



# **DEVELOPMENT OF THE INNOVATIVE ENVIRONMENTAL AND ECONOMIC SYSTEM IN UKRAINE**

**MONOGRAPH**

Prague, 2019



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BUGAY INTERNATIONAL SCIENTIFIC  
AND TECHNICAL UNIVERSITY»**

**DEVELOPMENT OF THE INNOVATIVE  
ENVIRONMENTAL AND ECONOMIC SYSTEM  
IN UKRAINE**

*Collective monograph*

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The monograph is designed for a wide range of readers, including students of economic specialties, scientists, civil servants and representatives of the real economy sector who are interested in transforming the economic system of Ukraine in accordance with global trends and development drivers.

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## PREFACE

The issue of developing an innovative environmental and economic system in Ukraine today is relevant to the applied-science discourse. I believe that it is precisely this kind of work that reveals the theoretical and methodological basis of the problem of strategic management of the innovative development of the economic system of Ukraine in the context of the deployment of the fourth industrial revolution and the transition of the global economy to the sixth technological paradigm and the knowledge economy, meets the requirements of the time.

The monograph investigates the theoretical foundations of the formation of innovative components of scientific - technological and industrial security of the economic system at the state and regional levels, management of the innovative basis for financial and investment components of competitiveness, development and validation of new methods for assessing global and local challenges of the present in the system of ensuring environmental security.

The monograph consists of five sections. The first section is devoted to the theory and methodology of strategies for innovative economic development and enhancement of competitiveness. The scientific developments of the authors concerning the modern paradigm of strategic management in macroeconomic dimensions are presented. The microeconomic aspects of strategic management and competitiveness management are revealed. The second section is devoted to the latest conception of the formation of innovative factors of public administration of economic growth. The approaches to institutional and technological design of innovative models in the field of public administration, the mechanism of implementation of the principles of the concept of compliance of all components of public administration with economic growth are proposed. The third section deals with the issues of the innovative basis of financial management and monetary-credit policy. The scientific-methodical principles and practical tools for improving the system of public finance management - optimization of the taxation system, public sector debt, the latest principles of the budget and monetary-credit policy, FinTech development, are worked out. Innovative financial technologies and investment security tools are offered. The fourth section focuses on the determinants of national economic security. The globalization factors of foreign economic security are investigated. Innovative drivers of social security of regions of Ukraine are determined. The mechanism of implementation of the integrated territorial management of environmental security in the conditions of transition to sustainable development is formed. The fifth section addresses to the principles of

creating a favorable business environment for entrepreneurship activities in Ukraine. The main mechanisms of attraction of direct investments into the real sector of the economy are revealed.

The authors' collective body of the monograph included experienced and young scientists - representatives of academic and scientific institutions: V.N. Karazin Kharkiv National University, Pryazovsky State Technical University, Sumy State University, Bogdan Khmelnytsky Cherkassy National University, International Humanitarian University, Meritt Group Ltd., National Technical University "Kharkiv Polytechnic Institute", State Higher Educational Institution "Kherson State Agrarian university " and others.

The monograph is prepared in the context of four research topics: "Diagnosis of regional economic systems economic development in the conditions of new regionalism formation" (State registration number 0118U001590), "Trends in the modernization of economic management systems" (State registration number 0118U001636), "Environmental responsibility in management" (State registration number 0118U001635), "Modernization determinants of the socio-territorial systems transformation in Ukraine in conditions of the European integration strengthening processes" (State registration number 0118U001588).

The monograph is designed for a wide range of readers, including students of economic specialties, scientists, civil servants and representatives of the real economy sector who are interested in transforming the economic system of Ukraine in accordance with global trends and development drivers:

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# SECTION 1

## STRATEGIES OF UKRAINE'S INNOVATIVE ECONOMIC DEVELOPMENT AND DRIVERS FOR INCREASING COMPETITIVENESS

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### STRATEGIC PRIORITIES OF INNOVATIVE DEVELOPMENT OF UKRAINE IN THE CONTEXT OF the GLOBAL WORLD Tendencies

*Abstract.* The article is devoted to the substantiation of priorities of innovative development of Ukraine in the conditions of globalization. The global world tendencies of innovative development of the world countries in the modern conditions are systematized. The tendencies in the development of the network economy and different forms of the horizontal integration (the forming of innovative-integrated structures and innovative ecosystems) were characterized. The directions and models of interaction of the participants of the innovation process in the framework of the concept "Quadruple Helix" were determined. The main consequences of the fourth industrial revolution "Industry 4.0" were presented, related to the emergence and rapid spread of the latest production technologies and information exchange. The possibilities of ensuring rational and efficient using of resources and the spread of a human-centered approach, which are based on smart technologies were explored. The comparative analysis of indicators of innovation and competitiveness of Ukraine in the measurement of the international comparisons was carried out. The strategic priorities of the sustainable growth of the national economy on the basis of innovations were grounded.

**Key words:** strategic priority, innovative development, innovative-integrated structure, innovation ecosystem, concept "Quadruple Helix", competitiveness, globalization.

**Introduction.** In the context of the European integration policy, which was chosen by Ukraine, the strategic priorities of the state's innovation development should be formed on the basis of the modern world tendencies to the related to the intensification of globalization processes while simultaneously by decentralizing power and governance, the rapid development of the network economy, innovative ecosystems, the introduction of unprecedented new technologies in all spheres of

the economy and public life. The prioritization of these priorities should be preceded by the thorough analysis of the current state of the levels of innovation development and competitiveness of Ukraine in the international arena, strengths and weaknesses, key drivers of strategic growth, existing models of interaction between the participants in the innovation process.

At the present stage in Ukraine there are a number of significant issues that restrain the possibilities of accelerating innovation development. In particular, the destabilization of the military-political situation in the country, the financial and economic crisis, negative demographic and migration tendencies, the prevalence of low-tech products in the economic structure. The mentioned issues the search for the effective ways to the overcome destructive phenomena, to exit from the crisis socio-economic situation and further accelerated growth on the innovative basis.

The various aspects of the providing innovative development in the conditions of globalization are the subject of the considerable attention from the domestic scientists such as L. Fedulova [4], S. Davymuka [3], I. Ladyhina [8], A. Levchenko [1], N. Sytnyk [6] et al. At the same time, the scientific substantiation requires the question of the adaptation of the domestic economy to the global tendencies and trends, the introduction of modern methods, levers and instruments for the regulation and stimulation of the innovation activity, enhancement of Ukraine's competitiveness at the world level.

**The purpose** of the research is to substantiate the strategic priorities of the accelerated innovation development of Ukraine on the basis of the analysis of the world trends and drivers of the socio-economic growth, comparative evaluation of key indicators of competitiveness and innovation.

**Presenting main material.** The following can be attributed to the key contemporary world trends of innovation development that can provide the long-term competitive advantages in the globalized space (Figure 1).

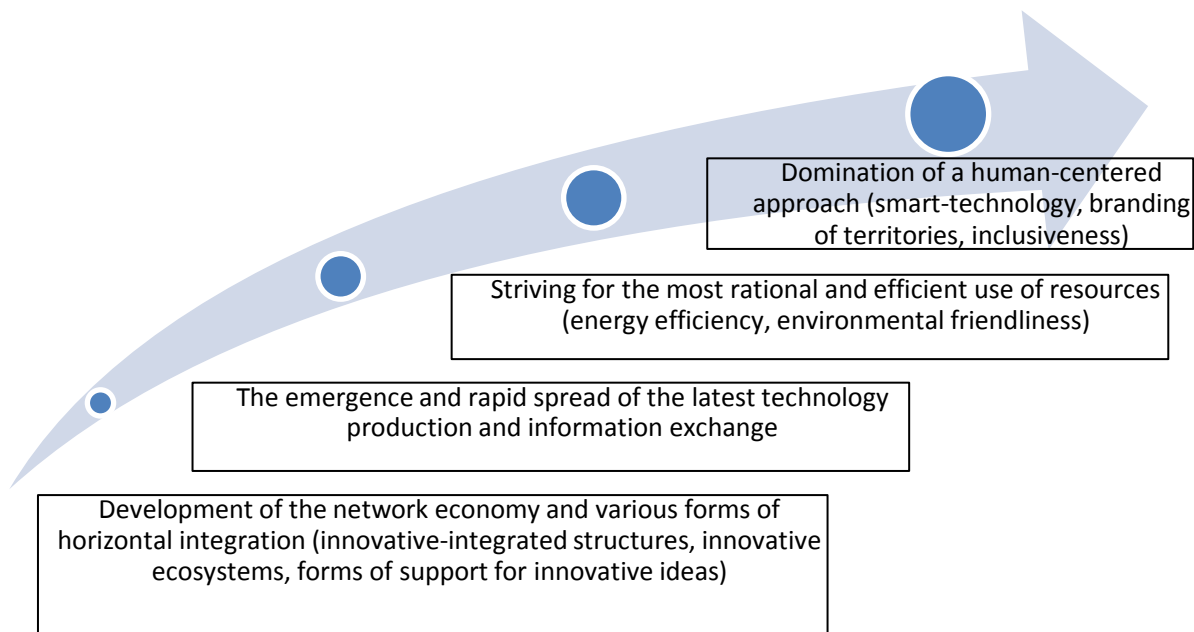


Figure 1 – Modern world trends of innovative development

Source: formed by the authors

According to the first trend, it should be noted that the desire for various forms of integration of participants in the innovation process is due to the possibility of achieving significant synergistic effect from joint coordinated actions, pooling of resources, knowledge, effort and experience. The main factors of their forming are legislative, normative, research, personnel, financial, material and resource, technological, infrastructure, informational and communicative.

The most common types of innovative-integrated structures in the world include innovative clusters, scientific and technical alliances, technology parks, technopolises, business incubators, innovation centers, venture companies, technology transfer centers, regional business support funds, spinach-companies, spinoff-companies, areas of development of new and high technology, regions of science and technology. The common peculiarities of all innovative-integrated structures are that they unite by concentrating on a specific territory, enterprises, institutions or organizations with a view to the transferring new ideas or developments into the direct process of their transformation into the new

knowledge-based types of goods or services and the introduction of high technologies [1].

The innovation ecosystem is a synergy of the state, entrepreneurial and research environment with using the organizational, normative, educational, methodological and financial resources, and the implementation of the mechanism for transferring knowledge in order to transform into the innovative products [2].

The innovative ecosystem can be represented as a set of organizational, structural and functional components (institutions) and their interactions, which are involved in the process of creating and applying scientific knowledge and technologies that determine the legal, economic, organizational and social conditions of the innovation process and ensure the development of innovation activity as a level enterprises, and at the level of the region and the country as a whole on the principles of self-organization [3].

The following technologies are important for the effective action of the innovation ecosystem: business incubation; project financing; horizontal links between participants in the innovation process; infrastructure of technology parks and innovative clusters; building public relations and reputation; creative management [4].

At the present stage, in the area of integration of the participants in the innovation process, there is a gradual transition from the concept of "Triple Helix" (active interaction in the system "business – education – state") to the concept "Quadruple Helix", which additionally includes a component of civil society. Such a transformation allows the forming of effective territorial innovation ecosystems, raising the degree of community involvement in the innovation process: design for users - design with users - design by users (Figure 2).

It corresponds to the goals of decentralization of all management processes, the application of the differentiated approach to the socio-economic development

of territories, taking into account their specific needs and opportunities.

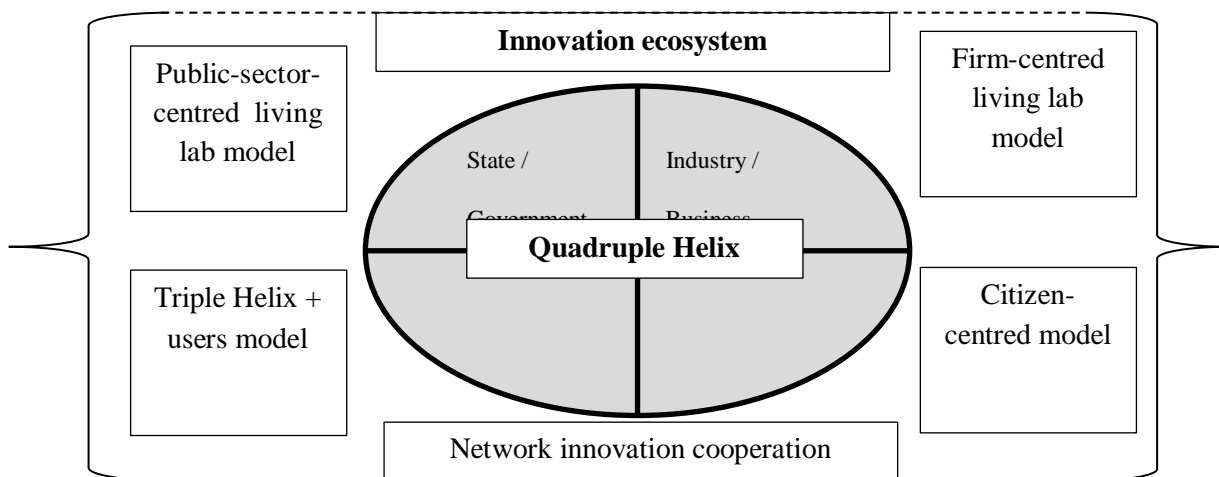


Figure 1 – Quadruple Helix: the role in the formation of an innovative ecosystem and patterns of engagement of participants

Source: formed by the authors according to [5]

The extended classification of participants in the innovation process, for example, in supporting start-up projects includes the following institutions: startup companies at different stages of the life cycle and prospective members start-ups, government, central and local governments, investors (private and public capital, business angels, venture capital companies, investment funds, crowdfunding platform), competence centers (universities, research institutes, high-tech companies), experts (professional consultants, technical and business experts, mentors, lawyers, trainers), the coordinating bodies (governmental committees, working groups, professional associations and unions), the agents of change (bloggers, journalists, famous politicians, businessmen, public figures, social groups), infrastructure managers (business incubators, business accelerators, technology parks, innovation centers, etc.) [6].

One of the important aspects is the potential interoperability within the model «Quadruple Helix» to bridge the innovations gaps between civil society and innovation. According to the estimations of the foreign scientists, the following can be distinguished: technological innovation gap (the insufficient capability of firms to translate their technological know-how into successful business cases with significant commercial and societal impacts); trust gap/moral gap (citizens do

not necessarily trust the breakthrough technologies developed by firms and public research organizations or that they can consider these technologies and the use of them unethical or unecological); public sector innovation gap (the insufficient capability of local, regional and national authorities to involve citizens into the development of public services and organizations) [5].

The Deployment of the world processes, called the fourth industrial revolution "Industry 4.0", can be characterized by the following manifestations:

- the transition from information technology (IT) to data technologies (DT);
- creation of systems of artificial intelligence, blockade, technologies of processing large data;
- robotics, robotic processes of production and services;
- implementation of the concept of "Internet of Things" and others.

As a result, on the one hand, it creates significant opportunities for the release of a person from heavy routine work, accelerates the exchange of information, significantly accelerates the pace of a number of functions and tasks. This is consistent with the Global Sustainable Development Goals by 2030 with regard to:

- development of high-quality, reliable, sustainable and accessible infrastructure based on the use of innovative technologies;
- promoting the accelerated development of high and medium-high-tech sectors of the processing industry based on the use of the "education - science - production" chains and the cluster approach, the development of the innovation ecosystem, the development of information and telecommunication technologies, etc.;
- creation of a financial and institutional system (innovation infrastructure) that will ensure the development of scientific research and scientific and technological (experimental) developments [7].

On the other hand, there is a need to address the socio-economic problems associated with the transformation of the labor market (the lack of demand for

specialists in a number of occupations and specialties, the emergence of radically new types of employment, distance employment, social tension in society, etc.).

The expansion of the integration links of the participants of the innovation process in conjunction with the achievements of the fourth industrial revolution interdepends on the actualization of the two following global trends, which consist in the need for rational use of all types of resources and development of a human-centered approach. The concept of the "Smart Approach", which proved its effectiveness in many developed countries of the world, can contribute to solving these problems. For example, "Smart city" contains six main components (Table 1).

Table 1 – Constituents of the concept «Smart city»

| <i>Component</i>                              | <i>Characteristics</i>   |
|---|--|
| "Intelligent environment" (natural resources) | energy efficiency, renewable energy sources, environmental protection, resource saving   |
| "Smart People" (social and human capital)     | skilled users of information and communication technologies (ICT), accessible learning, participation in public life, entrepreneurship |
| "Intelligent mobility" (transport and ICT)    | integration of the transport system, environmental modes of transport  |
| "Smart way of life" (quality of life)         | good consumption, comfortable planning, social interaction, healthy lifestyle  |
| "Smart Economy" (Competitiveness)             | productivity, new products, services, business models, international cooperation, flexibility  |
| "Intelligent management" (participation)      | citizens' involvement services, open in decision-making, convenient data   |

Source: formed by the authors according to [8]

Consequently, modern global trends can provide significant opportunities for accelerated innovation in the development of the domestic economy, with the adaptation and implementation of best practices and approaches, and contain a number of threats in case of continuing the trend of lagging in many areas of the economy and society, the prevalence of extensive approach to use resources, domination of low-tech structure of the economy.

The analysis of indicators of innovativeness and competitiveness of Ukraine in the measurement of international comparisons are summarized in the Table 2.



Table 2 – Value of GDP per capita, indexes of the Global Competitiveness, Global Innovation, Human Capital and Human Development for 50 countries of the world, 2017-2018

| №  | Country        | PPP     | GCI  | GII   | HCI   | HDI   | №  | Country        | PPP           | GCI         | GII          | HCI          | HDI          |
|----|----------------|---------|------|-------|-------|-------|----|----------------|---------------|-------------|--------------|--------------|--------------|
| 1  | Austria        | 47290,0 | 76,3 | 51,32 | 73,29 | 0,908 | 26 | Netherlands    | 48345,7       | 82,4        | 63,32        | 73,07        | 0,931        |
| 2  | Australia      | 55707,3 | 78,9 | 51,98 | 71,56 | 0,939 | 27 | Germany        | 44549,7       | 82,8        | 58,03        | 74,30        | 0,936        |
| 3  | Azerbaijan     | 4140,7  | 60,0 | 30,20 | -     | 0,757 | 28 | New Zealand    | 41593,1       | 77,5        | 51,29        | 74,14        | 0,917        |
| 4  | Argentina      | 14466,6 | 57,5 | 30,65 | 64,34 | 0,825 | 29 | Norway         | 74940,6       | 78,2        | 52,63        | 77,12        | 0,953        |
| 5  | Armenia        | 3861,0  | 59,9 | 32,81 | 64,46 | 0,755 | 30 | Poland         | 13822,6       | 68,2        | 41,67        | 69,61        | 0,865        |
| 6  | Belgium        | 43582,2 | 76,6 | 50,50 | 72,46 | 0,916 | 31 | Portugal       | 21161,3       | 70,2        | 45,71        | 65,70        | 0,847        |
| 7  | Bulgaria       | 8064,0  | 63,6 | 42,65 | 68,49 | 0,813 | 32 | Russia         | 10608,2       | 65,6        | 37,90        | 72,16        | 0,816        |
| 8  | Brazil         | 9894,9  | 59,5 | 33,44 | 59,73 | 0,759 | 33 | Romania        | 10757,0       | 63,5        | 37,59        | 66,12        | 0,811        |
| 9  | United Kingdom | 39734,6 | 82,0 | 60,13 | 71,31 | 0,922 | 34 | Serbia         | 5899,0        | 60,9        | 35,46        | 62,50        | 0,787        |
| 10 | Greece         | 18637,3 | 62,1 | 38,93 | 64,68 | 0,870 | 35 | Singapore      | 57713,3       | 83,5        | 59,83        | 73,28        | 0,932        |
| 11 | Denmark        | 56444,1 | 80,6 | 58,39 | 74,40 | 0,929 | 36 | Slovakia       | 17664,3       | 66,8        | 42,88        | 67,14        | 0,855        |
| 12 | Estonia        | 19840,1 | 70,8 | 50,51 | 73,13 | 0,871 | 37 | Slovenia       | 23654,4       | 69,6        | 46,87        | 73,33        | 0,896        |
| 13 | Israel         | 40258,4 | 76,6 | 56,79 | 71,75 | 0,903 | 38 | United States  | 59501,1       | 85,6        | 59,81        | 74,84        | 0,924        |
| 14 | India          | 1982,7  | 62,0 | 35,18 | 55,29 | 0,640 | 39 | Turkey         | 10512,0       | 61,6        | 37,42        | 60,33        | 0,791        |
| 15 | Ireland        | 70638,3 | 75,7 | 57,19 | 71,67 | 0,938 | 40 | Hungary        | 15531,2       | 64,3        | 44,94        | 66,40        | 0,838        |
| 16 | Spain          | 28358,8 | 74,2 | 48,68 | 65,60 | 0,891 | 41 | <b>Ukraine</b> | <b>2582,8</b> | <b>57,0</b> | <b>38,52</b> | <b>71,27</b> | <b>0,751</b> |
| 17 | Italy          | 31984,0 | 70,8 | 46,32 | 67,23 | 0,880 | 42 | Philippines    | 2976,3        | 62,1        | 31,56        | 64,36        | 0,699        |
| 18 | Jordan         | 5677,6  | 59,3 | 30,77 | 58,13 | 0,735 | 43 | Finland        | 46016,7       | 80,3        | 59,63        | 77,07        | 0,920        |
| 19 | Kazakhstan     | 8840,9  | 61,8 | 31,42 | 69,78 | 0,800 | 44 | France         | 39869,1       | 78,0        | 54,36        | 69,94        | 0,901        |
| 20 | Canada         | 45077,4 | 79,9 | 52,98 | 73,06 | 0,926 | 45 | Croatia        | 13138,3       | 60,1        | 40,73        | 66,81        | 0,831        |
| 21 | China          | 8643,1  | 72,6 | 53,06 | 67,72 | 0,752 | 46 | Czech Republic | 20152,4       | 71,2        | 48,75        | 71,41        | 0,888        |
| 22 | Colombia       | 6272,8  | 61,6 | 33,78 | 61,80 | 0,747 | 47 | Chile          | 15070,4       | 70,3        | 37,79        | 64,22        | 0,843        |
| 23 | Korea          | 29891,3 | 78,8 | 56,63 | 69,88 | 0,903 | 48 | Switzerland    | 80590,9       | 82,6        | 68,40        | 76,48        | 0,944        |
| 24 | Mexico         | 9304,2  | 64,6 | 35,34 | 61,25 | 0,774 | 49 | Sweden         | 53217,6       | 81,7        | 63,08        | 73,95        | 0,933        |
| 25 | Moldova        | 2279,7  | 55,5 | 37,63 | 62,29 | 0,700 | 50 | Japan          | 38439,5       | 82,5        | 54,95        | 72,05        | 0,909        |

Note:

PPP – GDP per capita, US dollars, 2018;

GCI – The Global Competitiveness Index (maximum value = 100), 2018;

GII – Global Innovation Index (maximum value = 100), 2018;

HCI – Human Capital Index (maximum value = 100), 2017;

HDI – Human Development Index (maximum value = 100), 2018.

Source: compiled by the authors according to the international statistics [9; 10; 11; 12].

From the data presented, we can see that the most significant level of lag in Ukraine from developed countries of the world is based on GDP per capita, which was only \$ 2582.8. USA (Figure 3), while in Switzerland - \$ 80590.9. US, Germany - 44549,7 USD USA, France - \$ 39869.1 US, UK - \$ 39734.6 United States, Czech Republic - \$ 202.4 USA, Poland - \$ 13822.6 USA.

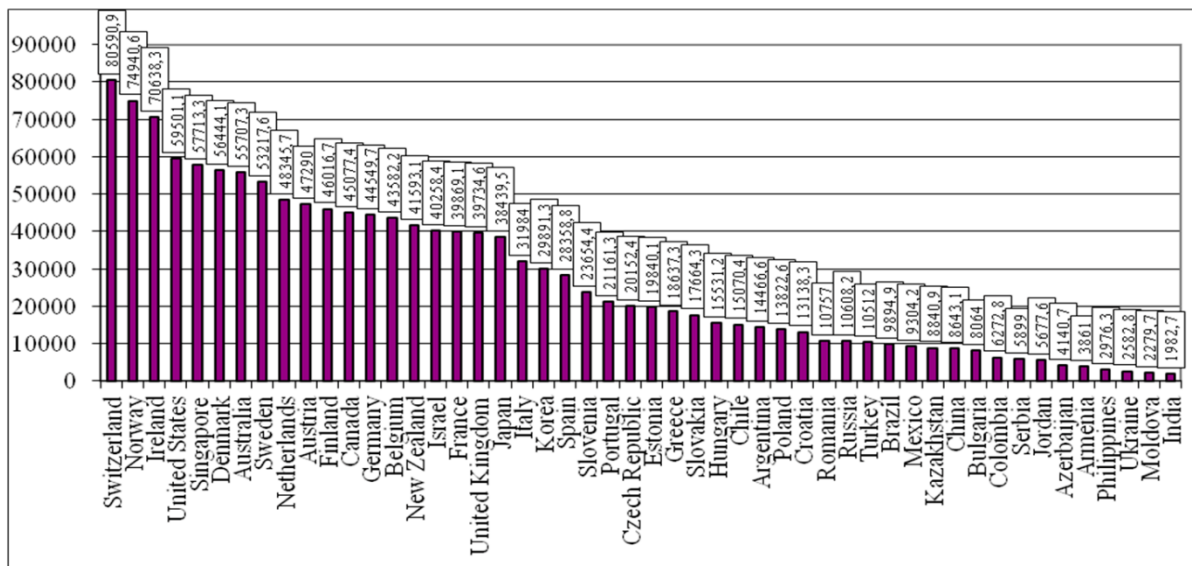


Figure 3. Ranking of 50 countries by volume of GDP per capita, in 2018

Source: formed by the authors according to the international statistics [9].

According to indicators of the global competitiveness index and global innovation index, the situation in the countries of the world is as follows (Figure 4). The index of global competitiveness of Ukraine in 2018 amounted to 57.0 points from the maximum possible 100 points (83-rd place from 140 countries of the world). At the same time in the section of the components of this index, the following values were fixed: I. Enabling Environment (1. Institutions – 46 points / 110 place; 2. Infrastructure – 70 points / 57 place; 3. ICT adoption – 51 points / 77 place; 4. Macroeconomic stability – 56 points / 131 place); II. Human Capital (5. Health – 72 points / 94 place; 6. Skills – 69 points / 46 place); III. Markets (7. Product market – 55 points / 73 place; 8. Labour market – 59 points / 66 place; 9. Financial system – 49 points / 117 place; 10. Market size – 63 points / 47 place); IV. Innovation Ecosystem (11. Business dynamism – 55 points / 86 place; 12. Innovation capability – 39 points / 58 place).

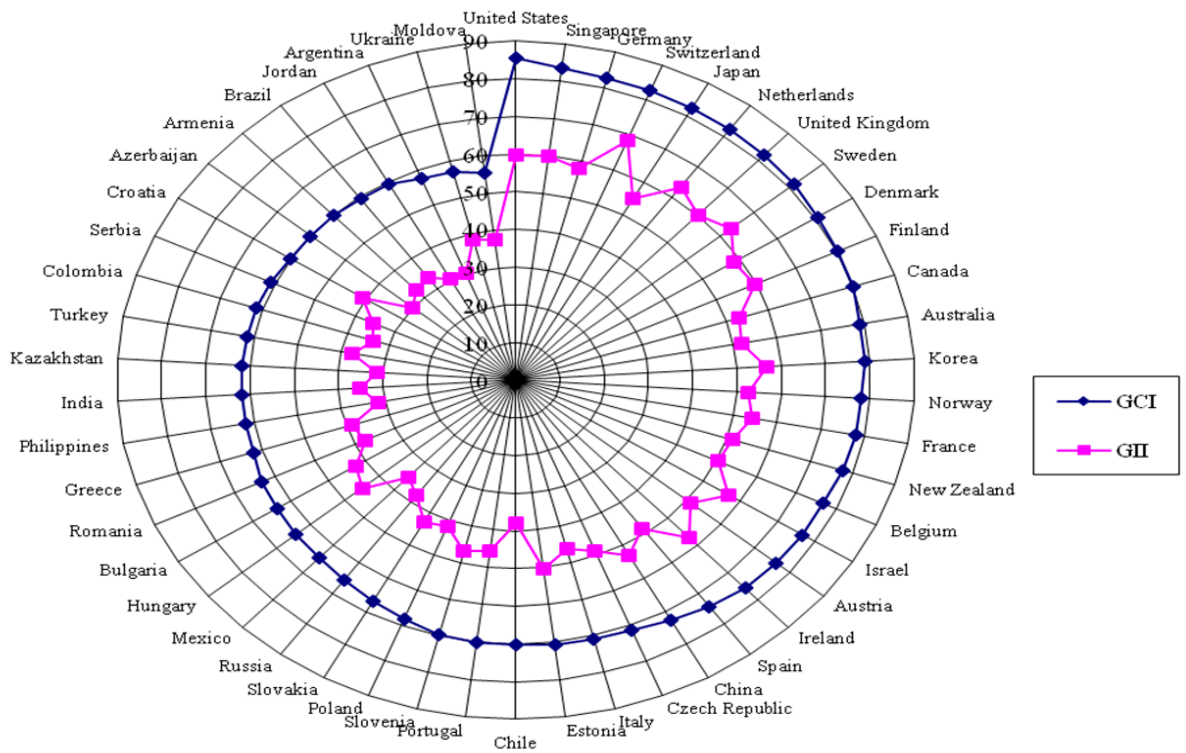


Figure 4 – The rating of 50 countries of the world by The Global Competitiveness Index and value of Global Innovation Index, 2018

Source: formed by the authors according to the international statistics [9; 11].

The global innovation index of Ukraine in 2018 was 38.52 points, the index of human capital (2017) - 71.27, and the index of human development (2018) - 0.751.

Thus, the analysis of world trends of innovation development and the level of innovation and competitiveness of the Ukrainian economy make it possible to formulate the following strategic priorities of sustainable growth:

- development of modern reliable and accessible infrastructure, including information and communication, road transport, energy and innovation infrastructure, in order to increase the efficiency of business activity and quality of life of the population;

- creating the system of incentives for improving resource efficiency, wider use of clean and environmentally sound technologies and industrial processes;
- dissemination of various forms of state participation in the implementation of infrastructure projects, ensuring flexible tariff policy for creating attractive business and investors;
- creation of conditions for the development of innovative medium and small businesses;
- the application of a smart approach to the organization of logistics, communications, transport;
- development of relations of public-private partnership between state authorities, local self-government, business structures, educational, scientific institutions, public and international organizations;
- stimulating the development of social responsibility of business; intensifying the provision of information and consulting services on issues of production and export of high-tech products;
- formation and systematic updating of the database of potential foreign and domestic investors, wide informing about possible ways of attracting investment of business circles;
- promotion of the creation of powerful research centers based on institutions of higher education, the activities of which are aimed at the development of modern information and communication technologies, robotics, technologies of 3D printing, artificial intelligence, energy saving technologies, etc.;
- study of the possibilities of forming in the region of innovation-integrated structures of different types;
- assistance in the formation of a positive image of the territory (branding) by holding specialized exhibitions, fairs, excursions, festivals, conferences, disputes, concerts, various thematic events;
- promotion of development and systematic monitoring of accessibility of infrastructure for people with disabilities, their involvement in public life;

- promoting the integration of regional innovation systems into a globalized world economic space;
- studying the possibilities of activating cooperation on research and development issues by local scientific and educational institutions on request of state and private customers;
- creation of remote innovative work places for people with disabilities;
- promoting the integration of regional innovation systems into a globalized world economic space;
- assistance in setting up an outsourcing system for personnel to carry out scientific research and development;
- assistance in organizing works on renewable energy, energy modernization of buildings and premises;
- attraction of qualified scientific workers to carry out researches on questions of evaluation, audit, monitoring;
- organization of research on ecologization of socio-economic development of territories;
- creating a favorable innovation environment;
- training of project managers;
- creation of coworking centers and start-up centers in the settlements for the work of talented youth;
- the organization of regular contests and startups for the development of innovations and the creation of funds for their financing by state authorities and local self-government bodies;
- creation of real mechanisms of commercialization of knowledge;
- popularization of innovations among the population;
- creation of support and support programs for startups.

**Conclusions.** Consequently, the formation of strategic priorities of Ukraine's innovative economic development should take place taking into account both global trends (innovation-integration processes, the fourth industrial revolution, resource efficiency, human-oriented approach) and the level of innovation

development and competitiveness of the country on the international area. The issues of creation of innovation-integrated structures and innovative ecosystems, organization of mutually beneficial interaction of all participants of the innovation process with the application of the provisions of the concept of "Quadruple Helix", smart-approach to the management of the development of territories, modern information and communication technologies, support of innovative ideas become extremely important under the present conditions. and creation of conditions for their further commercialization (start-ups, ventures, etc.), development of innovation infrastructure, formation of social responsibility business, environmentalization of socio-economic development, preservation and increase of human capital, creation of mechanisms for the transfer of modern knowledge.

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## **STRATEGIC BENCHMARKS OF REGIONS OF UKRAINE CONVERGENCE BASED ON THE INVESTMENT ACTIVITY INTENSIFICATION**

***Summary.** The integration processes and the world economy globalization have led to the prevalence of convergence. Unfortunately, Ukraine does not manage to adapt to modern conditions, so the state of the economy is deteriorating, the gap with developed countries is growing significantly. Interregional differentiation also increases within the country. In the context of implementing the Ukraine – 2020 sustainable development strategy, due to the shortage of investment resources, a mechanism for investment activity intensification in the country and its regions requires structural changes. The formation of an optimal investment distribution structure and their involvement in different spheres, which is focused not only on economic benefits obtaining, but also on meeting the socially important needs of socio-economic development and raising the level of environmental safety, are of fundamental importance.*

*The scientific novelty of the obtained results is to deepen the theoretical foundations, to substantiate the necessity and to develop the directions of investment activity intensification in the region in the conditions of European integration.*

*The chapter reveals the genesis of investment activity theory in the region. The conceptual approach to the investment activity intensification in the region has been improved; methodical approaches to investment activity were disclosed. The analysis of the areas of investment attraction has been conducted and the estimation of investment activity efficiency and the investment sufficiency in the regions are assessed. Based on the experience of the European Union, a mechanism for investment activity intensification in the regions of Ukraine has been developed. Scientific and practical approaches to modeling the process of investment activity intensification in the region are proposed. The recommendations for the formation of investment activity intensification strategy in the region are substantiated.*

***Key words:** investment, investment activity, investment activity intensification, investment activity efficiency, convergence, European integration.*

### ***Introduction***

*The relevance of the research.* The integration processes and the world economy globalization have led to the prevalence of convergence. Unfortunately,



Ukraine does not manage to adapt to modern conditions, so the state of the economy is deteriorating, the gap with developed countries is growing significantly. Interregional differentiation also increases within the country. In the context of implementing the Ukraine – 2020 sustainable development strategy, due to the shortage of investment resources, a mechanism for investment activity intensification in the country and its regions requires structural changes. The formation of an optimal investment distribution structure and their involvement in different spheres, which is focused not only on economic benefits obtaining, but also on meeting the socially important needs of socio-economic development and raising the level of environmental safety and regional convergence are of great importance.

Fundamental aspects of the study of the differentiation of regional economies and the problems of their development convergence on the basis of the processes of investment activity intensification were disclosed in the works of such economists as V. Goblyk, L. Gulko, E. Zabarna, M. Zmienko, O. Miroshnychenko, Z. Naumenko, L. Seidametova, P. Skrypchuk, A. Snetkova, D. Stechenko, N. Tatarenko, A. Poruchnyk and others. However, the processes of regional economies convergence based on the investment activity intensification in the conditions of European integration remains insufficiently substantiated. The given provisions confirm the relevance, scientific and practical value of the research, the main goals and objectives of the study.

*The purpose and tasks of the study.* The purpose of the work is to substantiate theoretical and methodological approaches and to develop practical recommendations for the regions of Ukraine convergence based on the investment activity intensification.

To achieve this goal, the following tasks were set and implemented: to reveal the theoretical and methodological principles of investment activity intensification in the region, to conduct an analysis of investment activity in the regions of Ukraine, to determine the organizational and economic principles of investment activity intensification in the region in the conditions of European integration.

## **Main part**

### **1. Theoretical and methodical principles of investment activity intensification in the region**

Convergence processes strengthening with developed countries of the world is impossible without attracting investment. Investment activity ensures, on the one hand, the maximum use of capital in the event of its surplus, and, on the other hand, allows us to reach a qualitatively new level of development of productive forces in countries where there is a lack of capital. We agree with E. Zabarna opinion that the current state of Ukraine economy is characterized by a deep decline in investment activity at all levels, which leads to increasingly progressive aging of production potential [4, c. 62]. Investment activity is the source and the main prerequisite for sustainable development of the country and its regions.

Investment theories have gone a long way to evolution - from the era of antiquity to modern neoclassical doctrines of the international capital movement. There is an assertion that the emergence of the first basics of understanding the nature of investment is attributed to the works of ancient Greek philosophers Plato, Xenophon and Aristotle. The philosophers investigated ways of multiplying and using the wealth of the state, leaving the mechanism of its formation on the secondary plan [5, c. 44]. The modern concept of investment included accumulation, derived from current consumption and postponed for future consumption, but with greater benefit [12, c. 45].

The generalization of scientific researches of native and foreign scientists has made it possible to define investments as economic resources, which are invested in various spheres of economic activity with the view of its further development and achievement of social, economic, and ecological results from their involvement.

The phenomenon of investment activity is extremely complex and multi-faceted. This is precisely the reason for the lack of unanimity among researchers in the interpretation of this concept. Investigation of different approaches to the definition of the essence of investment activity allows to understand investments

better and, on this basis, to effectively engage and regulate them. The analysis of scientific views on investment activity made it possible to distinguish cost, resource and effective approaches to the interpretation of its essence (Figure. 1). It was revealed that in the course of their evolution there was a change in emphasis from the quantitative indicators of the expected results of the investment activity implementation to the qualitative characteristics of the investment of economic resources in the priority fields in order to receive not only profits, but also the achievement of other positive effects.

Investment activity is a source and the main prerequisite for sustainable development of the country and its regions. Depending on the direction of investments we propose to allocate investment activity in the social, economic and environmental spheres. It can be implemented at different levels: the state and international groups, the region, business entities.

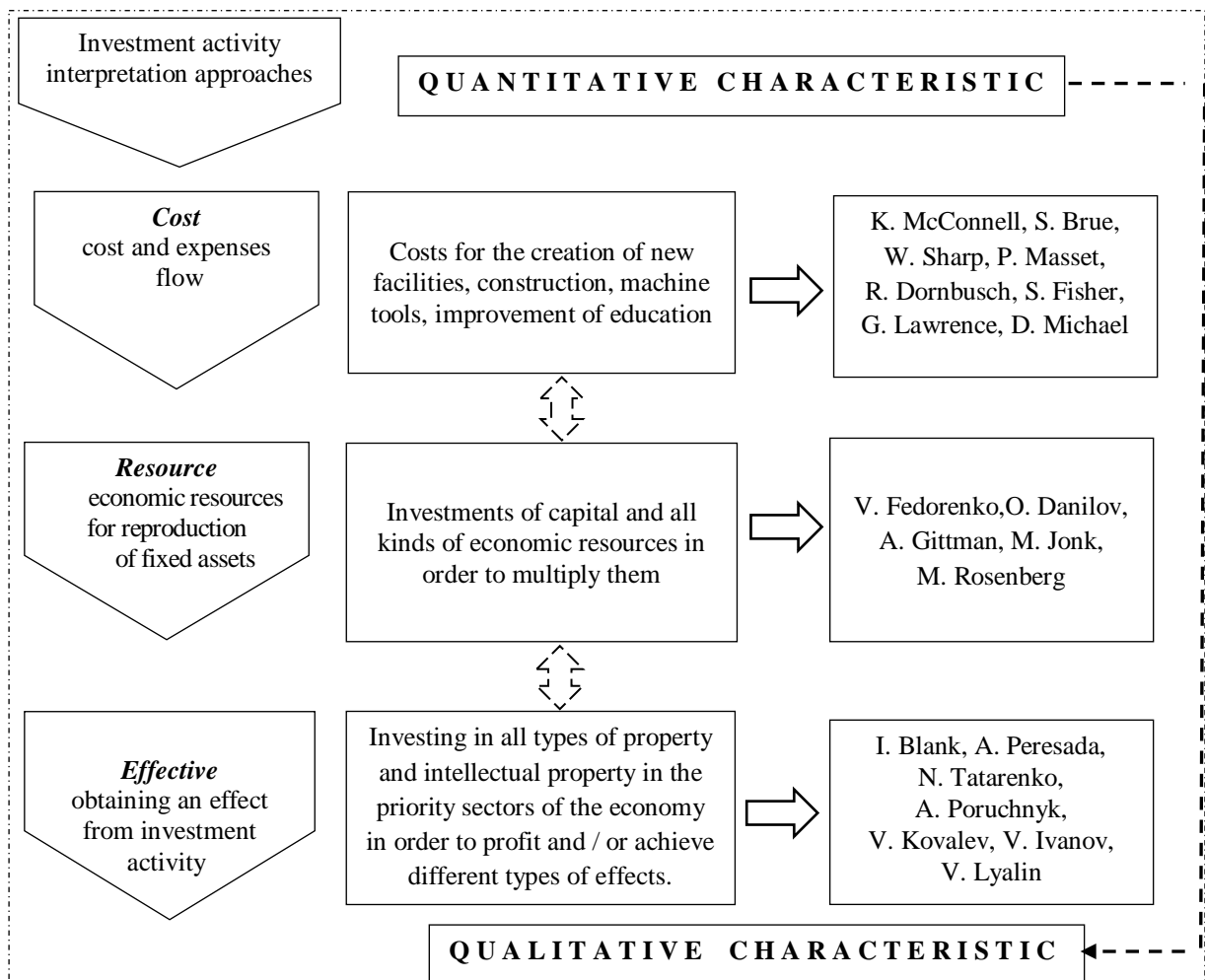


Figure 1. *Interconnection of investment activity interpretation approaches*  
 \*Created by authors.

Investment activity in the region is defined as a targeted set of actions and measures for investments attraction in various spheres taking into account the peculiarities of regional development in order to achieve social, economic and environmental efficiency from its implementation. A key aspect of obtaining positive effects from investment activity in the region is its intensification. It is determined that investment activity intensification in the region is a purposeful influence on investment processes in order to achieve optimal distribution of limited investment resources and increase quantitative and qualitative indicators of their attraction.

Taking into account the aforementioned, we propose a concept for investment activity intensification in the region (Figure 2).

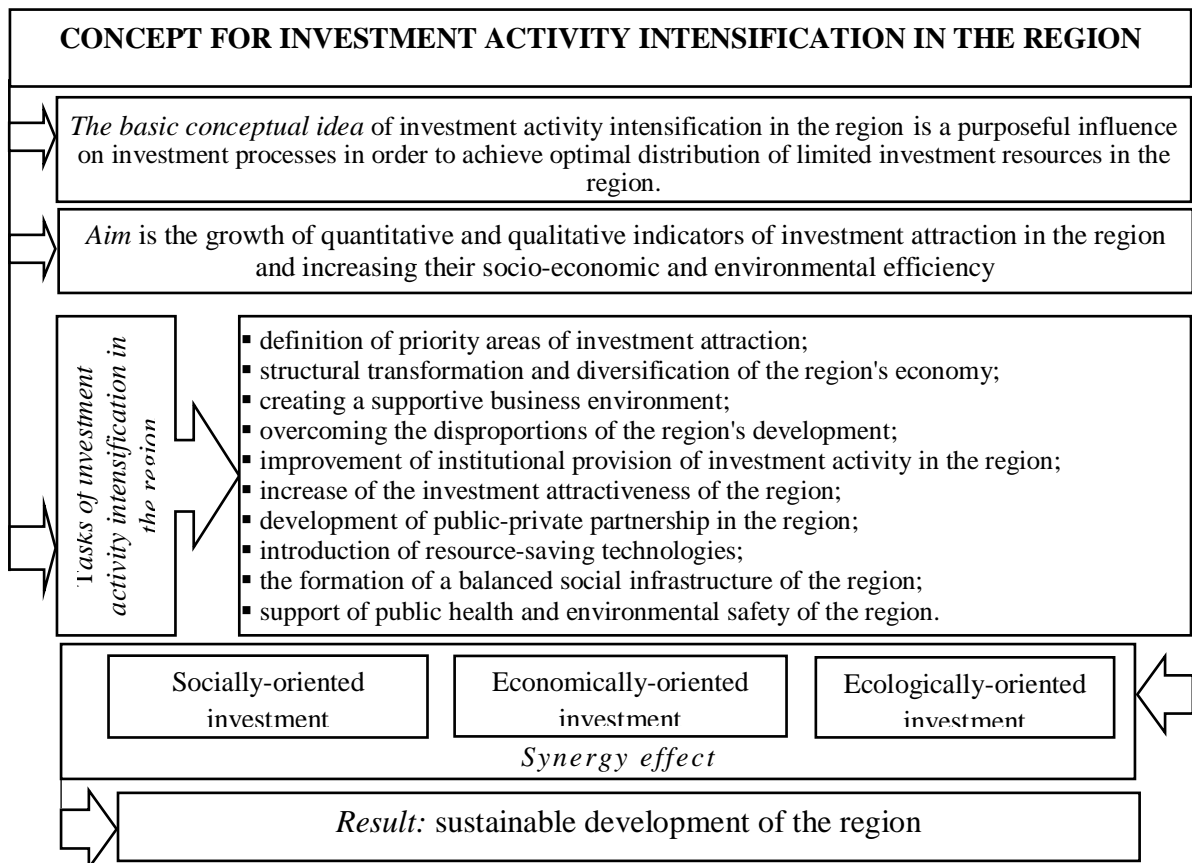


Figure 2. *Concept for investment activity intensification in the region*

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The results of the investment activity intensification in the region are positive indicators of the socio-economic and environmental efficiency of investment activity, which are achieved through the implementation of socially-,

economically- and ecologically-oriented investment.

The study of existing methodological approaches in the investment activity diagnostics in the region has allowed to identify some differences, which indicates the need for their improvement. The methodology of investment activity diagnostics in the region is proposed. (Figure 3).

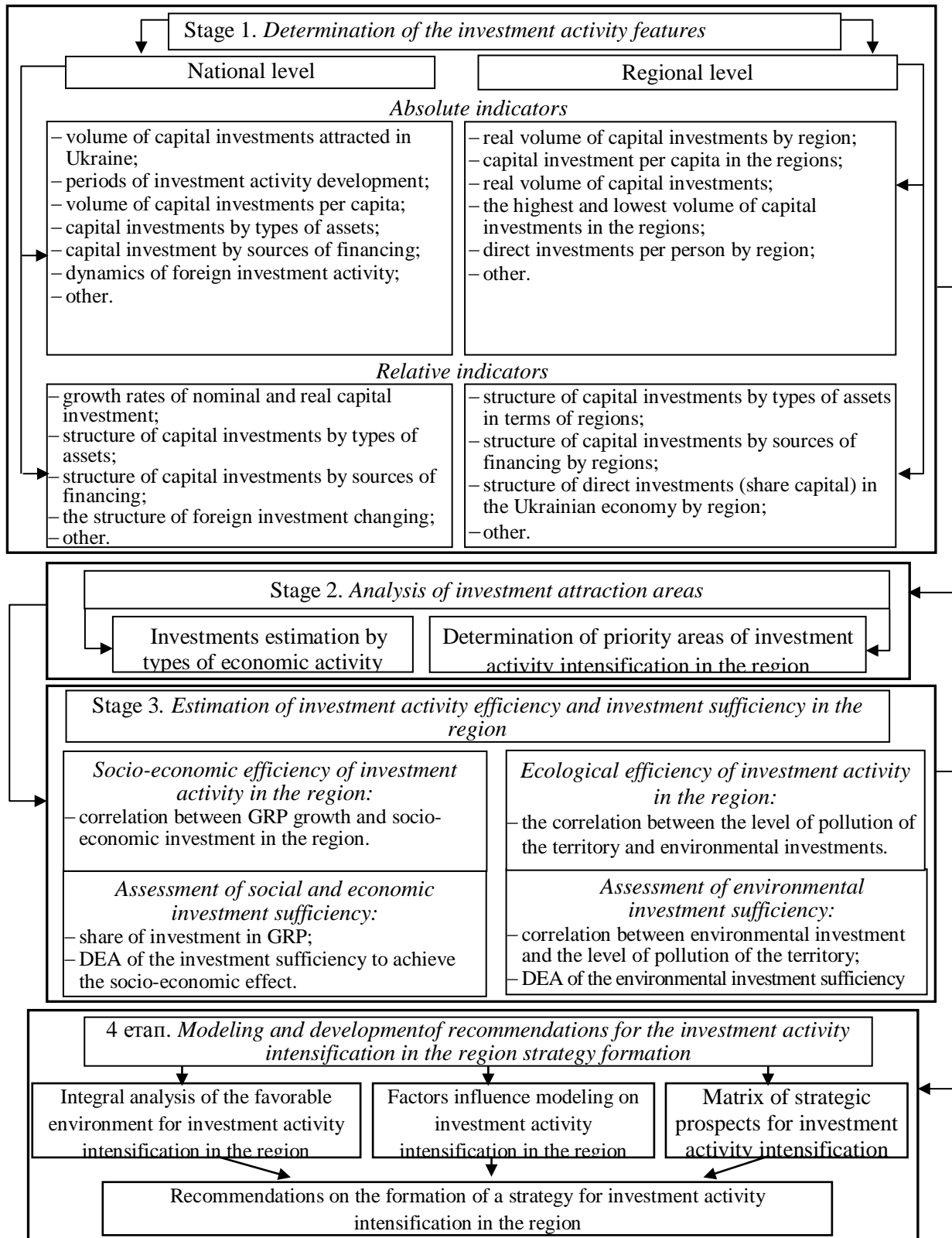


Figure 3. *The methodology of investment activity diagnostics in the region*

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The proposed methodology includes the consistent implementation of the following stages: definition of the features of investment activity in the country and its regions; analysis of areas of investment attraction; estimation of investment activity efficiency and investment adequacy in the region; modeling and development of recommendations for the investment activity intensification in the region strategy formation.

Investigation of investment activity in the region will enable regional authorities and local self-government bodies to specify measures aimed at investment activity intensification in order to achieve the goals of sustainable development.

## **2. Diagnostics of investment activity in the regions of Ukraine**

Investigation of investment activity and development of scientifically substantiated recommendations for its intensification are based on a comprehensive analysis of the investment sphere of the country and individual regions, identifying promising areas of investment attraction to achieve the greatest social, environmental and economic effects and modeling the impact of the main factors on the activity of participants in the investment process. This important methodological prerequisite makes it possible to intensify investment activity in the region and introduce an effective mechanism for its implementation.

Analyzing the intensity of attracting investments to Ukraine and its regions during the period of 2010-2017, it is possible to note the direct dependence of changes in their volume on the economic situation in the country and the impact of crisis phenomena on this process.

According to the results of investment activity assessment regarding volumes of capital investments attracted to Ukraine during 2010-2017, the following periods were selected: 2010-2012 - pre-crisis, increase of investment activity; 2013-2015 - economic crisis, reduction of investment activity; 2016-2017 - post-

crisis recovery, insignificant growth in the real volume of capital investment. (Figure 4) [15, p. 128].

The analysis of statistical data shows that in all regions of Ukraine, the real volume of attracted capital investments in 2012 was significantly higher compared to 2013-2017. The revealed tendencies indicate a curtailment of investment activity.

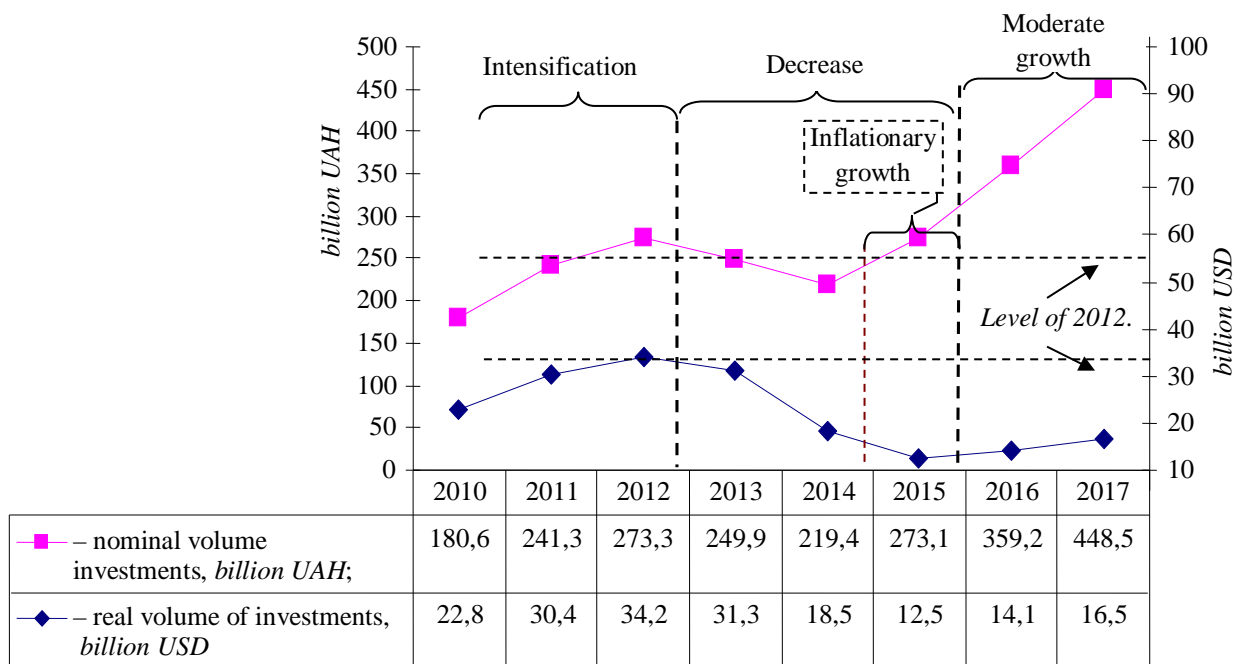


Figure 4. *Periods of development of investment activity in Ukraine in 2010-2017*

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In order to assess the state of real investment, an important indicator is the volume of capital investments in the region per capita (Figure 5).

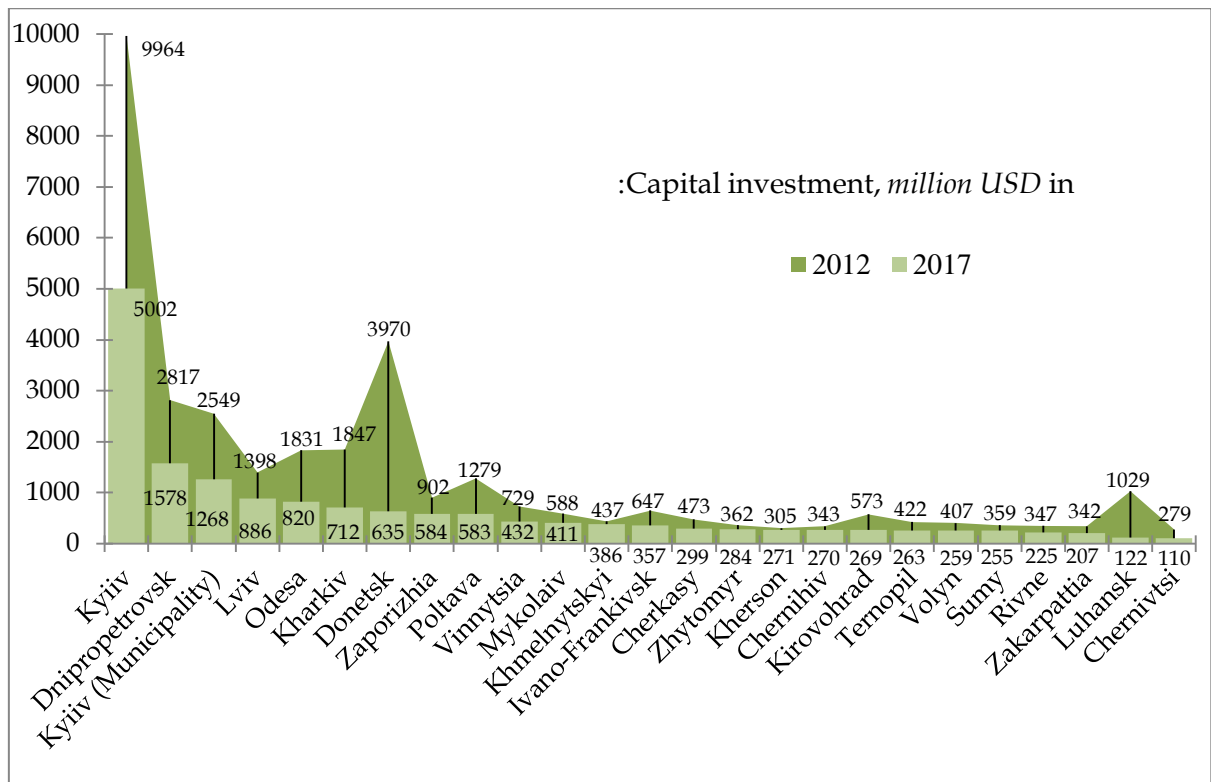


Figure 5. *Real volume of capital investments in the region, million. USD*

*\*Created by authors according to the State Statistics Service.*

An analysis of the dynamics of capital investment per capita gives grounds for concluding that the biggest development of investment activity took place in regions that acted acutely to the change of the investment climate in the country, while in regions where there was no active investment attraction policy, fluctuations are smaller ones.

Significant regional imbalances in terms of capital investment per capita have been traced (Figure 6). According to the conducted analysis, the most attractive areas for investment activity in the regions of Ukraine are industry, agriculture and construction. Investing in the specified areas of activity is conditioned by the possibility of obtaining a greater economic effect in comparison with others. An analysis of the areas of investment attraction showed the predominance of their share in material production compared with the social and environmental spheres, the difference between which is particularly aggravated during the period of economic instability.



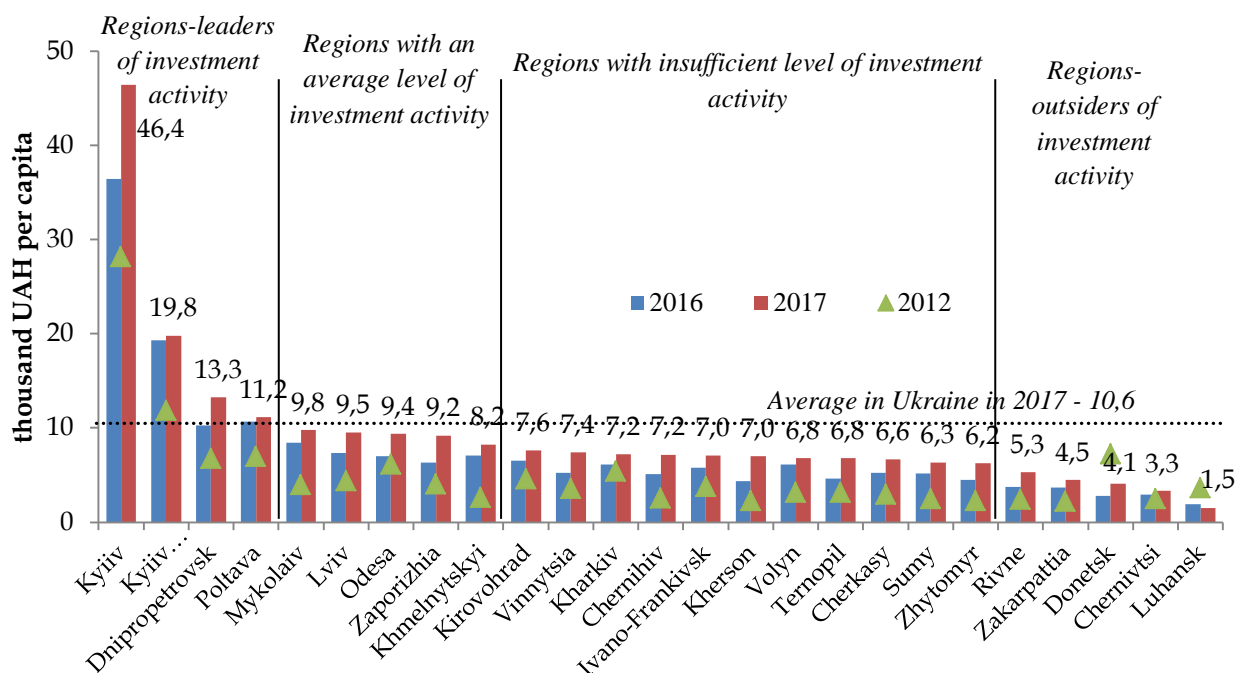


Figure 6. Volume of capital investments per capita, thousand UAH

\* Created by authors according to the State Statistics Service [3].

The main source of financing of capital investments in Ukraine is the own funds of enterprises and organizations, the share of which grew on the background of a reduction in the share of investments financed by bank loans and other loans (from 15.2% in 2011 to 6.6% in 2017), which proves the dependence of investment activity in the country on the stability of the economic situation. The share of capital investments from the state and local budgets in the financing sources structure amounted to 12.7% in 2017. The high share of budget financing of investments is characterized in regions with a low level of investment activity. Given the unfavorable investment climate, foreign investment is virtually non-existent, its share declined from 2.1% in 2010 to 1.4% in 2017.

