходів до оцінювання людського розвитку та людської безпеки. Обґрунтовано методичний підхід до аналітичного забезпечення оцінки безпеки людського розвитку, який забезпечить найбільш повне вимірювання процесу. Іл.: 1. Бібліогр.: 12 назв.

Ключові слова: людський розвиток; людська безпека; оцінювання; аналітичне забезпечення.

УДК 330. 341. 1

Гилка, У. Л. Оцінка факторів, що визначають успіхи і невдачі інноваційних проектів / У. Л. Гилка, О. І. Яковенко // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 216-221.

Анотація. Спирачись на бізнес-плани, були визначені три групи показників: - вихідні характеристики проекту (оригінальність, ресурсне забезпечення, готовність виконавців, обсяг робіт тощо); - очікувані проблеми виконання проекту; - ймовірність ринкової реалізації проекту. Запропонована шкала для визначення кількісних оцінок показників і схема обробки. Проаналізовано 24 бізнес-плани інноваційних проектів. Тематика проектів охоплює пріоритетні науково-технічні напрями: машинобудування, приладобудування, паливно-енергетичний комплекс, енергозаощадження, нові матеріали, агротехнології. Табл.: 2. Бібліогр.: 11 назв.

Ключові слова: інноваційні проекти; фактори успішної реалізації проектів.

УДК 330.341.1

Новікова, І. Е. Підприємницький університет як імператив реалізації стратегії інтеграції в систему Європейського трансферу знань: досвід України / І. Е. Новікова, Ч. Хуіюй, О. Р. Бедюх // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 222-231.

Анотація. Показано трансформацію науково-освітньої сфери в Україні в умовах дії ринкових відносин та розвитку міжнародного співробітництва. Виокремлено основні досягнення та прорахунки українських університетів на шляху становлення академічного підприємництва та надано рекомендації відносно усунення складнощів євроінтеграції знань. Табл.: 1. Іл.: 2. Бібліогр.: 12 назв.

Ключові слова: entrepreneurial university; eurointegration; technology transfer; commercialization of research results; Ukraine.

УДК 331.22-047.44

Мельник, К. Ю. Економіко-правовий аналіз доплат і надбавок працівникам / К. Ю. Мельник, Ф. А. Цесарський, О. В. Селецький // Науковий вісник По-

sumption of tangible and intangible goods; the ability to maintain and maintain a sufficient level of health; ensuring an adequate level of purchasing power; the ability to withstand the migratory movement of the population. Tabl.: 2. Refs: 9 titles.

Keywords: економічна достатність; домогосподарство; ресурси; витрати.

UDC 330.3:612.6-049.5

Nazarova, G. V. Approach to analytical support for assessing the security of human development / G. V. Nazarova, N. K. Nazarov, A. A. Demianenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 210-215.

Abstract. In the article a critical analysis of existing methodological approaches to the assessment of human development and human security was systematized and conducted. The methodical approach to the analytical support for assessing the security of human development, which will provide the most complete measurement of the process, is substantiated. Figs.: 1. Refs: 12 titles.

Keywords: human development; human security; assessment; analytical support.

UDC 330. 341. 1

Gylka, U. L. Evaluation of factors that determine the successes and failures of innovative projects / U. L. Gylka, O. I. Yakovenko // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 216-221.

Abstract. Three groups of indicators were identified based on business plans: - initial characteristics of the project (originality, resource support, readiness etc.); - expected problems of project implementation; - probability of successful implementation of the project. A scale was developed to determine the quantitative estimates of the detected indicators. There were analyzed 24 business plans of projects by described method. The topics of the projects include such priority scientific and technical directions as machine building, instrumentation, fuel and energy complex, energy saving, new materials, agrarian technologies. Tabl.: 2. Refs: 11 titles.

Keywords: innovative projects; factors of successful implementation of projects.

UDC 330.341.1

Novikova, I. E. The entrepreneurial university as imperative for implementation of the strategy of integration into the system of European knowledge transfer: the Ukrainian experience / I. E. Novikova, Zh. Huiyu, O. R. Bediukh // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 222-231.

Abstract. The transformation of the scientific and educational sphere of Ukraine has been shown under the conditions of market relations and the development of international cooperation. The main achievements and miscalculations of Ukrainian universities in the way of formation of academic entrepreneurship have been set out and recommendations on the elimination of the difficulties of European integration of knowledge have been given. Tabl.: 1. Figs.: 2. Refs: 12 titles.