The total share of capital investments coming from the state and local budgets has increased significantly over the years – from 8.9% in 2010 to 9.1% in 2012 and 12.7% in 2017, which was mostly happening due to a decrease in the weight of other sources of investment financing.

The method of grouping the volume of capital investments into groups of industrial activities allows us to conclude that the volume of capital investment in

the sphere of material production dominates by the volume of capital investments in the social sphere and service. In particular, the industry remains the most investment-attractive, where in 2016, 117753.6 million UAH was invested. This amount is UAH 2760 per capita, which is almost 2.65 times more than the share for construction and 2.3 times more than agriculture, forestry and fishery shares.

Investigating the change in the structure of investments involved in various fields of activity during the crisis, one can note a certain pattern: the increase in the share of investment in material production was accompanied by a simultaneous decline in investment activity in the social sphere and service (Figure 7).

As is evident from the figure, with the reduction of investment resources, the most vulnerable is service activities and social services, where the reduction of investment financing occurs primarily and in relatively large volumes, which proves an increase in the share of investments in material production during the period of the economic crisis of 2013-2014.

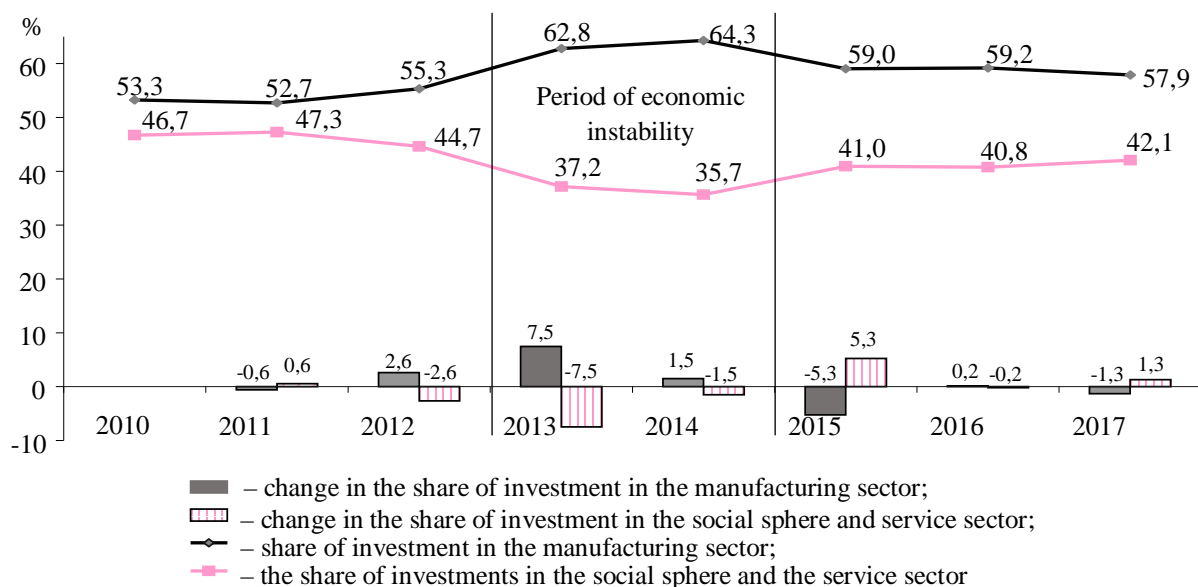


Figure 7. Trends in investment structure changes in different areas of activity in the period of economic instability

\* Created by authors according to the State Statistics Service [3].

The efficiency of investment activity as a key element in ensuring the socio-economic development of the region should be considered in the context of the

main indicators that characterize it. The results of the study showed that in 2010 – 2017, the share of investments in Ukraine GDP reached the highest value in 2012 (18.73%), the lowest – in 2015 (13.73%).

The growth of the share of investments in GDP positively influences its dynamics and promotes socio-economic development of the country, and the decrease in this share leads to its slowdown. Therefore, within our research, we propose an integrated approach to assessing the socio-economic efficiency of investment activity in the regions of Ukraine on the basis of the proposed methodology. The main criterion for the efficiency of investment activity in the socio-economic sphere is the growth of the GRP:

$$E_1 = \frac{GRP_i - GRP_{i-1}}{I_{i-1}} = \frac{\Delta GRP}{I_{i-1}} \text{ та } E_2 = \frac{W_{i-1} - W}{I^e_{i-1}} = \frac{\Delta W}{I^e_{i-1}}, \quad (1, 2)$$

where  $E_1$  – socio-economic efficiency of investment activity in the region;

$E_2$  – ecological efficiency of investment activity in the region;

$\Delta GRP$  – change in gross regional product volume, *UAH*;

$\Delta W$  – change in the amount of waste accumulated in the region, *t*;

$I_{i-1}$ ,  $I^e_{i-1}$  – the volume of socio-economic and environmental investments, respectively, *UAH*;

$i$  – year of research.

According to the results of the conducted evaluation, it was determined that the relatively high level of social and economic efficiency of investment activity was observed in Kharkiv (2.67%), Poltava (2.45%), Zhytomyr (2.35%) regions. Regarding environmental efficiency, in most regions of Ukraine, a negative indicator has been received, indicating the critical state of investment activity in the environmental sphere. The calculations confirm that the lack of investments in the social sphere and the environment leads to a decrease in the quality of life of the population and a deterioration of the ecological situation in the country.

The sufficiency of investments involved in the socio-economic and environmental spheres in the region is calculated by the formula, inverse to the efficiency indicator.:

$$D_1 = \frac{1}{E_1} = \frac{I_{i-1}}{\Delta GRP}; \quad D_2 = \frac{1}{E_2} = \frac{I^e_{i-1}}{\Delta W}. \quad (3, 4)$$

where  $D_1$  – the sufficiency of social and economic investment in the region;

$D_2$  – the sufficiency of environmental investments in the region.

According to the results of the DEA, the rating of the regions regarding the sufficiency of socio-economic and environmental investments has been made. There groups of regions with a critical volume of attracted investments, insufficient, relatively sufficient have been separated (Table 2, 3).

On the basis of the calculations, the percentage of increase of socio-economic and environmental investments for each region of Ukraine was proposed.

*Table 2*

**Regional ranking by  
the sufficiency of social and economic investment**

| Region number by the level of socio-economic investment development | Region              | Relative indicator of the sufficiency of social and economic investment | DEA-results | Level of social and economic investment attraction | Proposed percentage of the volume of social and economic investment in the region increase |
|---|---------------------|---|-------------|--|--|
| 1   | Kyiv                | 25,97   | 1           | Reference standard                                 | x  |
| 2   | Kyiv (Municipality) | 19,01   | 0,73193     | Relatively   | 26,81  |

|    |                 |       |         |            |              |       |
|----|-----------------|-------|---------|------------|--------------|-------|
| 3  | Khmelnyskyi     | 18,67 | 0,71892 | sufficient | 28,11        |       |
| 4  | Volyn           | 17,86 | 0,68767 |            | 31,23        |       |
| 5  | Mykolaiv        | 16,83 | 0,64797 |            | 35,2         |       |
| 6  | Lviv            | 16,2  | 0,62375 |            | 37,63        |       |
| 7  | Ternopil        | 15,73 | 0,60570 |            | 39,43        |       |
| 8  | Ivano-Frankivsk | 15,46 | 0,59527 |            | Insufficient | 40,47 |
| 9  | Zakarpattia     | 14,4  | 0,55428 |            |              | 44,57 |
| 10 | Odesa           | 13,96 | 0,53763 | 46,24      |              |       |
| 11 | Kirovohrad      | 13,81 | 0,53169 | 46,83      |              |       |
| 12 | Dnipropetrovsk  | 13,57 | 0,52236 | 47,76      |              |       |
| 13 | Luhansk         | 13,15 | 0,50615 | 49,38      |              |       |
| 14 | Poltava         | 13,13 | 0,50547 | 49,45      |              |       |
| 15 | Chernivtsi      | 12,57 | 0,48379 | 51,62      |              |       |
| 16 | Sumy            | 12,45 | 0,47933 | 52,07      |              |       |
| 17 | Chernihiv       | 12,27 | 0,47223 | 52,78      |              |       |
| 18 | Kherson         | 11,85 | 0,45627 | 54,37      |              |       |
| 19 | Zhytomyr        | 11,63 | 0,44781 | 55,22      |              |       |
| 20 | Vinnytsia       | 11,16 | 0,42955 | 57,04      |              |       |
| 21 | Rivne           | 10,96 | 0,42181 | 57,82      |              |       |
| 22 | Cherkasy        | 10,94 | 0,42114 | 57,89      |              |       |
| 23 | Kharkiv         | 10,68 | 0,41133 | 58,87      |              |       |
| 24 | Zaporizhia      | 10,58 | 0,40743 | 59,26      |              |       |
| 25 | Donetsk         | 8,66  | 0,33327 | Critical   |              | 66,67 |

\* Calculated by authors.

Table 3

**Regional ranking by  
the sufficiency of environmental investments**

| Region number<br>by the level of<br>environmental<br>investment<br>development | Regions             | Relative<br>indicator of<br>the<br>sufficiency of<br>environmental<br>investment | DEA- results | Level of<br>environmental<br>investment<br>attraction | Proposed<br>percentage of<br>the volume of<br>environmental<br>investment in<br>the region<br>increase |
|--|---------------------|--|--------------|---|--|
| 1  | Kyiv                | 94,77  | 1            | Reference<br>standard                                 | x  |
| 2  | Kyiv (Municipality) | 78,45  | 0,82779      | Relatively<br>sufficient<br>[0,5; 1)                  | 17,22  |
| 3  | Ternopil            | 61,95  | 0,65369      |   | 34,63  |
| 4  | Odesa               | 8,32   | 0,08779      | Insufficient<br>[0,015; 0,5)                          | 91,22  |
| 5  | Ivano-Frankivsk     | 8,28   | 0,08737      |   | 91,26  |
| 6  | Kharkiv             | 8,03   | 0,08473      |   | 91,53  |
| 7  | Chernivtsi          | 7,52   | 0,07935      |   | 92,07  |
| 8  | Poltava             | 7,49   | 0,07903      |   | 92,1   |
| 9  | Zakarpattia         | 6,25   | 0,06595      |   | 93,41  |
| 10   | Zaporizhia          | 4,94   | 0,05213      |   | 94,79  |
| 11   | Chernihiv           | 4,22   | 0,04453      |   | 95,55  |
| 12   | Khmelnyskyi         | 4,15   | 0,04379      |   | 95,62  |
| 13   | Cherkasy            | 3,6  | 0,03799      |   | 96,2   |
| 14   | Vinnytsia           | 2,87   | 0,03028      |   | 96,97  |
| 15   | Zhytomyr            | 2,84   | 0,02997      |   | 97   |
| 16   | Kherson             | 2,59   | 0,02733      |   | 97,27  |
| 17   | Mykolaiv            | 2,23   | 0,02353      |   | 97,65  |
| 18   | Volyn               | 2,06   | 0,02174      |   | 97,83  |
| 19   | Rivne               | 1,6  | 0,01688      |   | 98,31  |
| 20   | Sumy                | 1,35   | 0,01425      |   | Critical<br>[0; 0,015)   |
| 21   | Lviv                | 1,04   | 0,01097      | 98,9  |  |

|    |                |      |         |  |       |
|----|----------------|------|---------|--|-------|
| 22 | Donetsk        | 0,9  | 0,0095  |  | 99,05 |
| 23 | Dnipropetrovsk | 0,25 | 0,00264 |  | 99,74 |
| 24 | Luhansk        | 0,19 | 0,00201 |  | 99,8  |
| 25 | Kirovohrad     | 0,03 | 0,00032 |  | 99,97 |

*\* Calculated by authors.*

Consequently, the results of the conducted assessment of the efficiency of investment activities and the sufficiency of investments in the regions of Ukraine prove a significant lack of investment resources and their inefficient development.

### **3. Organizational and economic principles of investment activity intensification in the region in the conditions of European integration**

While establishing the strategy of investment activity intensification in the regions of Ukraine, it is important to study the experience of the EU countries in implementing the main directions of investment activity management aimed at development investment within their borders and on the continent as a whole [1].

It is revealed that the European Union's regional policy is aimed at creating the optimal investment structure for the achievement of the goals of the Europe 2020 smart, sustainable and inclusive growth strategy, according to which investments are considered not only as a source of capital inflows but also as an effective means of promoting sustainable development. Accordingly, the development of a mechanism for investment activity intensification in the region should be conducted taking into account the priority directions and analysis of the real state of socio-economic development of the region, as well as the environmental situation [7; 13; 11].

The main factors that can be used for quantitative assessment of the favorable environment for investment activity intensification are economic development, demographic situation, labor market, entrepreneurial activity, construction, transport and communication, external and internal trade, education, science, innovation.

With the help of the integrated analysis method, we conducted a quantitative assessment of the factors and determined the integral indicator of the favorable environment of investment activity of the regions of Ukraine for their intensification

in 2017:

$$I_s = \sqrt{\frac{f_1 * n_1 + f_2 * n_2 + \dots + f_k * n_k}{\sum k}} = \sqrt{\frac{\sum f_k * n_k}{\sum k}}, \quad (5)$$

where  $k$  – number of factors of investment activity intensification;  $f$  – group of factors,  $n$  – the number of indicators that it generates.

By the integral indicator, the differentiation of the investment activity environment for its intensification in the regions of Ukraine has been determined (Figure 8).

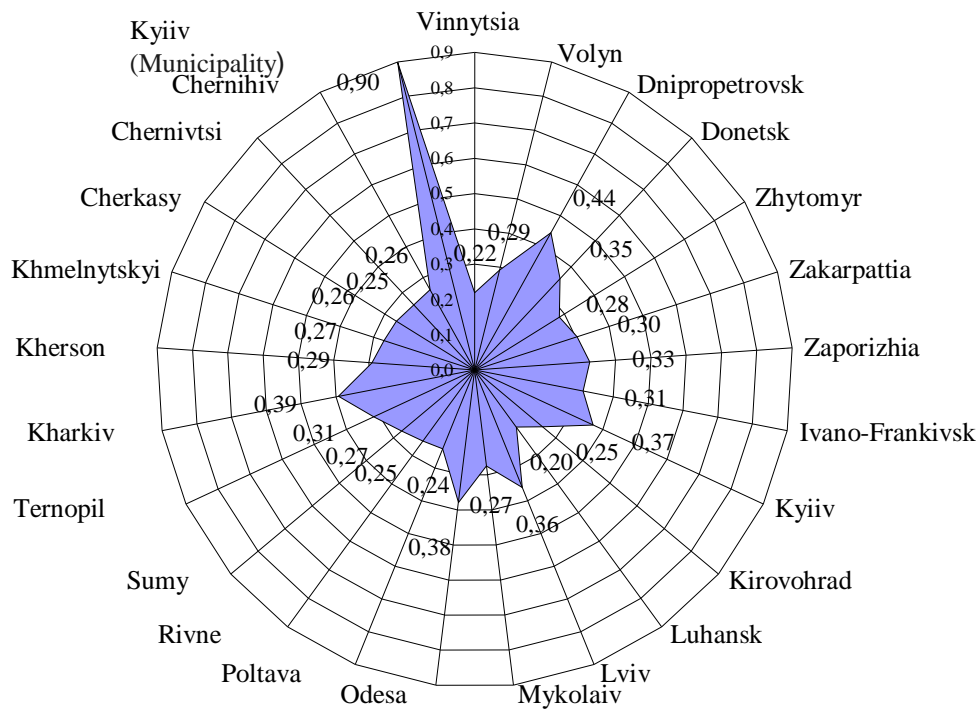


Figure 8. Regional differentiation of investment activity environment for its intensification (as of 2017).

\* Created by authors.

The selection of the main factors, the regulation of which will enable the most influence on the investment activity intensification in the region, was carried out on the basis of the method of correlation-regression analysis.

In order to assess the indicators influence of investment activity environment on investment activity in the region, a regression model was constructed:

$$Y = 0,0497 + 0,1138 * X1 + 0,175 * X2 + 0,6658 * X3, \quad (6)$$

where  $Y$  – capital investment per capita;

$X1$  – the urban population;



X2 – acceptance of housing by region;

X3 – wholesale trade turnover of wholesale trade enterprises by regions.

Promising spheres of investment attraction in Ukraine are wholesale trade and housing construction, stimulation of which contributes to the growth of quantitative indicators of investment. Along with these factors, the significant influence of urbanization processes on the intensification of investment activity in the regions of Ukraine was revealed.

According to the results of the DEA-analysis, in order to determine the optimal distribution of limited investment resources between the socio-economic and environmental spheres, the matrix of strategic prospects for investment activity intensification in the regions of Ukraine is developed (Figure 9).

|   |                                | Sufficiency of social and economic investment in the region |  |   |                   |
|---|--------------------------------|---|--|---|-------------------|
|   |                                | Reference standard<br>(+/+)                                 | Relatively sufficient<br>(+/-)                   | Insufficient<br>(-/+)   | Critical<br>(-/-) |
| Sufficiency of environmental investment | Reference standard<br>(+/+)    | Kyiv<br>(+/+; +/+)  | (+/+; +/-)                                       | (+/+; -/+)  | (+/+; -/-)        |
|   | Relatively sufficient<br>(+/-) | (+/-; +/+)  | Kyiv (Municipality),<br>Ternopil<br>(+/-; +/-)   | (+/-; -/+)  | (+/-; -/-)        |
|   | Insufficient<br>(-/+)          | (-/+; +/+)  | Khmelnyskyi,<br>Mykolaiv,<br>Volyn<br>(-/+; +/-) | Odesa,<br>Ivano-Frankivsk,<br>Kharkiv,<br>Chernivtsi,<br>Poltava,<br>Zakarpattia,<br>Zaporizhia,<br>Cherkasy,<br>Chernihiv, | (-/+; -/-)        |

|  |                   |            |                    |   |                       |
|--|-------------------|------------|--------------------|---|-----------------------|
|  |                   |            |                    | Vinnitsia,<br>Zhytomyr,<br>Kherson,<br>Rivne<br>(-/+; -/+)      |                       |
|  | Critical<br>(-/-) | (-/-; +/+) | Lviv<br>(-/-; +/-) | Sumy,<br>Dnipropetrovsk,<br>Luhansk<br>Kirovohrad<br>(-/-; -/+) | Donetsk<br>(-/-; -/-) |

Figure 9. Matrix of strategic prospects for investment activity intensification in the regions of Ukraine

\*Created by authors.

The transfer of regional grouping results by the level of investment sufficiency in the binary system of evaluation enables to reflect the specifics of each segment of the matrix and take it into account when developing a strategy for investment activity intensification in the region.

State policy, aimed at forming a model of convergent development of regions of Ukraine, should be phased. At the first stage, it is inappropriate to concentrate resources and efforts on the issues of overcoming the backwardness and depression of the most crisis regions. Instead, it is worth to focus on stimulating the development of the most promising and priority sectors and growth poles that can provide the greatest dynamism of development [9, c. 60].

Specifying the strategic benchmarks of regional development convergence based on the investment activity intensification was realized on the example of the Volyn oblast. According to preliminary calculations, this region has a relatively average level of investment activity and the development of which is under the influence of the European integration factor in connection with the common border of the region with the Republic of Poland - a member of the European Union. Among the areas of investment activity intensification in the Volyn region, it was proposed to identify priority and promising spheres of investment attraction (Figure 10).

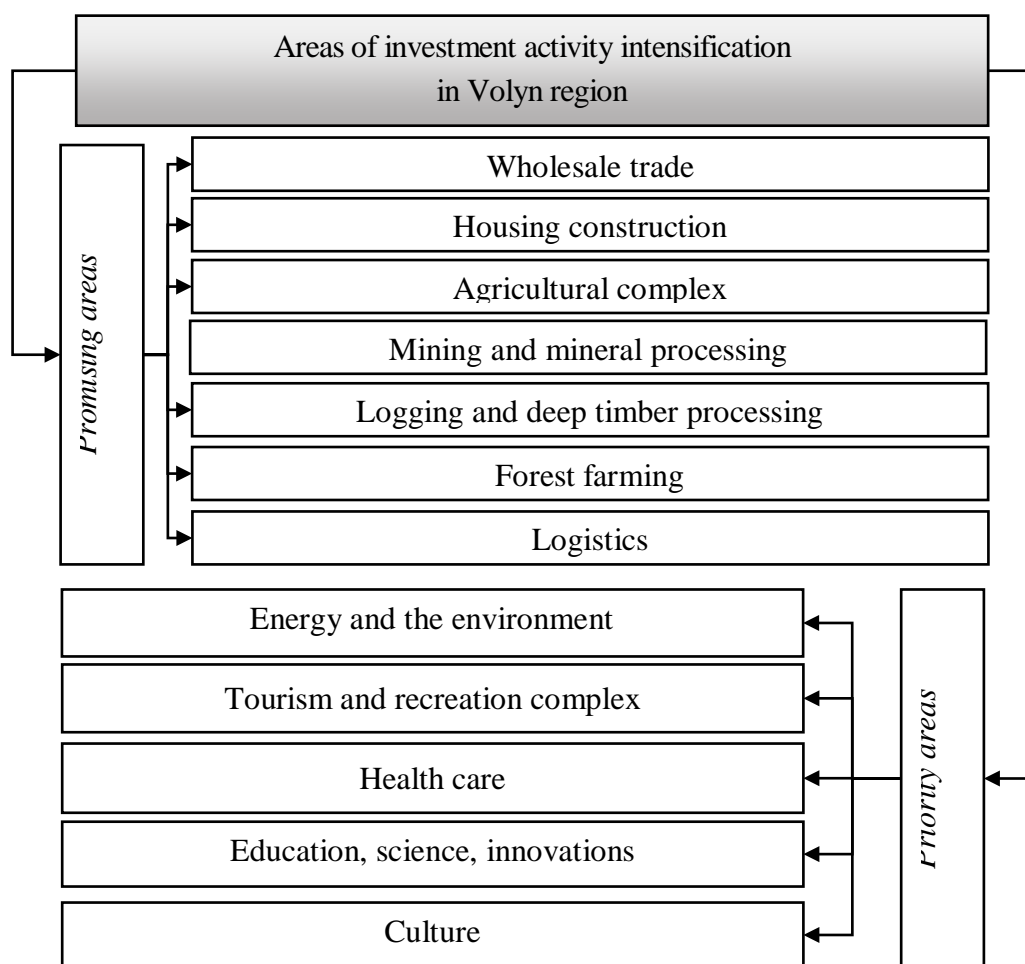


Figure 10. *Promising and priority and spheres of investment activity intensification in Volyn region*

*\*Created by authors.*

We consider promising spheres of investment activity intensification as those, the development of investment activity in which is mainly aimed at obtaining the economic effect and multiplying the invested capital. While investing in priority areas is aimed at achieving socio-economic and environmental goals of sustainable development of the region.

The recommendations proposed for the investment support of the sustainable development of the Volyn region intensification can be used for other regions of Ukraine, taking into account the specifics of their development.

### **Conclusions**

1. Based on the study of the genesis of investment theories, it was proposed to define investments as economic resources, which are invested in various spheres of

economic activity with the view of its further development and achievement of social, economic, and ecological results from their involvement. The essence of investment activity is disclosed through distinguishing cost, resource and effective approaches to the interpretation of its essence. It was revealed that in the course of their evolution there was a change in emphasis from the quantitative indicators of the expected results of the investment activity implementation to the qualitative characteristics of the investment of economic resources in the priority fields in order to receive not only profits, but also the achievement of other positive effects.

It is proved that the basis of investment activity intensification in the region is the formation of an optimal structure of social, economic, and eco-oriented investment with the help of purposeful influence on the processes of distribution of limited investment resources and obtaining a synergistic effect to achieve the goals of sustainable development of the region.

The complex approach to the diagnostics of investment activity in the region is proposed based on the absolute and relative indicators characterizing the features of investment processes at the national and regional levels; definition of priority areas of investment intensification, efficiency of use and sufficiency of investment volumes; the favorable investment environment analysis; modeling the influence of factors on the investment activity intensification in the region and the formation of a matrix of strategic perspectives. Implementation of the improved methodology will allow to substantiate the recommendations for a strategy for investment activity intensification in the region formation.

2. The results of the analysis of investment activity in the regions of Ukraine revealed the periods of its development, which made it possible to investigate the tendencies of reducing the real volume of attracted investments, reducing investment activity in the country and its regions, interregional differentiation of distribution and investment development strengthening, competition for limited investment resources aggravation. On the basis of this, the inefficiency of investment activity management and the ineffectiveness of investment process regulation are proved.

Compared to the potential need for sustainable development, investing in social and environmental spheres in the regions of Ukraine is inadequate and ineffective. This indicates that there is no regulation of investment activity in order to optimally allocate investment among the social, economic and environmental spheres of economic activity.

The calculations of the indicators of socio-economic and environmental investment activity efficiency and sufficiency of investments in the regions of Ukraine made it possible to find out the low level of return on capital investments in the respective spheres, due to their significant lack and inefficient development.

3. In our opinion, one of the ways to reduce the disproportion of regions development is to hold an effective regional policy aimed at optimal use of investment resources in the regions, investment activity intensification in the socio-economic and environmental areas and deepening of interregional economic integration.

Taking into account the European experience of implementation of the “Europe 2020” development strategy, strategic benchmarks of regional development convergence based on the improvement of the mechanism of investment activity intensification in the region were substantiated. Based on the results of the integrated analysis of the assessment of the favorable environment of the investment activity in the region and the method of correlation-regression analysis, a model for assessing the impact of investment environment indicators on the investment activity in the region is conducted, the results of which determined that the greatest impact on the investment activity intensification along with the level of urbanization in the region has the wholesale trade and housing construction development.

The matrix of strategic prospects for investment activity intensification in the regions of Ukraine is developed, which enables to substantiate the recommendations of regional development convergence on the basis of optimal structure of investments attraction in priority areas formation. Strategic benchmarks for regional development convergence based on investment activity

intensification on the example of Volyn region have been developed. Their observance will contribute to the increase of quantitative and qualitative indicators of investments attraction, increase of socio-economic and ecological efficiency of investment activity and can be used by other regions of Ukraine taking into account peculiarities of their development.

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## **SYNERGETIC APPROACH TO QUALITY MANAGEMENT AS THE BASIS FOR COMPANY'S INTERNATIONAL COMPETITIVENESS<sup>1</sup>**

***Abstract.** Application of synergetics as a new scientific paradigm to management is discussed. The necessary settings for the development of organization as a complex system in the framework of the theory of synergetic management are analyzed. Within the limits of the model of endogenous scientific and technical progress the problem of efficiency increase of integration into the general system at all stages and levels of a product life cycle is considered. A synergistic model, which allows to present evolution of life cycle on the basis of joint behaviour of designing, making and using systems is constructed. On the basis of phase portraits kinetics of continuous transition between modes of realisation of the product life cycle answering various parities of times of change of a gain of scientific and technical result and the production functions of using and making systems is investigated.*

***Keywords:** synergy, model, product life cycle, competitiveness, quality management, complex technical product*

The Fourth Industrial Revolution have defined that key factors of long-term global competitiveness are drivers of economic growth and economy's productivity, particularly, human capital, innovation, resilience and agility. Moreover, they are considered not only as drivers but also defining features of economic success in the Fourth Industrial Revolution [1]. It should be noted that their efficiency and performance primarily depends on well-functioning quality management system based on principles of customer orientation, motivation and

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involvement of senior management, process approach and continuous improvement [2] declared in the ISO 9000 standards.

These standards containing recommendations and tools for companies and organizations who want their products and services to constantly meet the customer's requirements, and the quality is constantly improved. The process approach is used as the base one [3]. According to the requirements of ISO 9001:2015 [4], the organization must determine the processes necessary for building a quality management system [5-7]. The problem is that the quality management system at each enterprise is, as a rule, unique and characterized by the content and importance of the hierarchical structures of the processes entering it, their input and output information, energy and material flows, quality indicators and their marginal values. The complex of interrelations between processes in each organization is complex and multifaceted [8-10]. Clients, competition, economic and political changes create new conditions for the existence of organizations and require flexibility and quick reaction in their management [11]. Until now, the methods of quality assurance applied at the most machine-building enterprises have been based, as a rule, on rigid multistage control of the product and services quality (functional approach), and very insignificantly concerned improving the quality of production management systems based on the process approach, considering as the most important sign of perfect quality management and as a base in the International Standards ISO series 9000 [12-15]. For practical implementation in accordance with the requirements of ISO 9001: 2015 [4] the organization have to determine the required input data and the expected output of these processes; determine the sequence and interaction of these processes; identify and apply criteria and methods (including monitoring, measurements and relevant performance indicators) necessary to ensure the effective implementation and management of these processes; identify the resources required for such processes and ensure their availability; designate responsibilities and authority for the processes.

Under conditions of uncertainty in the external and internal environments

characteristic of most modern enterprises, the formation of an optimal hierarchical structure of business processes that allow transforming "entrances" into "exits" and often al-most uncontrollable, for the adoption of rational (optimal) management solutions to continuously improve quality is a complex scientific and practical task. This is especially relevant for enterprises, for example, machine building, which are involved in the product life cycle (PLC), in particular, the complex technical products life cycle. For them, a common scientific methodology is necessary both for the analysis and for synthesis of the system of processes at the stages of the PLC of complex technical products, and for analysis and synthesis of systems for integrated process control, taking into account the corresponding dynamic, parametric and energy laws.

The purpose of this work is to improve fundamentals of quality management of the complex technical systems on the base of synergetic approach.

As a part of a complex technical system, in general, three different components can be distinguished [16] – a complex of technical means, software and operational personnel. Designing, manufacturing and operation of complex technical products is based on interconnections within single systems through information, energy and material flows.

To ensure the quality of the complex technical system, it is necessary to ensure the appropriate quality of output data for each phase of the complex technical system life cycle realized through the identification and monitoring of key performance indicators within the life cycle.

The algorithm for developing the process indicators is as follows:

- 1) identifycation of the process and its result;
- 2) identifycation of inputs (resources) and controls (rules and requirements for the process);
- 3) evaluation of possible results as outcome indicators;
- 4) generation of cost indicators based on the inputs of the process;
- 5) examing correctness of the process;
- 6) performance indicators calculation as the ratio of the result obtained to the

time;

7) calculation of key performance indicators as integral characteristics of activity.

In general, the company's processes are classified as Basic, Providing, Directing and Developing Processes (table 1).

**Table 1.** Classification of processes

| Processes Types      | Characteristics   | Elements   |
|----------------------|---|--|
| Basic Processes      | <ul style="list-style-type: none"> <li>Processes that create a product that is valuable to the external consumer;</li> <li>Processes that create added value to a product or service.</li> </ul>  | Sales, Design and development, Service maintenance, Supply, Production   |
| Providing Processes  | <ul style="list-style-type: none"> <li>Processes supporting and providing the main processes;</li> <li>Processes that create and maintain a company's infrastructure</li> </ul>   | Financial and Economic Management, Human Resource Management, Maintenance management, Legal support, Business Security Management, Managing documented information, Knowledge Management, Communications Management, Logistics Management, IT security |
| Directing Processes  | <ul style="list-style-type: none"> <li>Processes, the main purpose of which is to manage the company's activities;</li> <li>The processes that ensure the survival and development of the organization regulate its current activities</li> </ul> | Strategic management, Business Process Quality Management, Risk Management   |
| Developing Processes | <ul style="list-style-type: none"> <li>Irregular and innovative activities to improve and develop the organization;</li> <li>Activities aimed at the long-term perspective.</li> </ul>  | Project management   |

The main factors of these processes' complexity are:

- the dynamic nature of the processes;
- both the internal and external processes are non-linear, synergistic (dissipative);
- the natural evolutionary processes occurring in the organization are degradative, have a latent stage of development and are aimed at the destruction of the system;
- the length of degradation processes considerably exceeds the length of specific processes.

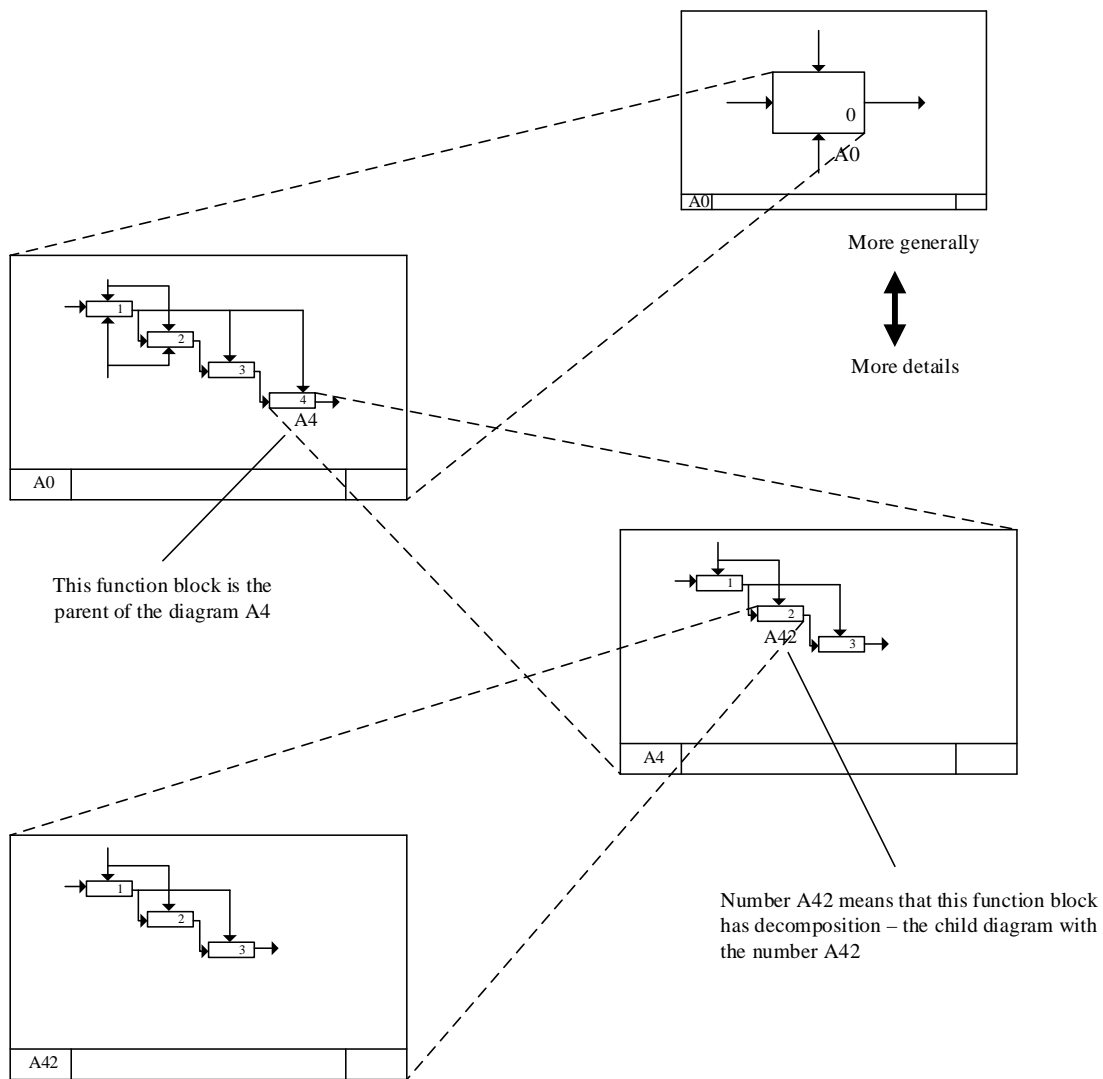
Every process is characterized by the structure and interconnection of its components and can be represented in the form of a graph where nodes correspond

to components, and arcs correspond to their connections.

Basic models of business process as part of the methodology is regarded to be structural models (control), workflow models, models of executable processes, data flow models [17, 18].

Consider the structural model and its notation (a stable set of rules that describes the business process as part of the methodology). Its submission form provides an opportunity to see and understand the interconnection of processes without going into details. Processes can be represented in the form of a hierarchical structure with characteristics of links (branches), reflecting the utility, the probability for obtaining a result and the connection with previous and subsequent processes.

Grafically the structural model is a set of interrelated functional blocks. Structural modeling the business processes is the first stage of studying the system. Today, this technique of describing business processes has become the most widespread in the world and adopted as a standard in many countries [19-23]. The processes decomposition in the form of the structural model is shown in Fig. 1.



**Fig. 6.** The principle of the processes decomposition

The decomposition of variants is carried out by a set of characteristics. Criteria for choosing options are economic indicators (minimum cost, costs) or technical solutions forming a benefit function (utility). Description of business processes involves:

- 1) defining the owner of the business process, its boundaries, clients, outputs, suppliers, inputs, and resources;
- 2) describing the business process technology;
- 3) defining of indicators of the business process, the results of the business process, customer satisfaction of the business process;
- 4) analyzing, improving the business process, reporting to a superior manager.

In describing and optimizing the organization's processes, two possible tasks can

be solved:

- increase transparency and effectiveness of the organization;
- automation of business processes.

As criteria for evaluating the results of the description of processes, the following can be adopted:

- availability of verified descriptions of business processes;
- solution of problems identified during the implementation of business processes;
- the degree of coordination of units;
- the degree of minimization of possible variations as a result of the implementation of the corresponding business process. Thus, the business process is executed stably without failures.

It is vital to note that the business process evaluation ought to be conducted within PLC.

According to the international standards ISO 9000 Series, PLC can be presented by a combination of designing, manufacturing and operation levels. Each of these levels represents a system which can have an independent character of results application. However, their integration into the general system provides possibility of essential increase of technical and economic indicators of the product.

According to [24] **PLC** is regarded as a period of a system's dynamic development, which under some conditions constantly turns from intellectual to technical and economic one, comprising two interconnected cycles: *innovative* ("materialization" of ideas, inventions and investigations into new technically embodied production types, means and labor objects, technologies and organizations of production) and *market* ("commercialization" of innovations, which turns them into income source), which are superimposed on one another in time (fig. 2). Focusing on the Concept of Sustainable Development it is reasonably to introduce the concept the Product Customized Cycle (PCC), which allows more clearly to define time aspects in ecological and economic estimation of the innovation producing and consumption efficiency during its whole evolutionary

development in the long-term period. Its start has to be the moment from works beginning with attempts to embody material plan. PCC shows ecological and economic estimation of the effect from creation, production, consumption of innovation, and also processing and destruction of wastes during PLC and after its exit from the market and from the consumption sphere (fig. 2) [24].

Taking into account the mentioned above, one suggested to determine PLC as a period of time, during which economic effect from creation, production, consumption and utilization of innovation is observed considering its market life. In its turn, PCC is a period when originating resource gets consumer's features, which are necessary for effective satisfaction of consumers' demands, during which one can see ecological and economic effect from its production, consumption and utilization in the long-term perspective. Unlike PLC, PCC is not ended with stage of exit from market, it has also the ecoreaction stage, during which environment continues to be under ecodestructive or ecoconstructive influence, made by the processes of production producing, consumption and utilization, which is not sold at the market. Thus, CCI defines time aspects to get ecological and economic results of the innovation production, consumption and utilization during its evolutionary development and after its exit from the market. Traditionally, PCC curve character is connected with PLC curve character. That's why their analysis and prognostication have to be conducted parallel [24].

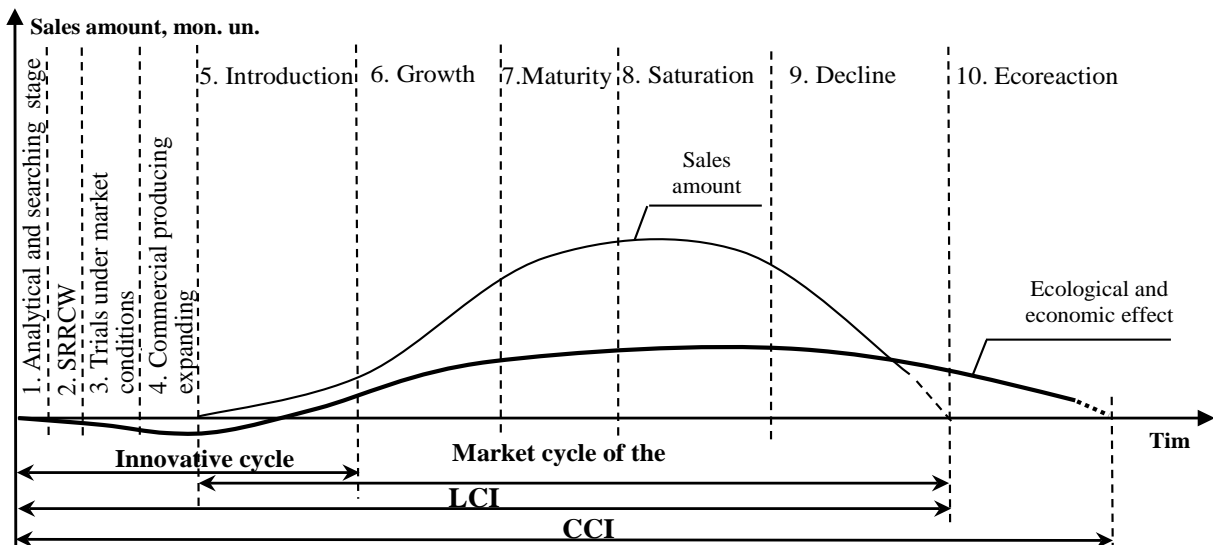


Fig. 2. Correlation between PLC and PCC [24]

The PLC system condition is defined by a set of conditions and means providing joint functioning of economic, technical and social processes, testing on itself unequal influence of an environment and possessing different response time. The majority of mathematical models of processes which are in use nowadays consist of the following elements: set of possible entrance influences (any streams of resources - material, financial, personnel and information); set of possible target influences (production, service, etc.); the set characterising a condition of the system during the given period (the workplaces that serve for transformation of streams of resources into finished goods).

In these conditions to define quantitatively dependence between an input and output of the production, having reconstructed internal structure with sufficient completeness, is rather difficult. On the other hand, the description of functioning of modelled process as a system can be received on the basis of processing of the statistical data. In such situation PLC management turns into a problem, which demands an application of special means of the analysis, planning and management. One of such means is an economic-statistical modelling in which models of the *production functions* are used most often [14, 25]. In a general form it is possible to present the production function by the following dependence:

$$y = f(x_1, \dots, x_n), \quad (1)$$

where  $y$  – an output indicator;  $x_1, \dots, x_n$  - indicators of industrial resources.

Number of factors of the production functions  $n < 10$ . Usually production function (1) is created by selection of the most suitable functions of a certain parametrical class  $y = f(x_i; a_1, a_2, \dots, a_k)$ , where  $a = (a_1, \dots, a_k)$  is vector of parametres. More often in economic researches production functions are expressed in multiplicate  $y = a_0 x_1^{a_1} x_2^{a_2}$  or an additive  $y = a_0 + a_1 x_1 + a_2 x_2$  forms. Here  $a_1$  and  $a_2$  are the indicators of the production function that characterise sensitivity of the throughput to the change of the costs of industrial resources,  $a_0$  – the factor, which considers



dimension of indicators and neglected random factors of manufacture. These indicators are received on the basis of available statistical, expert and other data types about technology and production behaviour. Thus, the method of their estimation unequivocally is not defined and depends on the purposes of production function creation, features of the modelled process and the initial data.

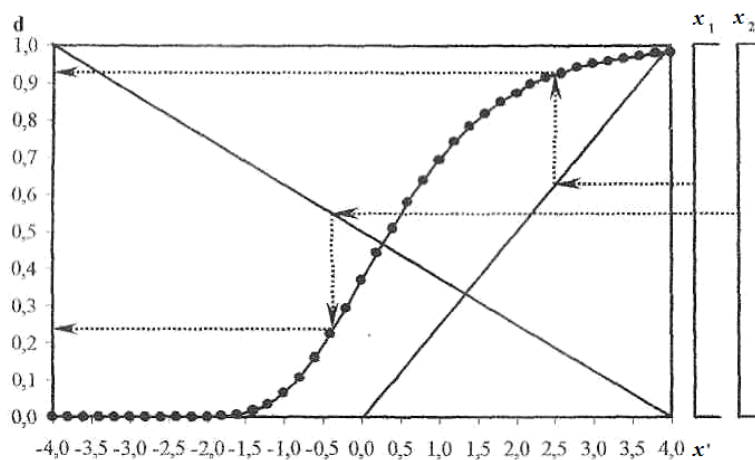
The analysis of the existing methods shows that it is the most rational at production function formation ( $y$ ) to pass on to dimensionless indicators  $x_1, \dots, x_n$ . For this purpose it is necessary to convert all indicators ( $x_i$ ) into a dimensionless scale  $x'$ , where each individual indicator will be defined under the formula [15, 26]

$$d_i = e^{-(e^{-x'_i})} . \quad (2)$$

At unilateral limitations  $x_i \leq x_{i_{\max}}$  or  $x_i \geq x_{i_{\min}}$   $x'_i$  are counted according to the formula:

$$x'_i = k \frac{x_i - x_{\max}(x_{\min})}{x_{\max}(x_{\min})} + m , \quad (3)$$

where  $k, m$  - the factors, which allow to set a various curvature of the curve (fig. 3).



**Fig. 3.** Graph of the Harrington's desirability function

It allows to consider separate, most important features of the modelled process and the initial data.

Consequently production function is formed as a generalised function representing a geometric mean of separate parameters

$$y = \sqrt[q]{d_1 \cdot d_2 \cdot \dots \cdot d_q}, \quad (4)$$

where  $q$  – number of studied parameters of optimisation.

The special scale (table 2) allows to find either desirable level of production function.

Table 2. Scale of production function desirability

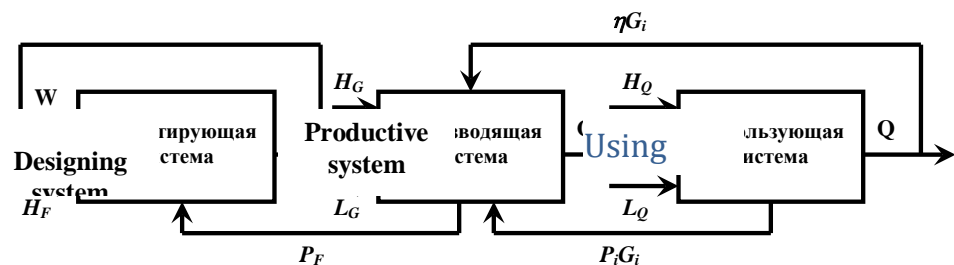
| Production Function Level                         | $y$         |
|---|-------------|
| maximum possible level of production function     | 1.00        |
| High level of production function                 | 1.00 – 0.80 |
| Good level of production function                 | 0.80 – 0.60 |
| Sufficient level of production function           | 0.60 – 0.37 |
| Admissible level of production function           | 0.37        |
| Inadmissible level of production function         | 0,37 – 0    |
| The most undesirable level of production function | 0           |

Thus the production functions can be applied both independently and as a part of the more complex economic and mathematical models.

The most known model which allows to consider processes of PLC is P.Romera's model [27] – the model of the endogenous scientific and technical progress, based on the idea of accumulation of the human capital. According to this model PLC can be presented as the block diagramme shown in fig. 4.

The product is originally created at a design stage - engineering and design preparation of the manufacture. It is possible to present the results of this stage by the production function  $F$  which is proportional to already available store of

designs  $W$  and realisations (an existing fund of knowledge), including complex of preproduction works (research and development), and to the involved volume of human capital  $H_F$ . At a production phase the information, presented in the design and technological documentation (engineering documentation and technical documentation, accordingly), by means of technological actions will be transformed to properties of a product. Functioning in system resources, technology and organisation conditions define potential possibilities and a condition of the process of production. Efficiency of transformation of resources into production can be expressed by the production function  $G$  (cost of the output of the end product), which includes industrial capital costs  $H_G$  and labour inputs



$L_G$ .

**Fig. 4.** The block diagramme of the model of endogeneous scientific and technical development of the PLC

Made product  $G_i$  (product cost (means of production)) is put into operation, where on the basis of labour inputs  $L_Q$  in the form of cost of tangible assets (machinery and equipment, buildings, constructions, the earth, stocks of raw materials, half-finished products and finished goods), which are applied in production, and the involved human capital  $H_Q$  (the accumulated expenses for the general education and special training of experts, public health services, labour moving, etc.) is used by the customer for a release of the end production  $Q$  (cost of the output of the end product).

In the offered work the phenomenological scheme is investigated. In the framework of this scheme evolution of self-organizing systems can be represented in a self-coordinating way, and possible variants of continuous transition between

modes of PLC realisation can be considered. Our approach is based on the Lorentz's three-parametrical system, answering the elementary field representation of the self-organizing system.

As shows the research of complex systems [7], representation of the self-organizing system is reduced to the self-co-ordinated description of time dependences of parametre of the order, the interfaced to its field and the operating parametre. As efficiency of realisation of PLC is defined at its operation, then it is necessary to accept the production function of maintaining (using) system  $Q$  as an order parametre. Accordingly, the conjugate field represents the production function of making system  $G$ , and the operating parametre  $F$  characterises a gain of scientific and technical result. As a result the problem is reduced to an expression of the specified quantities' change rates  $\dot{Q}, \dot{G}, \dot{F}$  through their values  $Q, G, F$ .

Considering that the behaviour of parametre of order  $Q(t)$  is the core and subordinates behaviour of the conjugate field  $G(t)$  and the operating parametre  $F(t)$ , we will accept an expression for its change rate  $\dot{Q}$  in the linear form

$$\tau_Q \dot{Q} = -Q + A_Q G. \quad (5)$$

Here the first summand in the right part considers a relaxation of the production function of the using system to zero value for time  $\tau_Q$ , the second - describes linear reaction of the change rate  $\dot{Q}$  to field increase  $G$  ( $A_Q > 0$  - a communication constant).

The equation for the conjugate field is regarded as

$$\tau_G \dot{G} = -G + A_G Q F, \quad (6)$$

where the first sum mand again has a relaxation nature with the characteristic time  $\tau_G$ , the second - represents a positive feedback of the production function of the

using system and a gain of scientific and technical result with the change rate of the conjugate field ( $A_G > 0$  - the communication constant). This communication causes increase of the conjugate field (the production function of making system), which is at the bottom of self-organising.

Last equation of evolution of the system describes the relaxation of the gain of the scientific and technical result  $F$ , which is playing a role of the operating parametre:

$$\tau_F \dot{F} = (F_e - F) - A_F QG . \quad (7)$$

Unlike (5), (6) the first summand in (7) describes a relaxation of parametre  $F$  not to zero, but to final value  $F_e$ , which is set by external influence ( $\tau_F$  - corresponding characteristic of relaxation,  $A_F > 0$  - a communication constant). According to (7) negative feedback of the conjugate field and parametre of an order with speed of a gain of scientific and technical result, according to a principle of Le-Shatele, results to reduction of this parametre.

According to [16-19] system of synergistic equations (5) - (7) is the elementary field scheme representing effect of self-organising. For the analysis of this system it is convenient to make use of dimensionless variables by scaling time  $t$ , the production function of the using system  $Q$ , conjugate field  $G$  and internal status parametre  $F$

$$\tau_Q, Q_c \equiv (a_G a_F)^{-1/2}, G_c \equiv (a_Q^2 a_G a_F)^{-1/2}, F_c \equiv (a_Q a_G)^{-1}. \quad (8)$$

Then the behaviour of PLC processes is represented by dimensionless system of the equations

$$\dot{Q} = -Q + G, \quad (9)$$

$$\sigma \dot{G} = -G + QF, \quad (10)$$

$$\delta \dot{F} = (F_e - F) - QG, \quad (11)$$

where relations of characteristic times  $\sigma \equiv \tau_G/\tau_Q$  and  $\delta \equiv \tau_F/\tau_Q$  are entered.

Within the frames of the elementary picture the evolution of self-organizing systems is represented by adiabatic approach  $\tau_G, \tau_F \ll \tau_Q$ , according to which the conjugate field  $G(t)$  and the operating parametre  $F(t)$  change so quickly that they have time to be arranged under slow change of parametre of an order  $Q(t)$ . Thus system evolution has the monotonous character described by the equation of Landau-Halatsnikov. According to [9], for reflexion of nonmonotonic evolution of system, it is necessary to weaken a standard principle of hierarchy [10], accepting that not one, but two variables possess the greatest time of relaxation. As a result a system of two differential equations represent a transition and the problem comes to research of possible scenarios of continuous transition.

According to the model given in the international standards of series ISO 9000, PLC may be presented by the combination of the levels of designing, manufacture and operation. Each of these levels represents a system, which can have an independent character of application of the results. However their integration into the general system provides qualitatively new set of properties and a measure of utility of products, as well as an increase of technical and economic indicators of its manufacture and operation.

Condition of the PLC system is defined by set of conditions and means of joint functioning of the economic, technical and social processes, which are unequally influenced by the external environment and which possess various persistence-levels.

In such situation management of PLC turns to a problem that requires application of special means of the analysis, planning and management with the help of production functions.

In the offered work the phenomenological scheme is investigated. In the framework of this scheme evolution of self-organizing systems can be represented

in a self-coordinating way, and possible variants of continuous transition between modes of PLC realisation can be considered.

The conducted researches show that Lorentz's system ((9) - (11)) allows to present in the self-coordinating way the basic features of transition from the mode of inefficient realisation of PLC to the mode of its effective realisation. The phenomenological description is reached due to dependence of synergistic potential  $V(Q)$  from the production function of the maintaining system. In case of continuous transition this dependence is defined by the characteristic value of intensity of the external influence  $F_e$ : a monotonously increasing dependence  $V(Q)$  with a minimum in a point  $Q_0 = 0$ , which answers inefficient realisation of PLC, is received at  $F_e < 1$ . And at  $F_e > 1$  there is a minimum  $Q_0 \neq 0$ , which corresponds to a mode of effective realisation of PLC. The kinetic picture of transition has been presented by the phase portraits shown in fig. 8, 9. On the basis of the phase portraits the processes of continuous transition between the modes of realisation of PLC, which possess various parities of times of change of production functions of the making and maintaining systems and time of change of a gain of the scientific and technical result have been investigated. It is shown that critical increase of two first times leads to an oscillatory mode if the parametre «the gain of the scientific and technical result» changes much more slowly than other values. Otherwise the evolution of the system is defined by a universal area of a phase trajectory.

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**INNOVATIVE PROGRAMS OF AGRARIAN DEVELOPMENT OF THE  
UKRAINE'S SOUTHERN REGIONS AND THE CRIMEAN PENINSULA:  
FORMATION OF THE UNIFORM ECOLOGICAL AND ECONOMIC  
COMPLEX**

*Summary.* The article analyzes the programs that were implemented in the Ukraine's southern areas (through 1954) and the Crimea after the end of World War II. Studied were the programs of providing the electric power base for agricultural development in those regions within the rural electrification program and establishing the Southern Electric Power Area that would include the Trans-Dnieper area, southern areas of the Ukrainian SSR and the Crimea. The demographic situation in the Crimea and the Ukraine's southern region and the Soviet government's policy for its improvement in the period after World War II, in particular, by resettling the population from other regions, were also analyzed. The issues of providing the conditions for agricultural development by constructing the irrigation system in the southern areas of the Ukrainian SSR and northern areas of the Crimea was detailed. The author also drew attention to the programs of constructing the electric power stations, especially the Kakhovka Station, the high-voltage transmission lines, and the South Ukrainian and North Crimean Canals. The main set of problems analyzed in the article are the programs of development and cultivation of such crops as cotton and rice that were new to the Ukraine's southern areas and the Crimea, there was also an idea to develop citrus plant cultivation. The study was based on a collection of archive documents that reveal the actual economic condition and were only available to the bodies of the ruling party, the KP(b)U [Communist Party (of Bolsheviks) of Ukraine]. Such programs, the implementation of which was attempted for economic development of the Ukraine's southern areas and the Crimea, were to ensure the development of the region's economy that declined after World War II. As a result, the integral economic complex was established on the territorial basis of the Ukraine's southern areas and the Crimean Peninsula's territory.

**Keywords:** Crimean peninsula, southern regions of Ukraine, agriculture, demographic situation, energy, cotton production, climatic condition

The establishment of the regional economic complex based in the Ukraine's southern areas and the Crimean Peninsula was among the most demonstrable examples of economic development of territories in the history of the Ukrainian economy after the end of World War II. In that period, the Ukrainian economy sustained considerable destruction due to the military actions, and demographic losses were substantial as well. Situation in the Crimea featured demographic consequences of deportation of the

indigenous people in 1944; in addition, agriculture declined due to the lengthy interval in farming throughout the Ukraine's southern areas and the Crimean Peninsula. However, development of the region was of not only economic but also military and political importance. Therefore, the matter of populating the Ukraine's southern areas and the Crimean Peninsula with people who were able to work in agriculture, and moreover, within the Soviet collective farm system, was pressing. It should be noted that such labor organization system in agriculture enabled the government to mobilize considerable labor resources of collective farms promptly and at minimum costs, actually by using cheap workforce. As the experience of centuries shows, economic development of areas could only be successful if based on a solid ground of agricultural development. It is on the agrarian basis that the formation of the economic complex in the southern areas of Ukraine and the northern areas of the Crimea took place. At the same time, the rest of the Crimean Peninsula's territory, southern and coastal areas, developed owing to the economic "expansion" from the areas that were developed by implementation of agrarian projects in the southern areas of the Ukrainian SSR and northern areas of the Crimea.

After World War II ended, economic life of the Crimean Peninsula, and especially of the southern areas of the UkrSSR was extremely declined. That was because of a lengthy interval in land cultivation resulting in no prevention of the weed bitterling that became spread on the Kherson Oblast territories[1, s. 18-19]. The climate in the region of the Ukraine's southern areas and Crimea's northern areas was quite favorable for agricultural development given a large number of warm days in the year. It allowed to grow certain warm-season crops. In addition, both the southern areas of the UkrSSR and the northern areas of the Crimea had similar climatic parameters and formed steppe landscape. In terms of their agricultural specialization, the highland and northern areas of the Crimea differed from the rest of the peninsula's territory, and crops suitable for such climate that were original for the soviet-period agriculture were grown in those areas. This refers to viticulture, as collective farms in such Crimean districts as Yalta, Alushta, and Sudak, as well as Alupka, were mainly focused on viticulture, fruit growing, and livestock farming targeted on wool[2, s. 43-45]. Viticulture in the Crimea was supported by the state at the time, in particular, in 1947, the TsK KP(b)U [Central Committee of the Communist Party

(of Bolsheviks) of Ukraine] requested that conditions for grape growing similar to those enjoyed at that time by the Crimean winegrowers be provided for support to viticulture in the Transcarpathia region[3, s. 371-372]. However, development of only viticulture and in only three areas of the peninsula could not solve the Crimean socioeconomic development problem.

Within the measures to implement the Resolution of the Plenum of the TsK KP(b)U “On the Agriculture Fostering Measures in the Postwar Period” the output of the industrial crops, fiber flax, tobacco, shag, hemp, rubber plants, hop, etc., was to be surpassed between 1948 and 1949[4, s. 155]. It was also envisaged to increase the cotton planting acreage in Kherson, Mykolaiv, Odesa, and Zaporizzhia Oblasts by 16,000 ha in 1947. It was also planned to plant and repair the vineyards in the prewar scope between 1947 and 1949. Planned was to also use farm households for viticulture and orchards and berry fields were to be set out[4, s. 156-157]. Hence, the southern areas were to play the key role in implementing those development plans for industrial sectors of agriculture in UkrSSR, and some organizational measures to provide conditions for developing those sectors were taken in the first five-year period after the end of World War II. The UkrSSR Ministry of Agriculture actively extended the experience of taking such measures to Crimean Oblast after its transfer in 1954.

In the late 1940s, the Soviet leaders make attempts to promote, in the southern areas of Ukraine, the growing of crops that were unusual for such regions. For instance, First Secretary of the TsK KP(b)U N. Khrushchev raised the question of mastering the growing of such crops as cotton and citrus plants in the southern areas of the UkrSSR at the meeting on December 18, 1948. In addition to those rather exotic crops, there were plans to develop rice growing in large river valleys. That crop required systematic and reliable irrigation, and therefore, the main focus in the rice growing development was made on its cultivation in the full-flowing river valleys[5, s. 140]. The attempts to cultivate cotton plant in the southern areas of the UkrSSR and northern areas of the Crimea made it clear that growing of that crop with a possibility to obtain high yields is impossible without a reliable irrigation system. However, the issue of cotton plant growing on all suitable territories was of principle for the Soviet leaders in that period.

The motivations were primarily political, cotton plant was a strategic raw material, in particular, for the military industry. Also in that period, the USSR tried to compete with the USA on the global cotton market and had considerable prospects to take the lead. However, the USSR lacked time for intensive cotton farming development, and hence, the stake was put on extensive development, that is, on all territories suitable for growing that crop, and even the lowest yield was deemed fit.

At the meeting held by the TsK KP(b)U First Secretary on December 18, 1948, dedicated to cotton, herb, and citrus plant growing, N. Khrushchev brought up cotton farming as the first item. As the main problem in development of that sector, he pointed out the necessity to cultivate cotton on non-irrigated lands and told that the USA already had such experience at that time[6, s. 1]. The US experience was taken as model rightly, because the USSR entered the competition with that leading Western country in that period for not only strategic military reasons but political as well to demonstrate the advantages of the Soviet system globally. Later, when the construction of the South Ukrainian and North Crimean canals for cotton cultivation conditions to be provided in the Ukraine's southern areas and Crimea's northern areas was rolled out since 1950, it was stressed that such projects were not yet implemented in either Europe or America. Accordingly, the reclamation of lands for cotton plant, which were non-irrigated, was to evidence the USSR's ability to compete with the West in that area and introduce competition on the cotton market for the USA. Notably, the reason was that the US domination on the cotton market was a weighty strategic advantage in the global economy.

N. Khrushchev pointed out that cotton was already cultivated in the UkrSSR; however, collective farmers and collective farms failed to pay due attention to that sector because of its low crop yield and poor quality of the crops obtained, thus resulting low payment for cotton. In the course of the meeting, the experimental station in Kherson Oblast was instructed to breed short duration cotton varieties that would enable to fit in the number of warm days for obtaining the crop[6, s. 2]. Cotton was cultivated in Ukraine even before the war, and N. Khrushchev pointed out that the output of that crop on Ukrainian lands was low. He stressed that where the cotton crop was sown on 200,000 ha

in 1937 and 1938, the yield was five to six point five hundred kilograms per hectare. As the target, N. Khrushchev set that the output should be at seven to eight hundred kilograms per hectare, especially in the traditional districts cotton cultivation, Skadovsk, Hola Prystan, and others. Therefore, it was Kherson Oblast that he referred to. Moreover, such task was based on comparison with the output in the USA (six hundred kilograms per hectare) and India (three hundred kilograms per hectare)[6, s. 3-4]. In particular, it was suggested to give up on bringing the cotton seeds into the UkrSSR from the Central Asia and cultivate the seeds locally, that is, all crop acreage to be deemed crop seeding-down[6, s. 7]. Hence, the cotton cultivation in Ukraine was planned for a long term. Any yield higher than that in the USA, India, and Argentine was noted as the main motivating aspect in the cotton farming development in Ukraine. However, the cotton yield in Ukraine was almost three times lower than in the Central Asia. Obviously, the fact that in the USA and other countries grown were high grades of such crop that were more liquid on the global market was the main obstacle to cotton farming development in Ukraine, and that aspect was stated in the verbatim record of the meeting. However, as soon as in 1954, the Academy of Sciences of the UkrSSR put the feasibility of cotton cultivation in the southern oblasts of Ukraine in doubt[7, s. 10].

In the course of the meeting, the emphasis was placed on the issue of ensuring the use of machines for cotton cultivation. No such machines were available in Ukraine, and therefore, N. Khrushchev instructed L. Melnykov to organize the production of the required equipment in the UkrSSR[6, s. 21]. In other words, in that period when the programs of agrarian development of the southern areas of the UkrSSR were rolled out, some improvements in the farming equipment production structure occurred. Actually, the UkrSSR leaders assumes the functions of autonomous production resource management within Ukraine to ensure the implementation of their own initiatives. The previous initiatives of L. Kaganovich while the TsK KP(b)U First Secretary, acting together with N. Khrushchev, who was the Chairman of the Council of Ministers of the UkrSSR, related to production of the materials, required for developing the Ukrainian energy sector, at factories of union subordination (to the USSR sectoral ministries) located in the UkrSSR were the example[8, s. 83]. Similarly to the agrarian development

of the Crimea after the peninsula was transferred to the UkrSSR in 1954, the issue regarding the provision of machinery to the peninsula's agriculture arises in Ukraine[9, s. 62], which fact testified to the production workload and specialization in Ukraine, and the leaders of the republic were to solve those problems promptly.

At the same time, the issue regarding the prospects of cultivating the subtropical crops and the necessity to study a possibility to grow lemons, mandarins, and tea was raised at the meeting held by the TsK KP(b)U Secretary. N. Khrushchev also raised the issue of studying a possibility to grow eucalyptus[6, s. 24]. In fact, growing of such crops was treated as exotics that required experimentation; however, such item at a TsK KP(b)U meeting shows that the postwar south of Ukraine became a powerful experimental facility for the agro-industrial sector development.

It was obvious to the Late-Stalin period's USSR leadership that an irrigation system should be constructed for the agrarian restoration in the Ukraine's southern areas and the Crimean Peninsula. Construction of a reliable irrigation system was to ensure the elimination of the high farm management risk in that region due to low moisture level. The irrigation system, according to the plans under development, was bound to cover the territory of the southern areas of the UkrSSR and the northern areas of the Crimea. It was the growing of cotton plant that induced the transfer from theoretical irrigation concepts to specific calculations.

The irrigation system construction was to become the beginning of population of the regions that were hardly suitable for farming due to the dry climate. At the same time, an opportunity to solve the problem of populating the Crimean Peninsula, which was a pressing issue after the indigenous people were displaced (the Crimean Tatars, Bulgarians, and Greeks), arose. Representatives of those peoples were mainly employed in the Crimean agriculture and were growing the crops that were unique and typical of only that region. For that reason, the restoration of their farming was important to the Soviet leaders, and hence, the urgent need for populating the Crimea with people capable for farming, that is, for carrying out organized relocation of agricultural people arose. It was typical for the Late-Stalin period's USSR to implement large-scale construction projects most of which required a large number of unskilled labor because of ample

opportunities to enlist the same from collective farms. Such approach proved to be impossible for the Crimea because of the difficult demographic situation on the peninsula. The demographic situation in the southern areas of the UkrSSR was marginally better; however, it was still worse than in Zaporizzhia and Dnipropetrovsk Oblasts with the most optimal ratio between industrial and agricultural development. In fact, the Soviet leaders used the principle of territorial expansion from more economically developed regions southwards as they implemented the projects of irrigation of the Ukraine's southern areas and Crimea's northern areas. Hence, such economic development expansion began from Trans-Dnieper area owing to development of the electrical energy sector and transportation logistics in the region. When the construction of the South Ukrainian and the North Crimean canals was rolled out, Zaporizzhia became the coordination center for that construction, and operation meetings were held there. Local reservoirs were constructed in the Crimea at the same time, however, their main purpose was to supply water to cities rather than to establish the irrigation system. Prevalence of urban over rural population was typical of the Crimea in that period, in particular, urban population in Crimean Oblast was 453,437 thousand persons (except for Sevastopol) as at January 1, 1957, while the total Crimean population (except for Sevastopol) was 845,007 thousand persons[10, s. 50]. That is, urban population was by 61,867 thousand persons more, and urban population in Sevastopol totaled 128,459 thousand persons. Overpopulation and weak rural facilities of the cities posed difficulties in their supply. The Crimean cities had no reliable agrarian base, and therefore, its establishment was a matter of principle for Soviet leaders in order to provide conditions for normal socioeconomic development of the peninsula. It was impossible to establish any agrarian base for the cities without implementation of the area irrigation programs. At the same time, the issue of providing fresh water to industrial facilities in Kerch was urgent, and it could only be provided by supplying the water from mainland Ukraine. Hence, the use of water resources for irrigation was vital for the Crimea as an industrial and urbanized region with a strong military base. Similarly, the program of establishing the agrarian base for big industrial cities was introduced in the UkrSSR (without the Crimea at the time) back in 1947. Kherson, Mykolaiv, and Odesa were



designated as such cities in the southern regions of the UkrSSR. Kherson was also planned as the center of agrarian product processing and a large logistic center which should play a key role in Crimean connection with the mainland.

Ensuring the energy strategy implementation was the key objective for the USSR leadership with respect to Ukraine after World War II. However, the irrigation system construction for the purposes of agricultural development acquired a paramount importance in the context of the energy sector development program implementation as rehabilitation was under way in the southern regions of the UkrSSR. Receiving a large quantity of the resources supplied by agro-industrial complex became of vital political importance in that period's USSR. In the first turn, that was the attainment of grain croppage for grain diplomacy with respect to European and Asian countries. The Soviet Union tried to form its own sphere of influence and used the factor of food supply to the countries under its influence for that purpose. Therefore, the country mobilized the food supplies by carrying out the so-called grain deliveries. Such policy entailed manufactured famines in the UkrSSR in 1947 because the "grain delivery" rates were set too high without regard to low crop yield in the Ukraine's southern areas caused by dry climate. Therefore, in the same 1947, J. Stalin initiated preliminary estimations of the irrigation system construction and agricultural restoration in the southern areas of the UkrSSR. Hence, the plans of agrarian project implementation in the southern areas of the UkrSSR resulted in adjustments of the energy strategy in Ukraine. Concerning the southern areas, that strategy was adjusted for the irrigation system construction and incorporated the railway logistics development as a weighty factor. For instance, the draft Resolution "On Irrigation of the South Ukraine's Arid Lands" was prepared as soon as in 1948 considering the recommendations laid down in N. Khrushchev's memorandum to J. Stalin in 1947. However, the draft resolution was recalled in the same year by the UkrSSR Council of Ministers and the TsK KP(b)U because of substantial adjustments that became necessary due to discovery of the brown coal deposits in the area to be irrigated. Accordingly, the issue of rejecting the construction of power plants to be supplied with fuel brought from offsite was raised.

In his 1947 recommendations, N. Khrushchev pointed out the feasibility of constructing larger power-generating facilities in Donbass based on local hard coal together with power supply lines to the consumption, that is, the irrigated areas. N. Khrushchev's rationale was that the cost of supplying the coal by rail from Donbass to its consumption centers in the southern areas of the UkrSSR were considerable higher than losses of electricity if delivered through high-voltage transmission lines[11, s. 565]. In addition, the railway logistics in the southern regions of the UkrSSR in first years after World War II experienced a very difficult situation. The USSR State Planning Committee studied the matter of railway construction, including in Kherson Oblast, in particular, the spur from Chkalovo to Novo-Sirohozy of 25 km in length, that was the suggestion of the UkrSSR Council of Ministers made to Deputy Chairman of the USSR Council of Ministers V. Molotov. At the same time, the Head of Kherson Oblast Executive Committee and the First Secretary of the Oblast KP(b)U Committee sent their letters to the USSR Council of Ministers about construction of the line from the station Yanivka to Kakhovka[12, s. 73]. Hence, the railway transport system development in Kherson Oblast becomes vitally important as soon as in 1948; besides, N. Khrushchev personally attached special importance to that matter and construction of the Kakhovka Hydroelectric Station, which he mentioned in his memo to J. Stalin in 1947 regarding energy supply to the southern regions of the UkrSSR, was among the reasons behind such interest[11, s. 565]. In particular, pointed out in the memorandum from the First Secretary of Kherson Oblast KP(b)U Committee to the Chairman of the UkrSSR Council of Ministers and the TsK KP(b)U First Secretary was the necessity of functioning, subordinated to the Stalin Railway, of a narrow-gauge spur that would run through Henichesk, Syvash, Novotroitsk, and partially Kakhovka districts; also mentioned was the presence of the broad gauge spur from the station Chkalov running through Chaplynka District to the station Kalanchak. The Oblast Committee Secretary wrote because the army men began to disassemble the narrow-gauge spur and already dismantled 16 km of it[13, s. 2]. As was also stated in that letter that, Kherson Oblast had very short length of the railways that could connect the oblast center with its districts, and therefore, he requested that the narrow-gauge spur be extended to the station

Kahovka[13, s. 3]. In the same period, Kakhovka acquired a great importance in Kherson Oblast, which fact was mentioned in the letter, in particular, that the volume of transportation using it, considering the increased grain, industrial, and oil crop planting areas with crop yield to reach 62 thousand tonnes in 1949. The necessity to complete the narrow-gauge spur branch before 1949 harvest time was stressed in the letter, and it was pointed out that the Executive Committee of the Kherson Oblast Workers' Council was prepared to cooperate in all respect in completion of the railway spur[13, s. 3]. The only way of cooperation in that instance was through allocating the labor resources out of collective farm workers and providing local construction materials. As soon as on February 5 Oblast Committee Secretary H. Hryshko applied to new TsK KP(b)U First Secretary L. Melnykov for assistance in constructing the railway section to the stations Nova Oleksiivka and Kakhovka. He explained the necessity to complete that construction, in particular, by increased cotton areas in Kherson Oblast[14, s. 5]. Moreover, the railway was to be extended to the stations tied to Dnieper river ports. Actually, reference was made to railway development tied to development of Dnieper water transportation. The logic of the logistic system development in the southern areas of the UkrSSR in that period will be developed thereafter as implementation of the project of constructing the South Ukrainian and North Crimean canals. Implementation of that projects also involved the gaining of the objective to provide conditions for shipping traffic development, and moreover, not only of end-to-end traffic in the Dnieper corridor to the Black Sea, but also connected with the river system in the European portion of the USSR through the Sea of Azov and with establishment of the Dnieper-Azov deep-water inland waterway. In addition, the importance of that route should grow as the connection of the Dnieper with the Baltic Sea was to be constructed[15, s. 104-105]. Therefore, in accordance with the development plans, Kherson Oblast was to become a logistic hub of a more global scale than within the UkrSSR; besides, the growth in the oblast's logistical importance by implementation of large-scale agrarian programs in it was to provide conditions for transport link of the Crimean Peninsula with other areas of the USSR's European portion that were economically important for its development.

The matter of coal delivery to irrigation and industrial concentration centers in the southern areas of the UkrSSR also got held up on low railroad capacity given an extremely high traffic volume. Active development of the railway network in the southern areas of the UkrSSR and measures to increase in its capacity were only rolled out with commencement of the active phase of constructing the South Ukrainian and North Crimean canals since 1951[16, s. 87]. The planned construction of the system of irrigating the Ukraine's southern areas and the Kakhovka Hydroelectric Station radically changed the importance of Kherson. In the future, that city was to become a powerful logistic center, and Kakhovka was to be linked with it by railway. In fact, the Kakhovka Hydroelectric Station construction, which was rolled out actively in 1951, was to be supplied through the stations Zaporizzhia and Kherson. In its turn, Kherson, as of 1957, shortly before drafting of the plan of energy sector development in the southern areas of the UkrSSR and the irrigation system construction for implementation of large-scale agrarian projects, was a city with low electricity consumption unlike other big cities in the southern region, Mykolaiv and Odesa, which experienced short supply of electricity[17, s. 443]. Therefore, Kherson, once the Kakhovka Hydroelectric Station construction began, became a powerful energy center with excess energy resources and, accordingly, could count on construction of industrial facilities in it, increase in its logistical importance, etc. The KP(b)U Oblast Committee worked actively towards the city's industrial development by lobbying the construction of an oil processing plant[18, s. 7] and agricultural produce processing facilities. Accordingly, the irrigation system establishment and implementation of large-scale agrarian projects was expected to transform the arid Kherson Oblast, adjacent to the Crimean Peninsula, into a promising and dynamic region.

Once the brown coal deposits were discovered in Zaporizzhia Oblast, the plans of energy supply to the Ukraine's southern regions were adjusted for construction of brown coal-fired heat power plants in the irrigation system development and industrial demand centers from which high-voltage transmission lines should be built. In addition, the amended draft Resolution of the USSR Council of Ministers "On Irrigation of the South Ukraine's Arid Lands", envisaged maximum use of the water-power resources of the

rivers in the southern areas of the UkrSSR, namely, the Dnieper, Southern Bug, and Dniester by constructing of hydroelectric stations thereon[19, s. 4]. The final provision of the explanatory note to the draft on energy sector development in the southern areas of the UkrSSR points to certain boundary delimitation of the energy and hydro-construction area by the rivers on which the hydroelectric station construction projects were to be implemented. Such localization already involved the provision of conditions for establishing the region's self-sustainability in the course of its supply with the resources necessary for implementing its development strategy. Actually, the region held promise to become independent in terms of resourcing from the adjacent powerful industrial Dnieper River areas. The economy management system in the Late-Stalin period involved sector-based approach to management with concentration of resources on the highest management level and their vertical mobilization; however, maximum possible economical use of the resources, reduction in project prime costs, and maximum use of local resources was promoted in that system through initiative from the top. The use of local resources in this context should be understood as the resources that were not exploited by enterprises of Union-level subordination. In those settings, initiatives related to maximized efficiency of resource supply for project execution were implemented in the regions with maximum local resource mobilization, and thus, construction projects and USSR republics, UkrSSR in particular, switched to self-sustainment. For instance, Chairman of the Council of Ministers D. Korotchenko often actively lobbied the matters of construction material plants where an urgent need for their products existed[20, s. 82]. For that reason, the region within the water resource boundaries formed as having the conditions for self-supply with resources by their internal mobilization created. Considering that the issue at hand was a Soviet Union-level project, implemented under the USSR Council of Ministers' resolution, initiatives for utilization of resources for its execution within their maximum accessibility were only supported and welcomed. Therefore, in fact, with active promotion of the irrigation system construction projects, Kherson Oblast becomes more autonomous in economic terms from Zaporizhia Oblast and the Dnieper River industrial region generally. Hence, as a result, preconditions for active industrial development expansion southwards, that is, the Crimean Peninsula, were

created. In the preamble of the USSR Council of Ministers' resolution, proposed as of January 17, 1948, the arid nature of the Ukraine's southern areas was mentioned, however, it was stated that there is a possibility to have high yields in crop farming if sufficient humidity is provided and given the warm climate, and this, in its turn, was to set the base for livestock farming, horticulture, and viticulture[21, s. 6]. That provision in the draft resolution preamble quite expressly reveal the strategy of agrarian development the Ukraine's southern areas in those years. Unlike the UkrSSR territory, the Crimea could not ensure the water resource supply in the appropriate volume then, and viticulture developed in the peninsula's coastal areas where conditions were favorable mostly for vineyard development in a resource-effective manner. The real high productivity of farming in the southern areas of the UkrSSR and the Crimea could only be ensured if the appropriate plant-growing base was created, because plant cultivation possibilities enabled to mitigate risks for industrial crop cultivation and stock-raising development considerably. Hence, the southern areas of the UkrSSR, namely Izmail, Odesa, Mykolaiv, Kherson, and Zaporizhzhia oblasts, were expected to become such base if irrigated. Viticulture and horticulture development was of quite high importance for the USSR, given the plans to increase the output of wine products. Sometime later N. Khrushchev would try to implement a strategy of switching the use of spirits in the USSR from vodka to wine.

In total, under the draft resolution of 1940, it was proposed to irrigate the areas of 455.2 thousand ha, such areas were much smaller than in the estimates that L. Kaganovich submitted to J. Stalin in 1947. As soon as in the draft resolution of the USSR Council of Ministers and TsK VKP(b) "On Construction of Kakhovka Hydroelectric Station and the South Ukrainian and North Crimean Canals and the System of Irrigation of the Southern Areas of Ukraine and Northern Areas of the Crimea", dated September 20, 1950, considerably larger areas, 1,200 thousand ha in the Ukraine's southern areas and 300 thousand ha in the Crimea's northern areas were envisaged[22, s. 78]. It should also be noted that the later draft, approved in 1950, unlike the 1948 draft, provided for an extremely large-scale construction, absorbing whole reservoirs, and did not account for artesian water potential at all. The draft of 1948 provided for irrigating 30 thousand ha by

using artesian water out of the overall tract of 255 thousand ha in Kherson Oblast[21, s. 7] in particular. In other words, the draft USSR Council of Ministers' resolution as proposed by N. Khrushchev envisaged the maximum use of regional approach to implementation of even very large-scale projects. As may further be seen from the draft resolution, that large-scale plan was to be implemented by mobilization of labor resource from collective farms in the construction area locally. That is, regionalization of local resource management was to take place. The draft resolution adopted on September 20, 1950 envisaged a global mobilization of labor and physical resources.

Two project implementation options were considered in the course of planning the construction of the irrigation system in the Ukraine's southern areas and Crimea's northern areas. Considered were the gravity and pump options of water supply to the irrigation system. Actually, the gravity option of water supply to the irrigation system under construction won when it was decided to approve the design assignment owing to its technical and technological support simplicity, however, with the use of a large number of unskilled workforce. That option was doubted in 1952 through the Academician S. Zhuk's initiative and proposal to switch to the pump option because the latter did not require so large volume of earthwork than the gravity option. The pump option involved abandoning the construction of the South Ukrainian Canal and construction of machine stations that were to pump water from the Kakhovka Reservoir. The hydro-construction projects in the region of the Ukraine's southern areas and Crimea's northern areas were of a large scale encompassing considerable territorial areas and were expected to attain quite a number of objectives. For instance, the construction of the South Ukrainian and North Crimean canals, launched under the resolution of the TsK VKP(b) and USSR Council of Ministers "On Construction of Kakhovka Hydroelectric Station and the South Ukrainian and North Crimean Canals and the System of Irrigation of the Southern Areas of Ukraine and Northern Areas of the Crimea", dated September 20, 1950, as planned, was to solve the problem of agricultural land irrigation, generation of electricity, and Dnieper navigation. In addition, considering the experience of World War II, construction of a powerful water main was of military and strategic relevance as it created an additional controlled water obstacle. Such direction of linking the water

resources in the European portion of the USSR was developed by the UkrSSR Academy of Sciences and it initiated the connection of the Black Sea and Sea of Azov water area with the Baltic Sea and of the Dnieper, Don, and Volga in 1954. To that end, hydro-construction to link the water resources along both the meridian (South to North, based on the Dnieper River) and the parallel, in particular, construction of the Dnieper-Southern Bug canal, was planned.

The matter of mobilizing the labor resources was reviewed at the meeting in the TsK KP(b)U, it was planned to use them, and members of the ruling party and the young communist league, to be enlisted from throughout the UkrSSR on the organizational recruitment principle, were deemed to be their sources; also planned was to use the resources from other republics[23, s. 6]. Therefore, Stalin's gigantomania is in clear evidence from implementation of that project. However, the course of construction of the South Ukrainian and North Crimean canals and the system of irrigation of the Ukraine's southern areas and Crimea's northern areas witnessed more effective use of exactly the staffing approach underlying the labor resource provision under the resolution of the UkrSSR Council of Ministers in 1948; measures to mobilize labor resources were taken by the KP(b)U entities, and such approach proved to be successful as pointed out by the management of Ukrvodbud Main Department of the USSR Ministry of Cotton Farming[24, s. 131]. In other words, the principle of narrower territorial base for labor resource mobilization together with reinforced organizational structures carrying out the same was a key success factor. At the same time, low population level in the southern regions of the UkrSSR should be noted. That problem became evident as soon as in 1949, when the program of cotton farming development in the Ukraine's southern region was launched. To solve that problem, the party ruling in the UkrSSR rolled out the program of relocating the population into the areas of planned cotton farming development. The relocation policy was to set the base for labor resource mobilization in the region, and therefore, the labor mix for construction of the South Ukrainian and North Crimean canals, mobilized from Western oblasts of Ukraine, was actual continuation of the relocation policy.



However, as the South Ukrainian canal construction was discontinued, and the project closed after J. Stalin deceased, local hydro-construction matters became more relevant. However, the implementation of local hydro-construction projects was successful in the southern areas of the UkrSSR, in particular, of Upper Ingulets and Lower Ingulets irrigation systems. Those local irrigation systems were to solve the problem of refining new hydraulic and agricultural technologies and train a sufficient number of irrigation system specialists, primarily management and support staff from among them[25, s. 33]. For that reason, once the South Ukrainian canal construction was halted, the hydro-construction operations concentrated on the territory of the southern areas of the UkrSSR.

Since 1953, the regional economy development planning approach began in the USSR came into more active use thus replacing the sectoral approach that was actively employed in the Stalin's period and, within the vertically integrated command and administrative system, acquired hypertrophic forms of total resource mobilization for implementing specific sectoral projects, and the use of such resources often was uneconomical and inefficient. Such specificity of the Late-Stalin period's Soviet economy explains the tendency to implement large-scale projects that were to attain large sets of objectives. The construction of the South Ukrainian and North Crimean canals and the system of irrigating the Ukraine's southern areas and Crimean northern areas was also a typical example of such project. As they implemented such projects, their initiators and implementing parties were hardly concerned about their environmental impact, as their main objective was to achieve instant outcome with minimum use of high-technology resources. For that reason, used was mostly manual low-skilled labor and technologies that required accessible physical resources with the use of unskilled labor in large volumes. Therefore, the slogan that vehicles and machinery must be used for canal construction to maximum extent and wherever possible was almost did not apply in practice.

Implementation of the large-scale irrigation construction projects involved large scopes of constructing the facilities that are associated with hydraulic structures. Primarily, those were dwelling houses, infrastructure facilities, public facilities, etc.

Hence, it promoted an active development of building materials in the canal construction area and construction of plants to manufacture them. Accordingly, the Ukraine's southern areas became the building material production center in the Black Sea region. Even before the South Ukrainian Canal construction began, in 1949, it was planned to start the construction of a transportation canal, based on the Dnieper and the Black and Azov seas, for supplying the shell stone, in particular, to the Crimea. In 1949, N. Khrushchev initiated the approval of the USSR Council of Ministers' resolution, dated April 4, 1949, on developing the mechanized shell stone excavation at Buldynka deposit was located on the coast of the Adzhalyk estuary that debouched into the Black Sea. It was planned to have the output of 40 thousand cubic meters of shell stone in 1949 and increase its volume to 80 thousand cubic meters thereafter. Development of that plant was planned counting on future shell stone supply by water to meet the needs of construction sites in Mykolaiv, Dnipropetrovsk, Kherson, and the Crimea, actually encompassing the coasts of the Black Sea and Sea of Azov and the Dnieper watercourse. The water was much cheaper supply option as compared with railway and road transport, and that was actually the rationale behind the development and mechanization of the deposit, same as its favorable location near the delivery waterway[26, s. 149]. To ensure the delivery by water, it was envisaged to make a channel in the dike separating the estuary from the Black Sea. To have that canal built, N. Khrushchev proposed to order that the Ministry for Construction of Military and Naval Facilities make such canal by the second quarter of 1950. Ordering exactly that Ministry was explained by the fact that it was to become the main shell stone customer. Hence, in this instance, attention should be paid to the approach within the command and administrative system whereby the so-called "stakeholder" agencies were involved in implementation of management decisions, and resolutions manually defined the areas for ministries to utilize any funds that were available to them. Notably, the basic construction in the southern areas of the UkrSSR in that period was under control of the military establishment, and hence, that fact necessitated the economic development of such territories for prospective military infrastructure development. In that period, the Black Sea area becomes strategically important for the USSR, given the reinforced positions of the USA in the Black Sea

together with its strengthened economic and military influence in Turkey and Greece. Therefore, the economic development of the Ukraine's southern areas and the Crimean Peninsula was conditioned by the changes in the geostrategic situation. In addition to canal construction for exit to the sea, N. Khrushchev asked for construction of the high-voltage transmission line from Odesa to the Buldynka Plant of 36 km in length to provide the power base to develop that facility. The responsibility was to be placed on the USSR Ministry of Power Plants[26, s. 150].

In parallel with the irrigation system construction, the project of forest belt planting to protect fields from soil aeoliation was implemented in the Ukraine's southern areas. In that way, the integral economic complex for excavation and production of building materials, focused on serving the large-scale construction projects for economic development of the region, was established on the territorial basis of the Ukraine's southern areas and the northern areas.

The range of ecological problems in the context of developing the economy complex in the southern areas of Ukraine and the Crimea should be noted specifically. In the first turn, the problem of flooding the large areas by making the reservoirs in the course of power plant construction is urgent. In that way, considerable areas of land were taken out of turnover. The issue of environmental implication was not pressing as the economic development was planned in that period. For the most part, maximum possible exploitation of available resources was calculated. The dry climate and the weed infestation and salinity of considerable areas caused the impossibility to [use] extremely large areas by using the existing agricultural technologies, which areas did not produce, as calculated in the memorandum submitted by L. Kaganovich in 1947, the grain and vegetable crop yield results by irrigation. In addition, population of the areas unusable for that purpose was treated as a socioeconomic outcome of implementing the irrigation and energy supply projects. Therefore, in fact, the flooding of lands by hydro-construction was regarded as necessary measures to include large areas of land in economic turnover. Besides, as an economic effect to compensate for losses from flooding the considerable areas of land, the prospects of fisheries sector development in the new reservoirs forming from the implementation of hydro-construction projects were studied.

Hence, the formation of the uniform ecological and economic complex based in the Ukraine's southern areas and the Crimean Peninsula's territories was actively rolled out after the end of World War II as a result of implementing the large-scale agrarian projects in the region. For the purposes of those agrarian programs, the project of irrigating the lands in the southern areas of the UkrSSR and the northern areas of the Crimea was rolled out, and the plans of energy strategy implementation, logistical and industrial development, and demographic policy operation in the region were adjusted. Hence, the proactive development of the southern areas of the UkrSSR with establishment of the prospect to extend the economic development to the Crimean Peninsula enabled the republic's leadership to make independent economic decisions, however having them authorized by the Union-level government. In fact, the UkrSSR leadership, as evidenced with their business correspondence with the Union-level government, wielded the function of accounting the resources in Ukraine and calculating the possibilities of their efficient use. However, the problem of sustainable use of natural resources was not pressing in that period, as the economic development was based on maximum use of natural and labor resources by using the most accessible methods. Therefore, inefficient flooding of land areas in the course of energy sector construction and hydro-construction and cultivation of plants that were not typical of the climatic conditions in the south Ukrainian and Crimean region could often be observed. However, the regional approach to planning the economic development of the areas, which came into active use in the Ukraine's southern areas and the Crimea's northern areas as soon as in the second half of 1940s for conservation and more efficient use of resources, opened the way to a more balanced economic development of the region with its ecosystem.

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## **THE FEATURES OF IMPLEMENTATION OF REGIONAL INNOVATION POLICY IN THE CONTEXT OF THE SMART SPECIALIZATION STRATEGY**

**Abstract.** *The research deals with justification of theoretical and methodological principles of formation of regional innovation policy in Ukraine on the basis of the smart specialization. Analyzing and summarizing scientific works of many scientists, the comparative analysis of innovation development indicators of Ukraine and the EU member countries is conducted. The essence of implementation the smart specialization strategy is revealed. Its effectiveness is confirmed by experience of the EU member countries during the implementation of the European 2020 strategy's goals. The drivers of innovation development in Ukraine are defined. They can become the priority types of economic activity in order to develop the smart specialization strategy in Ukraine. Using the European Commission's methodology for the identification of reference regions, the index of structural distance for Kharkiv region and regions of the EU member countries is calculated. It is emphasized that Pomerania voivodeship (the index of structural distance (ISD) – 2.91, Poland), Vilnius voivodeship (ISD – 2.92, Lithuania), Lower Silesia voivodeship (ISD – 3.17, Poland), Łódź voivodeship (ISD – 3.36, Poland) and Ústí nad Labem region (ISD – 3.49, The Czech Republic) are the most structurally similar regions for Kharkiv region. The experience of these regions is worth considering to implement the smart specialization strategy in Kharkiv region. It will help to incorporate Kharkiv region into the global value chains.*

**Keywords:** *entrepreneurial search, index of structural distance, regional innovation policy, strategy for smart specialization.*

**Formulation of the problem.** In the conditions of severe international competition and strengthening globalization processes, the national policy creates a platform for innovations and the regions are the source of innovation activity, where representatives of business environment, higher education institutions and local authorities interact directly. According to Honorary Director General at the European Commission D. White, regional level is a place where innovations appear, where research results are transformed into economic ones [1]. The

centralized innovation systems are replaced by the local innovative ecosystems; the bases of their development are endogenous factors.

Previously, regional innovation policies of European countries traditionally consisted of horizontal measures of industrial development that were sectorally neutral and aimed at improving the overall framework conditions and opportunities for using innovative potential (intellectual property rights protection, appropriate research infrastructure, ensuring competition and openness etc.). However, nowadays the priority of innovation development and consolidation for individual regions and the European Union is a new policy that maintains a traditional focus on horizontal events but already through the implementation of the smart specialization strategy.

Taking into account that Ukraine has chosen the European development path with ambitions to become a regional leader [2] and processes of reforming regional policy in Ukraine, it's expedient to learn the experience of European countries of implementation of regional innovation policy in the context of the smart specialization strategy.

In favor of the relevance of the research, it also shows the choice of three target countries to implement policy of smart specialization strategy in their regions – Moldova, Serbia and Ukraine during the training of the European program “Smart Specialization Strategy” at the Institute for Prospective Technological Studies of the Joint Research Centre (European Commission) on January 23-27, 2017 [3].

**Analysis of recent researches and publications.** Theoretical and methodical foundations of implementation of regional innovation policy in the context of the smart specialization strategy at the regional level are presented in the works of foreign scientists such as X. Beldarrain [4], D. Foray [4], M. Cervantes [5], J. Goddard [4], A. Janiszewski [6], M. Landabaso [4], Ja. Larosse [7], P. McCann [8], K. Morgan [4], C. Nauwelaers [4], R. Ortega-Argiles [8], I. Perianez-Forte [7], Ja. Pyka [6], S. Radošević [9] etc.

For example, in the paper [10] the essence of the smart specialization strategy, the features of its formation and implementation process are revealed. The importance of linking research and innovation with economic development in new forms is emphasized, its influence on the development of regions is determined. The diagnostics of the methods of encouraging regions to resolute development on the basis of innovations is conducted, taking into account the size of local budgets, available opportunities and barriers. It is argued that despite the common characteristics of regional and national development strategies, the local approach should be based on the understanding of regional features for its successful implementation.

In the article by Polish researchers [6] the methodical foundations for constructing a regional innovation strategy and the vectors of the innovative ecosystem formation in the region based on the smart specialization are presented.

Moreover, in the paper [7] theoretical and methodical aspects of the smart specialization strategy, its importance in the current economic context and the policy environment are revealed. The role of regional profiling and indicators in developing a smart specialization strategy is investigated. The features of using governance mechanisms and policy tools for smart specialization are analyzed. The best practices of implementation this approach in regions of countries with different levels of development are presented.

According to P. McCann Professor of Urban and Regional Economics at the University of Sheffield Management School and R. Ortega-Argiles Professor Regional Economic Development at Birmingham Business School [8], smart specialization is one of the main tools for implementation the Europe 2020 strategy and it is considered as a conceptual model for the formation of innovative and socio-economic policy. It involves identifying and developing unique industries or types of economic activity that constitute the specialization of certain regions in the national economic system. Smart specialization implies not so much the stimulation of innovation, but the activation of long-term structural changes in the regional economy in order to occupy important niches in global markets.

The Chairman of German-Ukrainian Chamber of Industry and Commerce A. Markus is convinced that there is a time of specialization in the world economy. On the one hand, Ukraine has an outdated industry, and on the other hand, Ukraine has a well-developed IT-sector. However there is an empty sector between these sectors of the economy. Industrial parks are just a platform. But now they have to be created with new technologies and for productive companies in the world. Otherwise, Ukraine will remain only a platform for small-scale productions of other countries. This strategy is for ten years, it is a Polish variant. Ukraine won't bridge the gap, calling on any investor; it must create industrial parks with a smart specialization [11].

The papers of Ukrainian scholars are also dedicated to the study of the features of innovation policy in the context of the smart specialization strategy. The depth and breadth of the subject's coverage are inherent in the scholarly works of V.M. Geyets [12], A.A. Grytsenko [12], S.A. Davymuka [13], A.I. Danylenka [12], V.Ya. Kudlaka [14], O.V. Makarovoi [11], N.Yu. Marynenko [14], I.V. Odotiuka [12], O.V. Pakhukhnyk [14], Yu.O. Ryzhkovoi [15], L.I. Feduluvoi [13] etc.

For instance, in the paper [15] a new approach in the regional development policy of the EU countries is considered. It is determined that one of the main conditions for receiving financial assistance from European funds is the availability of the strategy of scientific and innovative development based on the smart specialization. It is substantiated that in the conditions of limited financial resources the practical implementation of the smart specialization policy involves directing funds exclusively on the development of unique industries or types of economic activity that constitute the regional specialization.

The national report [12] stresses that one of the main directions of the formation of a new model of structural modernization of regional economy in the modern conditions should be their smart specialization. Taking into account the current conditions and priorities of regional development in Ukraine, the smart specialization strategy can be implemented in the regional structural modernization

policy through such mechanisms: scaling and internal integration of the regional innovation potential (establishment and further development of interaction between representatives of science, economics and business), creation of markets for smart technologies of the future (formation of a network model of economy functioning).

According to leading researcher at Regional Financial Policy Department (State institution “Institute of Regional Research named after M.I. Dolishniy of the NAS of Ukraine) S.A. Davymuka and professor at Kyiv National University of Trade and Economics L.I. Fedulovoi [13], the introduction of a new generation of innovative sub-national or place-based smart specialization strategies by the EU in recent years is justified by the fact that countries and regions can be (and remain) competitive in the global economy, concentrating knowledge resources and connecting them with limited priorities of economic activity. Such type of specialization allows the regions to benefit from the scale, size, and diffusion of creation and use of knowledge, it is an important engine of performance.

Besides, the Draft Declaration “Smart growth in the united territorial communities” [16] emphasizes that the territorial communities are different, they have different population, natural conditions, traditions and unique resources. In this regard communities have to find their smart specialization in the regional economy that should be based on its own competitive advantages and its own resources.

**Key research findings.** At the same time the issues of practical implementation of smart specialization at the regional and national levels, generalization of existing regional and sectoral assets to choose the priority areas for the implementation of smart specialization, institutional aspects of implementation of this approach in strategic management of regional development in Ukraine still remain unresolved and require thorough study.

**The aim of the study** is to analyze theoretical and methodical principles of formation of regional innovation policy in Ukraine on the basis of smart specialization in conditions of activation of European integration processes and

identify strategic imperatives and mechanisms for its implementation, taking into account the experience of EU member countries.

**The main results of the study.** Changing the architecture and key players in the global innovation market, strengthening network interactions and increasing their role in shaping the overall innovation picture of economies require the formation of multi-level strategic landmarks of development. The definition of strategic innovation development targets occurs at the level of individual companies, communities, regions, industries, countries and international institutions. Gradually there is a change in the logic of structuring innovation strategies: instead of defining priorities for “top” strategies, when strategic landmarks are formed by international institutions and implemented at the level of individual countries in the form of strategies for innovation development through the detailing global innovation targets, there is a definition of priorities based on the most capable innovation units: individual companies or clusters. Experience demonstrates the effectiveness of such a model of innovation strategy, that is aimed at supporting producers of innovations, instead of focusing on the artificial creation of innovative platforms or global innovative programs, that are often not effective.

Despite the gradual formation of the national innovation system, Ukraine is different from the countries with innovative economy that supply high-tech products or services. Ukraine is part of a group of countries “modest innovator” in the ranking “The European Innovation Scoreboard” (Fig. 1).

As can be seen from figure 1, Ukraine’s position has deteriorated and unfortunately trends remain negative, the lag behind the leader countries by the value of the consolidated index is about 4 times. The most threatening situation has been in the commercialization of research and development. The indicators of financing of scientific activity have considerably deteriorated in recent years.

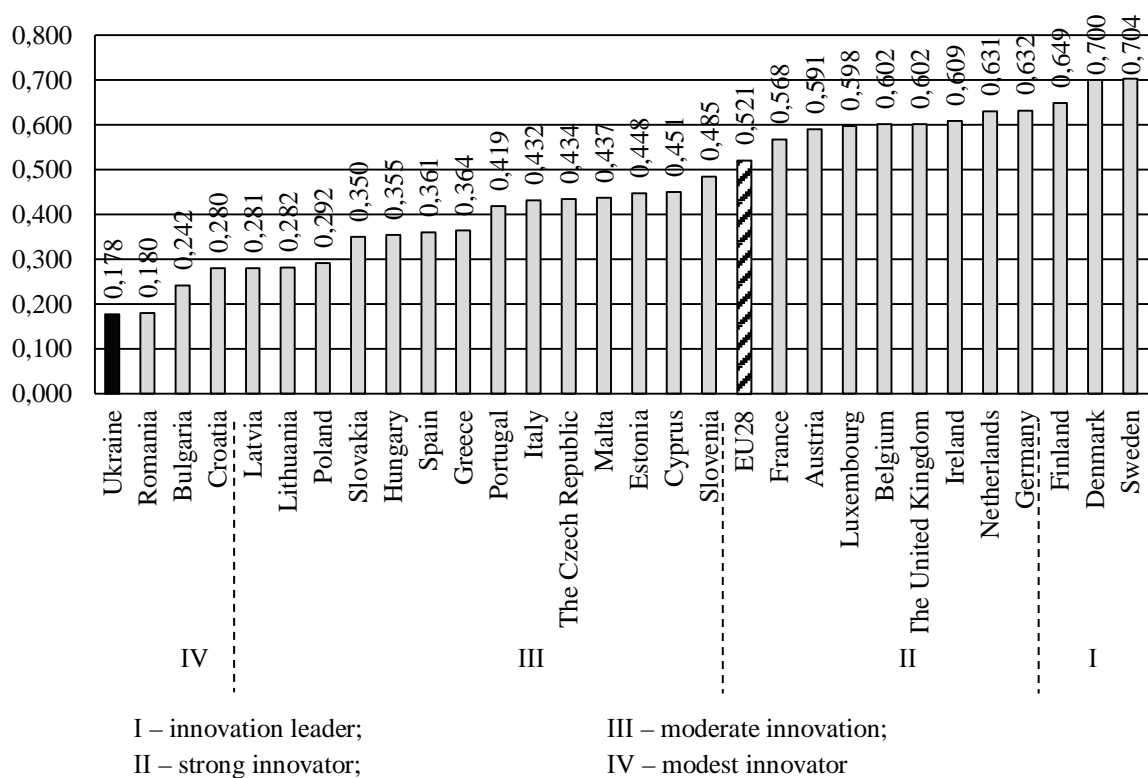


Figure 1 – Consolidated index of innovation development of the EU member countries and Ukraine in 2016 (authors' elaboration, based on [17])

Table 1 presents the results of the comparison of the Ukrainian innovation system and the EU28 member countries ones.

Taking into account the data of table 1, one should also point out the fact that it is not a worrying place in the ranking of innovation development as a gap between Ukraine and the EU member countries. The maintaining indicators of innovation at such a level will cause loss of international competitiveness of the country. That's why the improvement of innovation activity at the national and regional levels becomes a priority.

So, there appears a new conception of regional development of “smart specialization” that was proposed by economists D. Freem, P. David and B. Holm to the European Commission in 2008. It combines industry and innovation policy, promotes the efficient use of public investment by focusing on the region's strengths that constitute its specialization [14]. Today the European Structural and



Investment Funds use it to realize the goals of Europe 2020 strategy for the period 2014-2020.

Table 1 – Comparative characteristic of the Ukrainian innovation system and the EU28 member countries ones in 2016 (authors' elaboration, based on [17])

| Indicators      |  | EU28  | Ukraine |      |
|-----------------|--|---|---------|------|
| Enablers        | <i>Human resources</i>                                 |   |         |      |
|                 | 1.1.1  | New doctorate graduates                               | 1,8     | 1,0  |
|                 | 1.1.2  | Population completed tertiary education               | 38,5    | 50,3 |
|                 | 1.1.3  | Youth with upper secondary level education            | 82,6    | 61,7 |
|                 | <i>Open, excellent and attractive research systems</i> |   |         |      |
|                 | 1.2.1  | International scientific co-publications              | 459,0   | 58,0 |
|                 | 1.2.2  | Scientific publications among top 10% most cited      | 10,5    | 3,1  |
|                 | 1.2.3  | Non-EU doctorate students                             | 17,8    | -    |
|                 | <i>Finance and support</i>                             |   |         |      |
|                 | 1.3.1  | R&D expenditure in the public sector                  | 0,72    | 0,34 |
| 1.3.2           | Venture capital investments                            | 0,063   | 0,002   |      |
| Firm activities | <i>Firm investments</i>                                |   |         |      |
|                 | 2.1.1  | R&D expenditure in the business sector                | 1,30    | 0,42 |
|                 | 2.1.2  | Non-R&D innovation expenditure                        | 0,69    | 0,50 |
|                 | <i>Linkages &amp; entrepreneurship</i>                 |   |         |      |
|                 | 2.2.1  | SMEs innovating in-house                              | 28,7    | 18,7 |
|                 | 2.2.2  | Innovative SMEs collaborating with others             | 10,3    | 1,5  |
|                 | 2.2.3  | Public-private co-publications                        | 33,9    | 1,0  |
|                 | <i>Intellectual Assets</i>                             |   |         |      |
|                 | 2.3.1  | PCT patent applications                               | 3,53    | 1,70 |
|                 | 2.3.2  | PCT patent applications in societal challenges        | 1,01    | -    |
|                 | 2.3.3  | Community trademarks                                  | 6,09    | 0,27 |
|                 | 2.3.4  | Community designs                                     | 4,44    | 0,10 |
| Outputs         | <i>Innovators</i>                                      |   |         |      |
|                 | 3.1.1  | SMEs introducing product or process innovations       | 30,6    | 7,4  |
|                 | 3.1.2  | SMEs introducing marketing/organizational innovations | 36,2    | 10,5 |
|                 | 3.1.3  | Employment fast-growing firms innovative sectors      | 18,8    | -    |
|                 | <i>Economic effects</i>                                |   |         |      |
|                 | 3.2.1  | Employment in knowledge-intensive activities          | 13,9    | 12,9 |
|                 | 3.2.2  | Medium & high-tech product exports                    | 56,1    | 31,8 |
|                 | 3.2.3  | Knowledge-intensive services exports                  | 63,1    | 38,9 |
|                 | 3.2.4  | Sales of new to market and new to firm innovations    | 12,4    | 3,3  |
|                 | 3.2.5  | License and patent revenues from abroad               | 0,54    | 0,09 |

The essence of the conception of smart specialization is to take into account regional specifics, while innovations are understood in the broad sense as the result of not only fundamental research but borrowing, combining and creativity. In this regard territories for the development of basic innovations and regions for applied

research and implementation of basic technologies in accordance with existing products and technological processes are highlighted. Separately, one distinguishes regions where innovation is the result of creative not scientific activity; it is expedient to develop creative technologies in them.

The conception of smart specialization implies [18]:

- to identify region specialization on the brink of existing capabilities, competencies and relevant technologies;
- to analyze experience, resources, competencies and technologies in other regions;
- to identify interregional interaction including purchase and sale of technologies, expansion of local firms, involvement in global value chain.

In the paper [19] it is said that sustainable innovation development of Ukrainian regions can be achieved by ensuring appropriate growth rates and increasing productivity in all significant sectors of the economy. Five sectors of the economy according to their innovation and price competitiveness criteria are singled out by the author: high-technology industry; IT, ICT and business services; mass production of industrial products; mining and mineral processing industry; production of goods and services for local markets. At the same time, growth, potential and competitiveness drivers vary considerably for each sector of the economy. In this regard drivers for innovation development and growth factors for distinct sectors of Ukrainian economy is proposed (Fig. 2).

Choosing a smart specialization strategy for Ukraine, the pharmaceuticals manufacturing can play a significant role because its growth is the most dynamic in recent years. The share of pharmaceuticals manufacturing in the structure of Ukrainian industry increased from 0.7% to 1.0% during 2010-2015. It would be unfair not to mention that fact that the share of this sector is also 1.0% in Poland. Today Poland is the largest in Central Europe and the sixth largest pharmaceutical manufacturer in the EU. In addition, pharmaceuticals manufacturing has a high

level of added value – from 70.0 to 90.0%, at the same time added value of manufacturing industry is 15.0%, retail and wholesale trade is 3.0-5.0% [20].

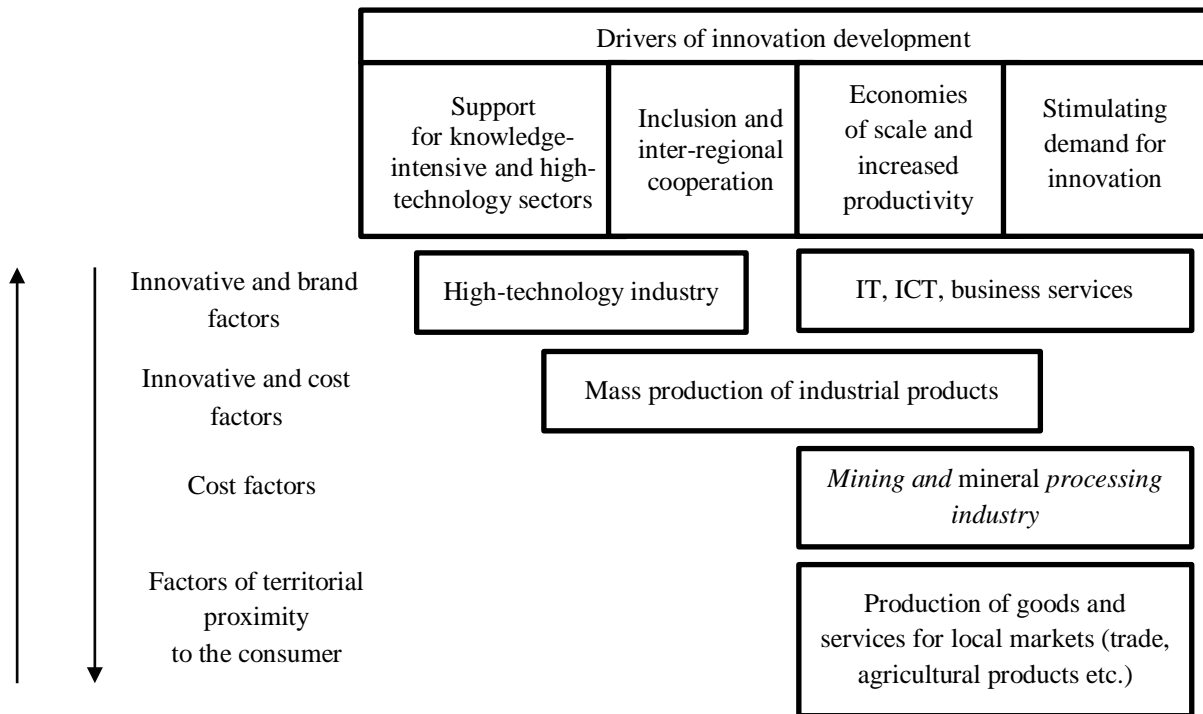


Figure 2 – Drivers for innovation development and growth factors of Ukraine’s economy [19]

Another highly innovative sector is IT. It is characterized by rapid growth in the world and is quite competitive in Ukraine. The share of IT in the Ukrainian GDP was 3.6% in the first half of 2016, this indicator was 0.8% in 2012 [21]. Ukraine has sufficient potential in this sector to compete for middle-class IT services markets with countries such as India and the Philippines and for the markets of outsourcing services of the highest class.

It is appropriate to note that smart specialization is an instrument that is implemented “from the bottom up”: from entrepreneurial search to selection of specialization at the regional level. According to some experts [12, 18] the feature of smart specialization is the strengthening of cluster development in the context of continuing the well-known P. Krugman’s idea. However, in our opinion, clusters are only part of the region’s innovative ecosystem, at the same time, smart specialization is a substantially broader policy aimed at reforming the system. For instance, the priority projects that are the basis for development of the smart

specialization strategy for Kharkiv region are considered at The Strategy for regional development of the Kharkiv region up to 2020 [22].

In order to evaluate the effectiveness of the implementation of smart specialization the expert survey was conducted (among representatives of local authorities, higher education institutions, entrepreneurs, public associations in those regions where the conception has already been tested; sample size – 179 persons) by the Fraunhofer Institute for Systems and Innovation Research (Germany) in 2016. The research's results showed that 60.0% of respondents consider that the further implementation of the smart specialization strategy is appropriate in some industries; 20.0% of respondents are convinced that such approach should be applied in all sectors; however, 20.0% of respondents noted that the implementation of this strategy is ineffective [5]. In this regard it is important to note that a lot of participants evaluated the effectiveness of this approach positively and emphasize the necessity of its implementation for further region development, stimulation their entrepreneurial activity. Besides, research shows that organized groups of interaction of society, business, science, state and their activities are not fading but on the contrary are actively developing.

The information day of EU Joint Research Centre (JRC) was held on the basis of NAS of Ukraine on September 14, 2016. His goal was to raise awareness of new opportunities for scientific and technical Ukraine's cooperation with the EU in the context of implementation of the smart specialization S3.

During the event, the participants of the working groups which included representatives of Ukrainian authorities, science and business, and the experts group from the JRC assessed the innovation system of Ukraine in the context of smart specialization by methodology [4]. Scores were for each of the 16 sub-dimensions on a scale from 0-5; 0 = no information available on the specific element; 1 = poor; 2 = to be improved; 3 = fair; 4 = strong; 5 = excellent (Fig. 3).

As you can see, Ukrainian experts evaluated the Ukrainian innovative system in the context of smart specialization more optimistic than JRC experts. The evaluation results reveal areas where it is appropriate to focus on the initial

stage of the implementation of the smart specialization conception: identify regional and national assets, highlight entry of Ukrainian innovative organizations into the global value chains, form a common vision of Ukraine's inclusion in the

EU's innovation space on the basis of investment of the selected priorities followed by careful monitoring and evaluation of the results.

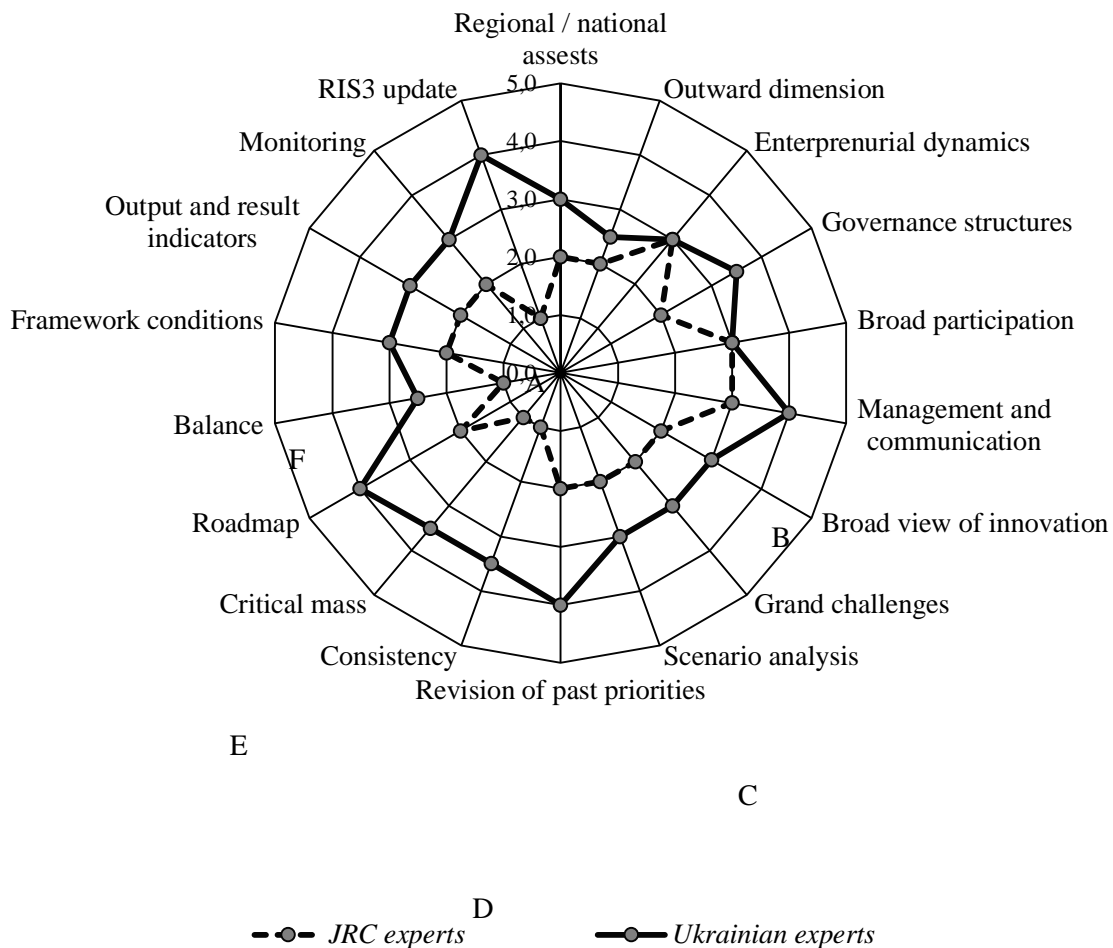


Figure 3 – Results of expert evaluation of Ukrainian innovation system

- A – analysis of regional / national context;      B – governance;
- C – shared analysis;                                      D – identification of priorities;
- E – policy MIX;    F – monitoring and evaluation

In order to reform the innovation policy of the Ukrainian regions through the smart specialization strategy it is advisable to study the experience of using this approach at the regional level of the EU member countries. However, this raises the question, the model of implementation the smart specialization strategy of which European regions should be used in Ukraine, because they all differ significantly in such indicators: geo-demography, HHRR educational level,

technological specialization, sectoral structure, firm size, openness, institutions and values. In this regards according to the authors, the criterion for choosing the base regions to take over the experience of implementation a smart specialization strategy may be the index of structural distance.

The index of structural distance is aggregate indicator that characterizes the degree of discrepancy in the structure of the territories' innovation system (in our case NUTS-2 level). It should be noted, that the smallest value of the index of structural distance corresponds to the regions with the most similar structure of the innovation system. In this regards regions with the lowest value of the calculated index can be benchmark examples in order to reform the innovation system in the context of the smart specialization strategy.

In our opinion, it's advisable to calculate the index of structural distance for Kharkiv region and regions of the EU member countries, because Kharkiv region was the leader by the level of innovation activity among the regions of Ukraine in 2015 (the total innovation index of Kharkiv region was 0.4857 in comparison with the average value of this indicator in Ukraine at 0.2928) [23].

The basis for calculating the index of structural distance for Kharkiv region and regions of the EU member countries is the European Commission's methodology for the identification of reference regions [18]. In general, this process involves the following steps:

1. Collecting statistics by region of the EU member countries (in our case the sample size was 205 regions) for following groups subindexes: geo-demography, HHRR educational level, technological specialization, sectoral structure, firm size, openness, institutions and values.

2. Normalization the values of the indicators by the formula [23]:

$$z_{kj} = \frac{(x_{kj} - x_{k \min})}{(x_{k \max} - x_{k \min})}, \quad (1)$$

where  $z_{kj}$  – normalized value of the  $k^{\text{th}}$  indicator for the  $j^{\text{th}}$  region;

$x_{kj}$  – actual value of the  $k^{\text{th}}$  indicator for the  $j^{\text{th}}$  region;

$x_{k \min}$  – minimum value of  $k^{\text{th}}$  indicator for all regions;

$x_{kmax}$  – maximum value of  $k^{th}$  indicator for all regions;

$j$  – region number, ( $j=1,2...J$ ).

3. Determination of indicators' weight coefficients by methodology [18].

4. Calculation of the index of structural distance by the formula [18]:

$$d(j, j') = \sum_{i=1}^k w_i \times (x_{ji} - x_{j'i})^2, \quad (2)$$

where  $i$  – corresponding variable;

$j$  – region for which the index of structural distance is calculated;

$j'$  – region that serves as an analogue for calculating the index of structural distance for the first region;

$w_i$  – weight coefficient of the  $i^{th}$  indicator of the index of structural distance.

It is appropriate to note that the smallest value of the index of structural distance corresponds to the greatest similarity of regions by development level. The regions with the lowest value of the index are benchmark examples in reforming innovation policy in the context the smart specialization strategy.

5. Checking the results of the index of structural distance by the Spearman rank-order correlation, calculating the corresponding coefficient by the formula [23]:

$$r = 1 - \frac{6 \times \sum d^2}{n(n^2 - 1)}, \quad (3)$$

where  $\sum d^2$  – sums of squares of rank differences;

$n$  – the number of pairwise observations.

The correlation coefficient acquires values within the limits  $\pm 1$ , i.e.  $1 \geq r \geq -1$ . The closer  $r \rightarrow 1$ , there is the greater the consistency between the results of the calculation. Negative value of “ $r$ ” indicates an opposite consistency.

As an example, the table 2 shows the initial data for calculating the index of structural distance for Kharkiv region (KHR) and Nordjylland (DK05, Denmark).