Keywords: підприємницький університет; євроінтеграція; трансфер технологій; комерціалізація результатів наукових досліджень, Україна.

UDC 331.22-047.44

Melnyk, K. Yu. Economic and legal analysis of premiums and increments to staff / K. Yu. Melnyk, F. A. Tsesarsky, O. V. Seletskyi // Scientific bulletin Polissia. -

лісся. - 2018. - № 2 (14), ч. 1. - С. 232-241.

Анотація. Невід'ємною складовою змінної частини заробітної плати є доплати і надбавки, які виплачуються за трудові успіхи та винахідливість і за особливі умови праці. За цільовим призначенням їх варто розглядати в якості компенсаційних та стимулюючих виплат. Табл.: 2. Бібліогр.: 25 назв.

Ключові слова: оплата праці; заробітна плата; грошове забезпечення; посадовий оклад; надбавка; доплата.

2018. - Vol. 2 (14), P. 1. - P. 232-241.

Abstract. Premiums and increments, paid for labor success, ingenuity, and special terms of work, form an integral component in variable part of wages. By their intended purpose, they should be considered as compensatory and incentive payments. Tabl.: 2. Refs: 25 titles.

Keywords: remuneration; salary; cash security; position salary; premium; increment.

УДК 330.34+330.163+316.62

Дружиніна, В. В. Підходи забезпечення збалансованості ринку праці завдяки усуненню факторів відторгнення / В. В. Дружиніна, Г. С. Ліхоносова, Л. П. Давидюк // Науковий вісник Полісся. - 2018. - № 2 (14), ч. 1. - С. 242-250.

Анотація. У статті емпірично встановлено важливі чинники стосовно поточного попиту, поточної пропозиції та задоволеного поточного попиту. Кризовий стан ринку праці пояснюється девальвацією трудових цінностей, труд не виконує покладених на нього функцій, що виражається в загостренні проявів феномену відторгнення. Запропоновано систему критеріїв, використання яких дозволяє послідовно визначити домінанти зовнішнього впливу на функціонування сукупного ринку праці. Табл.: 1. Іл.: 2. Бібліогр.: 10 назв.

Ключові слова: збалансованість; ринок праці; фактори відторгнення; попит; пропозиція; алгоритм.

UDC 330.34+330.163+316.62

Druzhynina, V. V. Approaches to balance labor market by eliminating exclusion factors / V. V. Druzhynina, G. S. Likhonosova, L. P. Davidyuk // Scientific bulletin Polissia. - 2018. - Vol. 2 (14), P. 1. - P. 242-250.

Abstract. The article empirically identifies the important factors in relation to current demand, current supply and satisfied current demand. The crisis in the labor market is explained by the devaluation of labor values, that labor does not fulfill its functions, which is expressed in the aggravation of manifestations of the phenomenon of exclusion. A system of criteria has been proposed, the use of which allows consistently identify the dominant external influences on the functioning of the aggregate labor market. Tabl.: 1. Figs.: 2. Refs: 10 titles.

Keywords: balance; labor market; exclusion factors; demand; supply; algorithm.

ПРАВИЛА ОФОРМЛЕННЯ ТА ПОДАННЯ РУКОПИСУ ДО ЖУРНАЛУ *"НАУКОВИЙ ВІСНИК ПОЛІССЯ"*

1. Журнал Чернігівського національного технологічного університету "Науковий вісник Полісся" бере до розгляду наукові статті з матеріалами досліджень у галузі Економіки.

2. Мова написання рукопису: українська, англійська, російська.

Стаття подається до розгляду у редакцію українською або російською мовами. Після затвердження статті редакцією до друку у журналі - ***обов'язкове надання перекладу статті англійською мовою*** (відповідно до п. 2.9. Наказу "Про затвердження порядку формування переліку наукових фахових видань України" від 17.10.2012 р. № 1111).

3. Рукопис статті подається до редакції у формі:

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4. Рукопис супроводжується:

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- **англомовним перекладом статті,** завіреним фахівцем англійської мови (бюро перекладів або викладачами англійської мови);
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5. Рукопис не має містити заборонених до друку матеріалів, оскільки журнал є відкритим джерелом інформації. За зміст статті та інформаційне наповнення несе відповідальність автор (автори) статті та експерти.