Table 2 – The initial data for calculating the index of structural distance for Kharkiv region (KHR) and Nordjylland (DK05, Denmark)

| Dimensions                   | Variables   | Output values |       | Normalized values |      | $w_i$ , % |
|------------------------------|---|---------------|-------|-------------------|------|-----------|
|                              |   | KHR           | DK05  | KHR               | DK05 |           |
| Geo-demography               | Total population, thousand people   | 2703,0        | 579,9 | 0,15              | 0,03 | 5,23      |
|                              | Number of persons below 15 years and over 65 years, %   | 15,15         | 18,44 | 0,25              | 0,80 | 3,89      |
|                              | Number of urban population, %   | 81,11         | 87,87 | 0,81              | 0,88 | 4,75      |
|                              | Multimodal accessibility, 0-100 index   | 54,0          | 60,0  | 0,60              | 0,54 | 5,49      |
| HHRR educational level       | Number of people with education 4-5 levels for ISCED,%  | 79,0          | 75,5  | 0,73              | 0,68 | 4,00      |
| Technological specialization | Number of patents in instruments, %   | 23,33         | 10,63 | 0,60              | 0,27 | 3,49      |
|                              | Number of patents chemistry, %  | 35,00         | 9,87  | 0,56              | 0,16 | 5,72      |
|                              | Number of patents mechanical engineering, %   | 1,67          | 24,95 | 0,02              | 0,29 | 3,75      |
|                              | Technological concentration of patents (GINI index), 0-100 index  | 0,72          | 0,60  | 0,64              | 0,46 | 5,05      |
| Sectoral structure           | Total number of employees in the wholesale and retail trade, transport, %   | 28,50         | 22,52 | 0,50              | 0,29 | 5,43      |
|                              | Total number of employees in the information and communication, %   | 1,94          | 2,84  | 0,16              | 0,29 | 5,02      |
|                              | Total number of employees in the financial and insurance activities, %  | 1,14          | 2,07  | 0,07              | 0,15 | 4,23      |
|                              | Sectoral concentration of employees in the top of 5 subsectors, % total employment                                | 3,50          | 7,44  | 0,13              | 0,27 | 5,07      |
|                              | Total number of employees in the production of wood, paper and printing, %  | 3,08          | 5,47  | 0,10              | 0,17 | 4,28      |
|                              | Total number of employees in the production of chemical real and chemical products, %                             | 5,65          | 7,03  | 0,32              | 0,40 | 4,30      |
|                              | Total number of employees in the production of rubber, plastic, non-metallic mineral products, %                  | 11,87         | 12,22 | 0,37              | 0,38 | 4,57      |
|                              | Total number of employees in the production of basic metals and metal products, except machinery and equipment, % | 8,40          | 8,26  | 0,40              | 0,39 | 5,29      |



|                         |  |       |       |      |      |      |
|-------------------------|--|-------|-------|------|------|------|
| Firm size               | Average firm size by number of employees, persons    | 16,41 | 19,53 | 0,27 | 0,33 | 3,93 |
| Openness                | Total exports, % GDP                                 | 34,62 | 23,45 | 0,34 | 0,23 | 5,01 |
| Institutions and values | The level of decentralization                        | 31,0  | 42,0  | 0,15 | 0,41 | 3,99 |
|                         | Quality of institutions, 0-100 index                 | 2,59  | 3,21  | 0,69 | 0,92 | 5,45 |
|                         | Important to think new and being creative, 1-6 index | 3,29  | 2,83  | 0,65 | 0,41 | 2,06 |

Using formula (2), calculate the index of structural distance for Kharkiv region (KHR) and Nordjylland (DK05, Denmark):

$$d_{(KHR,DK05)} = 5,23*(0,15 - 0,03)^2 + 3,89*(0,25 - 0,80)^2 + 4,75*(0,81 - 0,88)^2 + \dots + 3,99*(0,15 - 0,41)^2 + 5,45*(0,69 - 0,92)^2 + 2,06*(0,65 - 0,41)^2 = 4,29 \% \quad (4)$$

As you can see, the index of the index of structural distance for Kharkiv region (KHR) and Nordjylland (DK05, Denmark) is 4.29%. Similarly, will calculate the indicator for the other 204 European regions.

According to the calculation results table 3 shows the value of the index of structure distance for Kharkiv region and 20 regions of the EU member countries with the highest level of similarity of the innovation system.

As you can see, calculated values of the index of structural distance for Kharkiv region and regions of the EU member countries (sample size – 205 regions) give grounds to state that the most structurally similar regions for Kharkiv region are Pomerania voivodeship (the index of structural distance (ISD) – 2.91, Poland), Vilnius voivodeship (ISD – 2.92, Lithuania), Lower Silesia voivodeship (ISD – 3.17, Poland), Łódź voivodeship (ISD – 3.36, Poland) and Ústí nad Labem region (ISD – 3.49, The Czech Republic). The experience of these regions should be taken into account when implementing the smart specialization strategy in Kharkiv region in order to integrate it into global value chains. The reliability of the research results is confirmed by the Spearman's coefficient. Its value is equal to 0.910.

**Conclusions and directions of further research.** To draw the conclusion, one can say that the progressive mechanism for implementation of an effective

innovation policy is the smart specialization that promotes differentiation of regional innovation strategies on a countrywide scale and consequently emergence of new growth points and strengthening the course for the stable development of the national economy. The experience of the EU member countries confirms that innovation policy developed on the basis of the smart specialization is a prerequisite for a long-term national growth.

Table 3 – The index of structural distance for Kharkiv region and regions of the EU member countries (authors' elaboration)

| # p/p | Region code | Region name                   | Country            | The index of structural distance |
|-------|-------------|-------------------------------|--------------------|----------------------------------|
| 1.    | PL63        | Pomerania voivodeship         | Poland             | 2,91                             |
| 2.    | LT00        | Vilnius voivodeship           | Lithuania          | 2,92                             |
| 3.    | PL51        | Lower Silesia voivodeship     | Poland             | 3,17                             |
| 4.    | PL11        | Łódź voivodeship              | Poland             | 3,36                             |
| 5.    | CZ04        | Ústí nad Labem region         | The Czech Republic | 3,49                             |
| 6.    | CY00        | Cyprus                        | Cyprus             | 3,69                             |
| 7.    | EE00        | Estonia                       | Estonia            | 3,71                             |
| 8.    | HU21        | Komárom-Esztergom country     | Hungary            | 3,73                             |
| 9.    | HU22        | Győr-Moson-Sopron country     | Hungary            | 3,78                             |
| 10.   | HU23        | Baranya country               | Hungary            | 3,88                             |
| 11.   | UKC         | Northern Ireland              | Great Britain      | 3,91                             |
| 12.   | HU33        | Csongrád County               | Hungary            | 3,96                             |
| 13.   | CZ03        | South Bohemian region         | The Czech Republic | 3,97                             |
| 14.   | PL61        | Kuyavia-Pomerania voivodeship | Poland             | 3,99                             |
| 15.   | PL22        | Selesia voivodeship           | Poland             | 4,02                             |
| 16.   | FR42        | Le Centre-Val de Loire        | France             | 4,04                             |
| 17.   | CZ06        | Vysočina Region               | The Czech Republic | 4,12                             |
| 18.   | PL21        | Lesser Poland voivodeship     | Poland             | 4,18                             |
| 19.   | PL42        | West Pomerania voivodeship    | Poland             | 4,18                             |
| 20.   | UKE         | Yorkshire and Humber          | Great Britain      | 4,24                             |

In 2016 Ukraine is part of a group of countries “modest innovator” in the ranking “The European Innovation Scoreboard”, lagging behind the leaders (Sweden, Finland, Denmark) in terms of innovation development almost 4 times. This situation is due to the lack of effective mechanisms for implementation of the advanced achievements in science and technology into the economy and for stimulating investment in research and development. As a consequence, innovation

processes in Ukraine are characterized as unstable, devoid of clear long-term incentives.

Under such circumstances the innovation livelihoods in the national economy can only be ensured by inclusive and harmonious interaction of key actors of innovation activity: representatives of government, business, science, NGO and potential investors.

In this regard in future researches it seems appropriate to study the regions' experience of the development and implementation of regional smart specialization strategy of the EU member states that according to the results of calculations are the most structurally similar for Kharkiv region (Pomerania voivodeship, Vilnius voivodeship, Lower Silesia voivodeship, Łódź voivodeship and Ústí nad Labem region), to investigate the institutional aspects of implementing this approach in strategic management of regional development in Ukraine.

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## **ALTERNATIVE METHOD OF CONTROL OVER WASTES-A CONTEMPORARY CHALLENGE IN TECHNOLOGY AND ECONOMICS**

**Summary** *The work is devoted to the problem of minimizing wastes in the processes of various technological modes, including modes of V and VI levels. It was shown, on the basis of numerous sources and publications that the problems of wastes and their minimization remained to be vital, irrespective of their relation to the level of the contemporary engineering thought and, level of technological modes, or the countries in which such modes were acting. It was suggested to assume as the basis such properties of components of any engineering process as its component content, its source of raw materials and energy sources used for a particular engineering process. The implementation plan is represented of a so-called polymodal technological process, its principal idea being based on suppression of wastes formation in the source of its origin, namely, in the technological process. It is to be ensured by means of coordination of energy raw materials sources, applied in the particular technological process and the structure of the components of energy sources, relevant for the process. Such approach promotes an increase in commodity output and reduction in the share of components of raw materials sources that could be a potential source of wastes. Such technologies may be rather costly and may contain non-typical approaches to production, but they are oriented on solution of the most important tasks of our days – minimization of factory wastes.*

**Key words:** *factory wastes, commodity output, polymodal technological process, thermodynamic one-in-two unity, wastes formation, suppression the source of wastes formation.*

**Introduction.** On the intersection of the centuries the resource consuming economy acquired high-end economy as its alternative-devoid competitor. Y.N. Kharari maintains that material resources, as a source of will gradually lose its value, as compared to knowledge-another source of well-being [1, p. 23]. Under such conditions all conventional approaches to creation of numerous technologies, that are aimed at obtaining welfare in commodities, but leading to formation of dangerous wastes will gradually acquire an antagonistic inner contradiction. The society has to seek new ways of protecting the environment from factory wastes, as it is a factor that is a threat to the entire mankind.

Factory wastes exist as long as commodity production exists. Overall mass of the worldwide accumulated wastes will reach 200 billion tons in the immediate future [2, p. 2]. Every year hundreds millions of tons of factory wastes are produced throughout the world. Every year only one sixteenth part of such wastes is utilized, but a new portion of hundreds of millions of tons of factory wastes is produced, in arithmetic progression larger than the utilized part. Factory wastes in their mass and their influence upon the environment have essentially left behind all aggregate household wastes in the entire world. This process seems to be irreversible and it simply can't be stopped. Wastes, in nowadays world have long ago ceased to be just a global ecological problem. The problem of wastes has become equal to the most urgent social and economic problems of nowadays. Expenditures on storage, maintenance, neutralization (depending upon their toxic level) are comparable with a budget of a big European state. Many countries of the world are incapable, in principle, of coping with the accumulated wastes. Ukraine belongs to these countries. Thus, it can be stated that in spite of advanced up-to-date technologies the world has yet to adapt to the contemporary problems of wastes formation and all manufacturing technologies, without exception possess an obligatory component – formation of wastes.

**The objective of the work.** The objective of this work is to determine the conditions under which any engineering process could be maximally free from such phenomenon as wastes formation. Another objective is to formulate methodological conditions for development of such processes

**The principal part of the work.** Uneven distribution of technological modes in the worlds economy (see Table1) exerts sufficient influence upon appearance and accumulation of wastes of different quality, it giving an opportunity for them to become an important tool for solving many an important economic, ecological problem or even political problem. As an example the world dynamics of transactions in wasteful technologies within IV and even III technological modes of the countries of the third world (China, Indonesia, India, Brazil) at the end of the previous century can be mentioned, as well as the dominant placement of the up-

to-date technologies of V and VI technological modes in the USA and countries of Western Europe.

Table 1.

Share of technological modes in the economy of separate countries and regions. \*

| Country   | Technological mode, % |    |    |    |
|-----------|-----------------------|----|----|----|
|           | III                   | IV | V  | VI |
| USA       | -                     | 20 | 60 | 5  |
| Japan     | -                     | 10 | 55 | 20 |
| W. Europe | 5                     | 25 | 45 | 5  |
| Russia    | 30                    | 50 | 10 | -  |
| Brazil    | 40                    | 45 | 10 | -  |
| Ukraine   | 58                    | 38 | 4  | -  |

\* - the data from the sources [3,p. 1; 4, p. 65; 5, p. 79-83]

The situation with wastes formation is far from being perfect; neither has it seemed to be with production of the sixth technological mode. Such up-to-date technologies, like nano-technologies, based upon assembling of nano-parts from original nano-parts, which according to N. Taniguti, K. Drexler and R. Feinman, their founders had to be nearly wastes-free [6, p. 11, 7, p. 94], have not lived up to their expectations. Moreover, if we take into account the volumes of their wastes formation, compared to the volumes of commodity output, we may see that such production of the fifth and the sixth technological modes are inferior to the technologies of the fourth and even the third technological modes [8, p. 19]. Estimated correlation of the functions of affinity and divestiture, determined, according to our methods [9, p. 21], showing relative capacity of wastes formation for any technology testifies for this (see Table2). The reason is mainly explained by the fact that specialists in the domain of technologies of the sixth mode correlate ideologically their new technological processes with technologies of the inferior modes, thus “developing in their own way, the culture” of wastes formation.



Table 2.

Estimated correlation of the functions of affinity and divestiture, according to materials flows in nano-technologies.

| The name of the technology                                 | Experimental production and material resources, . |            |          | Function |             |
|--|---|------------|----------|----------|-------------|
|  | Raw materials                                     | Production | Wastes   | Affinity | Divestiture |
| Obtaining of nano-powders <sup>(1)</sup>                   | 0.25  | 0.17       | 0.08     | 0.68     | 0.32        |
| Production of nano-wire <sup>(2)</sup>                     | 0.070   | 0.063      | 0.007    | 0.90     | 0.10        |
| Obtaining of "Finemet" <sup>(3)</sup>                      | 100.0   | 77.5       | 22.5     | 0.775    | 0.225       |
| Obtaining of carbon tubes <sup>(4)</sup>                   | 0.030   | 0.0285     | 0.0015   | 0.95     | 0.05        |
| Technologies of intense plastic deformation <sup>(5)</sup> | 160.0   | 149.7      | 10.3     | 0.936    | 0.064       |
| Technologies of mechanical synthesis <sup>(6)</sup>        | 0.010000  | 0.009975   | 0.000025 | 0.9975   | 0.0025      |

<sup>(1)</sup> – the data obtained by calculation with application of the results of [11, p. 20-25];

<sup>(2)</sup> – the data obtained by calculation with application of the results of [12, c. 204-208, p. 225-228];

<sup>(3)</sup> – according to the data of [13, p. 98-102];

<sup>(4)</sup> – the data obtained by calculation with application of the results of [10, p. 26-32] and [15, p. 44-46];

<sup>(5)</sup> – the data obtained by calculation with application of the results of [14, p. 100, p.111, p.134] and [16, c. 61-65];

<sup>(6)</sup> - the data obtained by calculation with application of the results of [12, p. 212-216] and [17, p. 29-30];

It is evident that contemporary technological modes and new technologies require some new approaches to the problems of wastes production. Factory wastes recycling, their utilization and reuse, everything that deals with wastes at all technological modes in the world is based upon traditional engineering solutions, directed towards additional power and labour inputs, their efficiency being low, as a rule. All conventional methods of recycling of wastes, their utilization seem to be performed post factum, after the waste product has become a reality. As a consequence the society has to face the problem of ever increasing quantity of factory wastes; to cope with this task is almost impossible.

The structure of contemporary classical technological chart consists of a technical chart (Fig.1), indented for realization of this process. The entrance to this chart must necessarily have some material flow of raw materials ( $S_k$  - continuous or discrete), energy flow ( $E_o$ ), that put in action the tools of the chart (TC), in order to alter purposefully the state of raw materials and also the information flow ( $I_o$ ), actually expressing the ways and possible conditions of recycling of raw materials and materials flow of ready products ( $\vec{P}$ ) and wastes ( $\vec{W}$ ). On the exit of the system we traditionally have useful products (P), the production process existing for its sake and wastes (W), the structure and quality of which are arbitrary and depend on many factors of the production process. This chart migrates throughout literary sources, irrespective of the objectives of publications. Let us pay attention to some peculiarities of this chart.

1. The flow of raw materials is usually multi-component, consisting of "n" components and is specified for obtaining some useful products, in a form of single or double-component substance, in most cases ( $S_{1-2}$ ). Other components ( $S_k, k = (2 \div 3), (1)n$ ) of the source of raw materials are recycled, if it is done, with application of the same energy sources and the same methods that are used for the main component and nothing more. If the main components ( $S_{1-2}$ ), for instance, are recycled with application of thermal energy, then other components of the source of raw ( $S_k$ ) are also recycled with that type of energy. In most cases the production system does not possess other sources of energy.

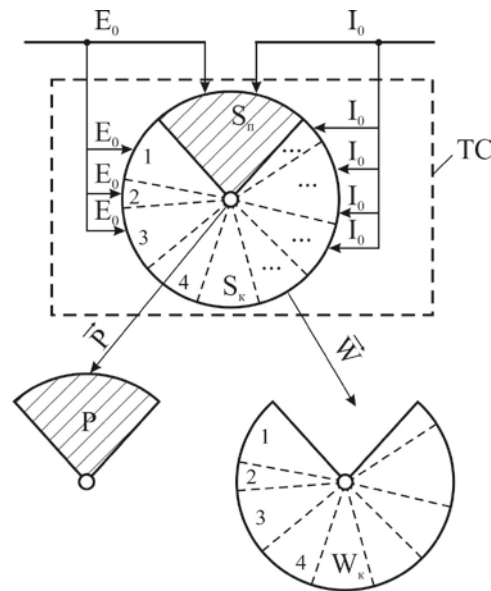


Figure 1. A conventional diagram of a traditional technological process .  
 (Designations are found in the text)

2. Energy source for a technological process is selected with due regard to the existing engineering views on the ways of receiving the necessary useful product from given raw materials.

General conditions are like that: *The original potentially useful component of the source of raw materials within the framework of a given technological process must correspond to such energy resource, by means of which commodity output can be obtained. Other components of the source of raw materials automatically come within guidance of this energy source.* (see fig.1). At they can undergo any arbitrary transformations, that make them useless as commodity products, such components or parts of raw materials for the main technological process are normally deformed (chips and shavings), sintered (slags), mixed (bulk substances), mutually polluted or scattered (dust) and the like An example is needed? The source of raw material of blast furnace process has got up 20 components, that include chemical compounds of silicon, sulfur, phosphorous, manganese, iron, carbon, to name but a few. Still we need iron only, or its carbonized derivate, in the form of cast iron. With this purpose thermal energy of natural gas and coke combustion is used in the technological process. Exothermic reactions of some

reactions still may be neglected. They do not give sufficient energy growth in the blast furnace process. But other components of the original raw materials are utilized with the help of energy of these thermal sources. So, the hypothesis that **the nature of wastes formation can be restricted to two equally important problematic components: exceedingly multi-component source of raw materials and local energy sources to be applied for a given technological process** has got the right to exist in its simplest variant that has just been mentioned. Surely, many other manufacturing types there exist the processes of agglomeration, flotation, separation in which the share of a component of raw materials, from which eventually commodity products appear is forcedly increased, or some “necessary” components are separated from “unnecessary” ones (see Fig.2). This technology of original, preliminary preparation of raw materials for the specified technological process (like sintering for the already mentioned blast furnace production) must have energy sources of its own ( $E_0$  and  $E_1$ ), its own rules in the form of information flows ( $I_0$  и  $I_1$ ) and nothing more. They all differ from completely new; let us call them “polymodal” technologies. For the latter each, or nearly each component of raw materials is recycled into the state of commodity product, by means of energy, that is required for it.

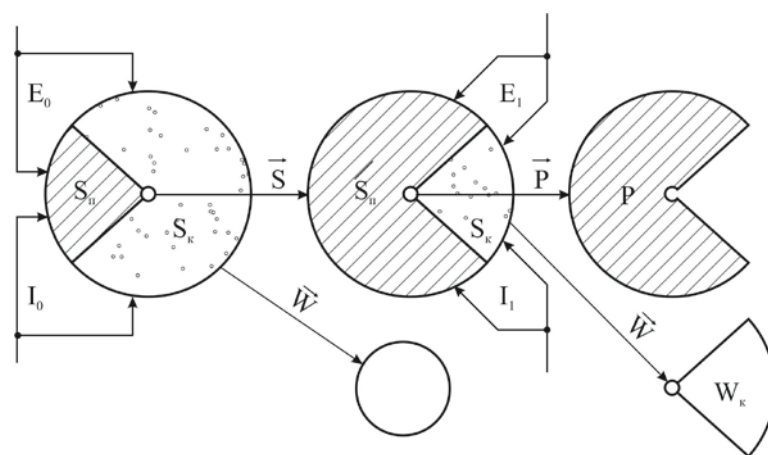


Figure 2. A conventional diagram of the process of agglomeration of raw materials (Designations are found in the text)

We come to a conclusion that works, aimed at creating products and wastes are done according to the same algorithms, with equipollent and comparable energy consumption and these resulting material components are equitable, differing only in subjective human attitude to them, due to their consumer value. The result is often like this: purposeful recycling is related only to those components of raw materials, which are of interest for the manufacturer, while equal simultaneous, equipotent but forced recycling with application of the same energy sources of the remainder of the raw materials part transforms them into unnecessary wastes.

We maintain that the multitude of energy sources, taking part in transformation of raw materials flows within the framework of a technological process should be aimed not only at transformation of selected components into commodity products. The structure of these energy sources should be directed at transformation of the entire range of raw materials components into useful products.

Here, we may speak about the property of **thermodynamical one-in-two unity of the production system** [18, p. 144]. When *the same technology is revealed for a certain part of components of raw materials as non-equilibrium and functions in accordance with the laws of non-linear thermodynamics ,it reveals itself for the other part of raw materials as weak non-equilibrium and obeys the laws of linear thermodynamic*. For such thermodynamic one-in-two unity of manufacturing products and wastes we rightfully may point out the presence of superposition of these irreversible processes (see Figure 3)i.e. a strong non-equilibrium, corresponding to achieving useful products and a weak non-equilibrium one, connected with formation of wastes

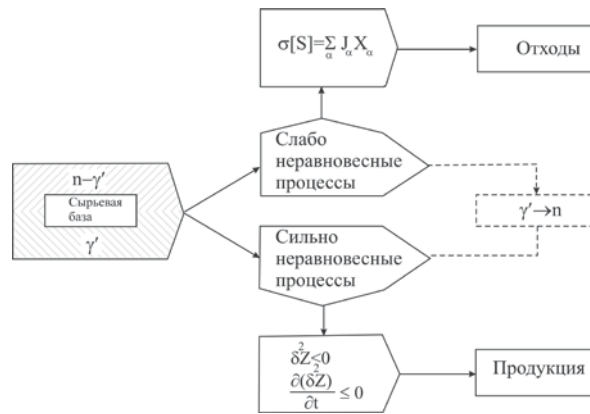


Figure 3. The diagram of the principle of thermodynamic one-in-two unity in technological processes  $n$  – a total number of components of the sources of raw materials,  $j'$  – the number of raw materials components, acquiring properties of useless waste.

With regard to the aforesaid we may set the *task of prevention (minimization) of formation of wastes in the process of production activities*, by transforming energy and regulating the source of raw materials. Such engineering tasks have not been set before man so far.

An ideal variant is when the technological process contains both technical and energy conditions for recycling of each component of the source of raw materials. (Fig. 4). Particularly, the system, must have together with its own energy source ( $E_o$ ), specified for recycling of the required part of raw materials ( $S_{1-2}$ ) some additional specific energy sources ( $e_k$ ), that correspond both in quality and quantity to the requirements for recycling of each component ( $S_k$ ) in the volume of the original source of raw materials for subsequent transformation into useful products (let us call it wastes, having the signs of useful products -  $W(P)_k$ ). Undoubtedly for this new technologies and new sources of information ( $i_k$ ). are needed. Process engineers are primarily interested in possibilities of transforming original raw materials for achieving useful products. As a rule, they do not care at all how other components of the source of raw materials will change their properties, structure and outward appearance. As a result we usually have what is called a component base of wastes. i.e. absolutely unnecessary products of a

particular production process. Now. Let us imagine an abstract polymodal (simply different from classical) technological process, in which every component of the source of raw materials has a correspondent source of energy, that simultaneously can recycle this component, irrespective of the state of other components of the source of raw materials into the state of a useful product

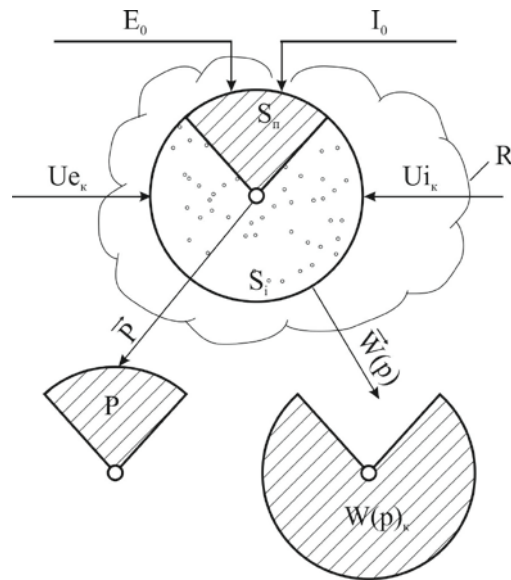


Figure 4. A conventional diagram of a polymodal technological process .  
(Designations are found in the text)

Now let us return to our blast furnace process. Not taking into account the design of a blast furnace, let us imagine some physical-chemical reactor(R) (see Fig.4), in which multi-component raw materials like blast furnace ore, flux additives and coke are functionally separated into separate components, separately silicon compounds, sulphur, phosphorous, separately arsenic and some other components of ore materials (see Table 3). In this case a specific quantitative component of useful commodity product could reach 88-95 % with regard to the weight of used ore, coke and additives. In this case blast furnace production would transform into wastes just 5-10% of raw materials in the form of “yet” not recycled part, instead of the 45%, existing now. Particularly, in such reactor it is possible to use high temperature electrolytic or chemical (connected with catalytic processes) energy sources. They are yet to be developed, but it “the game is quite worth the

candle”. We, actually speak of the ways of wastes suppression in the source of their appearance, i.e. strictly in the technological process

Table 3.

Evaluated data, regarding distribution of some components of the sources of raw materials of the blast furnace process between commodity products and wastes, given with regard to relative technical and economic indices of commercial cast iron, %

| Raw materials components         | Content in raw material , % | CONVENTIONAL TECHNOLOGIES |           | POLYMODAL TECHNOLOGIES * |        |
|----------------------------------|-----------------------------|---------------------------|-----------|--------------------------|--------|
|                                  |                             | Production                | Wastes    | Production               | Wastes |
| Iron                             | 16-72                       | 60                        | -         | 60                       | -      |
| Silicon                          | 8-10 and more               | -                         | 25-30     | 23-28                    | -      |
| Ore phosphorous                  | 0.15                        | -                         | 0.1-0.25  | 0,15                     | -      |
| Coke phosphorous                 | 0.015-0.04                  | -                         | 0,3-0.05  | 0.01-0.04                | -      |
| Coke carbon                      | 80-88                       | 3-4                       | -         | 3-3,5                    | -      |
| Ore sulphur                      | 0.1-0.3                     | -                         | 0,11-0,25 | 0,2                      | -      |
| Coke sulphur                     | 0.5-1,8                     | -                         | 0,05-0,10 | -                        | -      |
| Arsenic                          | 0,05-0,09.                  | -                         | 003-0.05  | 0.01-0.05                | -      |
| <i>CaO известняка</i>            | 55                          | -                         | 3-4       | ~2                       | -      |
| <i>SiO<sub>2</sub>известняка</i> | 45                          | -                         | 2.5-3.0   | ~1                       | -      |
| Coke ash                         | 8-12                        | -                         | 8-10      | -                        | 5-11   |
| ON AGGREGATE                     | -                           | 63-64                     | 33.3-40.7 | 89.37-94.9               | 5-10   |

\* -evaluated variants of distribution of the components, taking part in the technological process, in case polymodal components will be present.

Unfortunately, we have to be sure that the proposed polymodal technological process is not likely to be universally accepted. Some of process engineers will consider it too far-fetched, some of engineers will be against the dominant upon polymodal technologies, considering them exuberant, taking into account only utilitarian tasks of receiving direct useful products and subsequent recycling of the obtained wastes. Traditional process engineers and specialists, whose main task has been for a long time modification and upgrading of the existing technologies



and bringing technological indices to the level of the highest possible productivity and economic efficiency, to the highest possible quality of the main product are very likely to consider intervention into traditional technologies to be blasphemy.

Opportunities of technological power engineering are poorly investigated described from the point of view of the aforementioned positions. As a rule, energy goes in a technological process on its direct purpose, in a form, for example, of direct or alternating electric field, heating or cooling, direct chemical reactions or explosion, kinetic or potential energy of a certain load or rotating inertial body-accumulating energy etc. Rarely, one and the same energy is used in one and the same technological process in its different modifications. Two different, but mutually coordinated energy sources are used even more rarely. But sometimes only slightly transformed energy allows exerting controlled influence upon other components of raw materials, transforming them into useful commodity products. As such energy source, beside the principle one, participating in a particular technological process an imposed field of a different quality may exist: like a *synchronizing energy signal, secondary energy action, power nodulation of a stronger signal by a weaker one, resonance action etc. .*

All these methods of control of energy flows are quite real. The general task is to ensure maximally full and purposeful recycling of all components of all components of raw materials, applying own resources of a particular technological process and a technical system, specified for its implementation, into commodity products, of some consumer value for people.

Particularly:

1. Chemical and thermal energy in chemical reactors may be tied with a condition: endothermic reaction can happen only in case some amount of thermal energy is introduced into the system. Development of energy of chemical reaction will commence only after that.

2. Exothermic chemical reactions, in their term, are capable, due to release of thermal energy, of giving a start for other transformations of separate components of the source of raw materials that previously could not be transformed.

3. Blast furnace slag, producing millions of tons of wastes every single year is an electrolyte, containing oxides with clearly expressed acid and basic structure. To utilize it, it is necessary:

- to create an electrolyzer with application of electric power on graphite electrodes;
- to extract more reaction capable minerals and components from blast furnace slag;
- to ensure the conditions for activation of the surface of high temperature slag;
- to ensure the required viscosity of slag for realization of high temperature electrolysis;
- to ensure the treatment of the slag surface with a solution of an appropriate acid with the aim of regulating its structure.

The question if such technologies exist remains a topical one. Is it possible to achieve technological processes, aimed at minimization of wastes in the source of their emergence? This is the question of an alternative and challenge to the greater part of contemporary technologies of the third to the fifth technological modes. Iron and steel production, with its abundance of wastes is but an interesting object for implementation of such approach in various known technical solutions, allowing minimizing its wastes, by a technological method and the author is willing to share his own experience

**Conclusions.** On the basis of the principle of thermodynamic one-in-two unity of organization of the process of receiving commodity products and wastes the conditions were found out under which any technological process could be aimed at receiving maximum possible quantity of components of commodity products with the corresponding minimum of wastes Such technology is based on the principle of coordination of components of raw materials with the corresponding quality of energy sources, taking part in the technological process in such a way, so that it could be involved into conditions of thermodynamical string

non-equilibrium state, it promoting oriented recycling of all components of the original raw materials into commodity products.

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## **CONCEPT OF SUSTAINABLE DEVELOPMENT OF THE FOOD SECTOR ENTERPRISES IN THE COMPETITIVE ENVIRONMENT**

***Abstract.** This article focuses on elaborating the theoretical, methodological and applied principles of forming and implementing effective mechanisms of the farming enterprises development in a competitive environment.*

*The thesis suggests a new conception of food industry enterprises development, which gives clues for ensuring its sustain profitability, protection in economic, social and legal spheres. This conception is based on the theoretical and practical issues that include a system of measures aimed at achieving pursuing goals and implementing the conception in practice.*

*It presents scheme of food industry enterprises management, which enables the administration to avoid risks in taking decisions, considering the character of interaction of subsystems of risk-management with other subsystems.*

*A conceptual approach to the selection of priorities for structural changes in the food sector is proposed, based on an expanded matrix of possible options for structural changes, the choice of which is determined by a number of factors and principles. A set of measures for the development of processing industries in the food sector of the economy has been proposed.*

***Key words:** food industry enterprises, competitiveness, concept, structural changes, development*

Ensuring sustainable economic development should become the main goal of Ukraine's long-term policy. Without this, it is impossible to guarantee the rise of the standard of living of the population, the solution of social problems, the establishment and strengthening of the country's economic and political authority in the World Community.

The number of scientific studies devoted to the development of enterprises, regions and states is constantly growing, which indicates an increase in interest in the problem and deepening understanding of development processes.

Looking at it, there is no single simple definition of the development of all systems, as well as doesn't there exist a single development plan on a global scale, but nonetheless, we need to formulate a certain opinion and specific methodological methods for implementing a prudent order for economic development.

The development process is cyclical and consists of successive stages, the introduction of which is caused by the principles of motivation, planning, organization and control. Construction of a development model is an attempt to achieve the coherence of internal and external production opportunities [12, p. 23].

General patterns of development is cyclicity, purposefulness, irreversibility, but there are no clear and universal laws of development. So, there is no universal approach to developing a strategy for the development of all organizational systems. The process of developing a development strategy should take into account all the advantages and disadvantages, and based primarily on the peculiarities of economic development of countries, industries, enterprises.

A significant number offers of tips for forming strategies of enterprises, associations and industries now, but we believe that the strategy should take into account the specific characteristics of a particular industry, its culture, capabilities according to market conditions, rather assertive and worked perspective.

In the conditions of developed commodity and financial markets, the structure of production systems is complicated, there are such types of productive formations as clusters, interregional production complexes, etc. So, production systems are on a qualitatively new path of development, when in a competitive environment, the development of a strategic plan requires not only the implementation of a combination of certain actions, but also the adoption of rapid solutions regarding adaptation to the force majeure of competitive competition.

From our point of view, in this situation, studies of particular relevance are aimed at developing a holistic approach to optimizing production activity under conditions of instability of the environment. Actual questions are the search and formation of optimal forms of the institutional arrangement of production systems,

effectively operating mechanisms of operating systems, new methods of interaction in the internal and external environment.

Therefore the purpose of the research is to develop the theoretical, methodological and applied principles of the formation and implementation of effective mechanisms of the concept of sustainable development of enterprises in the food sector in a competitive environment.

The problem of stabilizing and developing the enterprises of the food sector should be investigated in point of view of profitability and cost reduction, as well as the choice of the optimal position according to the profit-risk scale. In the field of research on manufacturing activity in the transition economy, there remain unsatisfactory number of serious problems not elaborated in the methodological and applied aspects, and most importantly, there is no clear and understandable for concrete practitioners system of analytical tools and model tools for the development of productive activities [4, p. 57].

In modern conditions of development of Ukraine achieving Western Economic thought can not fully meet the needs of domestic science and practice, they meet only on a range of issues related to the specific market economy. In this regard, there is an objective need to study the methodological apparatus for the development of production systems to orient them to the modern needs of domestic practices, taking into account its specifics.

Advances in the development of the methodology of modern methods and technologies of management, based on mathematical modeling and computerization, are known and open prospects in specifically investigated areas [9, p. 145].

To number of insufficiently fulfilled problems, \_\_\_\_ should include the problem of methodological support for determining the effectiveness of activities and the prospects for the development of agrarian enterprises.

Market's transformations in the domestic economy, its development taking into account global trends and trends requires their analysis and accounting in the process of implementing the forms of development of specific industries. The

simple introduction of foreign experience of development makes it impossible, first of all, to distinguish between economic conditions.

Most of the methods for developing and evaluating a development strategy are based on the ideology of a systematic approach, according to which the economy, industry, and enterprise are considered as complex systems with defined goals, main types of activity and resource allocation as having a certain freedom of action in choosing the areas of their long-term development. Therefore, for the solution of large-scale economic tasks, directly, during the development of programs of scientific and technological development of the state economy, certain branches apply the program-target method.

As the market's relations deepen for the Ukrainian economy, it is possible to build a system of strategic management based on the principles of the problem-oriented approach. Its essence lies in ensuring the permanent and long-term ability of processing enterprises to perceive, transform, adapt, in order to activate mechanisms for implementing qualitative transformations.

The development of a long-term forecast of economic processes occurring at the level of industries and enterprises, as a rule, is realized on the basis of the program-target approach [1, p. 17].

This approach allows us to combine different types of forecasts (production technologies, resource capabilities, structural conditions) into an integrated forecast of the prospects for economic development of the industry, as well as to ensure the efficiency of production based on program optimization at enterprise level.

Analysis of the economic system, despite its scale and hierarchy, involves modeling its characteristics, formalizing knowledge about it and building on this basis an effective mechanism for its development.

Modeling is an instrument for managing development strategies and identifying logical coherence in financial, manufacturing, technological, trade and other areas.

One of the main issues of the concept of sustainable development is the



specificity of production and the features of its territorial location, which is especially important for agricultural enterprises. The development of a complete concept of development should have complete and reliable information about the object and parameters of its functioning. May cause significant damage to the object of the use of even mandatory reporting data defined in the regulatory documents, in particular the forms of financial statements of enterprises that can not be considered satisfactory according to the criterion of reliability [12, p. 144].

We think that the basis for the study of the functioning and development of industries, regions, and the state are mainly indicators of functioning of enterprises in the food sector. The presence of a significant number of indicators for assessing the technical, organizational and economic level, the state and prospects of enterprise development indicate the complexity and ambiguity of the evaluation results. The disadvantages of the information provision of the evaluation affect the distortion of the final results of the analysis, while the mistakes in their practical application and the formulation of recommendations are tolerated. The danger of such recommendations for production structures can be determined by the crisis in the economy, and the concept of regional, sectoral and state social and economic development are at risk in the state.

An analysis of the performance of production systems and the development of the principles of development allows you to determine the expected return on production at specified intervals. The process of active development in stages can be implemented in the form of appropriate measures to expand production, improve the quality of works and products, and be associated with minimizing the time value of the resources used. In this case, the ratio of income and expenditure within the specified time should increase. In the process of implementation of the development model, it is necessary to develop the levers of influence on the object of the goal realization.

In order to minimize costs, one should be guided by such a criterion is the costs for any type of product or service should not exceed the price of the product, since the adoption of the development concept of development of the absence of

profit at least one type of product or service means to lose the enterprise: both economically and psychologically, since the establishment of "low bars" will be perceived as a proper enterprise.

The ultimate goal of the developed scheme of management of the sustainable development of enterprises in the food sector in a competitive environment is to influence the development of events in order to virtually the development process as fully as possible correspond to the best result.

The most important elements of development models and their management are precise goals and benchmarks. The construction of a model of a phenomenon requires the identification of a system for comparing the values of variables by statistical data about the state of the system at certain intervals. For constructed models of the production system tools are developed to evaluate the effect of quantitative and qualitative performance indicators, analyze changes in the main parameters of the system and generate recommendations for the implementation of models in strategic management [5, p. 93].

To determine the technical and economic level and the level of intensification of production, it is possible to use a set of numerous indicators. Some of them can be systematized in the following order:

- system of coefficients of automation, mechanization of equipment and production, coverage of products by typical technological processes, repeatability, application in standard sizes, technical development of production, etc.;

- a system of general indicators of the technical and economic level of production and production (at the level of the best world achievements, at the level of the requirements of the national economy, the population of the country, mastered for the first time, does not meet modern requirements, such that is withdrawn from production);

- a system of indicators of the technical and economic level of production, which reflect the particular features of industries (average length of technological processes, total power capacity, capital and labor power, technical equipment, etc.) [12, p. 257].

These indicators, to a greater extent, determine not the final results of the enterprise, but intermediate. Therefore, their assessment does not contribute to stimulating the production activities properly. The given indicators are significant and can divert from the basic logic of the study of development of production, because, basically, regulate individual or internal issues of the company's work taking into account the influence of the environment.

The indicators of the level of development of production may include such indicators as the structure of production, the degree of its specialization, the degree of use of production capacity, the structure of fixed assets. This expanded definition of the technical and economic level of production is not justified in both theoretical and practical terms. Different elements of the production apparatus (material and technical base, qualification level of the labor force and organization of production) differ in their economic nature, their level and dynamics are caused by different requirements. The influence of individual elements on the development of production is also ambiguous.

In our opinion, a number of indicators have nothing relation with the characteristics of the quality of the development of the production base. Indicators of the use of equipment and the more productive capacity characterize the level of organization and are not directly related to the quality of the technical basis. Also not taken into account is the degree of generalization of different indicators. Many of the above indicators are characterized not by the quality level of the technical base of production, but by its scale (production capacity, growth rate of fixed assets, etc.), the increase of which may be accompanied by a deterioration of the result of production.

The main role in characterizing the quality of development of production have indicators of progressiveness of tools is a machine park. It is the techno-economic level of machinery and equipment or their complexes that has a decisive influence on the level of technological progressiveness, on the indicators of the use of labor objects, on the level of technical equipment of labor, the degree of mechanization and automation of production processes.

The technical level of production should be evaluated because of its economic content and reflect the degree of dissemination of advanced methods and tools. A quantitative estimate is proposed to be implemented through annual costs of labor resources operated in cost-effective areas, and the rate of growth of the technical level of equipment fleet is considered as an indicator of the intensity of the update [11, p. 189].

That is to say, to solve the question of a reliable assessment of production development is possible based on economic indicators. The level of efficiency is the ultimate result of the whole system of material and cost factors. At the same time, the primary factors of the development of a given production system are of particular importance: the increase of the technical and economic level of the used machines and equipment, the pace and form of updating the material and technical base, updating of the technology.

To study the level of influence of the organizational-technical level on the dynamics of effective performance indicators of production systems very often allow correlation-regression models [8, p. 7]. These models are based on the establishment of a stable relationship between the indicators of technical, organizational levels and the final economic indicators of the functioning of production both statically and in the dynamics for certain periods. However, when applying the correlation-regression dependencies in the development of forecasts for the development of production, it is not taken into account that qualitative changes affect the significant changes in the interconnection of technical and economic levels. Constancy of communication, inherent in a certain period and may not be absolute or even random for another period.

Goshovskaya O.V. offers a number of indicators for the areas of the enterprise (production, logistics, management, sales, finance, the organization as a whole), reflecting the presence of synergistic effects and can be used in shaping development models. It pays special attention to the indicator of quantitative assessment of the synergy effect. As a universal method of such an assessment, it is proposed to determine the present value of additional cash flow. This indicator,

as Goshovskaya O.V., acting as a variable, allows to investigate changes in the activities of enterprises under the influence of the introduction of synergy, without specifying the reasons for such changes [6, p. 10].

Some scholars are adherents of the use of integral indicators in the development models, which are based on the calculation of which commonly used indicators are used, which have a certain degree of uncertainty and uncertainty, either because they either do not take into account market factors and time factor, or depend heavily on them [15, p. 18].

The disadvantage of such indicators is the lack of a comparative estimate of costs, that is to say, it is necessary to know, which led to an increase in these indicators, whether it is possible to better ensure their consistency, reducing the cost of resources. These integral indicators do not allow realistically to assess the level of development and competitiveness of industries, enterprises and regions.

In economic practice, increasingly, like an aggregate indicator, is used the rate of bankruptcy probability, or the Z-index of Edward Altman. In accordance with this ratio, the financial position of the enterprise is estimated according to the statistical criterion used in the United States. According to the developer, this indicator also characterizes the economic potential of the enterprise and the results of its work for a specified period [2, p. 379].

We think, that the use of this indicator in the conditions of the domestic economy has a number of limitations. First of all, as if this indicator is obtained by constructing and optimizing the economic-mathematical function on the basis of statistical data, it reflects the internal and external factors that affect the activities of enterprises in the United States in general, but does not take into account the factors that operate in the conditions other states. Secondly, when calculating the indicator, information about the company's balance sheet and the statement of financial results is used, reliability is sometimes doubtful. In addition, the principles of recording and displaying individual indicators in domestic and American accounting vary.

If we consider the most significant features of the definition of a system of

indicators and criteria for assessing the development of production systems, the main thing is that the new system of indicators most often contains elements of the operating system. The inheritance does not detract from a real assessment of the status of an object, if it is aimed at increasing the responsibility of production for the fulfillment of its contractual obligations, the economical use of resources, and the strengthening of production and financial discipline.

The main drawbacks of traditional methods who used to evaluate and analyze are violations of the requirements of the system approach. This is manifested in the fact that the indicators of the primary and subsequent levels are not differentiated. All indicators are considered as/like one-way. In fact, there is a clear hierarchy between them: primary level indicators must react directly to certain changes, and the other indicators react indirectly. Such indicators as/like the level of organization improvement, socio-psychological criteria reflect the development of production either through the quality of the material and technical base, or through the improvement of the use of productive capacity.

Generally highlighted methods for assessing the development of production systems are too complex, which leads to their imperfection. Consequently, the methodology for assessing the level of development of production in modern conditions requires further improvement, which should take place in the direction of generalization of the result, the search for universal and comprehensive indicators.

Since development is a philosophical category that is not limited to any homogeneous, one-dimensional process, it can not be determined by the conceptual apparatus of a particular science. Nevertheless, for the needs of practice and empiricism, it is necessary to apply the conceptual apparatus.

When applying the approach to development from the natural hierarchy of living systems, due to the number of constituent parts (elements), the nature of the relationship between them, the intensity and type of links between the elements, the criterion of development would be the complexity of the system. However, it is not a measure that can be directly measured and does not meet the operational and

measurability requirements. In addition, the approach to the development of social systems from the point of view of living systems, as we have already noted, has undergone significant criticism by reputable scholars [14, p. 112].

The degree of development of the system is higher, the more successfully its internal organization promotes the correct distribution of elements and functions, their cooperation, coordination, integration and coherence. That is, the basis of the general tendency of development lies the imperative of optimal structure, and the universal criterion of differentiation of stages of development can accept the degree of optimization of the structure of the system. It is measured by the density of bonds or other similar quantities used by the general theory of systems in solving optimization issues. In the applied aspect, this indicator also has a comprehensive basis. For practical and cognitive purposes, it is important to know in what phase of the development process there is a system at the moment: in the phase of origin, growth, maturation, termination of growth, regression or disappearance. The definition of such a phase is possible when a known course of the optimization function of the structure of the system relative to one (as a rule, essential) parameter of its determinacy over the entire period of the existence of this system.

Individual stages of development can be evaluated, apart from the underlying, and relevant specific criteria related to development goals. Moreover, with a greater degree of probability, it is possible to determine the tendencies of the system's development on past stages, with less at the present stage. And it is almost impossible to reveal the trends of real development on future stages due to the complication of systems and the expansion of options for ways and possibilities of evolution. An assessment of the development of systems is possible, if the latter change people. It should be emphasized that from the point of view of the organization's theory, not every element of the system being established is capable of improvement, which increases the degree of probability in assessing the degree of system development [12, p. 97].

To assess economic grow up, a number of indicators are used, of which the

gross domestic product (GDP) is most prevalent. Growth of GDP characterizes the aggregate result of the whole variety of positive and negative trends in the economy, it is an aggregate measure of the volumes of production in the country. However, its absolute value, obtained on the basis of multi-level statistics, also has a certain level of uncertainty in the conditions of Ukraine.

It should be noted that in determining the indices of the national accounts system for the economy as a whole and for individual sectors and industries, the results are measured by different valuation methods: for the economy as a whole - output of goods and services and gross domestic product at market prices, for sectors and sectors - issue in current prices and in gross value added. The variety of approaches to evaluation and the complexity of obtaining and processing statistical information increase the uncertainty of the result.

In order to implement the intensive growth regime, two conditions are needed: firstly, the economy must contain a highly effective system of learning, that is, have a high potential for knowledge for growth, and secondly, consumer behavior must meet the known conservative "values": the marginal utility of free time or current consumption relative to the future should not be high.

The economy of the model of exogenous grow up is expressed by representative agents, which have two factors of production are capital and labor. Equilibrium growth is proposed to be defined as a solution to the task of an economic agent that provides a balance of its total deductible income and expenses.

It is possible to evaluate endogenous growth by modeling the system state with the inclusion of an additional variable reflecting the intensity of training or individual efforts to increase the technological efficiency.

Simulation of two different growth regimes can be used to explain the interposition of the differentiation of growth rates. The connection of a model with empirical data results in indicators that reflect the pace of autonomous growth and the effectiveness of the learning system. From a substantive point of view, this means that the more important direction of long-term economic policy that can



stimulate intensive growth, there must be a sharp increase in the efficiency of the education and training system.

The proposed methods of modeling economic growth are convincing, but provide for certain limitations, conditions of application, assumptions that determine a certain degree of uncertainty, which limits the practical use of these methods.

The results of the analysis of methodological developments and tools indicate that the achievements of scientists-economists in ensuring the ability of science to evaluate the material production output level. But one of the most difficult problems is the adaptation of this theoretical and practical experience to the current realities of Ukrainian economy.

The domestic economic thought has offered many different concepts based on past methodological dogmas, which can not be uniquely transferred to realities of present, in recent years. In our opinion, the objectives of post-industrial development correspond to market parameters and criteria. It should be noted that in modern conditions, one of the most important results of social processes in the development of production is a positive result from financial perspective or effect.

Relying on this, the increase in profitability (effect) is associated with the accumulation of potential of the enterprise (production funds, intangible assets, working capital, financial assets, etc.), that is, its development, then it is necessary to assess the growth rate of property. But, with such an assessment, difficulties arise both in the methodological and organizational aspects, so the indicators related to the valuation of property and property rights are not yet widely available today.

The generalized indicator, which organically combines and synthesizes well-known indicators, is competitiveness. And what is especially important, he characterizes qualitative aspects of any transformation. This indicator has a plurality of definitions and hence methodological recommendations for calculations.

Competitiveness as an indicator of the level of development requires the study

of three main components of the general problem of competitiveness of the economy: the formation of a system of assessments of the competitiveness of different levels of the economy; to define a system of indicators for assessing the competitiveness of different levels of the economy; to identify methodological and methodological approaches to calculating economic competitiveness assessments.

From the standpoint of the National Economic Complex of Ukraine, competitiveness should be considered at the following levels: at the interstate level of the economy as a whole; at the level of the branch of economy at the interstate level; cross-sectoral assessment of individual industries; interregional assessment of the competitiveness of the regional economy as a whole and its branches in the regions; interregional assessment of the competitiveness of the economy of large cities in general and its branches in large cities; inter-regional assessment of the competitiveness of the economy of urban and rural areas in general and its branches in urban and rural areas.

With regard to indicators for assessing competitiveness, they should take into account the resource, infrastructure, fiscal, political and economic components of competitiveness and characterize the competitiveness of the economy as a whole, its industries, regional formations.

The assessment of competitiveness should be carried out methodologically and methodically based on the logic of decision-making and the essence of competition. The logic here is simple: if the conditions of management are more favorable - then, and accordingly, the results are more successful. Decisions on the development of the system are not abstract, because in the real economy there is and can not be abstract conditions, due to the imperfection of the market system. In most cases, these decisions are made by enterprises by choosing, among the totality, the most acceptable options. That is, the basis of the decision is the principle of comparison and the choice of a better option from the possible.

An enterprise that, in comparison with others, produces products of better quality and lower cost, is more successful, and therefore, such an enterprise is more competitive compared with non-abstract criteria, and with the indicators of

other enterprises.

The theory of international competitiveness distinguishes between the competitiveness of the country and the competitiveness of enterprises. Of course, by their very nature, these categories are different.

It is possible to draw an analogy between countries and enterprises, considering that the country is a combination of enterprises or large-scale production, that competing in the world market. This identification is arbitrary because there are many differences in the goals, tasks and functions of the state and enterprises, in particular, the state has much more problems and their solution is much more complicated.

If the economy has a small amount of foreign trade, there is no urgent need to assess international competitiveness, since a small number of enterprises are involved in international trade, and their competitive activity in the foreign market does not affect the domestic market of goods and services.

If domestic production has a high level of competitiveness both in domestic and foreign markets, then the country can safely open its markets. In this case, the inflow of foreign products will be insignificant for the economy of the country.

The World's market countries doesn't compete, it is companies who are representatives of these countries. At the same time, the country does not have to be competitive in all sectors, but it must be competitive in various fields. Countries with a specialization in small-scale production and in certain industries, such as Ukraine, are extremely sensitive to any external economic crisis, such as the cessation of supplies of the necessary material resources, sudden changes in demand for manufactured products in the country, or a sharp fluctuation of the market situation.

Based on the concept that competition in the world market is not competing by countries, and enterprises-representatives of countries, will examine the indicators used to characterize competitiveness.

On the basis of the conducted theoretical research, the study of the practice of functioning of enterprises in the food sector developed a concept for their further

development, ensuring sustainable profitability, security in the economic, social and legal terms. The concept should include a system of measures that ensure its implementation in practice and achieve its goals and is formed from the blocks: the formation of awareness of the commodity producer in choosing the path of self-management in the form of a processing enterprise; concentration of land in the private sector; an increase in the enterprises of the food sector due to the transformation of personal subsidiary farms; cooperation and specialization of the enterprises of the food sector; formation of primary capital in the form of preferential loans; demonopolization of processing enterprises; scientific support for the development of farms; using the achievements of the NTP as a necessary condition for enhancing sustainable production development; use of the laws of market economy management as the basis for the development of enterprises in the food sector.

Improvement of the domestic economic complex should take place on the basis of rational use of natural, material and labor resources, ensuring appropriate proportions at the level of industries, regions, and total economy. There must be new views on the deployment of productive forces based on the effective use of their own resources, the mobilization of internal reserves, and the strengthening of integration processes. It should be noted that the definition of ways and means of development in Ukraine should clearly take into account its national interests.

Researcher of the issues of the placement of productive forces in Ukraine is presented by strong arguments for the adoption and implementation of the conclusions of economic knowledge [7, p. 89]. The following studies substantially reveal the peculiarities of the development of the national economic complex and allow us to determine the directions of the territorial organization of the economy. However, practical guidelines for entrepreneurship require the specification of production opportunities, both for the formation of new productions, and for the improvement of existing ones.

We believe that a generalized indicator that organically combines and synthesizes well-known indicators of enterprise development is competitiveness.

He characterizes qualitative aspects of any transformation. This indicator has a plurality of definitions and methodical recommendations for calculations. The assessment of competitiveness should be carried out methodologically and methodically based on the logic of decision-making and the essence of competition. Decisions on the development of the system are not abstract, but by choosing, among the totality, the most acceptable options. The basis of the decision should be the principle of comparison and the choice of the best option from the possible.

Entrepreneurs should be able to compare their activities with competitors, firstly, on the domestic, and secondly, on the external market. To achieve this, you need simple and understandable ways, instructions, regulations, and more. In our opinion, there is a need to create a cartography with reference digital data on sectoral production costs. Consequently, the entrepreneur, having received information about production costs for the creation of a certain type of raw material in a particular region, can compare efficiency in the context of the regions of Ukraine. Such a choice will enhance the competitiveness of the market taking into account market demand.

The results of the research on competitiveness are the basis for the analysis of the factors of unfavorable trends in its level and dynamics, as well as in developing measures to correct the determined competitive strategy of the agricultural enterprise. The main components of the competitiveness of an agrarian enterprise are: effective system of enterprise management; an effective system of quality management; corporate information system.

The existing methodology of research into the development of enterprises in the food sector in the system of factors of the competitive environment, although it helps to identify the basic laws of their development, but not fully can identify and investigate the causes of failures in the processes of management. Consequently, there is a need for the development and implementation of new methodological approaches to the study of the activities of this type of enterprise, which, based on the existing informative base, the application of existing methods of economic

analysis, the use of modern technical means of information processing, allowed to achieve a qualitative assessment of the development of these farms in modern conditions and to justify the prospects their development.

We think that the main factors of the competitiveness of enterprises in the food sector are land security and quality of land resources; technical equipment of production, which can be expressed as indicators of the economy of the means of production or density of mechanized works in standard hectares; material security; availability and use of labor resources.

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## **PLACE OF AGRICULTURAL HOLDINGS IN PROVIDING SUSTAINABLE DEVELOPMENT OF RURAL AREAS: INNOVATIVE AND SOCIO-ECONOMIC ASPECTS**

***Abstract.** The paper is devoted to the definition of the agrarian corporations' (agroholdings') role in ensuring sustainable development of rural areas. To achieve this goal, the current state of the Ukrainian agrarian sector was determined. The influence of localization of agroholdings in rural areas (economic and managerial aspects) is considered. On the opposite side, the current problems of rural areas are identified, which can be solved by the introduction of social programs by agro-corporations. The most perspective aspects for cooperation are determined. Proposed different ways of uncompromising achievement interests simultaneously by both interested parties. The mechanisms of avoiding or leveling the risks of the proposed solutions are established.*

***Key words:** agro-corporations, agroholdings, socio-economic development, rural areas, social development, sustainable economic development, Ukraine agricultural sector.*

**Formulation of the problem.** The transformation and sustainable development of the rural areas is one of the key tasks for our country on the path to economic growth [1]. However, the unstable economic situation exacerbates the problems of the development of rural areas (lack of qualified specialists, unemployment, infrastructural collapse, insufficient competitiveness of products and low rates of innovation in the production process, etc.). Due to the lack of systematic modernization of rural areas for years, the accumulated problems have led to a gap between the level of development of urbanized and rural areas in Ukraine, which includes the development of entrepreneurship and production, the implementation of innovations, investment attraction, the development of the social sphere, etc.

One of the mechanisms for stimulating the development of rural areas is the development of agrarian entrepreneurship and increasing the competitiveness of agricultural products. Ukraine has both private peasant and farm enterprises as well as large agricultural formations - agroholdings, which are becoming more and more influential players in the domestic agro-industrial complex and have a significant impact on the socio-economic status of rural areas.

The following legal forms refer to agricultural holding companies as:

- business entities (6967);
- private enterprises (3215);
- cooperatives (448);
- farms (34137);
- state-owned enterprises (199);
- enterprises of other legal forms (592).

These legal entities, by their nature, relate to corporate governance systems and form corporate relations.

In this regard, there is an objective need to study the role of agroholdings in ensuring the village's sustainable development, in particular, determining their impact on socio-economic development, opportunities for introducing innovations and attracting investment.



In this regard, there is an objective need to study the place and role of agroholdings in ensuring sustainable development of the rural areas, in particular the study of their impact on socio-economic development, the possibilities for implementing innovations and attracting investment.

Papers of V. Andriichuk [2], G. Cherevko [3], A. Dankevich [4], S. Demyanenko [5], V. Mesel-Veselyak [6], O. Moroz [7], V. Sapych [8], V. Tkachuk [9] and other economists are devoted to the problems of the study of the impact of the functioning of agricultural holdings on the development of rural areas. Despite the significant achievements in the research of the activity of agroholdings in Ukraine, the issue of their role in ensuring sustainable development of rural areas requires constant updating in the context of reforms and the implementation of new development programs.

**The aim of the paper** is to analyze the activities of agricultural holdings in Ukraine and to determine the role of these structures in ensuring sustainable development of rural areas and enhancing the competitiveness of the state.

**The main results of the study.** Agroholdings have an important role in the agricultural market of Ukraine. The share of holdings in total exports is higher than other agricultural enterprises by the total production of these crops, with the exception of soybeans.

The holdings' average EBITDA for the first time in a few years began to grow and became \$ 84.07 million in 2017. In 2016, this figure was \$ 77.31 million. Although the EBITDA indicator does not help determine profitability of the company, but gives an understanding of the history of its economic activity's.

The share of land at the disposal of agricultural enterprises is 29% or 6.25 million hectares, which is 3.6 times more than in 2008 (Fig. 1). In Ukraine, the number of agricultural holdings is growing as well as land bank. In 2017, there were 93 agricultural enterprises, which cultivate more than 10 thousand hectares. The total land bank in at the disposal of agroholdings has increased over 5 years from 5.6 million hectares to 5.95 million hectares in 2017.

The increase of agricultural lands in the use of these agricultural enterprises' type and has constituted 6.3%. The leaders by the land bank are Kernel - 600 thousand hectares, UkrLandFarming - 570 thousand hectares, "Agroproperties" - 410 thousand hectares. The largest number of agroholdings in 2017 was in Kyiv (32), Chernihiv (28) and Poltava (26) regions [10].

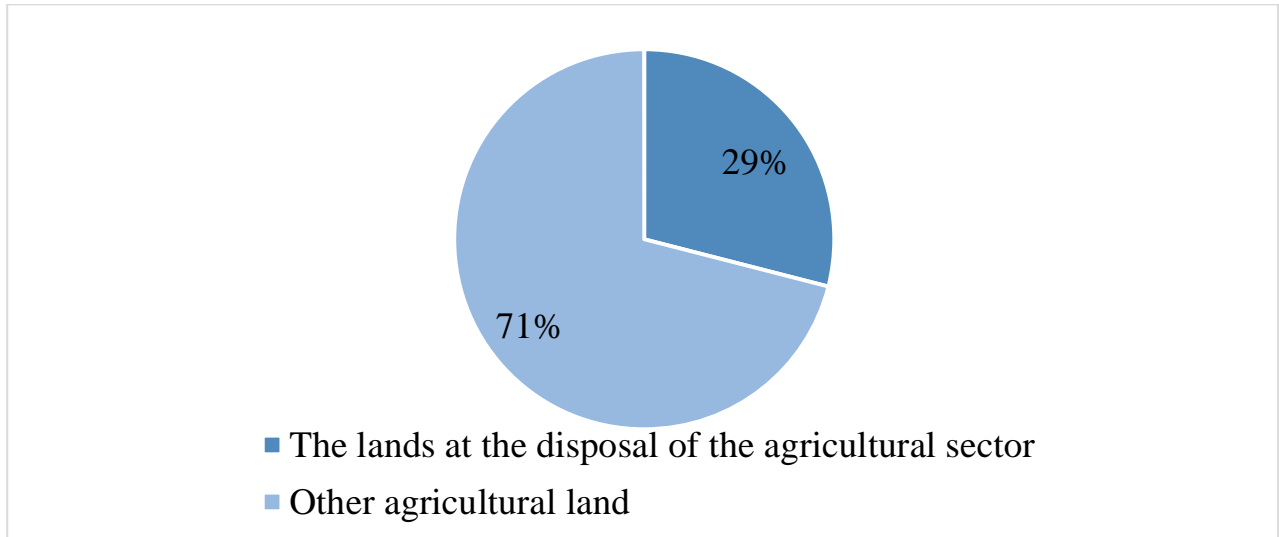


Figure 1 – The land fund's share at the disposal of the agricultural sector, in% to the total amount of agricultural land, 2018 [10]

Up to 50% of livestock production consists of raising livestock and poultry, with the share of enterprises twice as big as the share of households (Fig. 2). Milk production ranks second. In this direction, the situation is the opposite; households produce 2.3 times more than agricultural companies. It should be noted that companies mainly deal with milk processing, while households are engaged in production.

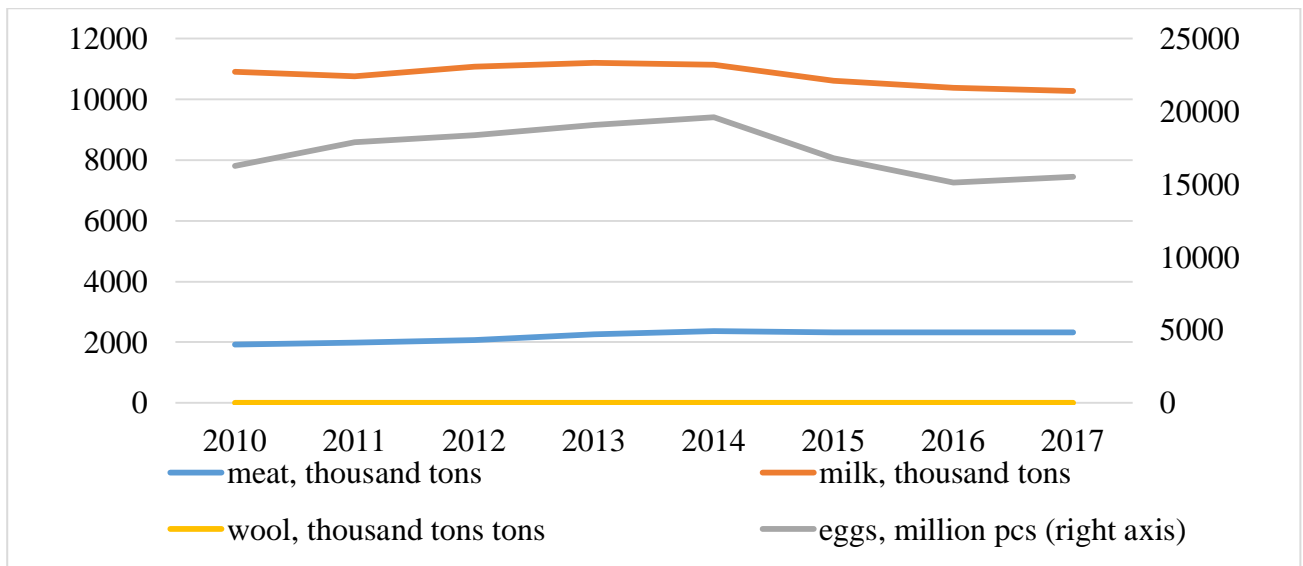


Figure 2 – The structure of the livestock products (2010-2017) [11].

Hence the first positive moment comes from the localization of agricultural corporations in rural areas. This is the optimal logistics for milk suppliers. Egg production is distributed approximately equally and takes up to 10% in the structure.

The structure of animal species has remained almost unchanged over the last seven years and shows a low popularity of sheep and goats. The largest share is cattle, which is almost 85% more than pigs. The general trend for the seven-year period for these animals is to reduce the number by 19-20% (Fig. 3).

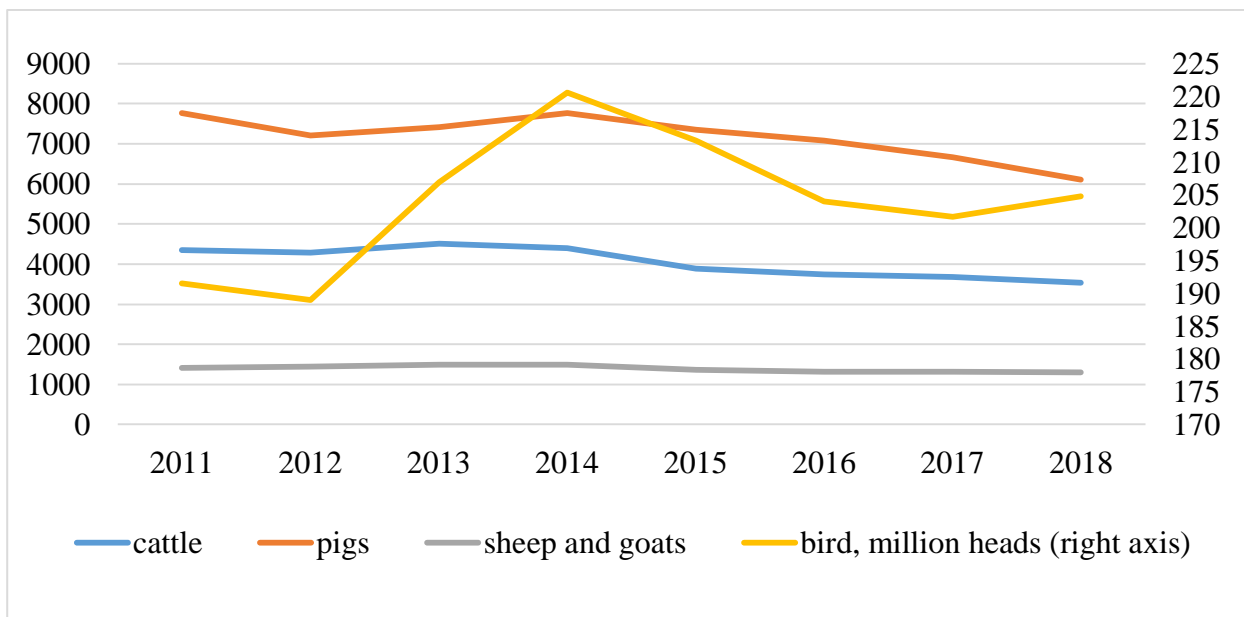


Figure 3 – Number of agricultural animals, thousand heads (2011-2018) [11].

Regarding agricultural crops, the structure is stable (Fig. 4). The largest share is grain crops - more than 42% (including technical crops). Over the past eight years, the breed of growth in the production of grain crops has doubled. In the second place - sunflower, almost 20%, in the third - the potatoes. It should be noted that potatoes are cultivated by households more than entities, and in agricultural enterprises the share does not exceed 6% of the agricultural crops' structure.

The volume of planting is directly dependent on the product of the sown area and yield (in the measurement of certain products per hectare of the opaque area). We will consider them more detailed.

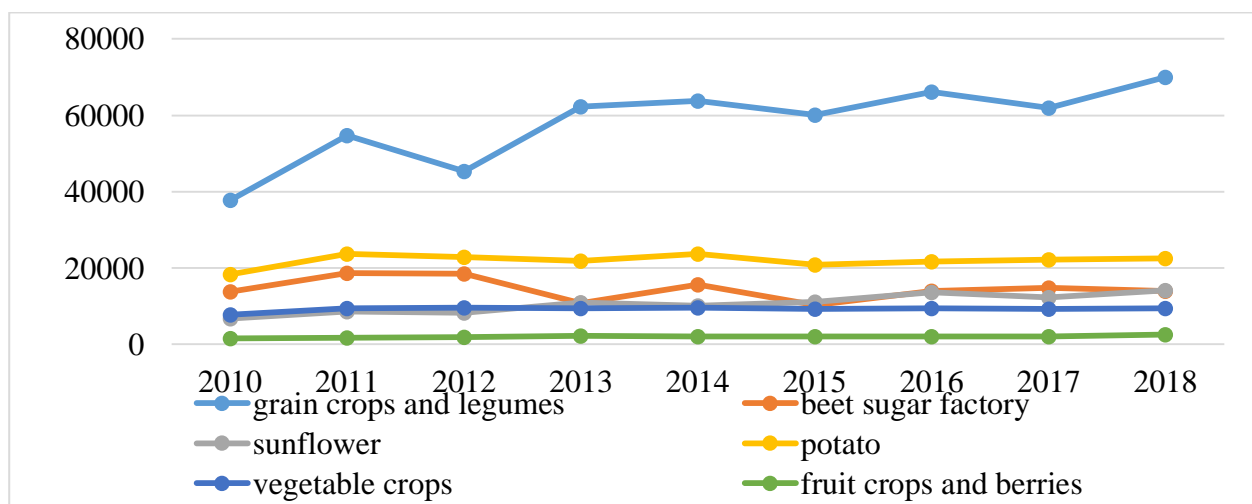


Figure 4 – Gross output of crops, thousand tons (2010-2018) [11].

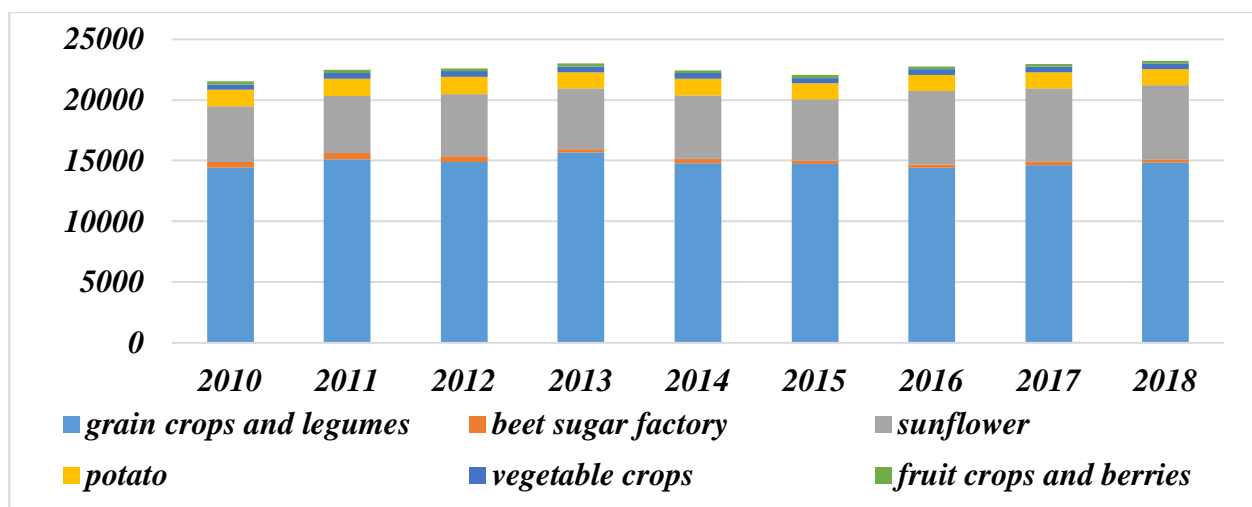


Figure 5 – Sown area of agricultural crops, thousand hectares (2010-2018) [11].

The plot of the sown area is completely reliant on the dynamics of the volume of agricultural crops, with the exception of sunflower and sugar beet (Fig. 5). They have almost identical percentages in the structure of production, but the sown area has a pain difference of 22 times. By comparing the two previous figures, we can conclude that there is a high stability of crop production and a tendency towards insignificant growth throughout the entire period, both in production and in the areas under cultivation.

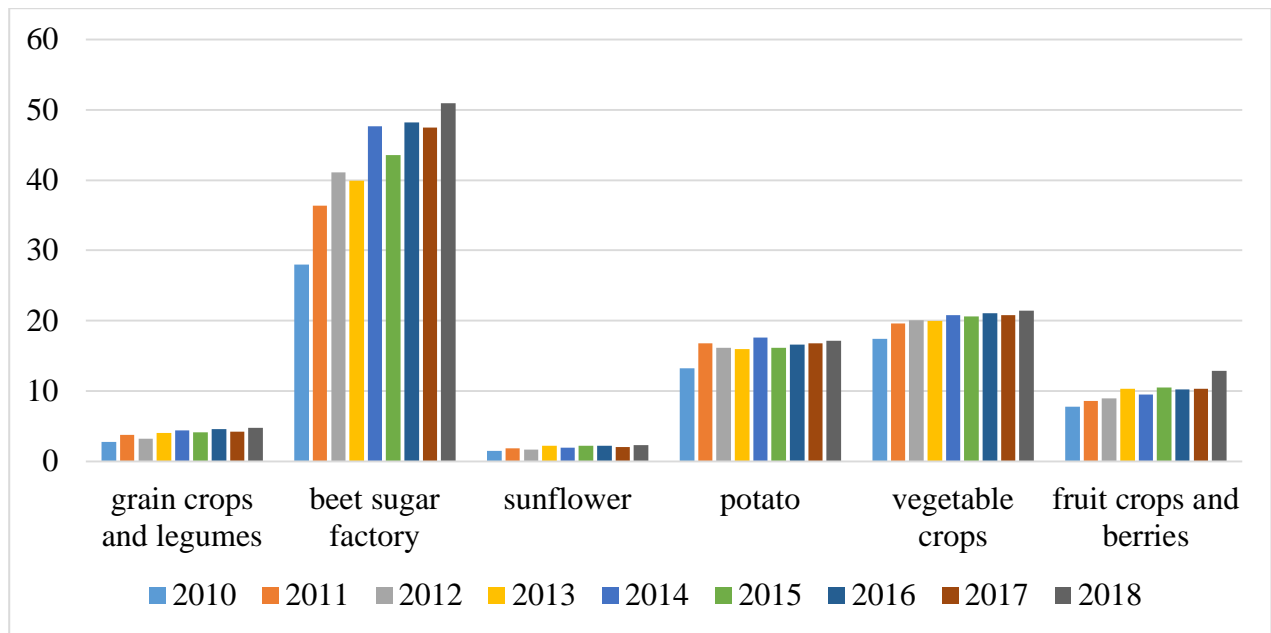


Figure 6 – Productivity of agricultural crops, t per ha of harvested area [11].

Analyzing the dynamics of productivity (Fig. 6), we can note that it is increasing for all positions. Thus, the smallest increase in vegetables and potatoes' yields (23% and 29% for 8 years, respectively). All other positions show an increase of 50% on average. The record holders are crops and sugar beet, their growth was 74.3% and 72.1% respectively for 8 years.

The analyz of the agricultural products price index' dynamics (Fig. 7) shows that there is a sufficient similarity between the enterprises' prices of and households' prices. This indicates the harmony of the agricultural sector and the absence of monopoly manifestations. However, the dynamics of prices in the households rather than in the enterprises, more stable. This phenomenon can be used by agricultural corporations that are localized in rural areas for increasing

their economic sustainability, through the inclusion of households in certain parts of their business processes. In order to choose the most advantageous aspects of integration, it is necessary to consider the price indices in the context of livestock and crop production.

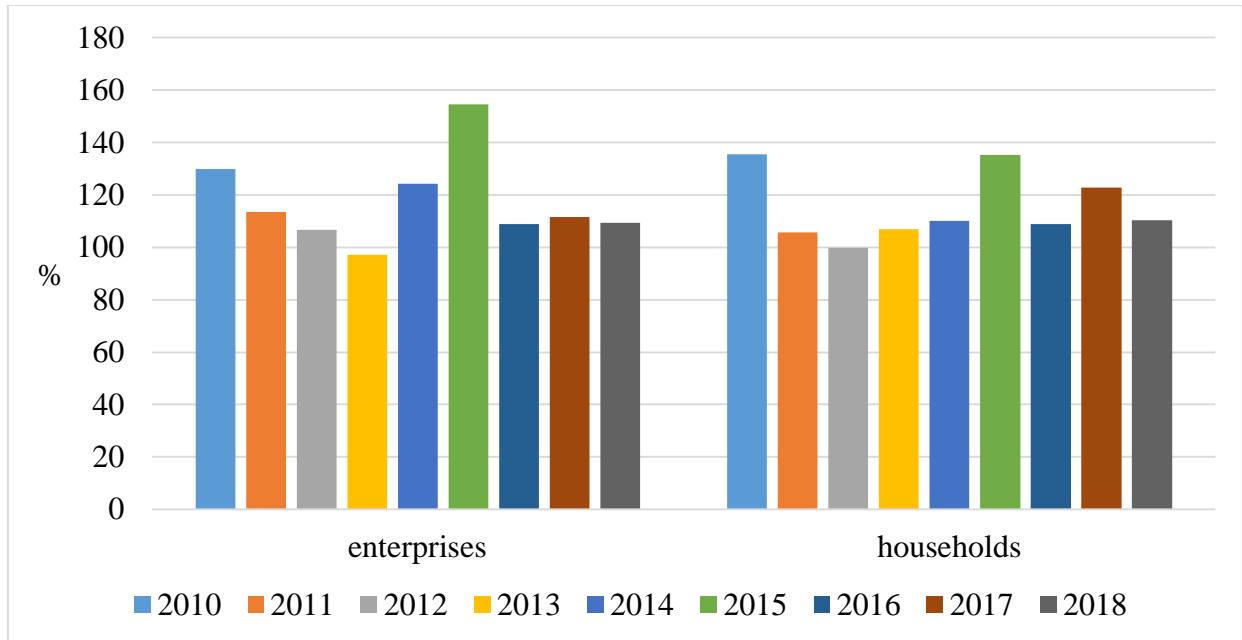


Figure 7 – Agricultural products sold by enterprises and households. Price indices (2010-2018) [11].

Regarding the crop products price indices (Fig. 8), it should be noted that mutual regulation, if the indices of prices in enterprises and households are unbalanced. They begin to balance each other, which is a positive aspect of the agricultural sector in Ukraine. In this case, there is no stability to price changes in households.

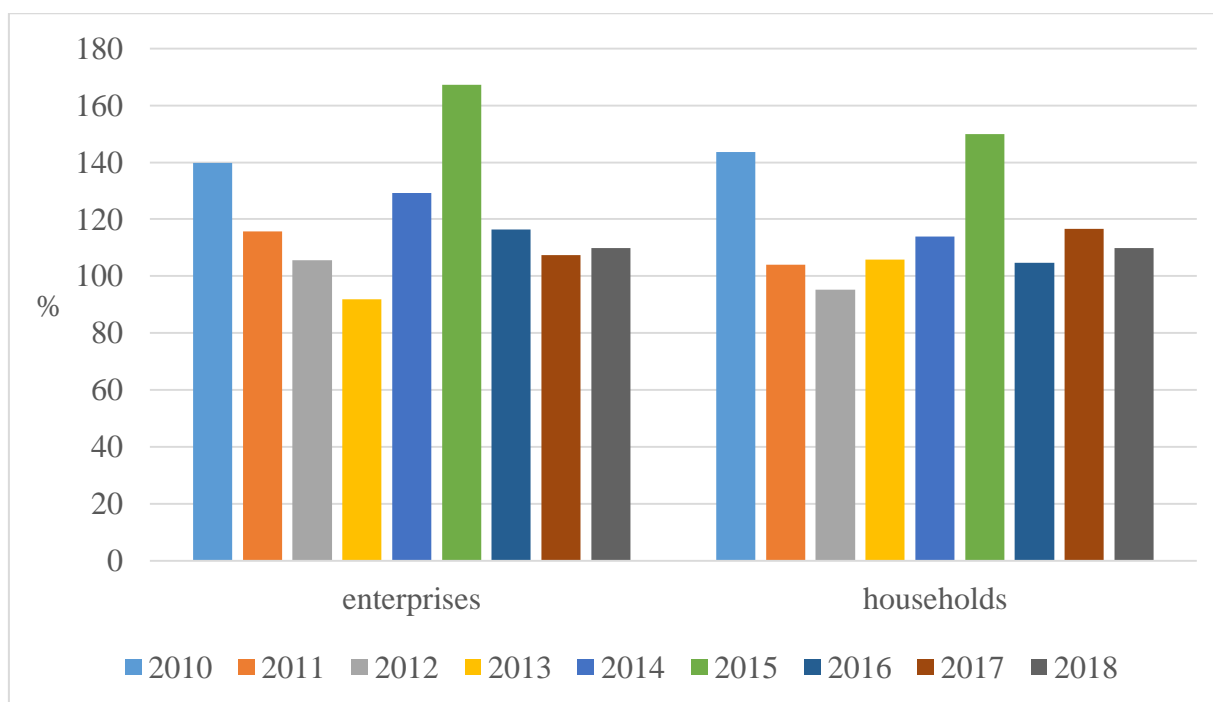


Figure 8 – Crop production sold by enterprises and households. Price indices (2010-2018) [11].

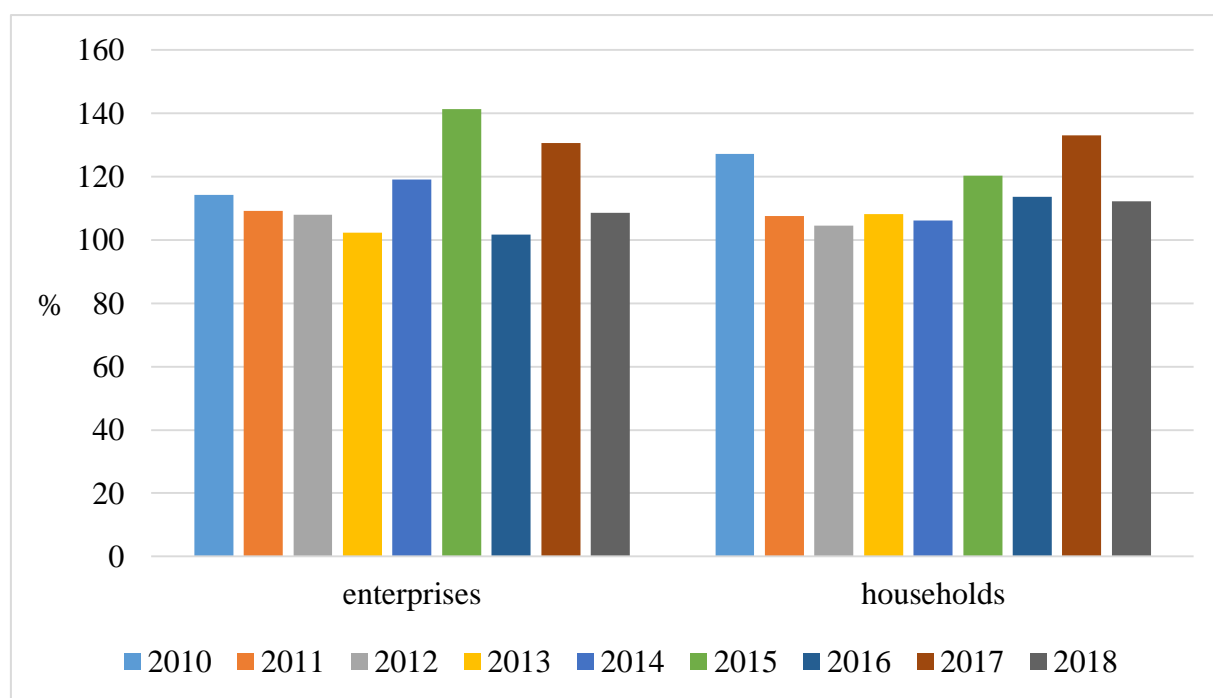


Figure 9 – Livestock products sold by enterprises and households. Price indices (2010-2018) [11].

Comparative livestock products prices' indices (Fig. 9) can be noted that the stability of households is considerably higher than that of enterprises. This is due to several significant factors:

1. Outbreak of livestock. There are many households and each of them has a relatively small amount of livestock and for enterprises the situation is opposite. This makes businesses more vulnerable to the risk of mass illness and livestock extinction. However, the average number of illnesses per year is higher in households that reduces their productivity [12].

2. Collective pricing. Households are very cautious about changing prices on products, both in the direction of increase and in the direction of reduction. As a rule, households are oriented towards each other, which makes them more stable and less susceptible to dumping and other monopoly manifestations [13].

Therefore, the possibility of including households in the business processes of agrarian enterprises located in rural areas, namely in livestock production. The role of households may vary, from an extensive supplier of animals and products to a service customer. Understanding the composition and structure of livestock households and establishing certain relationships with them creates possibilities for enterprises to increase their resilience by shifting some of the risks to households (which they carry), increase the stability and rhythm of household products and provide cheap and quality services for households [14].



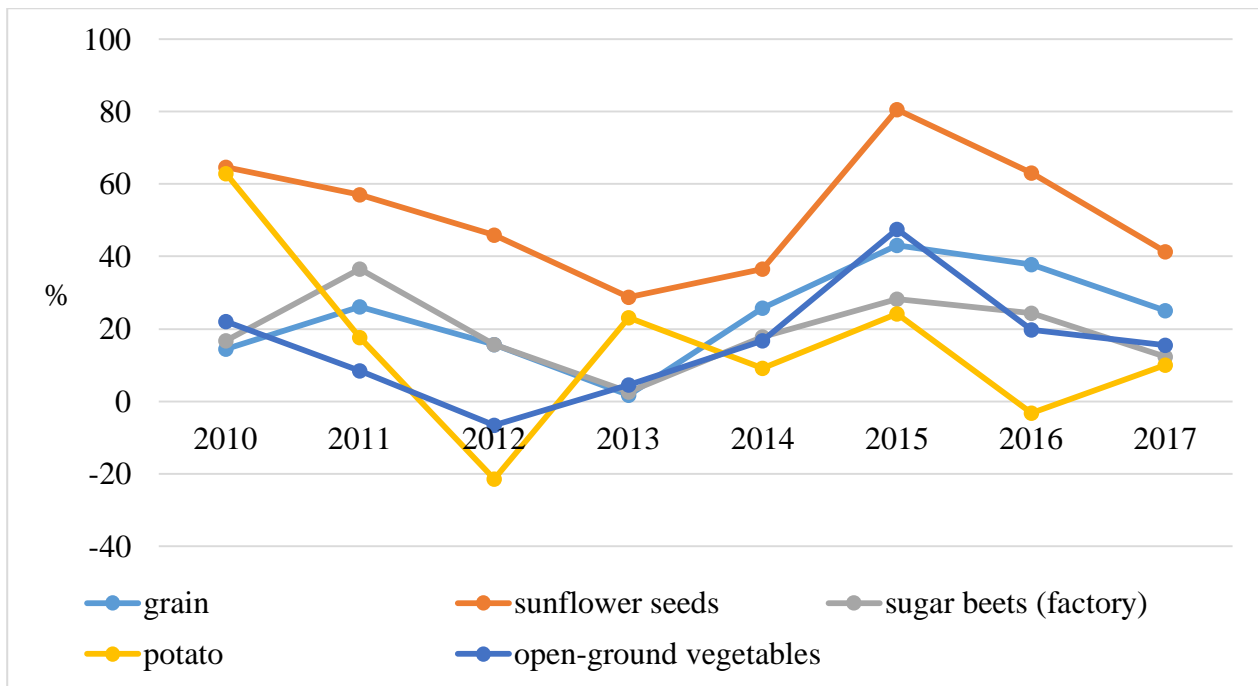


Figure 10 – Profitability of agricultural production in agricultural enterprises (crop production), % [11].

Based on the profitability graph (Fig. 10) in crop it should be noted that in 8 years there were almost no unprofitable directions. The exception was potatoes (in 2012 and 2016) and open-field vegetables (in 2012). The best level of profitability was in sunflower seeds, (on average about 45%). Average crop rotation rate is kept at the level of 19-21%.

Stability and profitability of crop production is self-sufficient but there are opportunities for development and co-operative. So, the next opportunity for agribusiness enterprises located in rural areas is the stuff cooperation. Most households combine agrarian activities with part-time employment in other areas. The salary level is lower in the village area. Villagers have an experience and a practice in the agrarian sector, which is an opportunity for obtaining more qualified personnel for a lesser remuneration [15].

Analyzing the profitability graphs of livestock shows much greater instability. So, the produced meat of sheep and goats, as well as cattle and poultry, the whole period is unprofitable (Fig. 11).

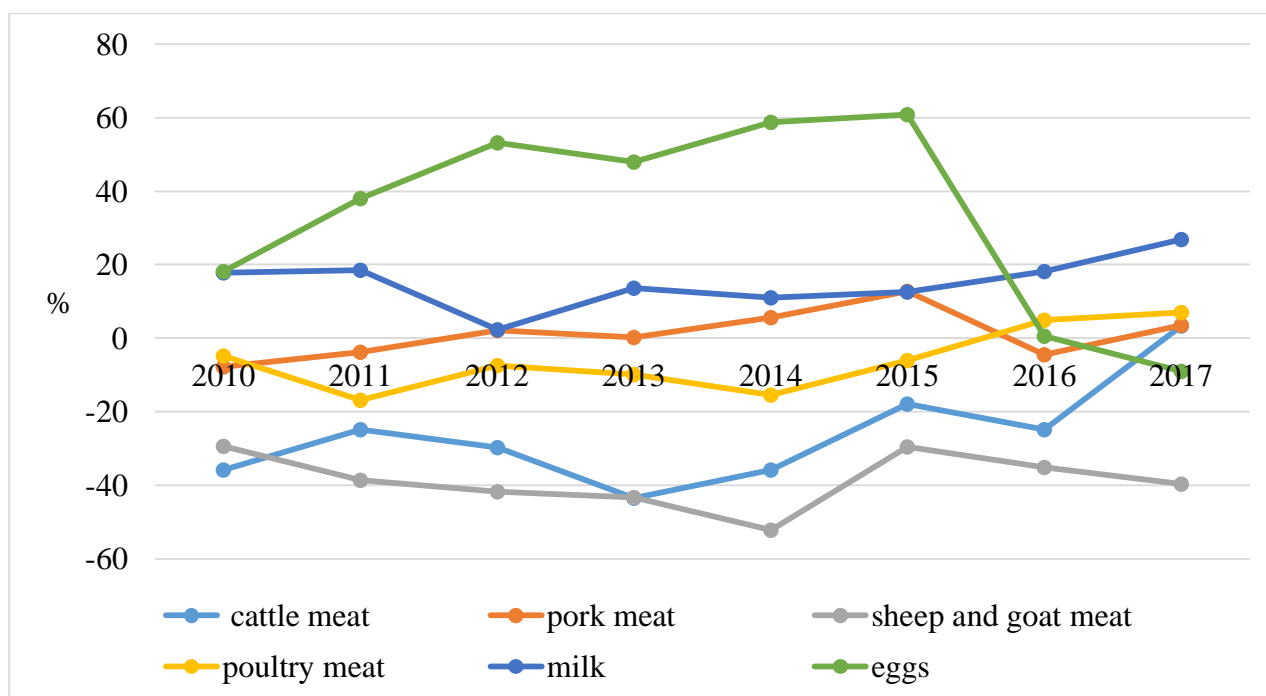


Figure 11 – Profitability of agricultural production in agricultural enterprises (livestock products), % [11].

The production of meat from cattle and poultry became profitable only in 2017. The production of pork on the average is at a break-even level. The production of eggs, which grew from 20% to 60 in 2015, is leading to the level of profitability, but according to the 2017 data, this activity is unprofitable.

Given this situation in livestock farming, it is necessary to change the format of work in this segment of the agricultural sector. It is advisable to use additional opportunities in the countryside to correct the current situation.

As for the gross output of agroholdings, in 2018 it amounted to UAH 55.9 billion, or 22% of the total volume of the country. In 2017, the share of agricultural holdings in the total volume of agricultural production has been higher and is 23%.

All opportunities for agricultural enterprises - from localization and co-operation in the rural area - can be multiplied with each other and have a correlation with the size of the enterprise that uses these opportunities. That is why agricultural holdings, located or planning to settle in rural areas, can achieve the greatest benefits. At the same time, there is a problem of the lack of an official

fixed link between agroholdings and rural communities, except for the procedure of transfer of land shares for use.

Analyzing the situation in rural areas of Ukraine, it can be argued that there are similar trends in different regions that can be reduced to the following:

- agricultural land is concentrated in the cultivation by large agrarian enterprises (the number of "independent" small and medium-sized agricultural enterprises is reduced) [9];
- the social functions of large agricultural holdings are not regulated and depend on the decisions of the enterprise's management (primarily in relation to rural communities); at the same time, a holding type agricultural formations receives significant amounts of financial assistance from the state for the development of their own activities [7].

It should be noted, that the formation of agricultural holdings in Ukraine has both positive and negative consequences, especially to ensure sustainable development of rural areas.

The advantages of functioning of agroholdings can be attributed to the effective development of business in the agrarian sector:

- possibility of attracting highly skilled specialists;
- creation of jobs for the rural population;
- effective use of equity, rational use of available resources of enterprises, intensification and diversification of production;
- access to preferential loans and subsidies, attracting private investors;
- optimal use of resources and production capacities: a combination of production with processing and marketing;
- opportunities for export with large volumes of production;
- availability of resources for introduction of innovations in the field of agro-industrial complex;
- opportunities to increase profits from activities by obtaining cheap raw materials through the integration of agriculture and processing industry products;
- low labor cost;

- low level of land rent;
- opportunities for minimizing tax payments;
- risks reduction through business combinations, usually in different natural climatic zones.

From an economic point of view, the functioning of agroholdings in modern conditions has many positive aspects that enable such structures to act as drivers of innovative strategic development of rural areas.

However, there are significant differences with the problems of social development. The following negative social impacts for rural areas can be identified as:

- 1) Low employment of rural population and absence of tax payments to local budgets. The reason for this is the use of high-tech equipment at large enterprises, which significantly reduces the employment of local population) and legal registration of enterprises in large cities or district centers (taxes do not fall into the local budgets of those administrative units where production capacities are located). That is, new jobs are created, industrial innovations are used, but the problem of employment of the majority of rural population remains. There are examples of agroholdings in which the labor intensity of the land is 4.2 times lower than the average in Ukraine [9]. This means that in rural areas where agroholdings are located, unemployment is higher;
- 2) There is a conflict of interest between the investor and the local community, due to the reduction of non-core industries, in particular livestock breeding.

Accordingly, the well-being of local residents depends on the effectiveness of local business structures in rural areas. That is, if enterprises operate effectively, then the social and economic situation in the rural area is better, as compared to the area where agrarian production is in decline. Successful agrarian enterprises provide work for local residents, pay taxes to local budgets, support and, in some cases, develop, rural infrastructure. In addition, sometimes agroholding can act as a village-forming enterprise, on which the existence of an area in general depends.

In order to achieve the coherence of rural area interests and entrepreneurial (corporate) structures that function in rural areas, the last should be involved in the implementation of social programs.

Motives for introducing social programs by agroholdings can be:

- 1) traditions and structure of social responsibility of effective enterprises in Ukraine and in developed countries;
- 2) dependence of companies on relationships with local authorities;
- 3) desire of managers and owners of companies to provide enterprises with labor resources and form a positive image in the local community.

In order to mitigate the possible negative consequences of the creation, operation and liquidation of agroholdings, and to increase the efficiency of their activities, it is expedient to conclude agreements between interested parties, i.e. between the managing organization, the investor, agricultural enterprises entering into the agroholding, and local authorities, in the preparatory period of the organization of such formations. The main principles of such agreements are parity participation and equal economic and social benefits of joint production, coherence efforts of partners, optimal combination of economic interests and responsibilities of the parties, the possibility of controlling the effective use of natural and productive resources, observance of environmental norms, participation of agricultural holdings in the development of social sphere of rural areas [4]. Such measures are the first step towards effective participation of agroholdings in the sustainable development of rural areas.

**Conclusions.** The increase of the agroholdings' number in the agroindustrial complex, the expansion of their activities, and the increase in activity is confirmed by the fact that their impact on the development of rural areas will only grow in the long term. In order to optimize the activities of such structures and balance their impact on the socio-economic situation in the rural areas, it is advisable to recommend the following:

- 1) in order to prevent conflict situations, develop a procedure for consideration of proposals, applications, complaints between the management company and employees;
- 2) to form a legislative base which will be regulate the activities of agricultural holdings;
- 3) in order to resolve disputes between agricultural holding companies and local communities in relation to tax payments, it is expedient to make adjustments to the Commercial Code of Ukraine regarding the territorial feature of the structural units of the enterprise, namely to indicate that the structural divisions of the enterprise should be located at the same place as legal adress of enterprise (within the same territorial community).This will fill the revenue side of local budgets and implement social programs;
- 4) to strengthen the control and stimulating functions of the state regarding to the rational use and protection of agricultural land, namely: to establish public control over the effective use of land through close cooperation between owners, local authorities and tenants, etc.

The role of agroholdings in the development of rural areas is becoming increasingly important every year. Moreover, if from the economic point of view the influence on the development of the agrarian sphere of the country and rural areas in particular has positive tendencies, then social and environmental aspects are characterized by high level of uncertainty and unregulated at all levels of management.

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## ENHANCEMENT OF RISK MANAGEMENT EFFICIENCY IN INVESTMENT ACTIVITIES OF IT FIELD ENTERPRISES

***Abstract.** Economic and political instability in the country makes for attracting investments, but this entails increased risks in the implementation of investment projects. This article covers the main aspects of managing the risks of investment activity of enterprises in the IT field. The primary goal of this article is to substantiate the theoretical and methodological principles of risk management of investment projects and provide practical recommendations for the effective management or reduction of the number of variations of risks at enterprises. The theoretical and methodological basis of the research consists of the works of leading domestic and foreign scientists. The study described the essence of the concept of "investment project risk". The modern concepts of risk management, in particular the concept of "wheel management risk", are described, and their main features are analyzed. The qualitative and quantitative methods of risk assessment of investment activity at an enterprise and possible consequences of their occurrence are described. The methods of evaluation of the investment project by types of risks are given, namely: informational, financial, legal, managerial, risks of unreliability of participants of the investment project. A special place is the consideration of ways to minimize the risks of investment projects on the basis of previous studies of scientists from different countries.*

***Keywords:** investment project, risk assessment, management, minimization of risks, risk management, IT sphere.*

### **Main part**

**Analysis of recent research and publications.** Risk management of investment activity in various spheres is the subject of research for many scientists, both domestic and foreign. Among foreign authors it is worth highlighting V. Berens, G. Birman, F. Knight, E. Ostrovsky, V. Sharp. Among domestic scientists, the high interest in determining effectiveness of investment projects under conditions of instability and risk is shown in works by: Y. Bartishevsk [1] who

studied the problem of choosing a methodology for risk assessment of the investment project and options for its reduction; O. Goncharenko [2] who was engaged in development of methodological and scientific-practical recommendations for improving the efficiency of risk management at enterprises; I. Koneva [4] who investigated the areas of investment risk management and created an algorithm for risk assessment based on an integrated approach, etc. However, despite the large number of works on the analyzed issues, the question of accurate and quick assessment and analysis of risks in the process of implementing the investment project, as well as the development of measures to minimize them, need further study.

**The purpose of the article** is the substantiation of theoretical and methodological bases for risk management of investment projects in the IT field and provision of practical recommendations for minimization or successful use of risks.

**Presenting main material.** First, rather than turning to the analysis of the main aspects of risk management of investment projects in the IT industry, it is necessary to cancel why such "risks" are based. The risk of an investment project is the likelihood that funds are invested in a particular project in order to receiving profits, depreciating as a result of the activities of the authorities, authorities or the economy as a whole.

The modern concept of managing economic risks, regardless of their type and cause of occurrence, is based on the principle of minimizing the possibility of a materially negative outcome. The process of risk management takes place in the form of economic, organizational and legal decisions, the purpose of which is to reduce the likelihood of occurrence of negative events or minimize possible losses.

The risk management process includes: assessment of possible financial and non-financial losses from the realization of risks; analysis of results and assessment of the effectiveness of risk management methods; formation of risk management strategy; impact on risk; monitoring of

possible risks and analysis of their influence on the activity of the enterprise; analysis of results and assessment of the effectiveness of risk management methods.

At the initial stage of risk and incident management, it is necessary to review them. The most appropriate analogy is the human ability to see and navigate: we go down the street or drive in the car, and when the road returns or an obstacle is encountered, we turn in order not to encounter, to overcome it or carry out another maneuver. Then the risk should be appreciated, because not every stones on the way is worth traveling around - it is quite possible to drive touching it. At the same time, it is bad when the risk management is conducted only on the basis of review and digital assessment methods, for example, statistics and benchmarking. It is like the moment you saw a tiger on the street: it is not a fact that you will be eaten, because it may be a photo stand, or a dressed animator entertaining kids.

There are many risk management concepts, but in my opinion, the Risk Management Wheel concept presented in Fig. 1 is one of the most effective ways of managing risks of IT investment projects Fig. 1

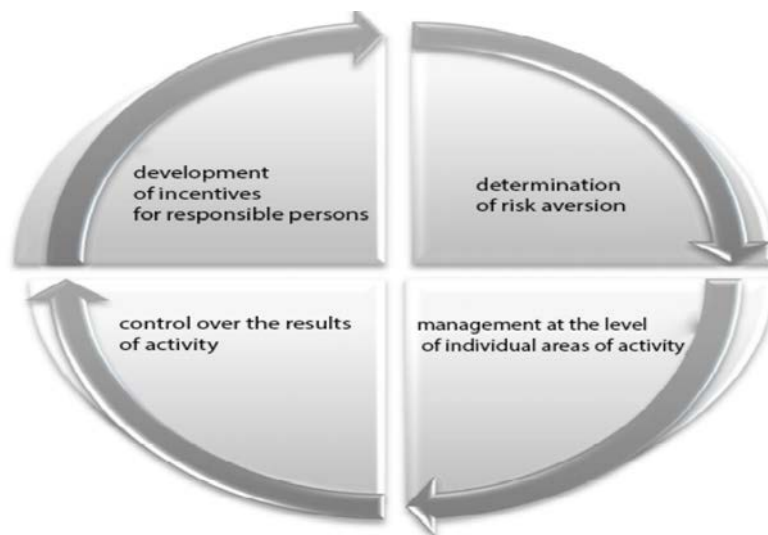


Fig. 1 Wheel of risk management

Source: [2]

This concept of risk management includes four elements of one cycle: the definition of risk aversion with allocation of strategically profitable areas of activity and reduction or rejection of non-priority areas; management of selected

risks at the level of separate areas of activity through distribution of responsibility and capital, control and implementation of the system approach; monitoring of the results through regular inspections and the development of a reporting system; the introduction of a system for evaluating the results that could create incentives for abandonment of unacceptable (non-profit) risks through the rewards of management and development of new goals [5, p. 192].

Another progressive concept of risk management is the BCG technique. According to this method, it is recommended to switch from the traditional structure (with P & L as the main component in the process of planning and risk assessment) to the full value system. Within the framework of the new system, the main criteria for risk assessment are the investors' risk appetite, the degree of riskiness of operations, the amount of capital, and the liquidity of the balance sheet. BCG also recommends that stress tests and scenario analysis methods be used to analyze and assess risks [6].

Methods of risk assessment of investment activity at the enterprise are divided into qualitative and quantitative ones. Based on the research conducted, the following most common methods of risk assessment of investment projects can be singled out: formalized (scenario method, Monte Carlo) and non-formalized (expert estimation method, SWOT analysis, decision tree) [7].

I also propose to consider the methodology for evaluating the investment project for each type of risk presented in Table. 1

| Type of risk     | Question to assess the probability of a risk  | Methodology for assessing the risk of SVI   |
|------------------|---|---|
| <b>Financial</b> | Is the project-level documentation of the investment project justified? What part of the amount needed to develop an investment project has already been found? | From 1 to 5 points, where 1 - the risk practically does not exist, 5 - the risk is highly probable. |

|  |   |   |
|--|---|---|
| <b>Informational</b>   | Is the information drive sufficiently developed?  | From 1 to 5 points, where 1 - the risk practically does not exist, 5 - the risk is highly probable. |
| <b>Managerial</b>  | Does your team have the experience required to design and implement an investment project? How psychologically compatible team members are with each other?                       | From 1 to 5 points, where 1 - the risk practically does not exist, 5 - the risk is highly probable. |
| <b>The risk of unreliability of participants in a social project</b> | Is there a team of professionals specializing in investment designing, experts who understand the technology of developing the final product / service of the investment project? | From 1 to 5 points, where 1 - the risk practically does not exist, 5 - the risk is highly probable. |
| <b>Legal</b>   | Are there any contradictions in your investment project with the current regulatory framework?  | From 1 to 5 points, where 1 - the risk practically does not exist, 5 - the risk is highly probable. |

Table 1 Risk assessment of investment projects

Source [3, p. 45]

The main methods of minimizing risks include:

Risk prevention is to develop certain internal measures that cover a particular risk of a project. Examples of this method are the complete abandonment of a large amount of borrowed capital and investment assets in low-liquid forms.

Risk-setting is the use of risks beyond their permissible level, usually in a zone of catastrophic or critical risk. Typically, such a method is implemented by involving a system of internal standards, which includes a limit on the amount of borrowed funds and the smallest amount of investment assets.

Distribution of risk between project participants consists in partial transfer of risks to other participants of such project for some operations. As a rule, such a method can be implemented between the supplier of a particular raw material and the enterprise, between the participants of the investment project or the leasing transaction

Risk reduction is to reduce the amount of loss by storing funds for unplanned expenses. An example of implementing such a method is formation of a reserve fund, special purpose reserve funds or reserve amounts of resources of the financial sector of the investment system.

Risk insurance is the transfer of risks to a particular insurance company. The method consists in compensation of the value of the property of the organization by special insurance bodies by means which are formed on the basis of insurance premiums. Insurance as a risk management tool for investment projects can be divided into two parts: risk insurance for investment projects and risk insurance for financing investment projects. In the first case, it is a project company that implements an investment project, in the second one - the side that finances this project. A separate case where implementation and financing of the project are carried out by one organization [5, p. 197].

### **Conclusions**

According to the results of the research, I concluded that the main factor in managing risks of investment projects is the choice of the concept, which, in its turn, will ensure the effectiveness of money investments. In my opinion, one of the most effective strategies is the "Wheel of Risk Management" which describes all the fundamental aspects. Equally important is the assessment of risks, which implies possible negative consequences in the future. They are: financial, informational, managerial, risk of unreliability of participants in the investment project and legal. An important condition for management is prediction of the variability of risk minimization which can provide reduction of losses and preservation of investment deposits.

In spite of significant domestic and especially foreign experience of risk management of investment projects, at present there is no scientifically substantiated system of project risk management. In addition, the growing inertia of economic processes indicates the need to develop and use new effective risk management mechanisms. That is why the theoretical substantiation of methodological approaches, the development of scientific and practical recommendations on risk management of investment projects is relevant and important for domestic enterprises research.

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## SECTION 2

### INNOVATIONS IN STATE GOVERNANCE OF ECONOMIC GROWTH

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### WORLD ECONOMIC TRENDS: INFLUENCE ON THE PUBLIC EMPLOYMENT POLICY REALIZATION IN UKRAINE

*Summary:* The article outlines contemporary world economic tendencies and analyzes their influence on the implementation of the public employment policy in Ukraine. In particular, the essence of the circular economy, a new model of socio-economic relations, is becoming widespread in the world and is considered as a path to sustainable economic growth through the preservation of resources and materials. For the first time, its impact on the formation and implementation of public employment policy in Ukraine is analyzed, which determines the scientific novelty of the research. It is substantiated that the introduction of closed-loop economy approaches can provide a positive potential for the transformation of the employment sector over the coming years. Further changes in the employment sector will be complex and multifaceted and will be conditioned by the speed of technological transformation, the willingness of society to these transformations.

*Key words:* circular economy; employment; gig economy; public policy; sharing economy

In place of existing models of the traditional economy in the developed countries, new ones are actively emerging – aimed at ensuring economic growth and welfare of the population while guaranteeing environmental safety, efficient resources usage and stimulating the introduction of innovations in services' production and provision areas.

The Triune Concept of Sustainable Development, which was recognized as the most promising ideology of the 21st century, is based on ensuring economic prosperity, social progress and ecological balance and defines the need to strike a

balance between meeting the modern needs of mankind and future generations, first of all taking care of the environment.

Awareness of humanity that "sustainable development" in the current socio-economic conditions, first of all, is "guided development", which is based on innovation, widespread use of modern digital technologies, while ensuring the citizens' rights and interests and preserving the environment, caused the emergence of new economic systems and models ("Sharing economy", "Circular economy", "Gig economy").

The idea of a closed-loop economy, as a system based on resource recovery, arose a few decades ago. However, in recent years, humanity has increasingly faced with problems that make it possible to think over adjusting the chain of "resources – goods – waste". It is precisely in this regard that developed countries build a state policy, as evidenced by an analysis of European strategies for socio-economic development.

In Ukraine, at the public policy level, state strategy, the economic model we studied did not find so far sufficient support as a means of ensuring economic growth and social development.

At the same time, Ukrainian scientists define the main problems of the present, which make us think over the need to implement a circular economy model: the low efficiency of the linear type of production in terms of the material resources usage and the formation of a significant waste amount; irrational resources usage, uneven distribution and consumption; environmental pollution, global climate change, deterioration of the ecological situation, accumulation of significant waste amounts [1].

From a scientific point of view, the problem of forming a "circular economy" model, building new types of relationships and socio-economic links within this model is rather new. Its impact on the population employment is not sufficiently worked out, further development of the public policy requires the development of new approaches and the formation of modern mechanisms for its implementation.

Ukrainian scientists in their researches rely on world achievements in searching the ways to build a new economic model. Thus, I. Zvarych, analyzing the circular economy strategies and targets of different countries (Australia, Denmark, Canada, Luxembourg, the Netherlands, the USA, Sweden, Scotland, Japan), revealing the peculiarities of the formation the circular thinking paradigm and the circular economics concept [2]. The author analyzes the peculiarities of the implementation of the main ideas and approaches of the circular economy in different countries on the principles of 3R: Reduce, Reuse and Recycle, and proposes the fourth principle – Global Responsibility – in the formation of global circular chains [3]. L. Musina and T. Kvasha in cooperation with experts of the project "Resource Efficient and Clean Production" within the EaP GREEN program "Ecologization of the countries economies of the Eastern Partnership countries of the European Union" covering six countries of the EU Eastern Partnership: Armenia, Azerbaijan, Belarus, Moldova, Georgia and Ukraine, reveal the basic principles of constructing a circular economy model, focusing on eco-innovations as a key means of implementing these principles [4; 5].

The directions of the public policy reforming in ensuring the implementation of the circular economy approaches are defined by L. Sergienko. The author proposes a comprehensive mechanism for the formation and implementation of the circular economy public policy, the implementation of which is associated with the environmental safety provision, economic prosperity and social development. Circular economy public policy in the article is considered as "a complex of consistent actions of public authorities and means to achieve the goals set in the direction of ensuring economic growth and social development without prejudice to the environment ..." [1, C. 135].

Despite some basic researches, the study of the peculiarities of the implementation of new models of socio-economic development in our country has not become systematic. The concept of "closed-loop economy" is considered in separate scientific and scientific-practical sources in terms of constructing modern models of economic development, ensuring resource efficiency of production, in

terms of solving environmental problems, etc. At the same time, in view of the public policymaking, in particular in the employment area, this scientific issue has not been adequately reflected.

Our goal is to reveal the essence of modern global economic trends, in particular the circular economy, to highlight the main ideas on which the new models of socio-economic relations are based, and to analyze their influence on the formation and implementation of public policy in the employment area.

The introduction of the circular economy model, closed-loop economy is based on the restoration, reuse of resources, and even the transformation of waste into a resource, and is considered to be the most successful way to sustain economic growth through the resources and materials conservation.

The circular economy' idea is that the goods are returned to a new cycle of production and re-processed after its consumption. Among the objectives of the circular economy model introduction are: the environmental friendliness of production and its consumption and energy efficiency, which ultimately should contribute to solving more global tasks in preserving natural resources, avoiding their depletion, etc.

Worldwide practice shows that a closed-loop economy model can play an important role in achieving sustainable economic growth. It's an alternative to resource-intensive processes by maximizing the use of existing assets and creating new sources of income. The purpose of a closed-loop economy is to get rid of the dependence of global economic development on specific resources, which are limited in scope. In this regard, the system paradigm of the new economic system is based on the harmonization and combination of sustainable production and consumption. The basic principles of the circular economy are: a) preservation and improvement of the natural capital's state by controlling the limited reserves and the use of renewable resources; b) optimization of resources productivity by introducing both the technical and the biological cycle of the goods of components and materials with the maximum impact at all stages of such cycles; c) promotion

of systemic efficiency by identifying external negative influences such as water, air and soil pollution, noise pollution and their

Innovation plays a key role in applying these principles. They stimulate the transition to a closed-loop economy and patterns of sustainable consumption and production. Many examples of new technologies, processes, services and business models have already been introduced, in which the life cycle of goods is planned differently, from their design, production and use to utilization and recycling. Internet of things, modern manufacturing and processing technologies, such as three-dimensional printing, play a significant role in the process of transition to new economic models. However, even in the European community, it's recognized that the process of transition to a closed-loop economy has only begun and the innovation potential in the aspect of ensuring sustainable production and consumption is not fully exploited.

The development of the circular economy (closed-loop economy), which is based on the restoration, reuse of resources, is projected along with the development of the sharing economy. "Circular economy" and "sharing economy" are considered as related phenomena. This is due to the fact that environmental demand, due to environmental pollution and the exhaustion of natural resources, become ecological safety requirements.

The connection between "circular economy" and "sharing economy" consists in the fact that the idea of things ownership comes to the end, the idea of sharing or reuse begins. From the traditional economic structure, these phenomena are distinguished by the fact that "... modern people need not much possession of things, as an opportunity to do something through these things" [7]. In the business environment, the idea of recycling consumed items in the production cycle and their processing is becoming increasingly widespread. The closed-loop economy and the sharing economy have already "challenged" the traditional economy, with companies having full ownership of the resources. Under new models, assets may not belong to companies, and employees may not be in the state. New forms and types of employment (freelance, outstaffing, etc.) arise and become widespread.

Experts point out that such companies learn faster than others through greater interaction, involving a wide range of people, the ability to compare and apply best practices, adapt to the environment, that is, they are more likely to develop, grow faster and adapt more quickly to the environment [8].

The emergence of a new economic model preceded the exacerbation of the economic global nature, caused by traditional economic activity. The current economy model doesn't meet the requirements of the sustainable development concept and isn't considered optimal from the standpoint of ecology, environment and environmental protection, which has led to the search for new ways and tools for economic growth, social development and environmental balance.

Leading scholars, political and public persons – members of the Rome Club, led by Presidents Anders Wijkman Ernst and Ulrich von Weizsekker, released the "Come On" report, in which the authors, while analyzing current socio-economic trends, cast doubt on the adequacy of the further trajectory of our civilization movement. "The old economy is doomed, the new one can't be avoided", authors believe. They emphasize the need to form a new philosophy and ideology of life in a world with limited resources.

The report states that transnational giants are professing the ideology of profits. 98% of financial transactions are speculative and aren't intended for payment for goods and services. This results in accumulation of surplus money in sectors with high financial profitability, but failing to fulfill a socially or environmentally important mission. At the same time, the report says about the lack of money in sectors that play an important role in meeting the needs of society. The authors outline the problem of the lack of accounting for environmental risks, which leads to exhaustion of natural resources.

According to the Rome Club members, the modern economy should be restrict and regulate by law and morality, and the basis of market relations should be the rights and values of man and personality. The future of the economy should be aimed not at the financial benefits, but in ensuring sustainable development and multiplication of the universal good.

In place of the ideology of manufacturing new products and goods, the ideology of extending their suitability, as well as re-use, should come. The report criticizes the GDP figure and justifies the need for an indicator that will take into account the important components of the well-being of citizens outside the market.

The transformation of the socio-economic paradigm, in addition to the above, is also due to climate change. For 2.5% of all greenhouse gas emissions, the surplus of which in the atmosphere is considered to be the main cause of global warming, responsible for 1% of the richest people. Members of the Roman Club believe that the commitments made temperature by the signatories of the Paris Agreement aren't sufficient to maintain the rate of growth within the required 1,5-2 C<sup>0</sup>. Since solar and wind energy are much more affordable than natural gas, oil and coal, the very basis of the future economy will be the very renewable energy sources [9].

Taking into account the outlined problems, the international community, in particular international organizations, whose main tasks are related to the coordination of activities in socio-economic development area, aimed at restructuring the new economic systems, reorienting from resource-intensive economic models to modern resource-saving, energy-efficient and environmentally friendly. Consuming less raw materials and energy resources, and even having a local character, they increase the employment rate of a particular region, stimulate economic growth.

The European Commission has developed an agenda for the transition to a closed-loop economy model as the basis for sustainable development of the European Union. Governments of European countries (Belgium, Great Britain, Spain, Italy, Germany, Portugal, etc.) have developed appropriate strategies based on the interaction and partnership of government, business companies, civil society and the scientific community.

It is proved that the closed-loop economy as a new model of socio-economic relations and the strategy of economic growth has a number of advantages: it's possible to obtain significant material savings and to reduce the impact of volatility

of prices. According to estimates, net savings on materials costs in the European Union (EU) could amount to 630 billion euros a year. By 2050, due to the transition to a closed-loop economy, the mobility costs of the average household in the EU can be reduced by 60-80%, the food cost – by 25-40%, and living expenses – by 25-35%.

The high potential of the closed-loop economy is associated with the creation of new jobs in various industries – through the local reverse logistics usage, as well as in small and medium-sized enterprises – due to the strengthening of innovation activities, the service sector development.

It's assumed that, as a result of the transition to a closed-loop economy until 2030, the use of key resources in the EU can grow by 3% annually, resulting in an increase in GDP of 7%, an annual profit of 0.9 trillion. euro.

The benefits of the new economic system for the environment based on the dependence of climate change on the use of natural resources are also substantiated. In the case of choosing a closed-loop economy, carbon dioxide emissions, according to experts, will decrease by 48% by 2030 and by 83% by 2050 (compared with 2012) [10].

Separate examples and best European practices show that the construction of a new closed-loop economic system is seen as a prerequisite not only for economic development, social well-being, but also for environmental safety – on this ideology that state strategies for the development of European countries (in some cases, regions or cities) are based.

Thus, the London Roadmap for the Development of the Circular Economy [11] highlights the vision of the "prosperity" of the capital city through the implementation of the circular economy principles. This road started in June 2017. It is projected that by 2050 the population of the city will be over 11 million people. In view of this, the development of the circular economy is seen as a guarantee of London's ability to adapt and develop. The document states that by 2036 a closed-loop economy could provide London with net benefits of at least £



7bn annually in construction, food, textiles, electrical engineering and plastics, and to create 12,000 new jobs linked to with reuse, recycling and innovation.

The Roadmap includes activities involving a wide range of stakeholders, including London Higher Education, the public sector, business in London, the digital sector, social enterprises, and the financial sector. The ultimate goal of the document is to turn London into a city with favorable conditions for the activities of the circular economy.

The Belgium experience is based on the development strategy of the circular economy of Flanders (one of the Belgium lands), which involves partnerships between government, private companies, civil society and the knowledge community, which are collaborating and committed to concrete actions in the process of developing the Flemish circular economy [12] .

The strategy of Brussels's circular economy for the metropolitan area [13], adopted in 2016, sets the 10-year framework for the transition of the Brussels economy to a cyclical model. The strategy focuses on three goals: to transform environmental challenges into economic opportunities; concentrate the Brussels economy where possible on local products and minimize transportation while optimizing the use of existing territory to create additional amenities for Brussels residents; promote employment security. It involves the implementation of 111 events at various levels, including government (covering three departments of ministries), sectoral, territorial, and regulatory framework.

The Catalan Government's strategy to promote the green and circular economy [14] aims to support sustainable development to achieve economic recovery, competitiveness, job creation and environmental risk reduction.

This strategy covers key policy areas related to the green and circular economy development: stimulating demand and creating markets; improving access to funding; stimulating research, development and innovation; intensification of internationalization; promotion of employment and entrepreneurship. The strategy is aimed at achieving economic recovery, increasing

competitiveness, providing employment and reducing environmental risks through the introduction of new economic models.

The Portugal transition plan to the circular economy [15] is a strategic concept based on the reduction, reuse, recovery and processing of materials and energy. Replacing the classical concept of a linear economy with new cyclical processes of resources reuse and renewal, the cyclical economy is considered as a prerequisite for economic growth.

Using the mechanisms of natural ecosystems, the circular economy: contributes to the reorganization of the economic model by coordinating production and consumption systems in closed circuits; characterized as a dynamic process that requires technical and economic compatibility of production activities, and also requires new social and institutional norms (incentives and values); goes beyond the scope of waste management, encompasses a wider range of activities, involves the involvement of new business models to optimize the use of resources, products, components and materials in technical or biological cycles. The goal is to develop new cost-effective and environmentally-friendly products and services, minimize extraction, resource extraction, maximize their reuse, increase efficiency and accelerate the emergence of new business models.

The plan envisages the implementation of concrete actions at three levels that need to be worked out and implemented over the next three years. These are: national measures and actions that cover a number of industries; industrial or sectoral "day-to-day arrangements", especially for the most resource-intensive industries and export-oriented; regional "agenda" that must be adapted to the socio-economic characteristics of each region.

The German Resource Efficiency Program II: Sustainable Use and Conservation Program [16] assumes the responsibility of the Federal Government for the conservation of natural resources identified as biotic and abiotic resources, physical space (eg land), environmental environments (water, soil and air), flows of resources (such as geotherm, that is, the thermal field of the earth, wind and solar energy), as well as the diversity of all living organisms. Back in 2002, the

National Strategy for Sustainable Development identified the goal of doubling the resource productivity (use of raw materials) of Germany by 2020, compared to 1994. The German Resource Efficiency Program (ProgRes) in 2012 was aimed at achieving this goal.

"Towards the Model of the Circular Economy for Italy - Review and Strategic Framework" [17] is a document that defines the strategic vision of the Italian Government in accordance with the commitments made under the Paris Agreement, the Agenda of 2030, the Communiqué G7 and within the framework of EU commitments. This document provides for a "paradigm change" for the Italian economy regarding a new way of consumption and production, as well as doing business. Justifies the need for a new industrial policy aimed at sustainability and innovation that can enhance the competitiveness of products and production.