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- обсяг рукопису повинен складати 18-24 тис. знаків або 10-15 сторінок (як виняток, не більше 40 тис. знаків або 20 сторінок), включаючи рисунки та таблиці;
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- рукопис повинен мати наскрізну нумерацію сторінок з вільним розміщенням нумерації на аркуші;
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- **переплетіння** – 0 см;
- **інтервал між рядками** – 1,5 пт.;
- інтервал між абзацами «**до», «після»** – 0 пт;
- відступи «**праворуч», «ліворуч»** – 0 пт;
- відступ першої строчки – 1,25 см;
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- рисунки створені у вбудованому у WinWord редакторі рисунків слід подавати, як згруповані об'єкти.

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7. Для текстового матеріалу використовується теперішній час дієслів, за виключенням посилання на попередні роботи.
8. Фізичні величини повинні подаватися в одиницях системи СІ.
9. Текст рукопису має бути побудований за загальноприйнятою схемою:

– **індекс УДК** у верхньому лівому кутку листа (Times New Roman, 14 пт.) та англійською мовою (**UDC**);

– **ініціали та прізвища авторів** у верхньому правому кутку листа українською (або мовою статті) та англійською мовою (Times New Roman, 14 пт.). Порядок подання: **ім'я, по-батькові, прізвище;**

– **науковий ступінь, вчене звання** українською (або мовою статті) та англійською мовою (Times New Roman, 14 пт.). У статті **не потрібно** вказувати назву факультету або кафедри, де працює автор (або автори);

– *порожній рядок (Times New Roman, 14 пт.);*

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– *порожній рядок (Times New Roman, 14 пт.);*

– **анотація структурована** (1500-2000 знаків) українською (або мовою статті) та англійською мовами (Times New Roman, 12 пт., *курсив);* **анотацію не потрібно розміщувати на окремому листі.** Анотація повинна містити стисле формулювання змісту статті, не повторювати назву статті. Загальна структура анотації повинна містити:

– **Актуальність теми дослідження (Urgency of the research);**

– **Постановка проблеми (Target setting);**

– **Аналіз останніх досліджень і публікацій (Actual scientific researches and issues analysis);**

– **Виділення недосліджених частин загальної проблеми (Uninvestigated parts of general matters defining)**;

– **Постановка завдання (The research objective)**;

– **Викладення основного матеріалу (стисло**) **(The statement of basic materials);**

– **Висновки** відповідно до статті **(Conclusions)**.

– *порожній рядок (Times New Roman, 14 пт);*

– **ключові слова** (до 25 слів) українською (або мовою статті) та англійською мовами (Times New Roman, 14 пт., *курсив*);

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- **Постановка проблеми** (Times New Roman, 14 пт.);
- **Аналіз останніх досліджень і публікацій** (Times New Roman, 14 пт.);
- **Виділення недосліджених частин загальної проблеми** (Times New Roman, 14 пт.);
- **Постановка завдання** (Times New Roman, 14 пт.);
- **Викладення основного матеріалу** (можливий розподіл на підрозділи) (Times New Roman, 14 пт.);
- **Висновки** відповідно до статті (Times New Roman, 14 пт.);
- *порожній рядок* (Times New Roman, 14 пт.);
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- **References** (Times New Roman, 12 пт., **жирний**, по центру).
- **Надійшла** стаття до редакції у нижньому правому кутку листа (Times New Roman, 12 пт.) у форматі (ДД.ММ.РРРР);
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Додаток 1

Приклад оформлення рукопису для представлення у редакцію

UDC 658.62.018.2

O. I. Harafonova, Doctor of Economics, Associate Professor,
G. V. Zhosan, Candidate of Economic Sciences, Assistant,
R. V. Yankovoi, Candidate of Economic Sciences, Associate Professor

DISTINCTIONS AND FEATURES OF ISO 9001:2015 STANDARD IMPLEMENTATION IN THE CONTEXT OF SOCIAL AND STRATEGIC DEVELOPMENT OF ENTERPRISES

Urgency of the research. *In terms of globalization of business and trade, when even the concept of "crisis" becomes global, the desire for continued growth and development becomes the most important and top priority.*

Target setting. *The quality and quantity of products are the most important indicators of the final result of the enterprise. The problem of improving quality should be a state priority.*

Actual scientific researches and issues analysis. *Such well-known scientists as A. Glichev, M. Kruglov, I. Kryzhanivsky, A. Lositsky, T. Korneeva, E. Korotkov, A. Feigenbaum, G. Taguchi, E. Shilling, H. Wadsworth, T.*