The national program aimed at the development of the circular economy in the Netherlands by 2050 sets one of the priority tasks (intermediate goal) to be implemented in cooperation with the stakeholders, to reduce the use of primary raw materials (minerals, minerals and metals) by 50% by 2030 . The main emphasis and priorities of the nation-wide program are biomass and food products, plastics, manufacturing, construction and consumer goods [18].

The Finnish roadmap for the circular economy of 2016-2025 [19] is to provide "common thinking" in Finnish society to promote the development of a circular economy and identify the most effective means for doing so. The roadmap focuses on five areas, the development of which will be a priority for improving the circular economy in Finland. Taking into account traditionally the strengths of Finland, they include a robust system of production and consumption of food, forest use, technical cycle links, transport and logistics, and also include joint actions by all stakeholders.

Particular attention deserves the Amsterdam experiment on the development of innovative models in the transition from a linear economy to a closed-loop economy. The construction sector in Amsterdam has taken a course on re-utilization, which according to expert estimates should provide a profit of 85

million euros annually and increase productivity by 3%. One of the flagship projects of the city is the eco-block Park 2020. His summary is an example of a closed-loop economy. Each building is made of materials that can then be adapted and reused. Amsterdam waste is turning into a source of income and energy. Rubbish is sorted, 27% goes to the processing complex. And from the fact that burned ash is used – every year 300 thousand tons. Of these 10% are sifted to extract metals. The rest form building materials for the production of pavement for streets and sidewalks. Amsterdam plans to recycle 65% of household waste in 2020. The EU as a whole plans to reach this figure by 2030.

Thus, an analysis of the European experience in constructing new models of socio-economic development that meet the requirements of the time has shown that the closed-loop economy isn't just ecologically and economically justified approaches to the use of resources and materials, garbage disposal. This is a new philosophy of reuse and profit from what was previously considered unnecessary and destroyed (disposed of) within the traditional "linear-producing," use-throw out triad. Statistics are striking: 80% of consumer goods are in garbage cans for 6 months. after their manufacture. The closed-loop economy allows you to make from already made, thus affecting the environment.

From the point of view of the impact on the population employment, according to experts, in Europe it's possible to create 580 thousand jobs, only adjusting the approach to what was previously carried to the landfill. Each European family will be able to save energy up to EUR 500 per year [20].

However, the transition to a closed-loop economy requires innovative business practices that relate to the design, production, supply and management of the goods life cycle. Often it turns out that the current regulatory framework and the microeconomic policy that is being carried out do not contribute to the transition to a new economic reality. A multi-level social dialogue between public authorities, entrepreneurs and actors of innovation activity, in particular on waste cost creation, becomes more and more important; closed-loop production and sales chains; models of product life cycle; full utilization of production capacities, etc.

The need for a scientific understanding of world trends in socio-economic development is evident, as well as the development and further practical implementation of mechanisms for the formation and implementation of public employment policy in the new economic reality.

It is possible to assume that a cyclic economy or a closed-loop economy as a socio-economic concept and as an object of scientific research will find both – the support and the opposite. Since its priorities and emphases, compared with the approaches of the traditional classical economy, are entirely different (environmental friendliness, energy efficiency, resource conservation, non-waste technologies, etc.), scientists and practices accustomed to think of categories of gross domestic product (GDP) as a material measure of the level of development of the country, obviously, will understand this concept through established economic logic and prism of financial categories. However, the results of the last World Economic Forum (as well as the above results of the collection of this year's Rome Club) confirm that humanity has been thinking about changing approaches to defining priorities for socio-economic development, including assessing the development of countries. In place of the classic indicator of GDP economic development, an Inclusive Development Index that takes into account not only GDP but also 11 parameters is proposed, that is, more fully reflects the real state of affairs in the country, and not only its production capacity. It is worth noting that the evaluation of the set of indicators presented to the world is absolutely new development leaders, rather than the assessment of countries by production capacity. For example, Norway, Luxembourg and Switzerland hold leadership both in terms of GDP and the Index of Inclusive Development. But there are opposite examples: Iceland is ranked second in the inclusive development rate (while GDP is twelve), Azerbaijan – the third place (for GDP twenty sixth). And the United States is on the 23rd place (from 30 developed countries) according to the index of inclusiveness, while the GDP indicator, as a rule, occupy the leading position in the world. This is due to the bundle of society, the high degree of inequality,

relatively low indicators of life expectancy, and the large size of public debt [21; 22].

Analyzing the above-mentioned global trends, we come to the conclusion that the economic system of Ukraine will inevitably undergo changes. Indeed, in a modern globalized world, no country can exist separated from others, and especially a country that seeks to join the European, including the economic space. In view of this, appropriate state policy should be developed and the choice of instruments for its implementation should be carried out.

The results of the impact analysis of new economic models on the population employment give grounds to note the following. The positive effect of the circular economy is possible due to the fact that such a model of the economy is intended to increase the term of product usage at every stage and even after the expiration of its operation. Thus, new links in the production cycle will create new jobs. It's also assumed that one of the changes in the socio-economic system will be the sale of goods and services for its use. New types of work will require high-level specialists.

In our opinion, public policy should provide for the promotion of the practical implementation of the circular economy principles and approaches by business structures, production, in particular through the introduction of privileges and loyal tax policies. Among the main tasks worthy of note is the maintenance of scientific research aimed at solving the actual tasks of constructing an innovative socio-economic model and the system of relations between society, state and business.

At the same time, the further deployment of a complex of technological changes in the form of the fourth industrial revolution provides optimistic forecasts for job creation. Despite the caution, such as "machines will replace people atn the workplace", "robots will work for people", it's possible to create new jobs. The reason for this is the expectations and forecasts for the production of modern equipment and materials. The growing potential of robotics allows for the possibility of increasing productivity, rather than reducing jobs.

The consequence of the deployment of the fourth industrial revolution is the global society's digitalization. "With a systemic governmental approach, digital technologies will significantly stimulate the development of an open information society as one of the essential factors for the development of democracy in the country, boosting productivity, economic growth and improving the quality of Ukrainian citizens life" – it is mentioned in the Concept for the development of the digital economy and society of Ukraine for 2018-2020 years [23].

The introduction of energy-efficient and resource-saving technologies, the digitalisation of production processes, the development of mechatronics and robotics – in their totality – can be seen as driving forces for raising the level of employment. However, they require high-level specialists who are capable of creating and managing modern automated production systems. That is, the production sphere will require specialists of all higher qualification levels, in particular engineering, technical specialties.

Problems of resource efficiency and ecology, along with the active smart technologies development obviously, will change not only production technologies, but also materials, construction methods, etc. Already, there are new types of work related to the installation, maintenance and repair of energy efficient equipment, the spread of which is conditioned by the need to use renewable energy sources. Execution of these works also requires a workforce of appropriate quality.

It is possible to assume that the practice of "sharing use", "repeated, cyclical use" of products will reduce the number of jobs in trade due to lower demand for certain types of goods. At the same time, it will require specialists in production and consumption of environmental products. In this area, employment growth is expected due to the expansion of online trading and the use of digital data analytics to provide a personalized customer-oriented approach to consumers.

Consequently, the introduction of closed-loop and sharing economy approaches can provide a positive potential for a radical transformation of the employment sector over the next few years.

In order for the circular economy, as an absolute, new, but time-consuming model of the relationship in society (including the activities of public authorities, the behavior of producers and consumers of products) has found practical implementation and solved its main tasks, it's important to ensure the effective interaction and cooperation of all parties. Public authorities, in the course of their activities, should guarantee the protection of the citizens rights and interests, their security, first of all, to take into account their needs in the process of public policy implementation. At the same time – to support, stimulate the innovations introduction, provide regulatory flexibility, openness to the introduction of new technologies, and support basic and applied research, promote the implementation of relevant business ideas, etc. Scientific schools, in turn, should provide the basis for the further implementation of new production ideas and the possibility of an innovative upgrade of the economy.

The results of the analysis show that further changes in the employment sector will be complex and multifaceted and will be conditioned by the speed of technological transformation and the willingness of society to these transformations.

According to world experts, the technological changes brought by the fourth industrial revolution will have a positive impact on the population employment. The transformation of the labor market situation is inevitable: apart from the emergence of new production functions and professions, the distribution of new types and forms of employment is projected.

Despite optimistic scientific assumptions and forecasts of employment in the digital age, solving the problems of social development of the country directly will depend on the consistency, systemicity and conscientiousness of the public policy. It should be aimed at protecting rights and interests, guaranteeing the safety of citizens, assisting in the development of their own potential, assimilation of new norms of public life.

Changing the public policy priorities, seen in the direction of strengthening investment potential and tax incentives, supporting innovative projects and high-



tech industries, encouraging research and entrepreneurial initiatives, is a prerequisite for economic growth.

Public employment policy, based on the implementation of mechanisms and the choice of tools that can provide regulatory flexibility, openness to innovation, guaranteeing the protection of the citizens rights and freedoms, can balance the interests of all participants in the labor market.

An important aspect from the point of view of solving problems of population employment is that the revealed tendencies of modern economic models development and systems cause changes in the vocational qualification structure of supply and demand in the labor market, the formation of requirements for new professional knowledge, skills and abilities of the worker, his demand on the market work Continuity in the professions development, the condition of the emergence of new production functions and new professions transformation of existing, allows predicting the emergence of new types of activity, the spread of new forms of employment (freelance, outstafing, etc.), the emergence of certain competences that involve the possession of digital technologies, cross-functionality, interdisciplinarity (for most new professions it is not enough to have a solid knowledge in one sphere or industry), mobility, readiness to change the sphere of activity, etc.

The revealed socio-economic transformations associated with a significant change in the vocational qualification structure of supply and demand in the labor market, the emergence of new requirements for employees, stipulate the need for the development of new professional knowledge and skills among people of economically active population, including as workseekers, so employed, engaged in economic activity. The outlined trends should be taken into account in the process of assisting in the construction and development of careers for different categories of persons: youth – in choosing future professional activities, people of the older working age – in re-training and certification training in accordance with the requirements of modern production, the needs of applying innovative technologies in production processes.

The further solution of the problems of productive (in terms of providing effective social production and meeting the needs of employees at the level not less than the guarantees provided by the legislation) employment of the population is possible through: the change of basic approaches to regulating the participants relations in the labor market; updating the system of national professions classification; educational standards updating and corresponding educational programs; development of an effective system of professional orientation of young people taking into account the labor market needs; assistance to citizens of different age groups in professional identification and professional implementation in the conditions of the emergence of new professions and the disappearance of others, as well as professional development throughout life.

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## **FEATURES, PROBLEMS AND DIRECTIONS OF THE STATE REGULATION AND MANAGEMENT OF THE TERRITORIAL DEVELOPMENT OF TOURISM IN UKRAINE**

**Abstract.** *The generalization of the results of the research gave grounds for the analysis of domestic experience in organizing effective management of the tourism market, which is the basis for ensuring its competitiveness, and the ability of public authorities to build an effective mechanism for the adoption and implementation of management decisions aimed at optimizing tourism activity in the services market has been determined. Based on the analysis of the development of the national market for tourist services, a tendency has been established to increase the volume of both inbound and outbound tourism flows, to reduce the volume of direct and indirect contributions of the tourism industry of Ukraine to GDP, to reduce the volume of capital investment in tourism, to reduce the number of employed people in the tourism industry state, low competitiveness of the tourist industry of the country in the world market of tourist services. An important problem in creating an effective mechanism for public management of the development of tourist destination at the regional level is the organization of effective interaction between institutional actors and achieving the necessary level of decentralization. The assessment of the institutional and legal framework for the development of the tourism services market has justified the need for: harmonization of the national legislation in the field of tourism*

*with EU legislation; bringing national standards in line with international ones; the transition to ISO international standards in the field of tourism and standards that ensure the sustainable development of tourism business.*

**Key words:** *tourist-recreational complex, state management of development, competitiveness, eurointegration, market of tourist services.*

Ukraine is one of the leading places in terms of providing valuable natural therapeutic and historical and cultural resources on the European continent, which annually visits 51% of all tourists on the planet. The tourist industry of Ukraine has objective preconditions for its development based on historical, geographical, cultural and economic factors, which determines its role in the sustainable development of the country's economy. Creation of a competitive national tourism product capable of meeting the tourist needs of domestic and foreign tourists as much as possible and providing on this basis the integrated development of the regions of Ukraine, while preserving the ecological balance and cultural heritage, is a challenge and tasks of the state policy.

However, in the context of the high rates of construction of tourist facilities according to world standards, the integration of regions of Ukraine into the international market of tourist services and the growth of the number of tourist organizations throughout the country, the basic conditions for the development of tourism in the regions are characterized by the existence of profound contradictions in the organizational structure of governance, qualitative and quantitative characteristics of the infrastructure. This actualizes the tasks of public administration - the formation of a mechanism for public management of the development of the tourism services market as a structural and functional basis for the comprehensive implementation of the strategy of ensuring the competitiveness of the tourist and recreational complex of the country and its regions.

According to the Administration of the State Border Guard Service, in 2018, 14.2 million people entered Ukraine, which is by 1.3 million more than in 2015 [1]. The growth in demand for travel services in Ukraine is evident, despite the fact that in the imagination of potential tourists the impression of a full-scale war is developing, and the country is perceived only as a hot spot. The overcoming of

existing negative trends, creation of systemic and complex prerequisites for the development of tourism and resorts in the state should become one of the priority directions of acceleration of economic growth of the country, support of employment, structural modernization of the economy, filling of budgets of all levels.

In Ukraine, six natural resort areas of Ukraine with unique natural therapeutic resources are recognized as resorts of state importance: Slavyansk, Khmilnyk, Mirgorod, Berdyansk, Skadovsk and Saki. Ukraine also has a developed network of tourist infrastructure objects, in particular, in 2017 there were 4,115 collective accommodation facilities: hotels and similar accommodation facilities (motels, hostels, campsites, etc. - 2474 units); specialized accommodation facilities (sanatoriums, boarding houses, holiday homes, etc. - 1641 units) [1].

According to the Register of hotel categories certification, 257 hotels operating in the regions of Ukraine have certificates of categories, of which 30 hotels are "five stars", 89 hotels are "four stars", 101 hotels are "three stars" , 27 hotels - "two stars", 11 hotels - "one star". A significant part of Ukrainian hotels operates under the control of international and national hotel chains. As of today, 2 661 domestic subjects of tourism activity have been licensed, of which 2222 have a license for tour operator activities in domestic, inbound and outbound tourism [1].

The main strategic long-term principles of tourism and resorts development in Ukraine are defined by the Law of Ukraine "On Tourism"[2]; The Strategy of Sustainable Development of Ukraine for the period up to 2020 (includes the Program for the Development of Tourism, the Program for the Popularization of Ukraine in the World and the Advancement of Ukraine's Interests in the Worldwide Information Space, the Brand Development Program Ukraine) [3]; A plan for implementing the Association Agreement for 2014-2017; State strategy of regional development for the period till 2020; Strategy for the development of tourism and resorts for the period up to 2026 [4].

Analyzing the preconditions and priorities of reforming the state administration in the field of tourism and resorts, it is important to note that the

preparation of projects for new state target programs that require additional funding from the state budget is discontinued, and the lack of a single vertical government of governance in the field of tourism complicates the implementation of an appropriate level of public policy in this at the regional and local levels.

In accordance with the Law of Ukraine "On Central Executive Authorities" [5] and the Regulation on the Ministry of Economic Development and Trade of Ukraine [6], the Ministry of Economic Development established an advisory body to the Ministry of Economic Development and Trade - the Council of Tourist Cities and Regions and the Scientific Council for Tourism and Resorts.

Another important institutional aspect is the issue of paying tourist fees, which, according to Article 10 of the Tax Code of Ukraine [7], is one of the types of local taxes. The rate of tourist fees is set at a rate of 0.5 to 1 percent to the base of collecting the fee, specified in paragraph 268.4 of Article 268 of the Tax Code of Ukraine. That is, the specific size of the tourist rate is set by the appropriate local council in its decision. The basis of collection is the value of the entire period of residence (overnight) in places, minus the value added tax. At the same time, the cost of living does not include the cost of food or household services (washing, cleaning, ironing and ironing clothes, shoes or linen), telephone accounts, clearance of passports, visas (visas), compulsory insurance, expenses for oral and written translations, other documented expenses related to entry rules.

According to the State Fiscal Service, revenues from the payment of tourist fees to local budgets during 2011-2018 increased from 27.7 to 90.7 million UAH, then they would have increased 3.3 times, and from 2016 they increased by 1 , 7 times [1]. The tourist tax in the cities of Ukraine is implemented on the example of European countries, because in Europe such a collection is absolutely normal practice. Tourists pay to cities budgets from 1 to 5 euros. The funds received by the authorities of cities are directed to the development of tourism, in particular, the development of tourist infrastructure and the preservation of cultural and architectural monuments. Taking into account the experience of European countries and due to the lack of state financing of measures aimed at developing



the tourist infrastructure of Ukraine and promotion of the national tourism product, local budget funds received from the payment of tourist fees should be directed towards the development of tourist infrastructure and the promotion of a regional tourist product.

The modern organization of management activity in the tourist and recreational sphere is based on the directions of several conceptual vectors of public administration reform in this area:

- institutional - improvement of the regulatory and legal framework and development of strategic and programmatic documents for tourism development in accordance with EU standards;

- organizational - bringing in the strategic tasks and functions of the management structure of tourism and recreational sphere at the regional level;

- information - creation of the State cadastre of natural medical resources and resort territories, provision with local authorities of public authorities to collect relevant data on indicators of tourism development;

- economic - introduction of mechanisms for economic stimulation of tourism and recreation development, allocation of grant funds for co-financing of innovative and effective projects, etc.

The globalization of the tourist market makes adjustments in the processes of public administration of the tourist and recreational sphere - the understanding of tourist areas in the context of qualitatively new marketing positions and the formation of a new object of management - tourist destination. The World Tourism Organization has proposed the following definition: "Destination is a physical space in which the visitor spends at least one day. It includes travel products, such as services and attractions, as well as tourist resources within one day of travel. This space has physical and administrative boundaries that determine the form of its management, image and reputation that affect its competitiveness in the tourist market "[8].

Government management of the tourism industry is implemented through state tourism policy as a targeted activity of state, public and private structures for

the development and implementation of methods, mechanisms and tools for the legal, economic, social and other activities to ensure the effective development of the tourism industry, satisfaction of domestic and external demand for tourist services and goods for the rational use of available tourist potential.

Public-management activities in the tourist and recreational sphere should be based on the following principles [9]:

- association of political actors for participation in the mechanism of formation and implementation of public policy in the tourist and recreational sphere on a systematic and long-term basis;

- distribution of responsibility of participants for the sustainable development of tourist and recreational sphere;

- strategic management of tourism development, oriented to meet societal significant needs in tourism services and increase the potential recreational function of tourism.

The hard work is steadily rising around the world and introducing itself to the emergence of post-war places and the depuration of poor countries and regions. According to the information provided by the World Tourism Organization (UNWTO), the contribution of tourism to the world gross domestic product with an unpopular effect of 10%. The total number of post-office visits, which is usually accompanied by spheres of tourism, is to be strengthened by 11% [10]. It turns out that since the year 2020, the tourism market has grown to 1.6 million tourists from the region, which will receive 2 tons of dollars. , you need 5 mlpd per day. The sphere of tourism and resorts becomes one of the main branches that affects the general state and trends of both world and national economies, as it is connected with the activity of more than 40 branches and will cope with socio-economic, cultural, innovative, psychological, foreign policy and other effects.

In recent years, Ukraine's tourism industry has been demonstrating extraordinary vitality, despite all the difficulties, especially those related to security issues. But in the world market, Ukraine's tourism industry is not sufficiently competitive (50th in the world ranking) due to the lack of proper material and

technical base; modern facilities for accommodating tourists; tourist infrastructure; qualified specialists in the organization and development of tourism. The analysis of tourist flows shows that, despite the wide range of countries from which tourists come to Ukraine, their predominant part are citizens of the former USSR, and primarily from Russia, Belarus and Moldova (62.8% of all foreign tourists in 2018). The flow of citizens who moved from the Russian Federation has decreased significantly, however, during 2016-2018, it has practically not changed, and amounted to 1.5 million people. As for other countries, tourists from Poland (7.7%), Hungary (6.4%), and Romania (5.2%) are the most visited by Ukraine. At the same time, only 0.25% of all foreign citizens who entered, noted tourism as the purpose of the trip, another 1.25% - as a cultural, sports, religious exchange, etc. The majority of citizens who can be considered as foreign tourists are not in fact such, and they visit Ukraine for official or private purposes (for example, for private business). All this may indicate a lack of organized tourism in Ukraine.

The development of enterprises of the tourist industry of Ukraine in the process of expanding the informatization, the growth of the technological level of the service sector in post-crisis economic conditions should be based on the introduction of innovations in the process of management and production and economic activity of enterprises and organizations in this sphere, which, in turn, requires investment investments. It is worth noting that for different countries, the motives and causes of innovation in tourism companies are different.

For the tourist business of Ukraine, the following features are: increased competition; the need to prevent the departure of Ukrainian citizens to places of recreation, similar to the conditions in the domestic regions; a harmonious combination of attractive recreation and travel conditions to fully meet the needs of the most demanding tourists; the transition from the supply economy to the demand economy.

Provision of tourist services is necessary, first of all, for countries that have embarked on market transformation. In this way, Greece, Egypt, Turkey, Spain have made significant progress in the development of tourism. The global tendency

to increase the scope of tourism services suggests that tourism is also declared a priority sector in Ukraine, as evidenced by the statistics of enterprises and the Ministry of Economic Development and Tourism of Ukraine. The number of Ukrainian citizens traveling abroad grew by 4.6 million people (by 19.2%) for 2015-2018, and by 1.3 million people, foreign tourists increased to Ukraine (by 10.2%). . According to the World Tourism Organization UNWTO, Ukraine's share in tourist flows in Europe is about 4% and about 0.9% in European revenues from tourism [10]. The low level of use of the capacity of the tourist potential of the country is confirmed by the insignificant contribution of the tourism sector to GDP.

The reason for this is the low level of service and relatively high prices for Ukrainian recreational resources, which leads to a decrease in the level of interest of the indigenous population to them. After all, the level of use of domestic collective accommodation, is characterized as low. Compared to European hotels, where this indicator has stabilized in the last years at 65-67.0%, in Ukraine - does not exceed 33.0% [1]. Therefore, Ukrainian tourists choose a foreign holiday, which is characterized by a high level of comfort, service, quality accommodation, attractive tourist attractions, which in turn leads to an outflow of capital from the country. The reasons for the low activation of rural green tourism enterprises are, firstly, insufficient level of their popularization in Ukraine both on the state and international markets, since information about functioning farms is not accessible to the consumer due to the inability of owners to promote their business in modern media (mainly through the Internet ) Secondly, the imperfect legislative framework, the lack of state investment policy in the field of rural green tourism and a holistic and integrated system of management and control over the use of tourist recreational resources of the country, an effective system of protection of rights and interests of tourists, provision of safe conditions at the sites of tourist visits and in the directions of tourist routes, different departmental subordination of tourist and resort and recreational resources, etc. Only certain aspects of the

activity of enterprises of rural green tourism are regulated by the Laws of Ukraine "On Tourism", "On Personal Peasant Economy" [11].

The third problem is the lack of innovation and research in the field of rural tourism, which would promote the creation of new original tourist products, comprehensive utilization and conservation of recreational resources, environment and cultural heritage, patriotic education, promotion of healthy lifestyles, strengthening the international authority of Ukraine as a tourist country. Thus, the number of green tourism homes does not increase during the period 2014-2017, which is 235 units, the number of people accommodated decreased from 50.7 thousand in 2014 to 19.2 thousand people in 2017, the average capacity of the estates is 12.7 persons

Rural green tourism has a significant socio-economic importance for the development of the state. First of all, it is a type of self-employment of the population, which stimulates the development of peasant farms and local infrastructure. It allows you to have a good rest for all sections of the population with different backgrounds. It provides farmers the opportunity to sell the excess output, thus activating the local labor market, depriving people need to go abroad to work. And yet - it enhances the cultural level of the villagers, forms our ecological consciousness. And in the end - it preserves the ethno-cultural identity of the nation.

A striking example of such development of regions and solving socio-economic problems in the countryside was postwar Europe. Then the Second World mutilated governments of Austria, Germany, France, Italy, etc., without being able to provide financial assistance to all households, dwellings fired owners from paying taxes in providing hospitality services. The rate was made on the socio-economic component: tax-free room and board room guests at farmers gave impetus to the development of local sightseeing, transport, tourism, residential, recreational, commercial services and others. And these types of businesses have already been taxed, but they also had privileged terms.

However, in such countries as Ukraine, Azerbaijan, Kazakhstan, Kyrgyzstan, Moldova, social tourism as a separate type of tourism activity is not considered at all. There is no regulatory framework that defined social tourism as one of the types of tourism activity. The analysis of statistical data of subjects of entrepreneurial activity, having the resource potential and opportunities for servicing social tourists, indicates a steady tendency to reduce the supply of tourist services.

It should be noted that the given tendency of reduction of the offer arises reasons of the location of enterprises for major repairs, increase in the number of unsuitable for exploitation due to accident rate of material and technical base, lack of funds for operation of facilities. From 2015 to 2017 in Ukraine, objects of socially-oriented tourism enterprises have significantly decreased. So in 2017 there were 284 sanatoriums in Ukraine, (91.9% of 2015), 55 sanatoria-dispensaries (69.6%), 67 houses and holiday resorts (88.1%), 1235 bases and other recreation facilities (88.2%), 9745 children from recreation and leisure establishments (99.2%).

In general, investigating the peculiarities of the functioning of the tourism sector in the social sphere, it has been established that the main problems hampering their development are: complex political and economic conditions, insufficient state support for enterprises, poor market intelligence, outdated infrastructure, poor quality of services, a small amount of service.

In today's competitive environment, national tourism companies need to develop and improve all their components. This is explained by the fact that just now, when the purchasing power of domestic tourists has significantly decreased, it is advisable to encourage them to travel within the country. Therefore, there is a need and opportunity and resources to create a unique tourist product within the limits of their placement in a compact area around natural or cultural-historical or socio-economic resources - destinations. Such organizational and managerial approach in the management of enterprises will most fully satisfy the requirements of consumers and will be based on the regional features of the tourism industry and

the relevant market as system entities. At the same time, the tourist destination should be understood as a complex organizational and economic structure, which is a locality of a certain scale with competitive tourism resources and business infrastructure, in which businesses of the tourism industry create and implement an attractive tourist travel product for travelers.

The formation and development of the tourist market in Ukraine in recent years was accompanied by a drop in the volume of consumption of tourism products, an aggravation of inflationary processes with a corresponding rise in prices for tourist services. In such conditions, the coordination of the interests of the tourist enterprise with consumers should be carried out with the help of pricing tools, on which the indicators of income, profitability and its place in a growing competitive environment depend. Therefore, the search for effective ways to solve the problems of tourism development requires radical economic transformations and the use of various economic methods, levers and mechanisms, a significant place among which belongs to pricing.

The state policy in the field of tourism is part of the socio-economic state policy and defines the state's activities in relation to the development of the tourism industry and subjects of the tourist market (tour operators and travel agents), improvement of forms of tourist service of citizens and strengthening of their political, economic and social potential. This policy is a combination of forms, methods and directions of the state's influence on the functioning of the tourism industry in order to achieve specific goals of preservation and development of the economic complex.

As practice shows, the mechanism of realization of the tourist policy of the state includes the development of concepts of tourism development; drawing up of targeted tourism development programs at the level of both the state as a whole and a separate subject; development of concrete measures to achieve the goal; state regulation of tourism activity.

State regional policy should aim at creating conditions for increasing the competitiveness of the regions as a basis for their dynamic development and

eliminating significant interregional disproportions. This is the main provision of the CMU Resolution "On Approval of the State Strategy for Regional Development for the period up to 2015". One of the priority types of tourism in the strategy is the further expansion of the range of resort and recreational services at the expense of medical services (diagnosis, prevention and treatment of diseases) with the extensive use of recreational and health-improving resources.

Let's consider the features, problems and potential directions of development of tourist-recreational complex on the example of the Kherson region. Tourism, rest, treatment and rehabilitation are becoming more and more significant in the socio-economic development of Kherson region. However, much of the natural areas, objects of cultural heritage and tourist infrastructure do not meet the international requirements for tourist visits, and tourist services in all sectors of the tourism industry in most do not meet the requirements for quality of service.

Kherson Region occupies one of the prevailing places of Ukraine by the level of provision of valuable natural and historical and cultural resources that can generate considerable interest from domestic and foreign tourists.

The main purpose of citizens to travel to the region by type of tourism is: recreation and recreation at the sea (75%), rural green tourism (19%), historical and cultural and other types of tourism (6%). For tourists developed more than 90 tourist routes in the territory of Kherson different directions and for different age groups, created and distributed a single registry routes of domestic tourism, the most popular of which are: thematic routes in the Biosphere Reserve "Askania Nova", walking in single in the wilderness of Europe, "Oleshkovskysky Sands", visit to the holy place of the Ukrainian Cossacks, a monument of the history of the national significance of Kamenskaya Sich, ecological routes on the islands Bir and whose Dzharylgach; excursions on objects of wine and rural green tourism, objects of historical and cultural heritage of the regional center and other historical places. This year, the certification of tourist objects of the region was completed, a register was created, which included 346 tourist objects.



The features of recreational resources and their components are of paramount importance when choosing a place for the organization of health tourism. Health tourism resources of the Kherson region are presented in a single system of recreation, as well as systematized depending on the origin and peculiarities of their existence.

Natural and climatic resources:

- water resources (sea waters of the Azov and Black Seas, Sivash, Perekopskaya, Tendrivska, Dzharylgatskaya, Salyane lakes, reservoirs and lakes in the Dnipro Valley);

- mineral chloride-sulfate-sodium waters of Kakhovka, Kalanchatsky, Genichesk and Bilozersky districts;

- geological and geomorphological resources (mud (peloids), peat, sapropel, silt sulphide mud of salt lakes and estuaries Azov-Black Sea region, geothermal water from 36 percent iodine Chongar Peninsula);

- landscape resources (flat steppe, steppe sea of saline and salt marshes, bog (Tract "Burkut" smooth Dnieper, Bekhtersky oak grove Oleshkivska desert - the largest sand massif in Europe), unique landforms (Kherson Grand Canyon));

- climatic resources (repeatability of favorable weather for organization of recreation and conducting of climatological procedures (average annual temperatures: summer + 22.4 ° C, winter -2.1 ° C));

- dendroflora resources (Askaniya-Nova Biosphere Reserve named after FE Falz-Fein, Black Sea Biosphere Reserve, Azov-Sivash National Natural Parks, Dzharylgatsky, Oleshkovsky Sands).

Cultural and aesthetic resources:

- finds of the ancient royal burial mounds, anthropomorphic steles, stands, testimonies of the culture of the Cimmerians, the Scythians, the Sarmatians, the Greeks, the ancient Slavs, the Zaporozhian Cossacks, the Tatars, the Turks, and the Russians;

- architectural and historical resources, namely historical (Ochakiv and Moscow gates of Kherson fortress, shipbuilding yard), religious (Holy Vvedenskaya church - a wooden monument

- religious architecture of the Zaporozhian Cossacks, St. Berislav, St. Catherine's Cathedral, Kherson, St. Grigoryevsky Monastery, p. Red Lighthouse of the Beryslav district), architectural and industrial buildings (Stanislav-Adzhigolsky rear lighthouse, complex of buildings of Kahovska HPS, complex of river and sea ports in Kherson);

- cultural objects (Kherson Oblast Music and Drama Theater named after M. Kulish, Kherson Oblast Puppet Theater, Kherson Philharmonic Society);

- Historical and entertaining complex "Green Khutory of Tavria", Skadovsk Dolphinarium "Akvarel", recreation center on water in Nova Kakhovka, green tourism base with fish pond "Vesely carp", recreation and entertainment complex on the basis of children's recreation camp "Vodohray" (Velikooleksandrovsky р-н, village Belousov).

Conceptual tourism resources:

- availability of conceptual restaurants, cafes, bars and classical pubs, cafe-clubs;

- The House of Variant Cognacs "Tavria", where three types of tastings are organized, such as "Classics of Cognac Barrels", "Harmony of Elements", "Renaissance of taste";

- festivals ("Kupalski stars" m. Naked Pier, "Watermelon sweet miracle" street food and emotions "HersON-FEST", m. Kherson, "AzovHealthFest" m. Henichesk, children's festival "Golden seed" m. Iron Port, the international theatrical festival Melpomena Tavriya and the International Festival of Amateur Cinema "KinoKimeria", Kherson, "Black Sea Games", Skadovsk).

Socio-economic resources:

- Favorable location of the Kherson region as one of the largest maritime regions of the country, which has maritime connections with the countries of the

Mediterranean, the Middle East and Asia, and creates opportunities for cross-border tourism;

- ecological situation in the region, which promotes good health and well-being of its citizens;

- operating international airport, sea port in Skadovsk (Skadovsk-Zonguldak (Turkey) ferry connection). The development of tourism infrastructure in the Kherson region is carried out mainly within the framework of state target development programs.

For example, the Ukrainian hospitality industry association announced a grant program "Support for the development of tourism in the regions" to promote the development of domestic and inbound tourism as a generator of economic growth, an instrument for the unification of the nation and increase its efficiency in the economy of destinations. Kherson Region became one of the first regions - the winners of the grant program of the Ukrainian hospitality industry association. In the framework of the Program for attracting investors and tourists to the region, the airport "Kherson" was included in the State target program for the development of airports for the period up to 2023, and after the reconstruction received the status of international. The main objective of the Kherson Complex Tourism Development Program for 2016-2018 is to create conditions for the development of tourism and tourism with a total funding of UAH 3,630 thousand. However, it is incorrect to assert that these actions are sufficient to leave the region to the state level of development of health tourism. Kherson region has a significant number of tourist resources of health tourism, the potential of which is not used in full. Therefore, it is expedient to develop zones of health tourism, which combine nature and architecture monuments, history and culture, objects providing a full range of services for accommodation, meals, entertainment, information services, and also form a health-improving effect [12].

During the last decade, in Kherson oblast, as in Ukraine as a whole, an understanding of rural green tourism as a form of recreation of the urban population in the village with broad opportunities for the use of natural resources,

economic, social, cultural and spiritual potential is formed. Very often, such concepts as "rural tourism", "green tourism", "agrotourism", "ecotourism" are used as synonyms. However, there is a difference between them, because the content of the content of the concept of "rural tourism" is much broader than "agrotourism" and "ecotourism", which are only its organizational forms.

In the Kherson region in 2017, out of a total of 2 064 farms, only 20% can provide agrarian tourism services. Holiday season - May-September, including high season - June-August. The average profit of farms from agro-tourism is 20-25 thousand UAH per year. Agricultural lands, along with other types of activities, also provide agrarian tourism services. The average profit from agro-tourism is 2-3 thousand UAH per year. About 25.0% of households in seaside settlements are engaged in the supply of products for both organized and unorganized tourists. From the sale of culinary products, the proceeds reach 50-800 UAH per day. The total number of agro-villages providing agro-tourism services is difficult to determine, since most of them do not declare their activities.

The rural population of the region is able to receive real revenues in the field of rural tourism from such activities as: the development of tourist routes; arrangement and operation of tourist facilities; work by a guide or guide; transport services for tourists; hunting activity (hunting, amateur and sports fishing); rental of tourist equipment; reception services for tourists; culinary services; preparation of cultural programs; folk crafts; production and sale of ecologically clean food, berries and mushrooms to tourists, etc.

In this context, rural green tourism has a positive effect on the revival, preservation and development of local folk customs, crafts, monuments of historical and cultural heritage. Showing interest in these achievements of folk culture, it is often the inhabitants of cities residing in the village, revealing the true value of cultural monuments to local people and thus contributing to their preservation.

It should be noted that the successful activity in the field of rural green tourism depends not only on the arrangement of the estate, but also, above all, on

the personal hospitality approach to each tourist, because a pleasant atmosphere will help reduce the disadvantages of the services and leave a pleasant memories and impressions of stay. At the same time, owners of rural homesteads must realize the responsibility that they take on themselves, arranging rest in their homes. After all, poor-quality service can permanently reflect the desire of the client to rest in the village.

Since 2014 in Ukraine began forming new units of administrative and territorial structure - combined local communities by enlarging existing units of the lowest order - village councils. In 2014, the conceptual framework was approved, and from the beginning of 2015 the practical implementation of the reform of the territorial organization of power and local self-government began. The process of reforming the administrative-territorial system in Ukraine is gradually accumulating more and more settlements. These transformations are actively taking place at the regional level, and in particular in the Kherson region. As of June 2018, in Kherson oblast, 27 united territorial communities and 1 united territorial community were formed, in which the first elections are not yet scheduled.

The process of decentralization is actively supported by various international projects and programs. One of them is "Decentralization brings better results and performance" (DOBRE). Komyunitiz Global (Global Communities) takes a five-year project of the US Agency for International Development (USAID) - DOBRE worth \$ 50 million, which was launched with effect from 2016.

DOBRE Program USAID "Decentralization brings better results and efficiency" together with the Ukrainian partner of crisis media center and the assistance of the Kherson Regional State Administration organized tourist hub "Tourism development in terms of new communities", held May 17-18 in Kherson region. Kherson region was chosen not by chance for this event, because it is a wonderful land with a natural potential for the development of a high level of tourism.

An important result of the development of the tourism industry in Kherson The program was DOBRE agreement on inter-municipal cooperation between united territorial community Askania Nova and Prysyvaskoyu united territorial community. It is a question of cooperation of territorial communities in the form of implementation of the joint project "Creation of a tourist-health cluster in the communities Askania-Nova and Prisivaya united territorial community ". United territorial communities submitted to the Ministry of Regional Development the project "Cluster Tourist" for participation in the competition for funding from the State Fund for Regional Development. Both communities already have a strong tourist potential and their cooperation can only strengthen it. After all, in Askania-Nova is the world-famous biosphere reserve to them. F. E. Falts-Fein, who visited in 2017 only about 10 000 tourists. A Prisivaska united territorial community is famous for the pink lake Sivash (village Grigorivka, the center of the Prisivaya united territorial community), which is not analogous to Europe. The lake is commonly referred to as the Lymurian or "Ukrainian Dead Sea". The lake has a high concentration of salt and therapeutic clay (the concentration of salt reaches 35 ‰), which is attractive to tourists as a health zone. The main goal of creating a "tourism cluster": a development tour for groups to people in one tour and were able to visit the world famous Biosphere Reserve "Askania Nova" and Lymuriyske lake, and possibly later travel resources Tavrychanskoyi united territorial community.

The idea of a tourist cluster in the world, in Ukraine and in the Kherson region is not new. In particular, in 2014 in the Kherson region a "Tauride tourist cluster" was created on the basis of the Taurian association of territorial communities of the cities of Nova Kakhovka, Kakhovka, Beryslav and Kakhovka regions, which have powerful opportunities to present to the guests of the Kherson region kinds of tourism such as ecological, water, historical, religious, eventful, guilty, and others. At one time, the creation of this project provided an opportunity for expanding opportunities for tourism attractiveness development throughout the Kherson region.

Practical recommendations for the integrated development of health tourism in the Kherson region can be divided into two main blocks. Recommendations directed at the regional level of management with the purpose of general infrastructure development of the territory:

- for the implementation of excursions it is necessary to increase transport accessibility of tourist objects of the region;

- activities and priority development for health tourism should be stimulated, including the food industry, the sphere of domestic and transport services, the arrangement of infrastructure of highways, the development of equestrian tourism, beekeeping farms;

- involvement of the local population in the process of forming a tourist product (especially as regards the organization of excursions), which requires state support in the form of grants and tax privileges.

Recommendations for the accomplishment of the territory and organization of leisure for tourists through joint efforts of recreation centers, sanatoriums, private estates and farms, local residents:

- detailed study of the routes of tourist trails, their maintenance in proper form (repair of domes, equipment of stops with urns and posters, placement of information on existing tourist trails in health facilities, installation of stands with interactive maps of routes, provision of information materials of visitors of tourist trails (with information about the flora and fauna of the area, historical facts and legends));

- development of more extreme routes for visiting young people and children (for example, rope parks on trees), as well as construction of sun decks; Opening of bicycle rental locations in the summer;

- development of programs for fishing, ecological tours and excursions;

- expansion of the complex of health services as a result of utilization of the entire potential of natural recreational resources of the Kherson region, namely sulphide sludge mud, sea water, climatic resources, dendroflora resources.

Thus, the development of health tourism in the Kherson region has reserves for modernization in the following directions: accelerated development of sea, river and aviation transport; Expansion of information exchange in the health tourism industry; Inclusion of formation of health tourism in the priorities of economic development of the region; development of a unified concept of continuous training for the health tourism industry taking into account market requirements; expanding the range of health services to create strong competitive advantages.

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## **FISCAL DECENTRALIZATION AS A FACTOR IN THE SUSTAINABLE DEVELOPMENT OF REGIONAL ECONOMIC SYSTEMS**

The dynamic pace of public relations' development, comprehensive informatization forces the state to form new approaches and principles of the institutional environment functioning, creating the basis for building a balanced system based on democracy. The question of effective state governance in the present conditions under the influence of globalization challenges is to create favorable conditions for the development of each subject the social relations, the equitable distribution of benefits and the search for adequate solutions to problem situations of a political and social nature within the state [13, p. 108; 1, p. 12].

The guidelines for sustainable development of modern progressive economies in the world result in the widespread use of government powers decentralization in foreign experience of public administration, especially in the countries of the European community.

The processes of globalization in the context of the world economy development have also become the causes of integration, which has become particularly evident at the turn of the millennium. More and more attention was paid to the problems of regional development. Regions began to acquire subjectivity in the international market, and therefore significant weight gain were decentralization of government functions, including in the fiscal area. The experience of European countries demonstrates the tendency to focus more and more on the basics of sustainable development on the basis of the most efficient use of regional resources. This enables us to take into account and strike a balance between the existing regional problems and the use of regional resources for their solution. However, for the possible solution of regional development issues at the local level, the provision and availability of diversified resources is essential and important. This goal can be achieved not by redistributing resources between the most developed and backward depressed regions, but through fiscal decentralization. It is precisely the use of the fiscal decentralization mechanism that enables regional and local authorities to make fiscal decisions locally in the direction of defining the tax base and rates of local taxes and fees, tax incentives and the formation of local and regional budget expenditures structure taking into account their urgent problems. This and other causes the relevance of the fiscal incentives study for sustainable development of regions in the context of fiscal decentralization.

Decentralization as proved by world experience is an instrument for overcoming social, economic, institutional and other obstacles to the development of regions and the state as a whole. Decentralization through the transfer of power from central to regional and local authorities contributes to closer interconnection between subjects of regions, greater interdependence of interests between different

branches of government and society as a whole [14, p. 208]. Since the level of trust in the government is higher at the regional and local levels, this will help to more effectively address the existing problems, taking into account the processes of financial decentralization.

Thus, a key element of the decentralization process is the question of authority's effective delegation in fiscal relations. Therefore, under these conditions becomes especially important analysis of the impact on fiscal decentralization potential.

The events of recent years related to the definition of the strategic vector of Ukraine's development, the legal consolidation of European integration processes and the declaration of orientation towards European principles for the construction of a public administration system, revived the activity of the scientific environment in the context of research into the reform of the domestic economy in the direction of power decentralization and intensification of the attention paid to sustainable development of regions.

Covering the issues of building an effective fiscal policy in the context of sustainable economic development has an important theoretical value among the achievements of domestic and world economic science. Moreover, this topic is the subject of active discussion at many scientific conferences, forums, symposiums. The problems of fiscal relations between different levels of state regulation in the direction of their decentralization were highlighted in the writings of such prominent scholars as Ch. Tibu, R. Masgrave, W. Oats, the founders of the fiscal decentralization's theory.

Particular attention is required, a number of scientific studies in the field of decentralization of authorities, in which a detailed analysis of the categorical apparatus has been carried out, thoroughly studied the issues of foreign experience in this direction. The work of the following authors is a great theoretical value: O. Boryslavska, M. Butko, E. Vasilkov, G. Vozniak, A. Galchinskyi, S. Gherchakivskyi, M. Getmanchuk, A. Drozdovsky, A. Desnyanyuk, V. Yemelyanov, A. Zhytsky, E. Zakharchenko, I. Zvarych, T. Kalchenko,

E. Kuzkin, N. Koren, N. Mirna, V. Melnik, V. Tropin, A. Chugrina, G. Schedrova and other scholars.

However, despite the existence of a substantive theoretical basis, there is still a need for a more detailed coverage of the analysis of the fiscal capacity of regions in the context of active decentralization processes, along with the identification of the main advantages and risks towards building an effective fiscal policy based on a rational allocation of powers between the state and regions.

Fiscal decentralization changes intergovernmental relations at different institutional levels and has a number of positive effects, which are as follows:

- brings regional governments and local governments closer to the population of regions through direct interaction between them, which enables to better meet the needs of the regions' population and respond more quickly to the problems of sustainable development;

- promotes a more reasonable distribution of financial resources between the regions which are not aimed at equalization of their development, and to focus efforts on their individual regional and local features, resources and potential;

- promotes awareness and greater responsibility of regional and local authorities to the population of regions for the use of financial resources and their distribution, accompanied by increased efficiency of the fiscal system as a whole.

The current system is characterized by blurring of certain legislative formulations, which creates a field for appropriate speculations related to illegal enrichment and misuse of budgetary funds, which leads to the creation of disproportions of the regional budget system. It describes the situation, best describing the current state of budget relations at the level of Ukraine's regions. The combination of these factors has a disincentive effect on the processes of regional fiscal expansion, adversely affects socio-psychological motives for tax payments and reduces the tax culture among the population, leads to an imbalance between the volume of needs in budget resources and the possibility of their satisfaction from local authorities. The complexity of the current situation makes it necessary to implement the measures for the decentralization of certain fiscal

functions in order to ensure a stable and even development of the regions.

However, sometimes the policy of equalizing the financial provision of the regions may not lead to the desired effect, first of all, not meeting the expectations of the public. In scientific literature, this term is defined as the effect of "Velcro", which most often occurs in the minds of low economic freedom level at the local level [12, p. 277].

In traditional fiscal federalism, this effect is considered to be a deviation from the norm that occurs when there is a mismatch between welfare functions, which are maximized by representatives of government and voters, due to the lack of information in the latest on the transfers provided, as well as in the imbalance between the type of transfers received and the nature of the cost decisions, which are taken by local authorities [6, p. 12].

One of the obvious patterns is that countries that follow the policies of fiscal federalism and the decentralization of fiscal functions are extremely rarely faced with such a problem. It should also be noted that all necessary prerequisites for the construction of an effective system of fiscal and budgetary decentralization have been created in Ukraine, due in the first place to the existence of a legally established distribution of expenditure and fiscal powers between different levels of government (whose potential has been neglected due to the existence of significant regional imbalances in the budget systems both on the vertical and on the horizontal level), and the peculiarities of the domestic budget system correspond to analogues in the progressive countries of the world.

Fiscal federalism in the EU, various forms of which are determined and based on the division of functions and financial resources between the state and local budgets, out on the interstate level and deserves attention in terms of comparative analysis of its provisions, means of regulation and effectiveness [7, p. 56].

To sum up, fiscal policy, in addition to providing basic tasks related to an efficient and equitable redistribution of income, can influence the socio-economic processes and phenomena (unemployment, investment volumes, export potential)

in accordance with existing government intentions. Given the specificity of interaction between state and market structures, use of instruments of fiscal policy allows the government to avoid the use of direct regulations, ensure the establishment of an enabling economic environment settings.

We propose to consider the impact of decentralization processes on the level of regions' fiscal capacity (the possibility of providing the necessary amount of budget revenues), considering in addition to the immediate benefits of the decentralization concept the shortcomings of the existing system, which may become potential barriers to its reform and potential risks directly related to the implementation process decentralization. This approach will allow a comprehensive assessment of the current state of the fiscal system, outlining the prospects for the future reform of the system, its impact on the level of the regions' fiscal capacity.

Noting the benefits of fiscal decentralization, it is first of all important to highlight the economic and socio-political aspects of this process.

The economic component is at the heart of the decentralization's notion, as the process of power delegation and concentration at the local and regional level in accordance with existing local needs. That is, the transfer function of the target budget allocation to the local level allows to enhance the effectiveness of their use, provide the more transparent control mechanisms, political delegate responsibility for certain aspects of the region by local elites.

At the same time, the socio-political component is manifested: the results of using budget funds can be visually compared with residents of different regions or territorial communities, which, in turn, increases the responsibility of local officials and gives the public additional levers of influence on the political class.

Democracy as one of the basic features of decentralization promotes political accountability, public control and transparency in the allocation of budgetary resources. The result of such processes is improving the business climate, optimizing the fiscal load, and increasing the welfare of the population. That is, forming a basis for the economic development of the region. Specifying

the impact of this aggregate of factors on fiscal capacity, we note that besides attracting investment and activating the processes of reproduction, the processes of decentralization contribute to the formation of tax culture and the "exit from the shadow" of local enterprises, which undoubtedly forms the basis for the growth of fiscal capacity in the region.

The ultimate result of decentralization should be the creation of a local budgets new system and intergovernmental fiscal relations, which should be based on institutional symmetry, which involves the combination and interconnection of economic agents who use public goods, pay taxes (bear the burden of costs), and those who independently decides on the provision of benefits (local authorities) [8, p. 616].

In spite of the justification of fiscal decentralization's some benefits, institutional barriers to implementing this policy and risk assessment that take into account the concept of decentralization in the economic and socio-cultural realities of Ukraine, in particular the impact of these factors on the fiscal capacity of regional structures, should be taken into account.

The basis of the formation a high level fiscal capacity is, first of all, the tax system and the degree of organization effectiveness of its work. Unfortunately, at the current stage of development, the tax system of Ukraine is characterized by a low degree of efficiency. One of the reasons for this situation is the lack of a developed system of tax incentives. The state sees the main purpose of taxes - filling the budget, while the stimulating function remains out of focus [2, p. 8].

Equally important are the issues of legislative support, since the existence of contradictory provisions in existing legislation, along with the lack of a systematic and forward-looking approach to reforming regulatory acts, occasionally creates legal conflicts, while at the same time increasing legal uncertainty about the future state of the business environment (within the framework of tax legislation ) Issues of tax evasion and ensuring an efficient system of tax administration remain a topical issue.

Considering the following component of fiscal policy, namely the budgetary

sphere, it is also necessary to note a number of systemic problems that are incompatible with an efficiently functioning decentralized budget system. In the study, the fiscal capacity of regions can highlight the following issues of national fiscal systems:

- inconsistency of expenditure needs of local budgets for their financial support;
- lack of authority of local authorities to apply incentive measures for fiscal policy and self-distribution of resources of the region;
- weakness of public institutions.

Another threatening factor that needs due attention in the fiscal decentralization implementation processes, directly affecting the fiscal capacity of the regions, is the high level of shadow economy of the domestic economy. A large share of the shadow sector results in high levels of lack of funding by local budgets, narrowing their fiscal opportunities, which in turn reduces their budget efficiency.

The phenomenon of shadow economy is not unique to Ukraine and is inherent in every economy in the world, but its share and qualitative characteristics make it possible to assess the level of economic development of the state and the effectiveness of the legal legislation as a social institution. The main reasons for the formation of the shadow sector can be attributed to:

- low level of development of an institutional environment that cannot provide a mechanism for preventing and preventing the organization of illegal actions on a large scale;
- high unemployment and ineffective state employment policy;
- low level of development of the system of cashless payments, prevalence of cash as a method of calculation;
- high level of market regulation, bureaucratization, lack of perfect and effective system of administrative services provision;
- the fiscal nature of taxes, the lack of a motivational component as an instrument for shadowing.



In addition to the above-mentioned reasons, it is worth mentioning a number of important provisions that serve as a brake on the process of shadowing the Ukrainian business environment.

One of the typical manifestations of the shadow economy that should be considered is the prevalence of illicit activities in the area of employment and employment, which is most often realized in the absence of legally registered labor relations or the fact of concealing the real amount of wages. The disincentive factor in this case is the high level of tax load and the amount of the wage fund social deductions.

Developing the impact of the modern employment structure and the peculiarities of the domestic labor market on the processes of shadowing, it is necessary to take into account the factor of mass labor migration of Ukrainians in neighboring countries. Today, Ukraine is acquiring the status of an active labor force exporter, which forms highly contradictory trends. On the one hand, a massive migration flow provides the country with a sufficient amount of currency and maintains a certain level of purchasing power of the population on the domestic market; on the other hand – this amount of financial resources goes beyond the state fiscal system and, besides budget losses, entails a number of social risks.

It should be further noted the negative nature of the fact of a significant decline in real incomes, which undermines tax discipline and has a negative impact on the pace of shadowing of the market [11, p. 80]. An example of this would be the domestic system of subsidies for the population as a result of significant deterioration in living standards has gained widespread and has become a field of possible abuse in the context shelter significant amounts of real income.

Matching the above objective reasons for the low fiscal capacity of regions at the present stage of development, we can determine the following potential risks of implementing fiscal decentralization:

- strengthening regional disproportions of development;
- inter-regional differentiation of net fiscal benefits (inconsistency of the

volume of results obtained from the provision of subnational public goods and the level of tax payments), which leads to a violation of the principle of social justice in the territorial section, according to which economic agents should have equal access to public goods, regardless of their territorial localization [6, p.10];

- management risks associated with probable low-skilled employees of local government, dominated their personal interests over the public, arbitrary execution of budget operations excluding the aims and objectives of regional development [7, p. 63];

- formalization of decentralization processes as a result of the reluctance of central authorities to transfer regulatory and distribution powers to the lower level;

- reduction of social infrastructure objects due to lack of financing of delegated expenditures of local budgets.

Thus, one could argue that the benefits of fiscal decentralization are not absolute, and their use should be considered as an effective instrument of state policy on rational budget allocation to regional and local level that can balance the existing disparities and create conditions for further economic growth provided elimination of systemic barriers fiscal sphere.

However, the effectiveness of fiscal decentralization is possible for a strong central government that can confront the macroeconomic and fiscal destabilization, increased interest from the government to lower levels of government. This factor is advisable to take into account in the preparation and implementation of reforms in Ukraine, where local authorities are well aware of the needs of the population, should get more rights to exercise their independent powers in the area of social and economic development [10, p. 63].

One of the powerful tools for influencing regional development processes is the use of fiscal incentives designed to become the basis for the creation of a supportive environment for the organization and development of innovative infrastructure in the regions. Fiscal incentives are the universal regulatory tools whose peculiarities and nature of influence may vary depending on the ultimate goal and the current state of market conditions. The traditional form of application

of this instrument is the provision of tax benefits, in the form of changes in the size of the elements of the tax, which directly affect the final amount of tax liabilities.

In addition, separate tax instruments (tax revenues, privileges, preferences, tax holidays, tax credits, tax rebates, etc.) can be used within the special customs regimes established in certain territories, special exchange regimes, special investment-innovation regimes, special modes of resource administration payments for the use of land, other natural resources and minerals, special pricing regimes, special budget and intergovernmental regimes [5, p. 42; 3, p. 183].

Considering the features of domestic fiscal policy, it should be noted the lack of value orientation of the existing tax incentives in accordance with the fundamental principles of the theory of sustainable development.

One of the current types of fiscal motivation, which is actively used in developed countries and requires substantial reform in the domestic legal field, is the fiscal motivation to ecologize the business environment. This system, as a rule, provides for the granting of special privileges to companies for the development and provision of services related to resource conservation or recycling; producers of organic products; preferential treatment for "green" investments.

Its content is the reduction or cancellation of certain social taxes with the simultaneous introduction of new taxes related to environmental protection, due to expanding the base of environmental taxation, but without increasing the total tax burden [4, p. 61; 9, p. 120].

Other systemic problems of the Ukrainian system of fiscal stimulation are:

- a chronically ineffective and discredited system of state programs for lending to small and medium enterprises, mainly due to the corruption of these processes;

- lack of effective tax crediting system in the field of social security and entrepreneurship support programs;

- absence of differentiated tax rates of direct taxes;

- low level of economic autonomy in the decisions taken on the application of fiscal motivation instruments at the regional level.

The use of fiscal incentives can be seen as direct benefits of increasing economic activity in industries or regions targeted by incentives, but it has a positive impact on industries that have links to subsidized spheres. At the same time, the use of more advanced approaches to the use of fiscal incentives can increase the level of environmental safety while avoiding the increase of tax load, however, the implementation of such measures requires a thorough understanding of all possible consequences for each participant in the process, in order to assess the feasibility of their use.

Many tried and tested tools and methods of innovation support in different countries (targeted subsidies, tax incentives, tools and financing mechanisms of science) with blind copying lead to distortion of the institutional environment [5, p. 120].

As a result of the study, the main preconditions shaped by the institutional environment of factors that play a catalyst for social processes and highlight the importance of applying fiscal incentives in the process of ensuring sustainable development of the region are outlined. Appropriate processes are developing in the dynamic global economies that occasionally generates extremely contradictory trends that require adequate response to these government agencies. The importance of applying fiscal decentralization policy is grounded in order to increase the level of efficiency of using budget resources and eliminate structural imbalances. Equally important tool is a means of fiscal stimulation involving application of preferential tax regimes for specific business entities regions to stimulate the development of priority sectors. Fiscal motivation is organically contributing to the revitalization of sustainable development processes in Ukraine, since their application opens up the opportunity to improve not only investment and innovation potential, but also increases the social responsibility of producers and the public regarding the problems of ensuring the environmental safety of the region.

Therefore, decentralization processes are an integral part of economic development of the advanced countries with market economies because they

provide optimization of allocation of budgetary resources and political responsibility between national and local governments in accordance with the specific social needs of an administrative-level management.

Implementation of this concept requires consideration of a number of factors that may negatively affect the final result. First of all, they are determined by the existing problems of the tax, budget sphere and obstacles in the business environment of the country, which hinder the process of fiscal decentralization and reduce the fiscal capacity of the regions. These problems can primarily include: a high share of shadow economy and tax evasion; the prevalence of unlawful activities in the field of employment and employment; mass labor migration of the population of regions of Ukraine; falling real incomes; political problems of distribution of power among state structures; mismatch of expenditory needs of local budgets for their financial support; lack of powers of local authorities regarding the application of fiscal policy incentive measures and the independent allocation of resources of the region; the weakness of public institutions, and so on.

The processes of decentralization have a positive impact on the fiscal capacity of the region, provided a comprehensive approach to implementation. However, it is necessary to take into account such potential risks of fiscal decentralization implementation as: increasing regional disproportions of development; inter-regional differentiation of net fiscal benefits; managerial risks; formalization of decentralization processes; reduction of social infrastructure objects, etc.

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## **KNOWLEDGE ECONOMY AS THE DIRECTION OF SOCIETY INNOVATIVE DEVELOPMENT**

**Abstract.** *The theoretical generalization of approaches to the definition of the essence, components, characteristic and specific features of the knowledge economy as a component of the innovative model of social development and an element of the system of national economic security is carried out. The role and place of the knowledge economy in the formation of the innovative economic system is determined. The role and place of the knowledge economy in the formation of the innovative economic system is determined. The role of knowledge and information in the knowledge society, which is developing according innovative type, is researched. The outstanding role the social institute of higher education in shaping the human capital for the needs of the knowledge economy is emphasized. Strategic tasks and priority directions of building the knowledge economy in Ukraine are outlined. Strategic tasks and priority directions of building a knowledge economy in Ukraine are outlined. It is concluded that it is the knowledge economy should become the driver of building an innovative society, and the quality of higher education, in the system of which human and intellectual capital are formed, is a factor in ensuring the competitiveness of the country and its national security.*

**Keywords:** *knowledge economy, information, knowledge, innovation, higher education, human capital, intellectual capital.*

Humanity fundamentally and qualitatively changed by the end of the twentieth century, entered the third millennium, one of the hallmarks of which is

globalization, that is, according to I. Wallerstein, a global social process that manifests itself in the intensification of the exchange of ideas, information, goods, standards, and leads to creating of the unified socio-economic world system [1, p. 12].

The modern development of human civilization convincingly demonstrates that its future is inextricably linked with the development of the knowledge economy and the development of the information society. The knowledge economy is the basis of an innovative economy, in which the knowledge and information, that form human capital today, is an important resource and driver of increasing the country's competitiveness in the global dimension. At present, it was formed the idea that only through knowledge one can create and develop a competitive economy capable of ensuring a decent living standard of the population, and investment in human capital is the most effective way to provide the development of the entire country economic system.

Today, the basis for national competitiveness and the main prerequisite for accelerated intensive socio-economic growth is the ability to integrate, use and disseminate new scientific knowledge. Therefore, Ukraine's future development depends on the innovative economic development based on the effective use of the existing human capital potential, which is the basis for all production activity, including the knowledge economy. After all, the very person who is the main bearer of knowledge and skills serves as a catalyst to exercise the innovative jump by Ukraine. The human capital is now closely linked with national security, and the strength or weakness of the country's human capital is determined by the situation of the education system in general and higher education in particular.

The first works devoted to the formation of the knowledge economy appeared in the 1960s, when the formation of the knowledge economy concept reproduced the real changes in social development, as a result of which people became the main source of growth the society wealth and their knowledge and intellectual potential acquired the value of the production main factor. The significant contribution to the development of the ideas of the knowledge economy and the information



society was made by D. Bell (the concept of *post-industrial society*); Brzezinski Z. (the theory of *technotron society*); P. Drucker (concept of *post-capitalist society*), M. Castells, Y. Masuda, M. Porat (the theory of *information society*); E. Toffler (*the third wave of civilization*) and others. The common ground for all the aforementioned theories was substantiation of provision that the determining factors for the further progress of society development become, namely, information and knowledge, and the main source of the competitive advantages of a particular country or producer in the world market are intangible assets, namely, the intellectual capital that is the basis of the economy knowledge.

Among the Ukrainian scientists who studied the problems associated with the knowledge economy development, the attention deserve the works of such scholars as N. Verkhohliadova, A. Halchynskyi, V. Heiets, O. Hryshnova, L. Fedulova, A. Chukhno, A. Shtangret etc.

The emergence, popularization and development the ideas of the human capital theory are associated with the names of such American scholars as G. Becker, E. Denison, J. Kendrick, S. Kuznets, F. Machlup, J. Mincer, T. Schultz. Later, from the beginning of 1990s, various aspects of this problem were reflected in scientific researches of Ukrainian scientists, such as O. Amosha, V. Antoniuk, D. Bohynia, O. Hryshnova, M. Dolishnii, H. Dmytrenko, I. Kaleniuk, A. Kolot, V. Kutsenko, E. Libanova, D. Melnychuk, S. Pyrozhkov, A. Chukhno and others. Taking into account the urgency of the problem of developing of innovative competitive economic system in Ukraine, the **purpose** of our scientific research is to highlight the theoretical approaches to the essence and features of the knowledge economy; to substantiate the need to form the knowledge economy in Ukraine as a driver of socio-economic progress; to determine the role of higher education in the process of human capital formation for an innovative economy and raising the level of the state economic security.

According to A. Toynbee, society during its existence faces a number of problems that it solves in the most appropriate way for it. Each such problem is a history challenge [2, p. 30]. Each country has directly faced such challenges; in

historic terms each country in order to succeed in its development used the intellect given to mankind. Today's mental capacities have reached the level when *knowledge society*, *knowledge economy* are the reality, which enables a real unification not only of scientific but also cultural achievements in a harmonized alignment, so that “the country that created and mastered them, makes a breakthrough to future, finding the answer to the challenges of the 21<sup>st</sup> century” [3, p. 9].

The term *knowledge economy* was introduced into the scientific study by the Austrian scientist F. Machlup in 1962 to designate high-tech sectors of economy and to the requirement of trends in the development of intellectual and information capital interaction. In a broad sense, *knowledge economy* is an economy where knowledge, concentrated in human capital and the information environment, is the main driving force of progress. According to the Organization for Economic Cooperation and Development (OECD), “Knowledge Economy, or knowledge-based economy is an economy that is directly based on creation, distribution and application of knowledge and information” [4].

Nowadays, the knowledge economy is considered as formed under the influence of information revolution a special branch where the scientific knowledge in all spheres of tangible and intangible production are produced and functioned [5, p. 208]. L. Fedulova emphasizes that the knowledge economy is an economy that creates, distributes and uses knowledge to ensure its growth and competitiveness. Along with application of knowledge, the knowledge economy creates it in the form of scientific and technical and high-tech products, highly-qualified services, and education [6].

The knowledge economy (knowledge intensive economy) is the economy in which the source of knowledge includes both specialized (scientific) and everyday knowledge; it makes accumulation and application of knowledge, along with natural resources, capital and labor, dominant factor, resulting in constant growth of competitive economy.

Today, the experts are increasingly using special terms *new economy* or *E-economy* to describe the knowledge economy [7]. In modern literature, other terms are also used to refer to the knowledge economy: information economy, information society, post-industrial society, network intelligence society, global society, knowledge society, digital society, etc.

Since the knowledge economy formation is inextricably linked with the knowledge society formation, we must point to a significant difference between the *society of knowledge* and *information society*. Information by its nature is chaotic, not structured. Instead, knowledge is objective, since it relates to a certain sphere, sector; they are systematized and clearly defined. Knowledge is the form of existence and systematization of the results of human cognitive activity; in essence, it is information at the highest level of organization. Therefore, the economy development based on knowledge and information is a continuous process of investing directly into human capital, because, in this approach, a person acquires the highest value in society.

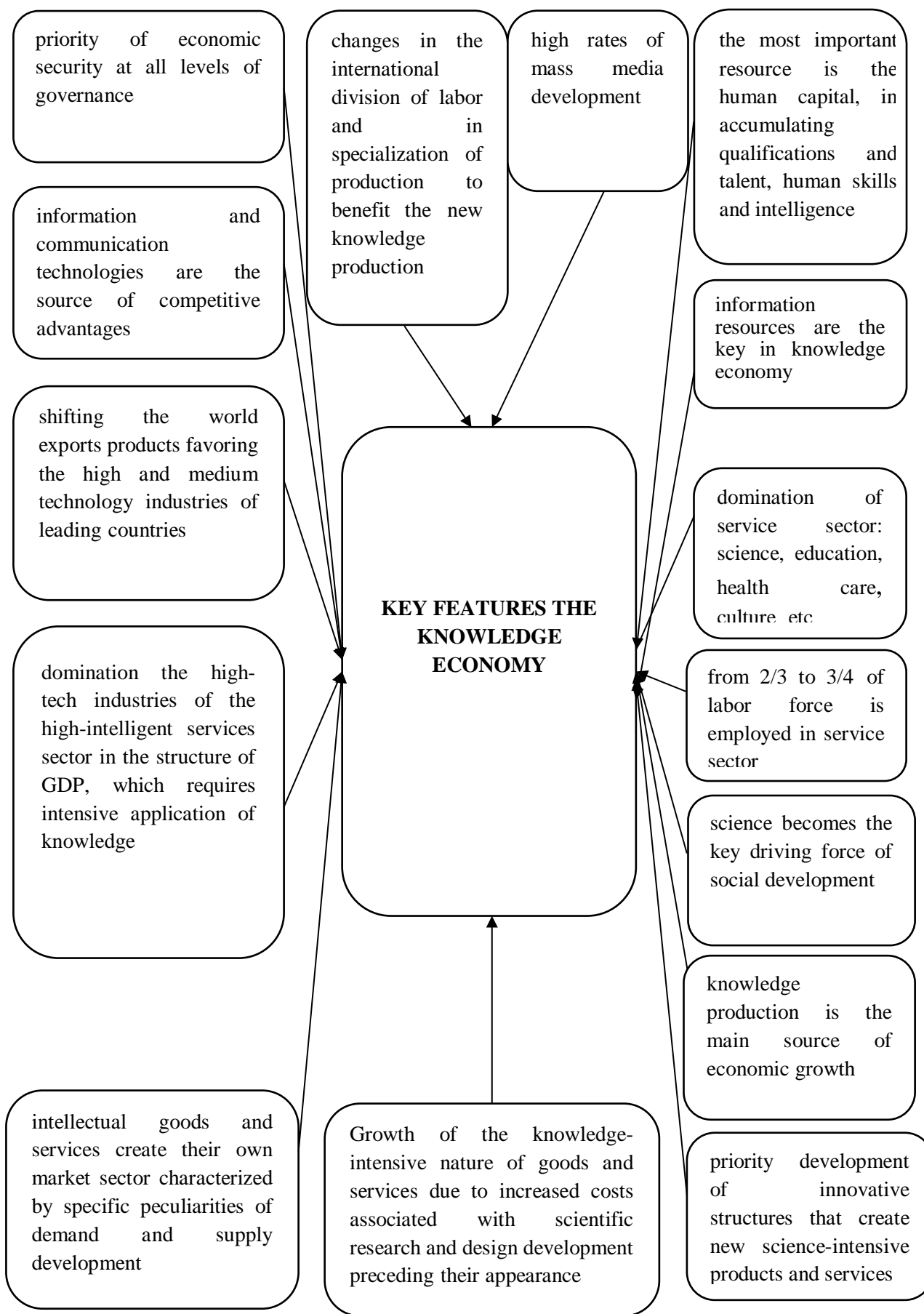
History has many examples when countries with rich natural resources and population are significantly behind socio-economic indicators of the countries with a high level of human capital development, where knowledge itself is one of the defining dominant. Knowledge acts as the primary in the system *knowledge – science – technology – production*. At the same time, the struggle is, first of all, for the further accumulation of knowledge, ensuring its continuous transfer in society and materialization in equipment and technology.

The existence of the knowledge economy is based on the processes of cognition, learning and transferring knowledge to future generations, as well as technology of their implementation into future practice [5, p. 208]. The foundation of the knowledge economy is a productive knowledge and high-quality education, which contributes to the implementation of intellectual capital in production activity results. Under these conditions, material production becomes secondary in terms of generating information and knowledge.

Scientists of the National Academy of Sciences of Ukraine emphasize that the interconnected components of the knowledge economy are: 1) high-quality and continuous education; 2) economic incentives and institutional arrangements that encourage the effective use of knowledge in all sectors of the economy; 3) an effective innovation system, which unites education, science, business in a single complex; 4) information infrastructure, which provides information to all market actors, state institutions and population; 5) state regulation. The main drivers of growth and the bearers of progress in such economy are the branches of high and medium technology and services with high intensity knowledge (so-called *know-how services*) [8; 9, p. 92].

According to experts, today's features of the knowledge economy are: 1) education and training (the presence of an educated and professionally trained population capable to create, accumulate and apply knowledge); 2) dynamic innovative infrastructure, which will ensure communication, processing and dissemination of information and promote free movement of knowledge, implementation of information and communication technologies and business development; 3) innovative systems (a network of research and 'brain centers', universities, private firms and organizations involved in the creation of new knowledge, borrowing them from the outside and adapting to local needs [10; 11; 12; 13; 14].

A. Shtangret distinguishes the key knowledge economy peculiarities of the world developed countries [15].



*Pic.1 General characteristics of the knowledge economy specifics*

Analyzing the role of knowledge in ensuring functioning of the knowledge economy in the country, Ukrainian scientists distinguish between several processes in which knowledge directly participates. Thus, V. Heiets believes that processes of accumulation and use of knowledge become the dominant factor in the knowledge economy [16]. Instead, L. Fedulova emphasizes the creation, dissemination and use of knowledge [6]. V. Tyshchenko emphasizes the combination of possible processes in which knowledge takes part in providing the knowledge economy in the country - creation, accumulation, use and dissemination of specialized (scientific) and everyday knowledge [17].

N. Podluzhna stresses that the number of processes in which knowledge is engaged to ensure the functioning of the knowledge economy in the country ranges from one to four, and no author gives a unified view of their structure. The researcher outlines the following processes in which knowledge is involved in ensuring the functioning of the knowledge economy: 1) production or creation of knowledge; 2) accumulation of knowledge; 3) use of knowledge; 4) dissemination of knowledge; 5) investing in knowledge [18, p. 308].

Today, the knowledge economy is based on the growing intellectual potential, which is becoming social in nature and strengthens its influence in combination with modern high-level information and communication technologies. «In the knowledge economy, the determining factor is the society intellectual potential on which it rests and which is a combination of everyday (ordinary) and specialized (scientific) knowledge, which is present in people's minds and materialized in technological methods of production», – the scientists note [19]. This emphasizes not an abstract, but an effective, practical aspect of the knowledge economy: the technological use of knowledge, which is an inalienable feature of the innovative development model.

O. Hryshnova mentions two main reasons for actualizing the current attention to the problem of human capital formation, which is the bearer of intellectual potential. First, this is the general pattern of the modern science development as a whole, which manifests itself in the concentration of scientists'

attention in human's problems research. Second, it's recognition of the fact that the activation of creative human potentials, the development of highly skilled labor force is the most effective way of achieving economic growth [20].

In this context, the problem of general and professional formation and development of young specialists, graduates of higher education institutions, in which human capital is only being formed, deserves special attention. It is the level of human capital formed during young years determines the life-long person's opportunities and achievements. We mean self-realization, employment, material wealth, social status, level of national, cultural and spiritual consciousness, etc.

The experience of the developed countries convinces that the old paradigm of education, according to which education was a platform for preparation for life, today has exhausted itself. Education is now a way of life: a person must constantly study and train, because the education during the life is a form of personal protection against uncertainty and unpredictability in the modern world. Each person's upward mobility depends on the quality of the received education, and the quality of education is, first and foremost, the quality of knowledge. The growth of public demand for intellectual work, based on the application of knowledge, analytical and communication skills, determines the need for highly educated workers.

It is obvious that in conditions of world globalization, the qualitative indicators of the education development show the effectiveness of nation's social progress, and the future of the country depends on the quality of higher education, since the human capital, the most important wealth of the nation, is formed in its system.

According to the State Statistics Service of Ukraine, Ukrainian higher education establishments (institutes, academies, universities) prepared 9,522,900 specialists during the period from 1990 to 2018; only in 2018 357,400 specialists graduated from 289 higher educational establishments [21], which is about 22.5% and 0.8% of the total population of Ukraine. After graduation a significant part of graduates of Ukrainian higher education institutions do not exercise the profession,

or are employed at work below their qualification level, that is, they work outside the field of intellectual activity, resulting in a significant loss of intellectual potential. Almost half of graduates of higher education institutions become unemployed (or need retraining). According to the State Statistics Service and the State Employment Service of Ukraine, in 2017-2018 about 50% of the unemployed had higher education.

According to official statistics, more than 50% of Ukrainian universities graduates have bachelor's and master's degrees in social sciences, indicating a hypertrophied structure of training and impossibility of innovation activity as a result of inadequate orientation of professional training for production sphere.

The imbalance between quantitative and qualitative indicators testify the existing systemic problems of the educational branch. In contrast, in the countries with high labor productivity (Denmark, the Netherlands, Germany, Norway, Sweden, Switzerland), the share of specialists with higher education among employees is rather high. “The economy responds to professional competence and experience, applying which complements and actualizes the knowledge gained in the process of formal education” – noted O. Harashchuk and V. Kutsenko [22, p. 383]. “It is not surprising that in recent times the intellectualization of employment in economy has been intensifying, a great deal of attention is paid to improving the staff quality. Therefore, it is extremely important for Ukraine to ensure the increase of the intellectual potential of the country, as well as its effective use”, – the researchers point out [22, p. 386].

The system of higher education during some time has showed slow response to changed needs of society in improving the quality of human capital. Among the constraining factors that prevented the development of innovative educational activities in Ukraine, we distinguish the following: 1) the lack of political will to develop a scientifically sound strategy for systemic changes in the educational sector; 2) uncertainty of national priorities in the scientific and technical field; 3) the slow pace of innovations dissemination and application; 4) imperfection of



legal and economic mechanisms of innovation activity regulation and the residual principle of its financing.

As noted above, the main component of the knowledge economy is high-quality and continuous education for the entire population of the country. And although Ukraine is one of the leaders in terms of literacy (about 80% of Ukrainians have post-secondary education) [21] and higher education figures, but there are still problems with qualitative indicators that hinder the progress towards the knowledge economy. It is the pressing issue of access to high-quality education, especially the higher one, which is increasingly becoming paid and, therefore, remains unavailable for the most families with the income level below the property line. For rural school graduates, access to higher education is most difficult because of the low quality of general education. The number of students from rural areas enrolled in higher education institutions in Ukraine during the last 10 years does not exceed 25% [21].

The outstanding issues in the educational sector remain: 1) the threat of lagging secondary and higher education quality from the requirements of the post-industrial economy due to lack of funding and blind copying of foreign experience; 2) the weak link between higher education and the needs of the labor market and the socio-economic problems of the national economy and society development in a globalized environment; 3) non-compliance with the standards of higher education quality and the lack of economic, legal and moral responsibility of specialists providing knowledge-intensive services; 4) the problem of personnel retraining and focus of higher education institutions on training of specialists capable of providing the innovative technological processes.

The realities of a harsh competitive environment determine the need to realize that higher education must make it impossible to disperse resources and minimize the inefficient use of human capital. Emerging tasks for higher education are: 1) the coherence of labor markets and higher education with the issues of quantitative and qualitative training structure; 2) development the scientifically substantiated mechanisms of higher education and production integration;

strengthening the practical component of the competencies forming process;  
3) establishing the close interaction links between the labor market actors and educational services. [22, p. 386].

For this, according to O. Khymenko, the higher education system should contribute both to emergence of the flow of creators and their innovations, along with emergence of innovative managers – mediators who help creators bring their innovations to market success. If, in the first case, the result is the dominant sign of success, then in the second it is a process. According to the researcher's vision, preparation of specialists who will accompany innovations at different stages of their life cycle, the scientific, scientific-pedagogical employees as the creators of new (scientific, technical, technological, etc.) knowledge, as well as in the preparation of innovative managers requires to take into account the trends, tendencies and changes that may occur in labor markets, goods and services during the period of specialist training in the relevant qualification and competence during the period of innovation creation as such [23].

However, as practice convinces, it is impossible to reform higher education, science, culture, industry, taxation system, pension system etc. separately. Everything is too interconnected... Without a program of cultural development through secondary, higher education, and the media space, it will not be possible to motivate young people to receive knowledge qualitatively and to ensure strict control over its possession.

It is believed that knowledge can be the source of economic growth and the basis of a corresponding modernization project of the economy and society only in the case of existing incentives that have a positive effect on the knowledge obtaining (accumulation) process. Actually, there should be the possibility of knowledge forming and transferring from its origin to implementation in new technologies. At the same time, there must be an interest in knowledge, which is the result of a reaction to the necessary enrichment, including spiritual, through the accumulation of knowledge. It is possible when not only individual's institutionalization takes place, but alongside an increase in his/her social status in

the system of production and social relations due to new knowledge takes place, – the experts point out [19, p. 40].

Unfortunately, current Ukrainian realities are characterized by the loss of educational potential and de-intelligence of labor resulting from the lack of strategic vision the 21<sup>st</sup> century Ukraine's development by the political elite. The typical features of the Ukrainian present day are: humiliation of intellectual work status; destruction of scientific schools; emigration of the intellectuals; decline in the population cultural and educational level; the best specialists' intensive labor out-migration abroad; deformed structure of population employment; loss of communication between Ukrainian science and production which is oriented towards innovative technologies, through its destruction during the years of independence.

Indicative information is provided in the reports of international analytical institutions: The Business School for the World (INSEAD) – Global Innovation Index; EFD-Global Network Consulting – Innovation Capacity Index; Boston Consulting Group – Global Innovation Index BCG and others. These documents contain the quantitative and qualitative indicators of the world countries', including Ukraine, innovative potential. Thus, according to the global competitiveness rating, Ukraine doesn't rise above the 70<sup>th</sup> position, remaining behind the leaders [24]; in 2018, according to the Global Innovation Index, Ukraine was the 43<sup>rd</sup> [25], while being among the leaders in terms of education indicators.

The strongest innovation points of Ukraine are the following: extent of people with higher education (4<sup>th</sup> rating position in the world), patent activity (27<sup>th</sup> place), technological capabilities of industry (34<sup>th</sup> place). At the same time, the level of scientific research intensity (44<sup>th</sup> rating position) and the level of the economy efficiency (50 rating positions) are low. At the same time, Ukraine's high positions in the World Economic Forum Human Development Index (26<sup>th</sup> in the world) are catastrophically limiting the low level of the Intellectual Property Rights Index (only 115<sup>th</sup> world ranking) [26, p. 50].

However, despite the negative effects of socio-economic transformations that took place before the mid-1990s, Ukraine's intellectual potential remains rather powerful and capable of effectively addressing the current problems of social development and solving contemporary innovation challenges. In particular, Ukraine has always had a high staff potential of science, which for many years has determined the place of Ukraine among the leading European countries. Thus, in 2017, the share of the research workers (researchers, technicians and auxiliaries) in the total number of the employed population was 0.58%, share of researchers was 0.37%. According to Eurostat, in 2015, the highest share was in Finland (3.21% and 2.35%), Austria (3.10% and 1.92%) and Sweden (2.97% and 2.33% ); the lowest was in Romania (0.53% and 0.33%), Cyprus (0.83% and 0.61%), Poland (1.0% and 0.75%) and Bulgaria (1.0% and 0.65%) [21].

However, despite the high rate of educational and scientific potential in Ukraine, unfortunately it is not necessary to speak about building the knowledge economy and an innovative environment. Based on international research on the strategy for building the knowledge economy and the knowledge society in other countries, A. Shtangret summarizes three main trends of nation's socio-economic reforms: 1) creation of a network society (information society) on the basis of information and communication technologies (ICT); 2) stimulation of the national innovation system to use the results of national research and practice guidelines; 3) investment in the development of intellectual human resources (national system of education and science, realization the concept of 'life-long' vocational education, development of national and cultural diversity [15].

Taking into account the above, the primary task for the development of the knowledge economy in Ukraine should be the designation of priority of the knowledge economy, considering the innovation policy in the educational, science, scientific and technological industries. In particular, the formation in Ukraine the economy which is grounded on the use of knowledge, information and technologies and is based on the appropriate coherence of such elements of the innovation system as: the intellectual potential of society, the *science – education –*

*technology – innovation – industry* chain, organizational and institutional regime, the physical environment of innovation, the system of socialization and innovation-oriented education, financial principles of activity, the adaptation to the external context of the innovative reforms, etc.

## **CONCLUSIONS:**

1. The globalization processes' challenges determine the need to formulate the answers adequately responding the time. Ukraine, facing civilizational choice, confronts with the task of creating innovative economy that can respond to pressing socio-economic problems and geopolitical challenges of the time.
2. The knowledge-based economy grounded on the society intellectual potential, which is formed in the system of higher education, has to become the driver of competitive economy creating.
3. Providing the quality of higher professional training should serve the development of competitive human capital, which is an important component of ensuring the national security of the nation.
4. The progress of the knowledge economy depends on the processes of development, implementation, enhancement and preservation of scientific knowledge. This should be a scientifically grounded state strategy for innovation development and the creation of effective tools for building a modern innovative competitive economy geared towards high-tech products production.
5. Disregarding the globalization challenges and the lack of timely and adequate responses threaten the possibility of building an innovative economy and reducing the Ukraine's role to a provider of natural and human resources one.

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### SECTION 3

## EFFECTIVE FINANCIAL MANAGEMENT AND ENHANCEMENT OF MONETARY POLICY

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### FISCAL POLICY IN THE COUNTRIES WITH TRANSFORMATIONAL ECONOMIC SYSTEMS

***Abstract.** The study states that fiscal policy is a significant component of the country's economic development. It is important to implement a balanced and systematic financial policy with the use of effective tools of the budget, tax, monetary and investment systems. The main purpose of fiscal policy is to ensure economic and social stability by creating favorable conditions for economic growth. The authors prove that taking into account the transformations in Ukraine's fiscal policy, it is expedient to deepen research and systematize the experience of implementing fiscal policy in countries with a transformational economic systems. The study outlines the common features of the countries with a transformational economic systems in reforming the state regulation of the financial system.*

*The authors research and characterize the indicators of fiscal policy development of countries with transformational economy in recent years, taking into account the global rating systems *Paying Taxes and Doing Business*. It is important to improve the fiscal policy regulatory mechanism, taking into account the degree of socio-economic relations development of countries with transformational economic systems. The authors determined that at this stage of financial relations, it is necessary to determine areas of economic regulation, fiscal policy priorities based on the fundamental principles of social and economic development in the medium and long term.*

***Keywords:** fiscal policy, fiscal regulation, financial system, investment policy, transformational economic systems.*

**Introduction.** In the context of Ukraine's transformational changes, fiscal policy is an important tool for regulating the cyclicity of the country's economy, ensuring its effectiveness under the influence of dynamic changes in the internal and external economic and social environment. The implementation of a well-balanced and systematic fiscal policy with the use of effective tools of the budget, tax, monetary and credit system is important. Improving the level of coordination

of fiscal policy components in the real economy and ensuring financial stability is relevant. Formation and implementation of effective fiscal policy is an important part of the regulation mechanism for country' social and economic development. Globalization transformations and openness of the domestic economy necessitate the improvement of institutional mechanisms and operating levers of financial management taking into account medium-term tasks of social development.

The transformation process involves changes in fiscal policy that will contribute to the positive dynamics of economic growth, in particular, increasing the efficiency of public finance management, fiscal regulation, investment attractiveness, and expanding the social orientation of the country's economy. Therefore, it is expedient to analyze and use the best practices of fiscal policy formation in countries with transformational economic systems in order to increase the state financial regulation in Ukraine taking into account the trends and priorities of social and economic development of the country.

**Literature review.** The fiscal policy formation peculiarities of the disclosed countries are determined in the scientific researches made by I. Chugunov, V. Fedosov, S. Fischer, M. Friedman J. M. Keynes, P. Krugman, A. Laffer, I. Luk'yanenko, J. Sachs, J. Stiglitz, I. Zapatrina, and others.

A significant contribution to the development of theoretical achievements in the effective financial and economic policy formation is carried out by J.-B. Say, D. Ricardo, A. Marshall, A. Wagner, and A. Pigou, who explore the impact of various financial instruments for economic development, determine the budget feasibility with deficit or surplus, justifying the state's role in financial regulation.

S. Fischer, R. Dornbusch, and R. Schmalensee study important financial policy components - monetary and fiscal. Fiscal policy is a set of decisions and measures of the state in the field of taxes and public expenditures. It is necessary to closely coordinate monetary and fiscal policy, use the budget instruments of monetary regulation to achieve state goals. They produce several types of financial policy, including the policy of stability, economic growth and limit the amount of business activity. Under the stabilization policy, scientists understand the use of

the state's fiscal and monetary policies aimed at bringing production closer to the potential level and ensuring a low rate of inflation. In their view, the main objective of the economic growth policy is an increase in the growth rate of the gross national product, while the policy of restricting business activity is a certain reduction of the gross national product relative to its potential level [9].

C. McConnell, S. Brue define fiscal policy as a set of changes that are made by the government in order public expenditure and taxation aimed at achieving full employment and production is not an inflationary domestic product [13]. Paul Samuelson highlights two main components of the state's fiscal policy, including fiscal policy - right to collect taxes and implement appropriate fiscal spending, and monetary policy, which determines the money supply and interest rates. Using data from fiscal policy instruments, the government influences the total level of spending, production, economic growth, employment and the rate of the consumer price index. One of the important goals of state economic policy, the scientist sees in increasing the productivity of labor and production, ensuring sufficient rates of country' social and economic development [17].

Ukrainian scientists V. Fedosov and V. Oparin consider the fiscal policy as an economic category, taking into account the impact of fiscal and monetary instruments for social and economic development of the country. Fiscal policy is seen as a set of actions and activities of the state, within their functions and responsibilities in finance and trends should be adequate socio-economic development of society. An important task of fiscal policy is to ensure economic growth through the use of financial mechanisms to influence demand, supply, consumption, savings, and investment [7]. I. Lyutyy in the study of economic nature and financial policy role in promoting socio-economic development turns his attention to the effectiveness of monetary policy, which, in his view, depends largely on the degree of consideration and implementation of economic interests of subjects of financial activity, which is directed to the mechanism of the state fiscal policy implementation [11]. S. Yuriy and V. Fedosov define financial policy as a

set of distributive and redistributive measures implemented by the state through the financial system for the organization and use of financial relations in order to ensure the gross domestic product (GDP) growth and increase the society's welfare level [8]. I. Zapatrina defines the fiscal policy essence as a part of sustainable socio-economic development. The scientist notes that the decisive factor for shaping the state's fiscal policy is the definition of its parameters, such as the state size (the share of GDP redistribution through state budget expenditures and extrabudgetary funds), the budget deficit and the share of state and guaranteed debt in GDP [20].

**The study purpose** is to deepen research and systematize the experience of implementing fiscal policy in countries with transformational economic systems.

**Research results.** Fiscal policy as part of economic development is an effective instrument for regulating social and economic processes. The experience of establishing a system of state financial and economic regulation shows that increase in quality of life, improvement of public finances, creating favorable conditions for business development are the most important tasks in the development and implementation of fiscal policy, as well as structural changes in the economy aimed at increasing the economic growth of the state.

Transformation processes lead to a reorientation of the state social and economic policy priorities to stimulate the development of services, improving social protection policy and income redistribution policy. The growing integration of national economies into the world, increasing globalization, dynamic economic changes necessitate improvement the country' model of the socio-economic development [17].

In modern conditions of globalization and integration into the global financial space, there are several approaches to grouping countries with transformational economies and take into account their particularities in socio-economic transformation:

– the geographical approach, which distributes transformation countries according to the following groups: Central Europe and Baltic countries (Latvia,

Estonia), Eastern Europe, Transcaucasia and Central Asia (Ukraine, Kazakhstan), countries of East Asia (China, Vietnam);

– the political approach that includes most of the former socialist countries: the former USSR and Central Europe (Belarus, Moldova, Georgia, Russia, Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, etc.).

The formation and implementation of fiscal policy experience show that it is constantly changing due to the development of all sectors of society, structural changes in the economy, science, and technology. The practice of financial reforms in different countries shows that the exposure level of the public planning social and economic processes increases significantly. Accordingly, in today's conditions, an important task is to develop an effective, scientifically sound fiscal policy that can promote investment and innovation activity, address critical socio-economic problems. This will allow a harmonious combination of strategic development of the country, government bodies, specific objectives of fiscal policy, financial indicators and state funds [1].

Globalization is deepening the state's role in regulating social and economic processes, improving the quality of fiscal management and monetary system with increased efficiency of its coordination. In modern terms, the country' fiscal policy is increasingly dependent on external economic factors contributing to the further need to improve the financial system, the implementation of structural reforms in public finance management [17].

The recent years' trend in the countries with transformational economic systems is the change in public administration in providing public services to ensure their final result, to strengthen the interconnection between the resources spent and the results obtained, and the effective allocation of financial resources [3]. This approach is based on the measurement of the results obtained, it increases the efficiency and transparency of these processes, the responsibility for the inappropriate spending of financial resources.

Countries with transformational economic systems have certain common features in reforming the state regulation of the financial system. As an

accountability tool for citizens, public authorities use a performance indicators system for evaluating fiscal policy effectiveness, which determines the legal rule to follow transparency. On the other hand, public control formed by professional associations, which acquire the capacity to influence public opinion and the ability to lead change in public confidence in state and local governments. In this connection, it is important to ensure the principle of transparency and publicity of the fiscal policy of developing countries

The importance of the country's fiscal policy in shaping and distributing GDP is reflected through the fulfillment by the state of its functions and tasks. The main indicator that reflects consideration of state factors of the gross national product is GDP per capita taking into account purchasing power parity (table 1). According to tabl. 1 level of economic development of the country is directly dependent on the GDP per capita. In countries with the restructuring of the economy and market transformation of social relations in this figure is quite low: Moldova - 1,900 USD, Georgia – 3,854 USD, Belarus – 4,989 USD, Georgia - 3,854 USD, Ukraine - 2,640 USD, which indicates a low GDP per capita. At the same time, this indicator is much higher in the countries that are at the last stage of adjustment and close to the level of economically developed countries: Poland - 12,372 USD, Latvia -14,118 USD, Czech Republic - 18267 USD.

**Table 1:** GDP per capita dynamics in countries with transformational economic systems for 2011-2017, USD

| Country               | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|
| <b>Belarus</b>        | 6,030  | 6,520  | 6,940  | 7,979  | 8,318  | 5,949  | 4,989  |
| <b>China</b>          | 4,561  | 5,634  | 6,338  | 7,078  | 7,684  | 8,069  | 8,123  |
| <b>Czech Republic</b> | 19,764 | 21,717 | 19,730 | 19,916 | 19,745 | 17,557 | 18,267 |
| <b>Georgia</b>        | 2,964  | 3,725  | 4,143  | 4,274  | 4,430  | 3,765  | 3,854  |
| <b>Kazakhstan</b>     | 9,071  | 11,634 | 12,387 | 13,891 | 12,807 | 10,510 | 7,510  |
| <b>Latvia</b>         | 11,326 | 13,703 | 13,823 | 15,032 | 15,725 | 13,667 | 14,118 |
| <b>Moldova</b>        | 1,632  | 1,971  | 2,047  | 2,244  | 2,245  | 1,832  | 1,900  |
| <b>Poland</b>         | 12,600 | 13,893 | 13,145 | 13,781 | 14,342 | 12,566 | 12,372 |
| <b>Russia</b>         | 10,675 | 14,212 | 15,154 | 15,544 | 14,126 | 9,329  | 8,748  |
| <b>Ukraine</b>        | 3,571  | 3,857  | 4,030  | 3,015  | 2,115  | 2,186  | 2,640  |

Source: World Bank data [16].

Last years countries with transformational economic systems have tended to fluctuate inflation. This is due to increased competitive pressure in the globalized economy in terms of reducing barriers to cross-border movement of goods and services and production factors as well as significant fluctuations in relative prices. It is also important to note the internal economic situation of countries with transformational economic systems have had an impact on the financial performance in 2011-2017. Thus, in Belarus, the financial crisis of 2011 and the monetary reform in 2012 led to a rise in consumer prices to 53.2% and 59.2%, but the result of the reforms was positive changes already in 2015 and 2016, when inflation was already 13.5% and 11.8%. The financial crisis in Ukraine in 2015 has led to a sharp rise in the consumer price index to 43.3%, but during the recession it was 12.4% in 2016 and 13.7% in 2017. At the same time, the impact on the prices dynamics in the national economy is driven by external factors that are caused by the globalization of economies and financial systems: the difference between actual and potential output levels, the dynamics of prices for individual product groups in world markets, etc., increased volatility in financial markets due to the formation of financial discontinuities [6].

**Table 2:** Budget system indicators of countries with transformational economic systems for 2017, %

| <b>Country</b>        | <b>Revenues,<br/>% of GDP</b> | <b>Expenditures,<br/>% of GDP</b> | <b>Public dept,<br/>% of GDP</b> |
|-----------------------|-------------------------------|-----------------------------------|----------------------------------|
| <b>Belarus</b>        | 28.9                          | 29.6                              | 40.0                             |
| <b>Czech Republic</b> | 31.6                          | 32.9                              | 30.3                             |
| <b>Georgia</b>        | 24.3                          | 25.7                              | 44.4                             |
| <b>Kazakhstan</b>     | 13.6                          | 15.7                              | 16.8                             |
| <b>Latvia</b>         | 43.1                          | 42.9                              | -                                |
| <b>Moldova</b>        | 30.2                          | 31.3                              | 37.9                             |
| <b>Poland</b>         | 32.9                          | 34.9                              | 57.8                             |
| <b>Russia</b>         | 24.2                          | 30.8                              | 14.2                             |
| <b>Ukraine</b>        | 34.1                          | 35.4                              | 61.5                             |

*Source:* International Monetary Fund, the National Bank of Ukraine data [14, 15].

The GDP country' level, which is redistributed through the financial system, depends on the priorities, functions of the state, features of the economy' model

and social policy. The GDP redistribution through budget revenues plays a significant role in the socio-economic development of society and influences the efficiency of public financial regulation. According to 2017 in countries with transformational economy the average value of the state budget revenues in GDP was 28.6% and expenditures - 30.5% (Table 2), in particular, the highest value has Poland - 32.9% for revenues and 34.9% for expenditures, and the least for Kazakhstan with a value of 13.6% for revenues and 15.7% for expenditures. Ukraine belongs to the group of countries with a moderate level of GDP redistribution through the budget revenues from the value of revenues 34.1% of GDP and expenditures 35.4% of GDP.

One of the main priorities of the fiscal policy of developed countries in the medium term is to reduce public debt and the debt burden on the budget. In countries with transformational economic systems, during the economic recession, the level of public debt has significantly increased, which was caused by the need for additional budget expenditures to stimulate economic development while reducing the volume of budget revenues. In addition, at that time there were state programs for a recapitalization of financial institutions, increase the banking system liquidity, redemption of troubled financial assets. In 2017, among the countries with transformational economic systems, Georgia (44.4%), Poland (57.8%), Ukraine (61.5%) had the highest level of public debt in GDP. Given the above, one of the fiscal policy priority directions should be reducing the public debt level and debt burden on the budget.

An important task of state financial institutions is the development and implementation of a well-balanced fiscal policy that would provide sufficient financial resources and contribute to economic growth. Most of the budget revenues are taxes, which indicates the strong position of the tax system in implementing effective fiscal policy. The quality of the institutional environment and the implementation of the budget and financial regulation, the public sector affect the change rate share of taxes in GDP. The size and characteristics of tax payments from individuals and legal entities determine the financial capacity of the



country to realize its functions. The size of the general tax rate may indicate the direction of development of economic relations in the country and the system of their regulation by the state. Typically, a rather high tax rate reflects a slowdown in economic development, a lack of government financial resources, and an increase in the volume of government withdrawal of these resources through the tax mechanism. Or vice versa - the state regulates excessive demand and the potential impact on economic activity through tax burden. "Optimal" tax burden on the economy is difficult to determine because the rate depends on the functioning of the national economy, the chosen model of socio-economic development and the institutional environment level of society.

Countries with transformational economic systems are characterized by different levels of tax rates (Table 3), in particular, Kazakhstan has a low tax rate of 29.2%, Latvia has 35.9%. This suggests a policy of tax incentives and increases aggregate demand in order to stimulate economic activity. Countries with an average general tax rate: Moldova - 40.2%, Poland - 40.3%, Russia - 47.0%. Countries with a high general tax rates: Czech Republic - 50.4%, Belarus - 51.8%, Ukraine - 52.2%, China - 67.8%.

**Table 3:** Tax system indicators of countries with transformational economic systems for 2017, %

| <b>Country</b>        | <b>Total tax rate, %</b> | <b>Share of taxes in GDP, %</b> | <b>Number of taxes, annually</b> | <b>Country place in the Paying taxes ranking</b> | <b>Country place in the Doing Business ranking</b> |
|-----------------------|--------------------------|---------------------------------|----------------------------------|--|--|
| <b>Belarus</b>        | 54.8                     | 29.8                            | 7                                | 96   | 38   |
| <b>China</b>          | 68.0                     | 19.4                            | 9                                | 130  | 78   |
| <b>Czech Republic</b> | 50.0                     | 35.5                            | 8                                | 53   | 30   |
| <b>Kazakhstan</b>     | 29.2                     | 13.5                            | 7                                | 50   | 36   |
| <b>Latvia</b>         | 35.9                     | 27.6                            | 7                                | 13   | 19   |
| <b>Moldova</b>        | 40.4                     | 32.0                            | 10                               | 32   | 44   |
| <b>Poland</b>         | 40.4                     | 20.1                            | 7                                | 51   | 27   |
| <b>Russia</b>         | 47.4                     | 28.7                            | 7                                | 52   | 35   |
| <b>Ukraine</b>        | 51.9                     | 38.9                            | 5                                | 43   | 76   |

*Source:* World Bank and PwC data [18, 19]

The ratio of tax revenues to GDP reflects the economic situation in the country and creates opportunities for distinguishing the fiscal policy features. Since taxes are the main source of budget revenues of any country, the ratio of revenues to GDP indicates the level of budget centralization and determines the effectiveness of accumulating revenue through taxes and fees [4].

At the present stage of economic systems development, the indicator of GDP distribution through the budget system distinguishes the main models of financial relations in society:

- American model assumes maximum self-financing of legal entities and individuals and is characterized by a low indicator of fiscal centralization (within 25-30% of GDP);

- Western European model is characterized by parallel operation and financing of public and commercial institutions in the social sphere; the indicator of centralization of GDP fluctuates at the level of 35-40%, which reflects its moderate level;

- Scandinavian model is characterized by extensive government social sphere, which forms the fundamental preconditions for increased social stability; the level of centralization of GDP is about 50-60% [12].

In the pre-crisis period in the countries with transformational economic systems experienced growth of basic macroeconomic indicators, including GDP. The highest rates of economic growth were in such countries as China - 8.8%, Kazakhstan - 5.0%, Poland - 4.7%, Latvia - 4.0%, Czech Republic - 3.6%. With the onset of an economic recession, there was a need to increase economic growth and enhancing the effectiveness of monetary policy, which led to the reform of fiscal adjustment towards reducing the tax burden and stabilize the financial system for the purpose of weakening the negative trends in the global economic space. At the same time, taking into account the possible risk of low budget support, in order to reduce the budget deficit and increase the efficiency of public finances in a number of countries with transformational economic systems, was an increase in social contributions and income tax for individuals (particularly in

Poland, Latvia - 2.0%). Also, adjusting the number and scope of tax exemptions and broadening the tax base has become an effective tool of tax management.

Based on the data in Table 3, it is possible to group countries with transformational economic systems into groups by the indicator of tax payments in GDP. The first group: countries where the share of taxes in GDP is less than 30% (China - 19.4%, Kazakhstan - 13.5%, Poland - 20.1%, Latvia - 27.6%, Russia - 28.7%, Belarus - 29.8%); second group: countries, the average share of taxes in the GDP ranging from 30% to 40% (Moldova - 32.0%, Czech Republic - 35.5%, Ukraine 38.9%). The share of tax revenues in Ukraine's GDP is 38.9%, which allows it to be classified in the second group. This indicator is higher than the average for countries with transformational economic systems, characterizes sufficient opportunities for filling the budget through the tax system.

The level of investment attractiveness of the country for domestic and foreign investors is an important component of an effective fiscal policy. The degree of the state regulation effectiveness of the financial system can be characterized by the country's place in the global rating systems Paying Taxes and Doing Business (Table 3). The annual ranking of Paying Taxes, conducted by a network of audit firm PricewaterhouseCoopers and the World Bank Group, countries are ranked by ease of paying taxes on the basis of the previous fiscal year. Tax systems of countries are valued according to four parameters: the total tax rate; time spent by business entities on payment of taxes; the number of payments; ease of VAT refunds and adjustments to corporate tax (income tax).

As a result of tax 2017, Ukraine ranked 43rd among 190 countries of the world. For comparison, the rating of other countries with transformational economic systems was: 96th place - Belarus, 51st place - Poland, 13th place - Latvia, 53rd place - Czech Republic, 130th place - China. Increasing the position of Ukraine in the Paying Taxes ranking for ease of taxes paid is possible by increasing the transparency of the tax regulation mechanism, reducing the total tax burden and simplifying the tax administration system.

The level of economic attractiveness of the country, the ability to develop an effective system of financial support for socio-economic development, is clearly reflected in the Doing Business ranking, which shows the ability of individuals and legal entities to conduct economic activity in one or another country. Each of 190 countries is assigned the appropriate position in the rating of favorable business conditions; this means that the higher country's place in the ranking is the more favorable business environment. The position of each country in the ranking determined by ordering collective evaluation obtained in terms of distance from the best mark in the ten directions. Each direction consists of indicators that have an equal value for the indicator. Countries with transformational economic systems are in the ranking on the following positions: Kazakhstan - 36, Belarus - 38, Russia - 35, Moldova - 44, China - 78, Ukraine - 76th place. For further growth of Ukraine in the rating, it is important to improve the regulatory and legal regulation of entrepreneurial activity, which will increase the level of investor confidence and ensure the gradual growth of investments in the country.

**Conclusions.** Fiscal policy is one of the effective instruments of economic regulation and the state's influence on the economic system. Co-ordination of the components of fiscal policy requires the improvement of the quality level of institutional support for public administration and the real economy. Fiscal policy is a significant part of the institution's system of society, improving the financial regulation quality will enhance the institutional changes effectiveness in the financial system and the economic environment. An important task of financial and economic policy is its proper adaptation to changes in the financial relations structure, the influence of exogenous and endogenous factors on economic processes. Systematic investment of financial resources in the accumulation of knowledge systems is a significant feature of the financial systems development in countries with transformational economic systems. This, in turn, contributes to improving the effectiveness of socio-economic transformations.

Further reform of the public finance system is a priority of improving the fiscal policy of countries with transformational economic systems. It aims to

achieve long-term macroeconomic stability. An important task of the government financial institutions is to develop and implement an effective fiscal policy that will provide sufficient financial resources and contribute to economic growth.

At the different stages of the world financial system, the influence degree of state regulation on the rate of economic growth was different. This was due to the chosen model of socio-economic development of the country, the economic policy priorities, the effectiveness of financial and institutional mechanisms for its implementation. Fiscal policy is one of the most important components of state regulation, based on the mechanism of state influence on economic processes. At the present stage, the state financial regulation impact the economic reproduction processes is increasing. The current model of economic development, including American, Western European and Scandinavian models transformed by adapting the tool to stimulate social and economic development, increasing the effectiveness of financial mechanism on economic growth.

Countries with transformational economic systems try to establish a parallel operation and financing of public and commercial organizations in the social sector by implementing the decentralization principle of fiscal policy. They also establish mechanisms of gradual decrease of the structural deficit and public debt, increase the fiscal efficiency of the tax system. At this stage of financial relations, it is necessary to determine areas of economic regulation, fiscal policy priorities based on the fundamental principles of social and economic development in the medium and long term. It is important to raise the level of competitiveness and investment attractiveness of the country's economy for domestic and foreign investors while minimizing the volume of expenditures related to structural transformations of fiscal regulation.

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## **THE FINANCIAL SYSTEM OF UKRAINE FUNCTIONING: INFORMATIO-ANALYTICAL APPROACH**

**Abstract.** *The aim of research is to offer an adequate information analytical approach to monitoring the effectiveness of the functioning of Ukraine's financial system with a wide financial and economic spectrum of action. Theoretical and applied aspects of the essence, purpose and functions of country's financial system in ensuring the development of national economy were considered. It was shown that financial system is interrelated with reproduction process, through it the process of production of GDP is provided, as well as the distribution and redistribution of its value. It was revealed that in other researches of the functioning of Ukraine's financial system, most often as information and analytical basis data on budget resources, budget deficit, public debt, financial sector, banking system are used. It was revealed that the approach to the study of the effectiveness of functioning of financial system based on these indicators is incomplete, fragmentary. The using of national accounts system as an information analytical basis is substantiated to study the functioning of financial system based on reproductive processes and their results. The functioning of Ukraine's financial system with the using of national accounts system was monitored. The data of production of institutional sectors of national economy was provided as the initial stage of analysis of effectiveness of functioning of financial system. The data on the capital account of institutional sectors of Ukrainian economy were considered as a result of processes of reproduction and functioning of financial system the national economy.*

**Key words:** *financial system, GDP, national accounts system, information analytical approach.*

**Introduction.** In the conditions of modern financial and economic transformations in the country, it is important to increase the effectiveness of the financial system, to improve and introduce adequate information and analytical approaches to monitoring the effectiveness of the financial system of Ukraine functioning as an instrument of economic development, ensuring stable rates of reproductive processes.



A wide range of aspects of the financial system functioning was thoroughly investigated by many Ukrainian scholars: O. Vlasyuk [1], I. Davydova [2], M. Lizogub [3], T. Petrova [4], R. Rak [5], O. Tarasova [6], M. Tarasyuk [7], L. Tsyban and L. Zotov [8], I. Shkolnik, T. Vasiliev, C. Leonov [9] and others.

However, internal and external financial and economic challenges constantly encourage research and professional development of issues of economic development, effective functioning of the financial system of the national economy of the country. The problem of building and implementing modern information-analytical approach, system tools to carry out comprehensive monitoring of the efficiency of the financial system is determined by many factors which are linked, which greatly enhances their mutual influence, namely: the fluctuation of the pace of economic development; strengthening of the shadow economy; problems of institutional units of the national economy implementation into official financial and economic circles; an increase of uncertainty and informational asymmetry of financial and economic processes both in the national economy and in the world level, especially in the conditions of strengthening of globalization and financing; the growth of the influence of informal institutions in the conditions of increasing the shadowing of the economy, which has the levers of influence on the adoption of state decisions on the efficiency of the functioning of the national finance and economics, and so on.

In this regard, the purpose of this study is to propose an informational and analytical approach to monitoring the effectiveness of the functioning of the financial system of Ukraine on the basis of the national accounts system, taking into account global processes of standardization and unification of accounting tools for reproductive financial and economic processes.

The research formulates the following tasks of scientific research: to determine the theoretical and applied aspects of the essence, purpose and functions of the financial system of the country in ensuring the development of the national economy; to consider existing approaches and indicators of the financial system of Ukraine of the analysis; to substantiate the application of the informational and

analytical approach to monitoring the efficiency of functioning of the financial system of Ukraine, based on the application of the system of national accounts; to monitor the effectiveness of the financial system of Ukraine functioning on the basis of the proposed information-analytical approach with the use of the system of national accounts.

**Main part.** Finance, financial resources, financial support, the effective functioning of the financial system of any country have a direct link with the course of economic reproduction processes both at the national level and in the global dimension. The effectiveness of the organization and functioning of financial relations in society depends primarily on the capacity of the financial system.

The financial system functioning is extremely complex, multi-faceted, dynamic and controversial, as the finances dialectically combine the coherence and contradiction of the interests of individual subjects [8]. The contradictory nature of financial relations manifests itself in the coherence of all actions of the participants, both from the point of view of individual and public interests, in the interest in GDP growth. Financial contradictions arise both at micro and macro level, since their own revenues always have priority. It needs to be considered at all stages of the reproduction process, in distribution, redistribution, exchange, which is the information basis for developing a targeted financial impact on the pace and proportion of financial and economic development.

The presence of an efficient financial system is an important condition for the functioning of the country's economy. The financial system is quite complex in its structure, the result of which is the implementation of a balance of interests and contradictions in financial policy and economy [7, p. 15].

In Ukraine, speaking about the financial system of the country, traditionally refers to the financial system of the developing country, and investigate a set of certain components with an attachment to the subjects of financial relations: household finances (sub-micro level), finances of business entities, enterprises (macro level), state finances (macro level), international finance (world economy)

and financial market as providing sphere through which the activity of financial system takes place and coordinated, movement of financial resources of national economics/

At first glance, such an approach is entirely justified in view of the well-known definition of the national financial system, as a combination of isolated, but interrelated spheres and parts of financial relations. But with such a purely formal, isolated approach, the relationship between finances, financial resources of the components of the financial system as between themselves and their dependence on the relations formed in society in the course of the movement of the value of the created GDP is not analytically monitored.

An important institution of social development of the present is the financial system, which must adapt to general macroeconomic fluctuations, while remaining an instrument for regulating economic cycles. Questions of the impact of the financial system on the socio-economic development of society require an in-depth study [2, p. 33].

The appointment of finances, financial resources, and therefore all components of the financial system of the country in the process of functioning, is an impact on the processes of social development through the provision of conditions for the creation, distribution and use of GDP in the country. The tasks of functioning of the financial system of the country are determined, first, by the functions of finance, namely, distribution and control functions.

The economic essence of the financial system can be represented as a component of socio-economic development of the country, which consists in using the totality of economic relations in the field of formation, efficient allocation and redistribution of GDP between its individual units, which are determined by the appropriate structure of the system of financial institutions and their interconnections for the purpose of creation proper conditions for balanced economic growth [2, p. 34].

Functioning of the financial system, which is based on the circulation of financial resources, is aimed at creating favourable conditions for social

production. The main tasks that are solved at the same time and reflect the essence of finance as a security public institution are: mobilization and optimal placement sufficient to provide a certain amount of GDP financial resources; achievement of the most effective use of available financial resources on the basis of choice of rational structure of forms of financial support; establishment of the optimal proportion of distribution and redistribution of the produced GDP in order to ensure the needs of citizens, business entities, and the state. At the heart of the functioning of the financial system is the circulation of financial resources. In each new play cycle, they must grow. The financial system and finances are used as indicators of the national economy, increasing the well-being of citizens, limiting negative moments in economic growth. The financial system promotes economic growth by directing financial resources for their most productive use [4, p. 29].

Considering the financial system as a component of the country's development, and the result of its functioning - GDP, we give international statistics on the economic situation in the world (Table 1) [10; 11, p. 523-524]. For comparative analysis, we selected the 3 countries with the highest GDP (USA, Germany, UK) and Ukraine. The data in Table 1 indicate that during the period under investigation, except for Ukraine, there is a positive GDP growth, the highest growth rate of GDP is observed in the United States. The United States is one of the leaders in the global economy and centres of the global financial market, in terms of investment, foreign investment.

Table 1. Gross domestic product of countries of the world (billion dollars, according to purchasing power parity (PPP), 2010) [10; 11, p. 523-524]

| Indexes        | 2012    | 2013    | 2014    | 2015    | 2016    | 2017           |
|----------------|---------|---------|---------|---------|---------|----------------|
| USA            | 15542,2 | 15802,9 | 16208,9 | 16672,7 | 16920,4 | 17301,5        |
| Germany        | 3079,6  | 3094,7  | 3154,4  | 3209,4  | 3271,8  | 3344,5         |
| United Kingdom | 2298,7  | 2345,8  | 2417,5  | 2474,2  | 2522,1  | 2567,2         |
| Ukraine        | 785,6   | 785,4   | 733,9   | 662,2   | 677,5   | No information |

However, comparing countries only with the GDP indicator is a simplistic approach, as all countries have different economies depending on the country's territory, state structure, demographic and social structure of the population, natural resources, etc. Therefore, it is expedient to bring GDP figures per person (Table 2) [10; 11, p. 527-528].

The data in Table 2 show that for the period under study all states except Ukraine have a positive GDP dynamics per person.

Table 2. Gross domestic product per capita in countries of the world  
(Thousands of United States dollars, according to PPP 2010) [10; 11, p. 527-528]

| Indexes        | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|----------------|------|------|------|------|------|------|
| USA            | 49,4 | 49,8 | 50,7 | 52,1 | 52,5 | 53,3 |
| Germany        | 38,3 | 38,4 | 39,0 | 39,3 | 39,7 | 40,5 |
| United Kingdom | 36,1 | 36,6 | 37,4 | 38,0 | 38,4 | 38,9 |
| Ukraine        | 17,1 | 17,2 | 17,3 | 16,6 | 15,5 | 15,9 |

Research by scientists [12, p. 84-88] prove that, for example, among the EU countries, the best in terms of production in 2015 was Poland, and in 2016 - Germany. Germany has the highest level of trade in 2015-2016, the lowest is the United Kingdom. Germany and Great Britain have a stable level of socio-economic development. Ukraine in 2015-2016, at the level of socio-economic development, entered the group of countries with a level of development below the average.

Important international experts believe that Ukraine has significantly increased the risks affecting the economic situation and reduced economic attractiveness. Ukraine has ineffective governance, and therefore an inefficient economy. There are significant financial barriers in the country that hinder the availability of loans. Banks have restricted lending since the global financial crisis has increased the share of non-performing loans, capital markets are poorly developed, the further devaluation of the hryvnia feels pressure. A number of political and economic factors will continue to exert pressure on Ukraine's external financing needs, support from the International Monetary Fund [13; 14; 15].

According to [16, p. 6], in the world financial markets in December 2017, the growth of US stock indices continued, while the fall of the European ones was suspended. The most important factor in the growth of American markets was the approval of the US Congress of Tax Reform, which reduces the tax burden on the corporate sector and promotes acceleration of economic activity. European stock indices were supported by positive macroeconomic statistics and the completion of the first round of negotiations on Brexit. Instead, the growth of European indices is constrained. Investors' interest in the assets of emerging markets persisted but weakened against the backdrop of growing investor interest in the assets of developed countries.

From the above theoretical approaches to the financial system, its essence, purpose, functions and characteristics of the state of development of countries, it is logical to conclude that the financial systems of countries that have positive dynamics of GDP, steady pace of development, operate effectively. But each country has its own financial system, which has its own peculiarities, for example, in its structure and functions, which are caused by many factors: ownership forms, level of economic development of the country, priorities of the ruling elites, etc. In the presence of certain differences and features, financial systems of different countries have a common basis both in the list of individual units, and in the designation of the financial system.

Modern financial systems are complex structures, which are only constituent elements of common economic systems. In addition, along with national financial systems, the global financial system is evolving. The development of financial systems is determined not only by the systematic optimization of the work of their elements and the improvement of the structure, but also by the influence of both external and internal economic transformations. After all, a stable financial system is one of the main elements of sustainable economic development [3, p. 35].

That is, regardless of the level of economic development of the state, the financial system requires continuous monitoring of the effectiveness of its functioning.

When investigating the functioning of the financial system of Ukraine, the most often as information and analytical basis are data on resources of budgets of all levels, budget deficit, public debt, currency system, financial sector, banking system, etc. [1; 5; 6; 9].

In examining, for example, the country's debt situation and its impact on the financial system are based on the data of the debt-to-GDP ratio, the ratio of public debt to GDP, the ratio of the amount of public guaranteed debt to GDP, the ratio of total public debt to GDP, the main quality characteristics of the load state debt to the budget of the country consider the ratio of absolute amount of domestic debt to GDP [9, p. 183, 184, 192].

When investigating the financial system of Ukraine, its problems and prospects of development, the main directions of functioning of the financial system of Ukraine are determined such as the fiscal-tax sphere, the currency market and the banking system, etc. It is proposed to analyse the state of budget execution (structure and dynamics of budget revenues and expenditures), state debt (structure and dynamics), the situation in the foreign exchange market (exchange rate of hryvnia) and the state of the banking system. Researchers believe that the most painful problem of the financial system of Ukraine in recent years is the state debt. Based on the analysis, it is summarized that the imbalance in the sphere of public finances is due to the inconsistency of the current system of distribution of financial resources with the revenue resources of the state budget, which urgently needs to be optimized for budget expenditures. In the framework of improving debt policy, it is expedient to use more actively alternative ways of managing public debt using financially-linked GDP. Support for the stability of the banking system should include such steps as the attraction of additional liabilities in the banking system, preferably long-term and in national currency [1].

In studying the problems of the financial system of Ukraine in the context of the globalization of international financial and economic cooperation, integration is considered: in the budgetary sphere, as relations arising in the process of borrowing from subjects of the international financial market (or granting of

loans); the stability of the financial system in the monetary sphere, which is measured by such indicators as the dynamics of inflation and the level of monetization of the economy; the market of financial services, which form the proposals of financial corporations - deposit (national and commercial banks, credit unions) and non-depository (non-state pension funds, joint investment institutions, investment funds, insurance companies). The researcher characterizes the position of the financial system of Ukraine as follows. Among the objective internal problems, it is necessary to emphasize: a) the critical state of the real sector of the economy, the weak development of the financial market; b) inconsistency of domestic legislation with international standards; c) the existence of a significant debt load and so on. The financial system of Ukraine is excessively sensitive to internal crises (political and economic), as well as fluctuations in international capital markets, the impact of speculative operations of individual financial market actors [5].

The team of researchers of the problems and perspectives of the development of the financial system of Ukraine emphasizes the fact that one of the important aspects of the problem of developing an effective financial system is the use of banking institutions for lending to related parties and the legalization of the proceeds received illegally. The banking system should create stabilization mechanisms that would ensure the formation of adequate capital, maintain enough liquidity and reserves to cover risks through active operations, stimulate the introduction of innovations as the basis for the efficiency and competitiveness of banks. The level of budget deficits may be influenced by factors such as tax revenues, current government expenditures, GDP and public debt. Tax revenues and current government expenditures have a weak correlation with the budget deficit, and consequently, an increase in the number of taxes and fees, increases in their rates will not contribute to reducing the budget deficit, as well as reducing current expenditures. There is a close link between GDP, public debt and budget deficits. The link between the factors is strong, which indicates that if the annual



volume of nominal GDP and public debt varies, this greatly affects the level of budget deficit [9, p. 5-7, 295].

Investigating fiscal policy and budgetary security in Ukraine, the scientist determines that financial policy is part of the financial system, which is part of the economic system of the state, which characterizes the activity of state authorities for managing the financial system, whose purpose is to influence the reproduction and satisfaction of the needs of society. Therefore, the following factors are considered: high level of public debt, significant deficiency of the state budget, inflation-devaluation fluctuations. In Ukraine, the effectiveness of information resource management is becoming more and more important [6].

But, in our opinion, these approaches to the analysis of the financial system of the country reflect certain indicators, fix the consequences – not the factors, that is, they are non-systemic. An overview of scientific achievements shows that the most controversial issues of the functioning of the financial system of the country were and still remain issues, firstly, of the effective implementation of the reproductive function, which is ensured by the mobilization and optimal allocation of financial resources, methods of transfer of financial resources; provision of liquidity and risk management; the formation of reliable and transparent information support. Secondly, the effective implementation of the distribution function of the financial system is ensured by the allocation of resources between the private and public sectors; ensuring a fair and transparent distribution of income in society; the implementation of an optimal redistribution of income; eliminating imbalances. Third, ensuring the effective implementation of the control function is implemented by introducing monitoring of the effectiveness of the functioning of the financial system of the country based on the information-analytical approach with the use of the system of national accounts, where all consecutive accounts quantitatively and qualitatively characterize the entire spectrum of reproductive financial and economic processes.

The indicators used to analyse the functioning of the Ukrainian financial system do not disclose full information about the financial resources of the national

economy, as they are fragmentary, isolated indicators extracted from the context of all stages of the reproduction cycle. Thus, the implementation of the revenue part of the budget depends on a series of factors: GDP, distribution (primary distribution, secondary) and use of income, etc. In other words, the revenue side of the budget is affected by the level of primary incomes from which taxes are paid and which ensure consumption, at the expense of which the incomes of enterprises and organizations are formed, which in turn is also the basis of budget revenues. Secondary distribution provides the population with resources, the volume of which increases the level of consumption. That is, official incomes are rising, revenues of all institutional units are increasing in the budget. The growth of budget revenues provides both an expenditure part and a decrease in borrowings. In turn, primary and secondary incomes affect both the level of consumption and the level of savings, the financial market, and in its composition and the banking system, only accumulate and redistribute financial resources of institutional units of the economy. Therefore, we believe that considering the budget, budget deficit, public debt, the functioning of the financial sector, the banking system in the study of the functioning of the financial system is a very simplistic approach, because these indicators are the result of the process of reproduction processes.