УДК 658.62.018.2

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ВІДМІННОСТІ ТА ОСОБЛИВОСТІ ВПРОВАДЖЕННЯ СТАНДАРТУ ISO 9001:2015 В КОНТЕКСТІ СОЦІАЛЬНОГО ТА СТРАТЕГІЧНОГО РОЗВИТКУ ПІДПРИЄМСТВ

Актуальність теми дослідження. *В умовах глобалізації бізнесу та торгівлі, коли навіть поняття «криза» набуває світового характеру, прагнення до постійного зростання і розвитку стає найбільш важливим і першочерговим.*

Постановка проблеми. *Якість і кількість продукції є найважливішими показниками кінцевого результату діяльності підприємства. Проблема підвищення якості повинна стати державним пріоритетом.*

Аналіз останніх досліджень і публікацій. *Значний внесок у розвиток теорії, методології та історії розвитку управління якістю продукції зробили відомі*

Seifi, Y. Rebrin has made a significant contribution to the development of the theory, methodology and history of product quality management.

Uninvestigated parts of general matters defining. *At the same time very few of scientific papers highlights the peculiarities of quality management systems based on the new version of the ISO 9001:2015 international standard implementation. New requirements of this standard as well as its differences from the previous version require researching.*

The research objective. *To study the features of the new version of the ISO 9001:2015 international standard, compare it with the previous edition of ISO 9001:2008 one and highlight the key differences.*

The statement of basic materials. *In the article the peculiarities of implementation of the ISO 9001:2015 standard are considered. A comparative characteristic between versions of the 2008 standard and 2015 one is conducted. It is established that the main differences concern principles of quality management, structure of the standard, terms and definitions, requirements of the standard.*

Conclusions. *The ISO 9001 certificate for the quality management system does not guarantee the quality of the product or service provided. Designing and obtaining the ISO 9001 certificate serves as a kind of trust instrument.*

Keywords: *ISO 9001:2015; ISO 9001:2008; quality management system; risk; process.*

вчені: А. Глічев, М. Круглов, І. Крижанівський, О. Лосицький, Т. Корнєєва, Е. Коротков, А. Фейгенбаум, Г. Тагуті, Е. Шилінг, Х. Вадсвордт, Т. Сейфі, Ю. Ребрін.

Виділення недосліджених частин загальної проблеми. *У той же час недостатньо наукових праць висвітлюють особливості впровадження систем управління якістю на основі нової версії міжнародного стандарту ISO 9001:2015. Потребують дослідження нові вимоги, визначені даним стандартом, а також його відмінності від попередньої версії.*

Постановка завдання. *Дослідження особливостей нової версії міжнародного стандарту ISO 9001:2015, порівняння його з попередньою редакцією ISO 9001:2008 та виділення ключових відмінностей.*

Виклад основного матеріалу. *У статті розглянуто особливості впровадження стандарту ISO 9001: 2015. Проведено порівняльну характеристику між версіями стандарту 2008 року та 2015 року. Встановлено, що основні відмінності стосуються: принципів менеджменту якості, структури стандарту, термінів та визначень, вимог стандарту.*

Висновки. *Сертифікат на систему менеджменту якості ISO 9001 не гарантує якості виробленої продукції або наданої послуги. Оформлення та отримання сертифікату ISO 9001 служить в якості своєрідного інструменту довіри.*

Ключові слова: *ISO 9001:2015; ISO 9001:2008; система управління якістю; ризик; процес.*

Актуальність теми дослідження. Підвищення якості продукції в умовах конкурентного середовища є однією з найбільш важливих і складних завдань для будь-якого виробника товарів і послуг…

Постановка проблеми. В сучасних економічних умовах основним завданням підприємств є підвищення конкурентоспроможності на ринку...

Аналіз останніх досліджень і публікацій. Значний внесок у розвиток теорії, методології та історії розвитку управління якістю продукції зробили відомі вчені…

Виділення недосліджених частин загальної проблеми. У той же час недостатньо наукових праць висвітлюють особливості впровадження систем управління якістю на основі нової версії міжнародного стандарту ISO 9001:2015…

Постановка завдання. Дослідження особливостей нової версії міжнародного стандарту ISO 9001:2015, порівняння його з попередньою редакцією ISO 9001:2008 та виділення ключових відмінностей…

Виклад основного матеріалу. Абревіатура ISO розшифровується як International Organization for Standardization (Міжнародна Організація по Стандартизації). Це організація, яка є …

Висновок. Основними відмінностями стандарту ISO 9001: 2015 від попередньої версії стандарту стали…

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