At present, it is necessary to improve theoretical and methodological principles of functioning of the financial system, deepening the disclosure of its economic essence as a significant component of economic growth, strengthening the relationship of financial regulation with the dynamics of social development; definition of promising directions for improving the financial system, taking into account the leading experience of developed and transformational economies, tasks of socio-economic development of the country, modern macroeconomic trends [2, p. 33].

Therefore, today, in our opinion, it is important not only to form and offer a single set of financial and economic information and analytical data, which characterize both the development of each country and the efficiency of functioning of the financial system of the country, but also to interconnect them

into a system that will allow Identify factors and their impacts on processes that are subject to evaluation. First of all, such a system of indicators should be formed on the basis of certain principles [12, p. 83]: a system approach; the unity of the methodology for constructing key indicators and their comparability with similar indicators in other countries; providing an integrated approach to assessing the country's financial and economic development, that is, coverage of all significant components and development factors; ensuring the adequacy of indicators for the real state of the studied object; availability of indicators; unambiguous interpretation of the indicators of economic and financial development; transparency of the constructed system of indicators, convenience for practical use, conciseness, that is, orientation to a set of important primary indicators.

In response to the current challenges of the development of economic relations, the improvement of the financial system for the effective performance of the tasks of economic development of Ukraine, we propose, as an information and analytical basis for monitoring the functioning of the financial system of the country, to use the system of national accounts (SNA).

The circulation of financial resources in the reproduction process reveals the system of national accounts. That is, the system of national accounts is an informational and analytical tool for a broad financial and economic spectrum of action, and therefore, the use of which indicators of GDP, revenues - gross profit and mixed income, gross disposable income, gross savings, etc., and the processes that accompany them, that is generation of income, distribution of primary income, secondary distribution of income, use of income and accumulation - quantitatively and qualitatively characterize the entire spectrum of reproductive financial and economic processes [10; 17].

The expediency of introducing a system of national accounts as an information and analytical basis for monitoring the effectiveness of the functioning of the financial system of the country is also due to the growing role of information and communication technologies in production processes, the globalization of national economic systems and social reforms, as well as the need to harmonize the

methodology with other international standards and guides in the field. macroeconomic statistics, with statistics on public finances, monetary statistics and statistics of the balance of payments. As has been repeatedly noted by many official sources [10; 18; 19; 20] and was given by domestic researchers [17; 21], the international standard of the SNA contains a description of new economic phenomena, details definitions, concepts, questions that attract the greatest attention of analysts. The purpose of applying the system of national accounts as an information and analytical basis for monitoring the effectiveness of the functioning of the financial system of the country is to update the methodology of national accounting in accordance with the current level of development of the financial and economic environment, the progress of methodological research and user needs; priority consideration of issues that affect the volume and structure of GDP as a general macroeconomic indicator. National accounts provide a generalized description of economic activity based on the use of comprehensive, clearly structured and adequately detailed statistical information, provide important data for the policy development of the Government, the executive authorities, the National Bank, research organizations and entrepreneurs to assess and forecast the economic, financial, social and other analysis. The data of national accounts is the basis for the formation of expert assessments, forecasting economic growth, estimates of tax revenues, monetary policy, etc. National accounts also provide European and international comparability.

That is, the purpose of using the system of national accounts as the basis of the information-analytical approach for monitoring the effectiveness of the functioning of the financial system of Ukraine with a broad financial and economic spectrum of action is to provide a complete quantitative and qualitative picture of the financial and economic situation in the country, the use of structured and detailed statistical information for the analysis of not only indicators, but also factors, determination of losses, leakages, injections, reserves, prospects of national development.

The account of the production of the institutional sectors of the country's economy as the initial stage of the analysis of the cycle of functioning of financial resources in all forms (financial, material) of the subjects of the national economy, and hence of the financial system, makes it possible to determine the volumes of resources involved in the processes of GDP creation (tab. 3).

The data in Table 3 shows that the most active participation in the processes of GDP is taking the resources of non-financial corporations and households. According to [22, p. 4], during the last half of 2017, no significant changes have taken place in the macroeconomic environment. Economic growth was slow, however, consumer and investment demand were rapidly recovering. That is, based on information [22; 23], we can conclude that the financial and economic situation in Ukraine is stabilizing and gradually aligning, which opens positive prospects for the national economy and the financial system.

Table 3. The account of production of institutional sectors of the economy of Ukraine for 2012-2017 (in actual prices, million UAH) [10]

| Indicators                    | Nonfinancial corporations | Financial corporations | General government sector | Households | Non-profit organizations serving households | Whole economy |
|-------------------------------|---------------------------|------------------------|---------------------------|------------|---|---------------|
| 2012                          |                           |                        |                           |            |   |               |
| Resource                      |                           |                        |                           |            |   |               |
| Total issue (in basic prices) | 2331305                   | 98393                  | 290718                    | 421011     | 9226  | 3150653       |
| 2013                          |                           |                        |                           |            |   |               |
| Resource                      |                           |                        |                           |            |   |               |
| Total issue (in basic prices) | 2299464                   | 104834                 | 304374                    | 469787     | 11099                                       | 3189558       |
| 2014                          |                           |                        |                           |            |   |               |
| Resource                      |                           |                        |                           |            |   |               |
| Total issue (in basic prices) | 2435632                   | 115273                 | 307820                    | 484536     | 10766                                       | 3354027       |
| 2015                          |                           |                        |                           |            |   |               |
| Resource                      |                           |                        |                           |            |   |               |
| Total issue (in basic prices) | 3075741                   | 105376                 | 366993                    | 627293     | 13838                                       | 4189241       |
| 2016                          |                           |                        |                           |            |   |               |
| Resource                      |                           |                        |                           |            |   |               |
| Total issue (in basic prices) | 3759145                   | 104685                 | 429010                    | 748944     | 16510                                       | 5058294       |

| 2017                          |         |        |        |        |       |         |
|-------------------------------|---------|--------|--------|--------|-------|---------|
| Resource                      |         |        |        |        |       |         |
| Total issue (in basic prices) | 4628384 | 117954 | 582567 | 904790 | 21702 | 6255397 |

The capital account of the national accounts system as the final stage of the financial system's functioning cycle and the result of the reproduction processes makes it possible to determine which sectors have financial resources (savings) to further invest in their activities or activities in other sectors (Table 4).

Regarding the financial capabilities of economic entities, Ukraine for the analysed period is the borrower of external resources, because of lack of internal resources of institutional sectors. Households remained a stable domestic lender, except in 2016 (Table 4).

Table 4. Capital account of the institutional sectors of the Ukrainian economy for 2012-2017 (in actual prices, million UAH) [10]

| Resource                           | Non-financial corporations | Financial corporations | General government sector | Households | Non-profit organizations serving households | Whole economy |
|------------------------------------|----------------------------|------------------------|---------------------------|------------|---|---------------|
| 2012                               |                            |                        |                           |            |   |               |
| Net lending (+), net borrowing (-) | -173860                    | -4709                  | -59602                    | 150234     | 678   | -87259        |
| 2013                               |                            |                        |                           |            |   |               |
| Net lending (+), net borrowing (-) | -159571                    | -2163                  | -47552                    | 110888     | 421   | -97977        |
| 2014                               |                            |                        |                           |            |   |               |
| Net lending (+), net borrowing (-) | -24823                     | 9316                   | -37053                    | 27868      | 381   | -24311        |
| 2015                               |                            |                        |                           |            |   |               |
| Net lending (+), net borrowing (-) | 25037                      | -6302                  | -6527                     | 15096      | 491   | 27795         |
| 2016                               |                            |                        |                           |            |   |               |
| Net lending (+), net borrowing (-) | -206                       | -332                   | -45771                    | -12410     | 346   | -58373        |
| 2017                               |                            |                        |                           |            |   |               |
| Net lending (+), net borrowing (-) | -143190                    | 38725                  | -25159                    | 62698      | 2117  | -64809        |

With the help of redistributive processes, an equilibrium between savings and investments can be achieved. The redistribution of resources, the formation of the final resources of economic entities, their foreign economic activity and the formation of incomes is carried out through the financial and credit mechanism, which in Ukraine is most represented by the developed banking system.

According to [22, p. 4], 2017 was a success for the banking system: it has become more stable and better capitalized. Banks have become profitable again, have stable funding, after a three-year pause, people and businesses began lending. At the same time, slow structural changes in the economy, low efficiency of state banks and the weakness of the legal system remain significant obstacles to its development. These factors reduce the efficiency of redistribution of financial resources and impede the restoration of lending.

Mighty domestic resource of the national economy is the savings of the population, which are accumulated and redistributed by the financial market as a security sector of the economy. As we see (Table 4), in 2016 Ukrainian households become significant borrowers of resources, which is conditioned by several factors, both financial and economic, as well as institutional, and political, etc. Based on these data, the loss-making activity of the banking system of Ukraine becomes understandable, which has repeatedly been stressed by the NBU [23]. These data also explain the state of gross external debt of Ukraine, since almost all institutional units of the national economy do not have internal resources for redistribution and further inclusion in the next cycle of reproduction. Therefore, Ukraine is a borrower of resources of another world.

Analysis of the creation, distribution, redistribution, use and accumulation of financial resources of the financial system of the national economy in the context of all institutional units with the use of the system of national accounts is the information and analytical basis for the study of the financial system, increasing the efficiency of its functioning for all institutional units of the national economy, that is, for households both business and state.

**Conclusions.** The results of the study made it possible to draw the following conclusions. The theoretical and applied character is a feature of financial science, which has not only to form theoretical concepts and models of finance, to investigate financial phenomena, but also to serve the practical needs of regulation of social relations, to improve financial practice, to carry out financial and economic transformation of the formation, effective functioning and development of the national financial system.

In the context of strengthening European integration processes, an important task is the effective functioning of the national financial system in order to ensure macroeconomic stability and stimulate financial and economic growth.

The use of comprehensive, clearly structured and adequately detailed financial and economic information on the state of development of the economy on the basis of the system of national accounts will help to reduce the asymmetry of information in all institutional units, and thus to make the functioning of the financial system transparent. Monitoring the effectiveness of the functioning of the financial system of the country based on information-analytical approach with a broad financial and economic spectrum of action with the use of the system of national accounts will provide a comprehensive analysis of financial and economic circle, reproductive processes and their results.

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## **PECULIARITIES AND PROSPECTS FOR DEVELOPMENT OF POPULATION LENDING IN UKRAINE**

***Abstract.*** *The article is devoted to the study of trends, features and prospects of lending to the population in Ukraine. The structure of loans granted to the population according to various features, volume of non-working loans is analyzed. The advantages of the Law "On Consumer Lending" for borrowers are determined. The main measures to increase public confidence in the banking system have been improved. The directions of development of lending of households in Ukraine are offered.*

***Key words:*** *lending to the population, consumer lending, purposeful use, problem debt, financial ombudsman.*

**Introduction.** The banking system of Ukraine in recent years is under the influence of significant shocks that operate systematically from three sources: external military-political; internal structural and economic; as well as

macroeconomic shocks [1]. As in Ukraine, most people today are not able to buy durable goods at their own expense, while domestic banks are in difficult conditions of operation, the issue of studying the peculiarities and prospects of lending to the population by banking institutions is relevant.

Bank loans are directed at the population both for productive purposes and for social needs, in the form of expenditures on human capital (education, health care, tourism, culture, etc.); on the main non-productive assets (life-supporting real estate); on consumer products, thus activating the development of the economy, stimulating investment growth, facilitating the process of sales of products and services, accelerating the profitability of enterprises and increasing revenues to the state budget [2].

In particular, the works of many domestic authors is devoted to bank lending in general and to lending to the population, in particular: O. Vasyurenko, L. Galkov, A. Galchinsky, S. Ilyashenko, V. Lagutin, O. Lavrushin, M. Savluk, O. Stoiko, V. Khodakivska, V. Shilo and others. The scientific papers of the aforementioned scientists present a modern organization of lending in the economy, as well as problems in its implementation. While paying tribute to the scientific work of scientists on this issue, it should be noted that there is a need for further elaboration. This is due to a number of separate issues, as the state, forms and mechanism of bank lending to the population change with each passing year and new problems arise that need to be addressed and investigated.

**Main part.** Lending is the most widespread type of banking in the developed world. It satisfies the needs of the population, increases the standard of living of households, and also partly smoothes the social imbalance of society. Lending to individuals affects the development of the national economy, and in particular contributes to the formation of solvent demand, which facilitates the process of product sales, accelerates the receipt of profits and the receipt of revenues to the state budget. It is this kind of loan that is the decisive stimulating factor in the intensification of economic development [3].

Under bank lending, the population understands the form of economic relations between banks and individuals, the essence of which is to obtain additional funds to meet the personal or collective needs of households on the basis of reciprocity, pay, voluntary.

In the conditions of negative influence on the activity of domestic banks, the consequences of events caused by military actions in the East of the country and the annexation of the Autonomous Republic of Crimea, the tendency of deterioration of the structure and quality of their loan portfolios attracts particular attention. The increase in the structure of loan portfolios of banks of the share of problem debt leads to a loss-making financial result and a decrease in the level of capitalization of banking institutions. Lending to households and legal entities is a priority economic function of banks. The economic situation in the country and the level of development of all spheres of economic activity depend to a large extent on how banks effectively realize their lending functions.

As of 01.01.2019, the number of operating banks amounted to 77 institutions, of which 37 - with foreign capital (48.0%), including 23 (or 29.8%) with 100% foreign capital [4]. In recent years, the crisis has been the expansion of state banks, the share of their authorized capital is 40%, Ukrainian private banks - 10%. The market for assets is 59% owned by banks with foreign capital, of which 15% are banks with Russian capital. State banks control 28% of assets, banks with private Ukrainian capital - 13% [4]. Figure 1 provides information on the volumes of loans granted by Ukrainian banks to the corporate sector and households.

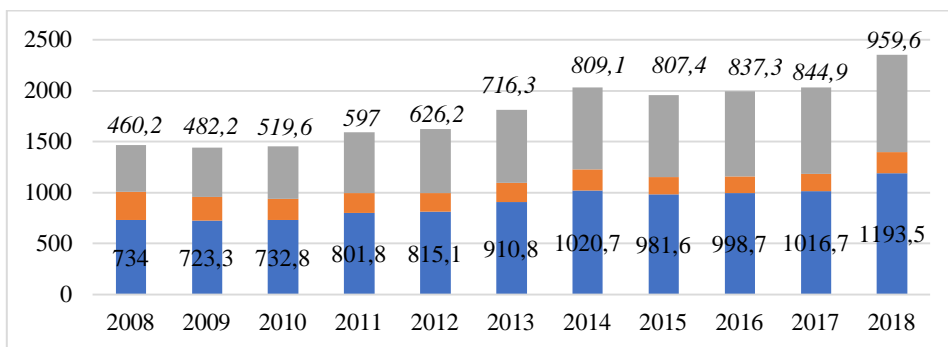


Fig.1. Structure of bank loans for households for 2008-2018, UAH billions, compiled on the basis of [4]

Figures 1 clearly show that loans to corporations in Ukraine for 2005-2018 amounted to an average of 62% -83%. The highest level of lending to corporations accounted for 2018 - 959.6 million UAH. or 83.1% of the total amount of loans. For eleven years (2008-2018), the share of loans to the corporate sector has steadily increased, despite the crisis waves of the functioning of the country's economy.

Unlike loans to the corporate sector, loans to households in Ukraine had a clear downward trend throughout the analysis period. Thus, in 2008, the volume of loans to the population amounted to 273.8 million UAH. or 37.3%, as of 01.01.2019, UAH 202.2 mln. or 16.9%. The largest volume of loans to households was provided in 2008 - UAH 273.8 billion, which was 37.3% of total loans. During 2008-2018, the volume of loans to the population decreased by 26.1%.

Table 1 shows the dynamics and structure of consumer loans for households by terms in the dynamics for 2005-2018.

Table 1

Structure of loans to households for 2008 - 2018 by terms of provision, UAH billions, compiled for [5]

| Year | Total loans to households | Including consumer loans |              |                   |                   |
|------|---------------------------|--------------------------|--------------|-------------------|-------------------|
|      |                           | Total                    | Including    |                   |                   |
|      |                           |                          | up to 1 year | from 1 to 5 years | more than 5 years |
| 2008 | 273,8                     | 186,1                    | 25,1         | 61,9              | 99,1              |
| 2009 | 235,3                     | 137,1                    | 19,2         | 40,6              | 77,3              |
| 2010 | 204,4                     | 123,0                    | 23,1         | 32,3              | 67,5              |
| 2011 | 196,2                     | 126,2                    | 32,3         | 37,3              | 56,5              |
| 2012 | 183,1                     | 125,0                    | 35,9         | 41,7              | 47,5              |
| 2013 | 188,5                     | 137,4                    | 50,9         | 47,6              | 39,0              |
| 2014 | 206,7                     | 135,1                    | 51,8         | 40,9              | 42,4              |
| 2015 | 170,8                     | 104,9                    | 33,3         | 29,5              | 42,1              |
| 2016 | 160,0                     | 101,5                    | 34,3         | 27,9              | 39,4              |
| 2017 | 170,2                     | 122,1                    | 42,6         | 45,3              | 34,2              |
| 2018 | 202,2                     | 136,8                    | 61,2         | 40,5              | 35,1              |

As can be seen from the indicators presented in Table 1, the emergence of adverse economic conditions of the situation led to a decrease in lending activity of

domestic households and a change in the structure of provided consumer credits. Thus, in the structure of consumer loans provided by banks to households, long-term loans (over 5 years) were gradually yielded by short-term loans (up to 1 year): in 2008, long-term loans accounted for 53.2% (UAH 99.1 million), while short-term loans of 13, 4% (25.1 million UAH), then in 2018 the share of long-term deposits accounted for 25.6% (UAH 35.1 million), loans to one year - 44.7% (UAH 61.2 million .) On average, consumer loans account for 30-35% of the total consumer loans to households. This is confirmed by the fact that due to the unstable political and economic situation in the country, and banks are cautious and households are afraid for a long time to raise funds for their needs.

In 2018, consumer loans totaled 74.3% of the total loans granted to households by banks. At the same time, the share of loans for the purchase, construction and reconstruction of households decreased to 25.7%, and the share of mortgage loans decreased to 24% [5]. Indicators of arrears on loans according to the NBU [5] are presented in Table.2 .

Table 2

Indicators of overdue loans for loans during 2012-2018

| Indicator  | 01.01.2013 | 01.01.2014 | 01.01.2015 | 01.01.2016 | 01.01.2017 | 01.01.2018 | 01.01.2019 | Change, % |
|--|------------|------------|------------|------------|------------|------------|------------|-----------|
| Loans, million UAH   | 815 327    | 911 402    | 1 006 358  | 965 093    | 1 016 697  | 1 090 914  | 1 193 558  | + 31,6%   |
| The share of overdue loans for loans in the total amount (non-working loans),% | 8,9        | 7,7        | 13,5       | 22,1       | 53,7       | 54,54      | 52,85      | + 43,95%  |

Based on Table 2 data, it can be concluded that the share of overdue loans for loans in the total amount has steadily increased from 2013: from 7.7% to 54.54% in 2017 - the highest figure for the last seven years. In general, against the background of growth of 31.6% of the total volume of granted loans, the share of unemployed increased in 2012-2018 by 43.95%.

According to financial analysts, Ukrainians take loans for the following reasons: renovation of an apartment or house - 42% of loans; payment services - 12%; for the purchase of equipment - 10%; to cover loans in another bank and to repay other debts - 7%; for business development - 5%; 4% of loans are issued when there is not enough money to pay; the remaining 20% relate to other expenses (this often includes the costs of important events in life: weddings, births, funerals, travel abroad, etc.) [6]. These data are strongly influenced by other factors, namely seasonality, age and gender of borrowers, qualifications and industry where borrowers work, etc.

It should be emphasized that in today's conditions for banks of Ukraine an important task is to strengthen their interaction with the real sector of the economy, increase of competitiveness on the domestic and foreign financial markets.

Given these circumstances, each commercial bank must, when formulating a credit policy, which is determined on the basis of both external and internal factors, as a necessary condition for the implementation of credit relations to form its loan portfolio, based on its capabilities. It is about taking into account availability of resource base, financial stability, liquidity, as well as taking into account the need to resolve such a dilemma as "profitability-risk".

Recall that in order to promote the restoration of public confidence in the banking system and fulfillment of Ukraine's obligations under the Association Agreement with the European Union, on 15.11.2016 the Rada of Ukraine adopted the Law of Ukraine "On Consumer Lending" [7], which entered into force on 10.06. 2017.

One of the innovations of the Law is to clarify the requirements for advertising consumer loans. Thus, in addition to the requirements of the advertising law, consumer credit advertising should contain standard information on the maximum amount for which a loan may be issued, the real annual interest rate (total consumer expenses, expressed as a percentage of the annual amount of the loan), the maximum period for which a loan is issued, and in some cases also the amount of the first installment [7].



In addition, the Law does not explicitly prohibit advertising in the advertisement that a consumer loan may be provided without documentary evidence of the borrower's creditworthiness or that the loan is interest-free or is granted zero interest. It should be noted that the total cost of a consumer loan, in accordance with the Law, does not include penalties for failure to fulfill obligations by the consumer, all taxes and compulsory payments paid for the goods, work or services purchased, as well as the cost of additional and related third-party services associated with obtaining a loan. This makes the total cost of a consumer loan, which must necessarily be announced in advertising, smaller, and therefore, the loan itself becomes more attractive.

The very fact of adopting a special law on consumer lending is already a significant development for the financial sector and consumers. The innovations introduced in the Law and the specification of already existing rules are aimed at protecting the rights of both consumers and lenders. They can become a solid basis for regulating legal relations in this area, provided that, at the level of the by-laws of the NBU and the National Financial Services Commission, the conditions of the activities and responsibilities of credit intermediaries will be properly detailed, as well as detailed rules and rules for assessing the creditworthiness of consumers [7].

As the banking system is a key element of the economy, which must make settlements between individuals, economic entities and the state, ensure the attraction of depositors' funds, their further provision to borrowers as credit resources and timely calculation with both borrowers and depositors. This is contributed to increase their confidence in banks and transparency in the activities of the National Bank.

The level of trust in banks and the banking system in Ukraine is at an unacceptably low level. As for the I half of 2018, 77% of citizens do not trust banks, 44% of them absolutely do not trust. And only 8.8% of the population has open deposits in banks [7]. An important reason for the loss of confidence is the insecurity and lack of awareness of borrowers on the loan.

The restoration of the reputation of the financial sector and the credibility of the population requires the coordinated work of all participants in the financial sector and state institutions. It is extremely difficult to build a system of public confidence in banking institutions. But his decision depends on the understanding that restoration of confidence - this movement is not one-way. In order to restore confidence, consumers, financial institutions must serve citizens, above all, honestly and transparently [8].

The reason for total mistrust and the fact that the financial sector is perceived as a whole. Confirmation of this is, for example, the answer to the question of which body carries out the procedure for liquidation and sale of the bank's property: 54% of the polled Ukrainians replied that it is the NBU and 26% - that is the Deposit Guarantee Fund of a physical person. Therefore, the level of mistrust is the same for all financial sector entities: both state and non-state [8].

Both parties, both consumers and financial institutions, will benefit from the new rules of the game on the consumer lending market. In particular, regulators of the financial market (NBU, NCSSFR, NSC) must obtain the necessary powers and instruments of enforcement (checks, violations of cases, fines, etc.) for violating consumer rights [8].

**Conclusions.** In our opinion, in order to overcome the problems connected with lending to households and development of development, first of all, consumer lending in Ukraine, it is necessary:

1) ensure the preservation of qualitative indicators of the loan portfolio with an intensive increase in its volume;

2) to improve the regulation of credit relations between creditors and borrowers regarding the maintenance of consumer loans and to develop mechanisms that will make it impossible to lend to individuals without information about their real rather than nominal income;

3) implement a policy of stabilizing economic and political situation in the state, and implement measures to ensure favorable conditions for raising incomes;

4) to improve the state legislation on the regulation and control of the activities of financial intermediaries. In addition, it is necessary to increase the financial literacy of the population, and, consequently, the trust in commercial banks;

5) the establishment of a financial ombudsman institution - an official, which is entrusted with the functions of control of the observance of the legitimate rights and interests of individual borrowers in the activities of the executive authorities of the authorities and officials.

The introduction of proposals submitted in our opinion, in our opinion, will allow to improve and develop the system of crediting households with banks' institutions; will enable commercial banks to organize their activities in accordance with an integrated system of credit operations and credit risks.

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## **THEORETICAL AND METHODOLOGICAL FRAMEWORK OF ACCOUNTING AND ANALYTICAL SUPPORT FOR SUSTAINABLE DEVELOPMENT STRATEGY**

**Abstract.** *In the article, the theoretical and methodological foundations of accounting and analytical support of the enterprise strategy in the concept of sustainable development are investigated. The essence of the concept of “sustainable enterprise development strategy” and its significance in the context of globalization of the economy and access to international commodity, resource and financial markets has been analyzed. The content and structure of accounting and analytical support for the strategy of sustainable development of the enterprise is justified. Structural-logical scheme of procedures for developing strategies for sustainable development of the enterprise has been proposed. The model of accounting and analytical support for the strategy of sustainable development of the enterprise has been developed. Information support for setting goals for sustainable development strategies in the context of sustainability factors has been improved.*

***Key words:** accounting and analytical support, sustainable development strategy, sustainable development drivers, information, non-financial reporting*

**Introduction.** In a globalizing economy and gaining access to international commodity, resource and financial markets, positive trends are apparent in recognition of the need to ensure sustainable development of companies by the management and governance. Due to an explosion in the demand from investors and shareholders regarding the activities of companies in the area of sustainable development, are becoming more demanding the requirements for openness and transparency in the business activities, quality and completeness of the information disclosed. In order to bridge the information gaps, a growing number of companies use non-financial data, resulting in various forms of non-financial reporting on the policies they implement in relation to social information, environmental protection, sustainable development, corporate social responsibility, etc. However, the increased information disclosed by an company cannot solve the problem of information gaps. The major groups of stakeholders are unable to take a holistic view of the ways an company creates economic value, as well as to provide a way to evaluate the extent to which such reporting contribute to the sustainable development.

In foreign scientific literature, sustainable development is one of the most relevant issues studied at both macro and micro levels. H. Daley, D.H. Meadows, C. Holling, J. Forrester, A. Enders, J. Elkington, have made a significant contribution to understanding the importance of environmentally and socially oriented economy. Basically, at the economic entity level, only a few selected aspects of sustainable development, rather than complex issue of its implementation are considered. In fact, the sustainable supply chain management (C. Carter, S. Matos, D. Rogers), the effective relationships with all stakeholder groups in the implementation of sustainable development (R. Freeman, K. Fussler, T. Holmes, D. Ellington), the impact of sustainable development on business operations (P. Kleindorfer, C. Corbett, C. Singal), as well as the development of systematic indicators to monitor the level of sustainable development (G. Azzone,

R. Welford, R. Hines, A Warherst et al.) constitute the most relevant areas of the research.

In national scientific literature, theoretical aspects of sustainable development at both macro and micro levels are studied by: L. Vasileva, L. Hryniv, M. Zhurovskyy, N. Shandova, P. Kamynskyy, V. Kuzmenko, A. Syzonenko, M. Fomina [1-8] et al. In the areas of accounting and analytical support and integrated sustainable development management, the research conducted by: V. Yevdokimov, S. Lehenchuk, D. Hrytsyshen, O. Baryshnikova, N. Lokhanova, R. Kostyrka, N. Iershova et al. [9-12] should be highlighted. The need for scientific and practical elaboration of an integrated approach to informational and analytical support for sustainable development has determined the relevance and focus of this study.

**The objective of this article** is to define sound conceptual foundations for the theoretical and methodological framework of accounting and analytical support for the business strategy based on the concept of sustainable development.

**Research tasks:** "sustainable development strategy" concept definition and its significance; the content and structure of accounting and analytical support for sustainable development strategy analysis; the structural and logic diagram of the steps in the sustainable development strategy elaboration building; Accounting and analytical support model for sustainable development strategy formation; improving information supply for setting out the sustainable development strategy objectives in terms of sustainability factors.

**The theoretical and methodological framework** of the research includes fundamental concepts in the area of accounting, economic analysis, strategic management and the theories of sustainable development. A systematic approach through the general scientific methods of analysis, synthesis, comparison, generalization, grouping was adopted to study the aspects of sustainable development strategy. The empirical study was conducted through the questioning.

**The practical significance of findings** of this research is that the suggested accounting and analytical support model for sustainable development strategy will enable

business entities to take decisions on the basis of up-to-date information in terms of the sustainability factors. The elaboration of sustainability reporting guidelines would allow for comparability of its formats, ensure data consistency and analytical support for sustainable development strategy, as well as be applied in the analysis and evaluation of the stability of economic entities, resulting in the improved diagnostics and sustainable development management.

**Discussion.** The concept of "sustainable development" first appeared in the report "The World Strategy for the Conservation of Nature" on the initiative of UNEP (United Nations Environment Programme) presented by E. Balfour and V. Jackson in 1980. However, the concept has become a vivid expression in academic setting following the publication of report "Our Common Future" by the United Nations International Commission on the Environment in 1987. Today, the concept of "sustainable development" is one of the underlying concepts of philosophical and interdisciplinary research field used in different areas of human activity, therefore, its definition has various interpretations [13].

Theoretical framework of the concept of sustainable development lies in the theory of equilibrium, which has got widespread in socioeconomic sciences, including in the economics. The report of the Sustainable Development Board of the National Academy of Sciences of the United States "Our participatory development: moving towards sustainability" emphasizes that the value of the concept is in attempting to match the real contradictions between the economy and ecology, as well as between the present and the future. This theory is based on the principles according to which the major driving force in the development is an equilibrium between the subject of development and its environment; that any development is aimed at achieving equilibrium. Thus, any company can be considered as a unity, the combination of equilibrium (stability) and change (development) [14]. The use of the concept of sustainable development at the micro level has required changes in the approach to the determination of an appropriate management methodology and the ways to achieve the final results, as well as made it necessary to develop working strategy.

At determining the concept of "sustainable development strategy" in scientific research, various approaches are highlighted. Vyshnyakova A.B. has defined this concept as follows: "Sustainable development in an production plants is defined as a complex of economic, social, political and other activities, enabling the modern production plants to resist the constantly changing conditions, as well as to accurately predict and reasonably plan its activities on the basis of the internal development capacity [15]. Yefimov O.V. has noted that: "Sustainable development is a long-term strategy based on the assessment of interaction and integrated management of the most important financial and non-financial value drivers of the company (economic, social and environmental) in order to ensure the long-term sustainability [16].

From our opinion, the sustainable development strategy is the result of a comprehensive studies on both internal and external capacity reflected in financial and non-financial indicators for each individual company. The effectiveness of management decisions on the implementation of this strategy is determined by the reliability and timeliness. Within the framework of the research topic "Theoretical and methodological framework for the Integrated Management Information System Development" (№ ДР 0117U004814), we have conducted a survey among the top managers and other executives of production plants on interpreting the significance of information for management purposes (Fig. 1).



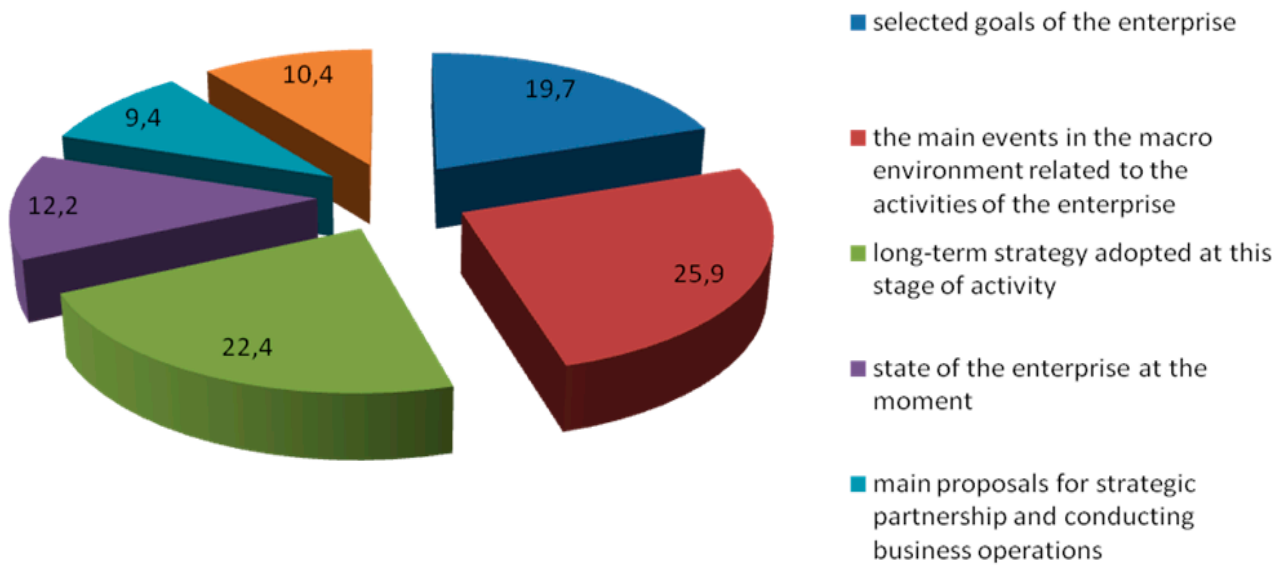


Figure 1. The results of the survey among the top managers and other executives of production plants on interpreting the significance of information for management purposes

Source: author's development

The majority of respondents stated the significance of information for the purpose of highlighting macroeconomic events concerning the business activities (25.9%), as well as information on the long-term strategy adopted at this stage of the business activities (22.4%). the information on the defined objectives of companies is required by 19.7% of the interviewed top managers and other executives of production plants. the information reflecting the current state of the company is required by 12.2% of the respondents and the main proposals for strategic partnership and business operations is required by 9.4% of the respondents, respectively.

The sustainable development strategy provides for:

- drivers of sustainable development definition;
- understanding of the potential risks and opportunities specific to the business strategy and the competitive environment;

- introduction of the sustainable development principles in the business activities and the use of innovative approach in product development;
- periodic strategy updating based upon the current environmental and social factors.

The above mentioned steps are promoting the sustainable development management system formation, including the appropriate structure, programme, principles of interaction and communication of the company, etc.; as well as the key performance indicators based upon the management system. The structural and logic diagram of the steps in the sustainable development strategy elaboration is presented in Fig. 2.

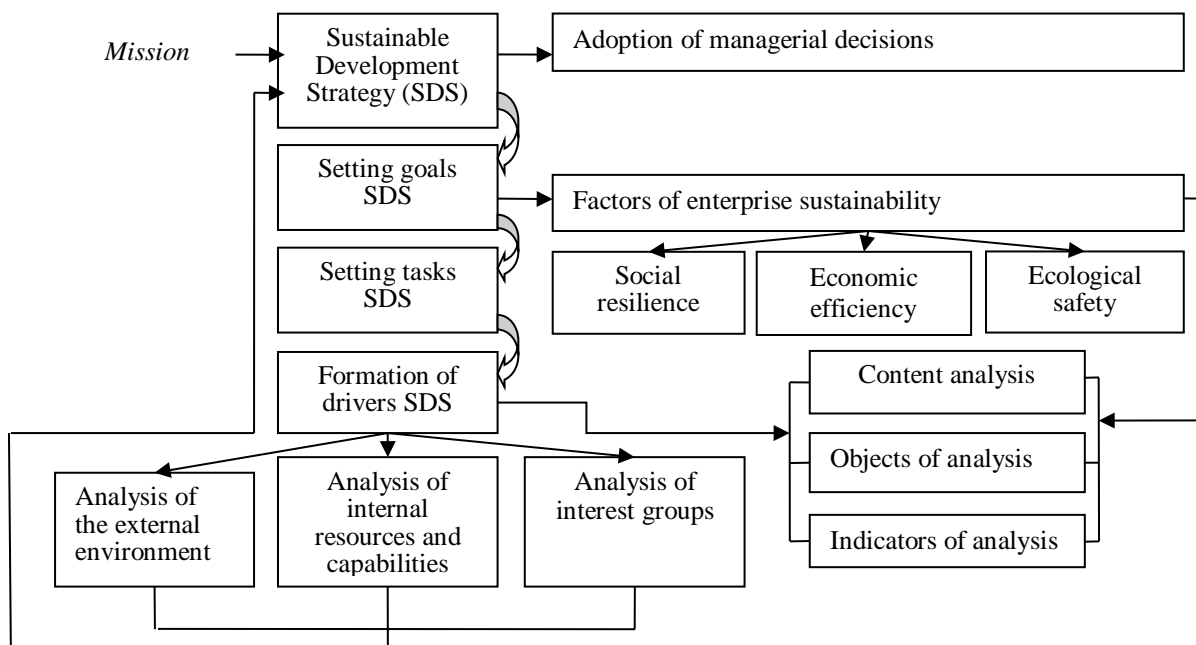


Figure 2. Structural and logic diagram of steps in sustainable development strategy elaboration

Source: author's development

Given the fact that the management decision support system is determined by the reliability and timeliness of information on sustainable development, the companies are required to provide the monitoring of a correspondent information flow, such as implementation of accounting and analytical support primarily responsible for collecting information on sustainable development of the company,

arrangement of document circulation between the competent departments, ensuring the incoming and outgoing information control information, as well as preparing the financial and non-financial reporting.

Within the framework of the research topic "Theoretical and methodological framework for the Integrated Management Information System Development" (№ ДР 0117U004814), we have conducted a survey among the top managers and other executives of production plants on the lack of adequate information and analytical support for sustainable development strategy (Fig. 3).

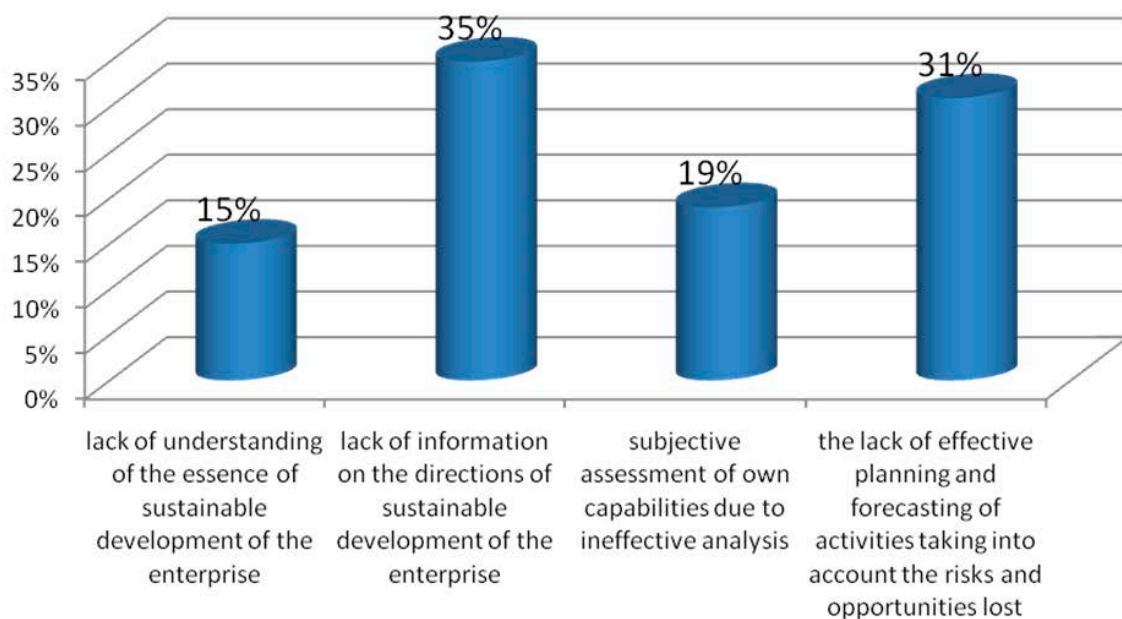


Figure 3. Results of the survey of top managers and other executives of production plants on accounting and analytical support for sustainable development

Source: author's development

The accounting and analytical support for sustainable development strategy is an information system containing the tied subsystems of accounting (accounting, financial, managerial (strategic), analysis and control, each of which features the subject, method, objects, functions, tools, legal and methodological basis [17].

The accounting and analytical support for sustainable development strategy is a process of collection, processing and transfer of the information developed in accounting and analytical system using the accounting, analysis and control tools [12].

The basic focus of accounting and analytical support is on satisfying the need for information based on the use of specific methodologies and tools for its acquisition of a specific user, compensating the lack of information, data generation, processing, collection and output available in a user-friendly format [5].

Most of the local companies can be characterized by the lack of systemic accounting and analytical support (in particular, the predominance of orientation to provide information only on current activities). In order to track the external opportunities and threats the sustainable development requires broader information range compared to current activities. The higher qualitative analytical potential is required to adequately assess the prospects of the emergence of opportunities and threats the enhanced qualitative analytical capacity is required as well. The lack of the reported "latitude and profoundness of thought" restricts the strategy space of the company.

The system of accounting and analytical support for sustainable development strategy is shown in Fig. 4 as an enlarged model; and in its construction the underlying are the principles of systemicity, complex analysis of all subsystem elements and components of the company, dynamic principles, the principle of taking into account the specifics of the company. In this context, there is a need for the economic feasibility of accounting and analytical support for sustainable development strategy, in other words, choosing an alternative to meet the accounting and analytical information at minimum cost. It is important to determine the methods of preparing the reporting information, its types and tools used for analytical purposes. Each accounting and analytical support subsystem for sustainable development strategy of the company consists of the units highlighting characteristic features of a specific type of support.

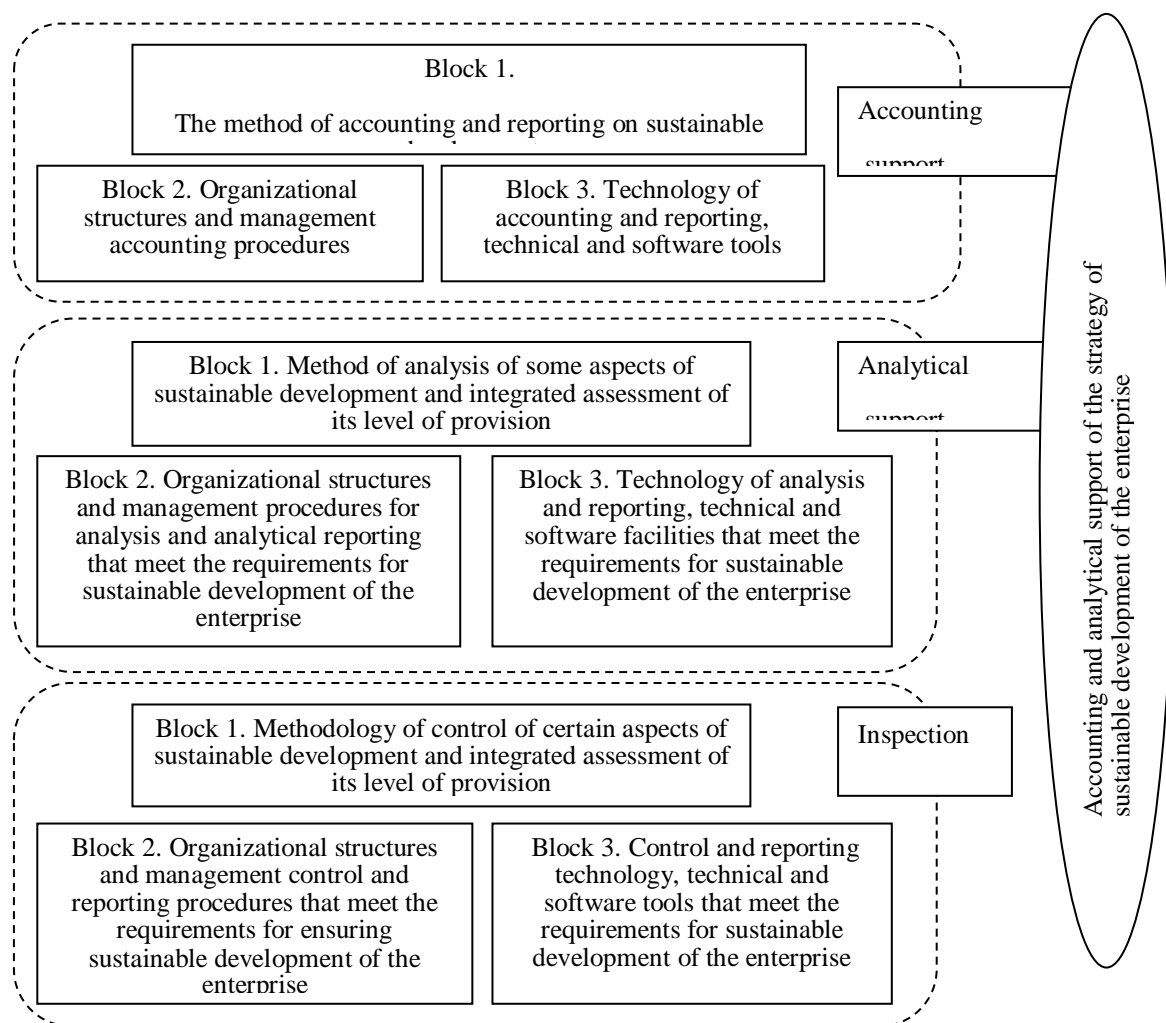


Figure 4. Accounting and analytical support model for sustainable development strategy

Source: author's development

**Unit 1. Methodology.** Accounting support is based on a specific methodologies for the financial and internal management accounting focused on the specific nature of its activities, enabling to set up a clear, rational, transparent reporting environment, as well as to enhance the quality and effectiveness of the information into management decision-making.

Analytical support is based on the specific methodologies of analysis with a view to refocus its resources for the achievement of relevant sustainable development in line with past trends.

The control support is based on the specific methodologies of management the internal control process allowing to assess the compliance of the planned output in the implementation of sustainable development strategy with the actual one.

The control and analytical support is the basis for regular monitoring of sustainable development strategy, called for a review of the management technologies, decision-making and control systems applied.

**Unit 2. Process Management and Organizational Structures.** The organizational structures of accounting, monitoring and analysing, in compliance with sustainable development strategy is a set of functionally specialized units tied in the process of substantiating, developing, adopting and implementing management decisions, enabling to flexibly respond to changes in the external and internal environment and take into account all the innovative management activities. The management accounting, monitoring and analysing, include setting goals, tasks, definition of the composition and location of the relevant units, their resource allocation, paperwork, regulations on consolidation and regulation of forms, methods and processes, implemented within the organizational management system of sustainable development.

**Unit 3. Technology.** The accounting, analytical and control technology, the relevant technical software, in compliance with sustainable development strategy, including modern approaches, methods, tools, forms, techniques, Standard Work Procedures and regulations on accounting, analysis and control, used in the implementation of each specified process, focused on sustainable development strategy. The accounting, analytical and audit technology is governed by the specifically developed normative and methodological documents.

Synthesizing and generalizing for all the elements of the considered units, is the accounting and analytical support bringing together accounting, non-financial, analytical and audit data, as well as data storage carriers, ensuring the collection, storage, processing, output and dissemination through the flexible information technology, hardware and software, resulting in the information flows.

The structured information of all the three units of accounting and analytical support for sustainable development strategy forms an informational field: internal and external. The internal information field is formed within the company and based on the information on its internal activities and processes. The external information field is formed on the basis of analytical studies of the market environment, external conditions in which the company operates, including counteragents, competitors, commodity and financial markets and their subjects, etc. The main issue in the information provision of the sustainable development strategy is an external information field formation, which may include: the partial information, its unreliability and contradiction, redundancy and heterogeneity of information. It's quite difficult to arrange the unification of such information for further storage and processing in a single technology. The successful implementation of sustainable development strategy requires the continuous improvement of the information field structure. The corporate officials and management team are required to consider the information need in relation to any task solution. Therefore, determining the focus and structure of the information required. Such approach provides taking steps in order to detect and collect the "invisible data", as well as ensuring the ways to get it. The management is also required to determine data processing techniques, methods for its analysis, frequency and form of disclosure of the results, exercising control, assigning the range of persons engaged in the analysis and control, as well as the executors of management decisions. Collecting information, hence, an experience gaining, requires time, skills, hardware and competent personnel. The best way of sharing information, includes the rational information system development and efficient information flows management are required.

The issue on information field formation is facilitated by management accounting, as well as its current direction - strategic management accounting, which is an integrated system of information and analytical support for processes of strategic business management. The functions of information and analytical support for strategic management accounting are not limited only to the collection

and fixation of information, but also provide processes for processing existing and compensation of insufficient information (especially, external), detection and reception of implicit information, determination of methods for its receipt, creation, modeling of information arrays of predictive and strategic character for management purposes in the absence of such information in available sources. Modern methods and systems of strategic management accounting and analysis allow to compensate for the lack of information, to create new information that is not available in the finished form with the help of special models of analytical data processing, forecasting, simulation, engineering, descriptive information, expert judgments and expert assessments in the relevant fields, experts and methods of expert assessments. The information of strategic management accounting and analysis is intended for the formation of a balanced overview of indicators that is strategic, since it is the main tool for assessing the level of achievement of strategic goals, through which the management of the company manages the specified process, and also reports on the development in this direction, respectively, external and internal standards before the interested parties. Table. 1 provides information support for defining the objectives of sustainable development strategy based on the analysis of the internal environment of the company in terms of stability factors (see Fig. 2).

Table 1. Information support for setting the objectives of sustainable development strategy based on the analysis of the internal environment of the company in terms of stability factors

| Stability factor    | Objectives of analysis   | Content of analysis   | Objects and indicators of analysis   |
|---------------------|--|---|--|
| Economic efficiency | Maximization of aggregate income, maximization of economic value of the enterprise | The ability of an enterprise to generate profits, the degree of availability of sources of profit | Indicators of sales profitability, earnings, profit before taxes, taxes and depreciation (EBITDA), free cash flow, economic value added (EVA, MVA, SVA, CFROI), total stockholder return (TSR) |



|                       |  |  |   |
|-----------------------|--|--|---|
| Ecological safety     | Reduction of greenhouse gas emissions in the form of methane and air nitrogen precipitates, development and implementation of waste recycling technology | Environmental risk management system       | The objects of analysis are general corporate policy in the field of industrial, environmental safety and labor protection, environmental audit, certification of environmental management system.<br>The system of indicators of environmental impact, the amount of investment in resource-saving technology  |
| Social sustainability | Ensuring a stable growth of gross value added (a component of the gross regional product) tax revenues to regional and local budgets                     | Human and social capital management system | The objects of analysis are policy in the field of management of charity and interaction with local communities, the mechanism for making decisions on allocating funds to the relevant programs, the system for monitoring the use of funds, the amount of training and training costs, Indicators: the degree of staff satisfaction, the proportion of staff with a degree of candidate, doctoral degree, professional certificates, costs of advanced training, etc. |

*Source:* generalized by the author in accordance with [9, 10, 12, 19, 20, 21]

The quality of information provision to determine the objectives of sustainable development strategy directly depends on the quality of the used meters: they must be relevant, clearly defined, unambiguous and comparable (within the company and between different periods). All units involved in the process of developing and implementing a sustainable development strategy should be responsible for the correct, complete and timely display of sustainable development information according to their profile and tasks.

The sustainable business development strategy implementation has practical significance in the direction of raising awareness of the business community. Continuous monitoring and publication of materials on the most pressing issues faced by the companies in implementing a sustainable development strategy are carried out by organizations such as the Association of Certified Chartered Accountants (ACCA), World Business Council for Sustainable Development (WBCSD), International Federation of Accountants (IFAC), International Integrated Reporting Committee (IIRC), International Institute for Sustainable Development (IISD), etc.

The basic aspects of business activities in ensuring sustainable development and efficiency in the economic, social and environmental spheres are reflected in non-financial statements. In Ukraine, the compilation of non-financial statements is advisory in nature and its publication is a voluntary initiative; however, legislation in some countries sets requirements for state-owned companies (such countries include Sweden and China) or for large companies regardless of ownership (Malaysia, Denmark, France) [19]. Reporting in the area of sustainable development is a mandatory requirement for participation in some projects of the European Bank for Reconstruction and Development (EBRD).

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Sustainability reporting (SR) is a voluntary disclosure of information that is credible and accessible to key stakeholders, which reflects the key aspects and performance of companies associated with implementing a sustainable business development strategy for the company [19]. Such a report should provide a balanced and reasonable understanding of business activities to ensure its sustainable development, including the positive and negative impact of this activity. The preparation of the Sustainable Development Report is based on the following principles:

- Significance (reporting should include indicators reflecting the most significant economic, environmental and social performance of the company);

- Involvement of stakeholders (the company should identify the stakeholder groups and strive for reporting on the most significant issues to them);
- Sustainable development content (the company should strive to include information on its activities in the wider context of environmental and social aspects, if such context provides the information with significant additional value);
- Completeness (all essential information should be included in the report).

The guidelines determining the reporting quality in the area of sustainable development of the company are:

- balance (reporting should reflect both positive and negative aspects);
- comparability (stakeholders should be able to analyze the changes that take place);
- accuracy (information presented in the report may only have an insignificant level of error);
- timeliness (timing of publication of the report should correspond to the needs of interested parties);
- accessibility and clarity (the information should be published in a form accessible to the widest range of users, while remaining clear to them);
- authenticity (information must be collected, recorded, systematized, analyzed and presented in such a way that it can be verified and verified).

Table 2 contains the summary of various types of non-financial reports.

Table 2. Contents of various types of non-financial reports

| Type of reporting                                   | Definition   | Contents of the report   |
|---|--|--|
| Special section in the annual report of the company | Part of the annual report in the form of a description of the results of the social business activities for the reporting year   | List and description of all social, environmental, sponsorship and charitable projects of the company in an arbitrary form   |
| State-of-the-Environment Report                     | The report reflecting the priorities and main directions of the company's environmental policies, environmental management systems, monitoring and control, impact on the external environment, cost indicators for environmental policy | Priorities of the company in the field of rational nature management. Official documents, regulations and concept of environmental policy. The system of ecological management. Environmental monitoring and production environmental monitoring. Influence of company activity on the external environment and environmental indicators. The costs, efficiency and economic aspects of environmental policy |

|                                |   |   |
|--------------------------------|---|---|
| Social Report                  | The report containing, along with a description of the mission, values and strategic objectives of the company, its social activities and projects that have been implemented as a response to a dialogue with stakeholders; the basis of environmental policy; impact on the environment; Indicators of the cost of environmental policy | Corporate Principles, Values and Culture.<br>The mission and strategic objectives of the company.<br>Social policy for team development.<br>Social, ecological and social projects of the company at different levels of state administration.<br>Economic, social and environmental indicators.<br>Charity and sponsorship.<br>Future tasks of the company |
| Sustainable Development Report | The report drawn up according to the relevant principles and using performance indicators of GRI, the AA 1000 S standard, featuring aspects of the social mission of the company, its corporate strategy, culture, social and environmental policies.   | Corporate Principles, Values and Culture.<br>The mission and strategic objectives of the company.<br>Economic performance and development.<br>Environmental safety of production.<br>Social policy of the company.<br>Future tasks of the company.  |
| Integrated Report              | Combined annual report and non-financial report, compiled taking into account international recommendations on sustainability reporting   | Financial, economic and production information about the main business activities.<br>Corporate Principles, Values and Culture.<br>The mission and strategic objectives of the company.<br>Economic performance and development.<br>Environmental safety of production.<br>Social policy of the company.<br>Future tasks of the company.                    |

The main advantages of sustainability reporting of the company are as follows:

- makes it possible to identify the opinions and expectations of interested parties regarding the activity of the company and to explain the strategy in the area of sustainable development;
- demonstrates the consideration of the views of interested parties and takes into account and builds long-term trust and cooperation;
- constitutes an effective tool for identifying, preventing and reducing non-financial risks and building a sustainable reputation;
- makes it possible to imagine the achieved indicators of efficiency in the area of sustainable development, to evaluate them and to take into account when making decisions at all levels, thereby increasing their quality;
- enables to keep track of compliance with the principles of continuous improvement and stimulates further improvement of internal processes;
- increases the competitiveness of the company.

In order to simplify the process of preparation and unification of non-financial reporting by international organizations dealing with sustainability issues,

international standards (manuals) developed to ensure the appropriate document preparation that will meet all the necessary requirements, that can be compared with the reports of other companies at different times . The most well-known international management reporting on sustainable development is The Global Reporting Initiative Guide (GRI), featuring recommendations for developing a system of indicators for reporting on the social, environmental and economic aspects of companies. The main objective of the GRI Guides is to support the reporting process, which has information on the most important issues of sustainable development and the spread of such practices as standard. The latest version of GRI-G4 provides an assessment of the level of development of company reports based on two compliance levels: "Basic" and "Full" (Table 3) [20, 21].

Table 3. Requirements to the disclosure of general and specific standard reporting elements [20, 21]

| Criterion                                   | Basic Compliance   | Full Compliance  |
|---|--|--|
| General disclosure of management approaches | For substantial aspect only                                | For substantial aspect only                                |
| Performance measure (indicators)            | At least one indicator for each essential aspect           | All indicators for each significant aspect                 |
| Specific reporting elements in the sector   | Required to disclose if there is an industry supplement G4 | Required to disclose if there is an industry supplement G4 |

**Conclusion.** By the results of carried out research, the need for the further system of timely and reliable formation of information on the activity of the economic entity at different stages of implementation of the sustainable development strategy was substantiated based on the scientific research.

The concept of "sustainable development strategy" has become more profound and its significance is substantiated. The analysis of the content and structure of accounting and reporting on sustainable development, including stakeholder information requests has been conducted. Analytical support for sustainable development strategy has been suggested. The structural and logic diagram of steps in sustainable development strategy elaboration have been developed. The suggested accounting and analytical support model for sustainable

development strategy. The methodical approach to informational support for establishing objectives of sustainable development strategy in terms of sustainability factors has been improved. The conducted research has demonstrated that the implementation of key success factors is provided by the controlling.

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## SECTION 4

# DEVELOPMENT OF A MODERN SYSTEM OF NATIONAL ECONOMIC SECURITY AND ITS MAIN ELEMENTS

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## ECONOMIC SECURITY OF THE COUNTRY AS AN IMPERATIVE OF NATIONAL SECURITY

***Abstract.** In response to intensified integration processes, issues of forming a set of steps ensuring Ukraine's economic security, developing methods of confronting new external and internal threats and overcoming destructive factors become more and more urgent.*

*Integration processes will enhance Ukraine's economy and its ability to resist destabilizing actions of internal and external threats, facilitate the community's sustainable development and competitiveness in the world economic system.*

*The sustainable development strategy "Ukraine-2020" [1] states that integration in the European Union political and economic structures is Ukraine's major priority. The association agreement between Ukraine and the EU provides for systemic social and economic reforms aimed at the country's democratic development, economic welfare and enhanced security as a basis for increasing stability of the national economy and fulfillment of requirements of the EU membership.*

*Several Ukrainian scholars and practitioners including I. Burakovskiy, L. Voloshchenko, M. Kyzym, T. Melnyk, V. Movchan, V. Nyzhnyk, T. Ostashko, T. Ponomarenko, V. Reznikov, V. Sidenko, V. Tochylin have studied the issue of enhanced integration impacts on the country's development. At the same time, the country's economic security and formation the concept of its provision in the context of enhanced integration require greater publicity.*

*This section of the monograph is intended to present theoretical principles of the problem of Ukraine's economic security in the age of its active integration into the world economy; the legal field where tasks of forming a complex system of economic security are solved; consequences of Ukraine's entrance to the World Trade Organization and signing the economic part of the EU Association Agreement in terms of their impact on Ukraine's national interests, opportunities for ensuring sustainable development and potential new threats; highlighting major achievements of Ukrainian scholars searching for an appropriate concept of the country's economic security and its basic principles.*

The notion of security comes from the phenomenon of insecurity, which in various forms occurs as threats to economic systems' activity. That is why, insecurity and threat are initial notions in considering security problems.

Insecurity is a real possibility of affecting negatively the community, an individual, a state, the environment, or an enterprise resulting in harm, damage, deterioration and expenses. Insecurity is a fully perceived, yet not fatal possibility of doing harm to anyone or anything that is determined by availability of objective and subjective factors capable of affecting the economic system [1].

Insecurity types can be classified according to:

- the character of direction;
- sources of insecurity (natural, technogenic, social);
- the probability rate (real, potential);
- the range and scale of possible negative consequences (international (global, regional); national or local (within a country); private (an enterprise, a company, a person));
- areas of social life and types of human activity.

A threat is the most concrete and direct form of insecurity or a set of conditions and factors causing insecurity for the state's interests, society, companies, individuals, national values and lifestyles [1]. Threats are negative changes of the external political, economic or natural environment which do appreciable real or potential damage to the state as a whole, its structural elements as well as Ukrainian citizens' vital, political, and economic interests.

Threats can be classified by various features, namely:

- the character of origin (natural, technogenic and social);
- human activity (political, economic, social, legal, military, environmental, demographic, scientific, technological, intellectual, informational, etc.);
- the source of origin (internal (the source is inside Ukraine) and external (the source is abroad));
- probability of occurrence (real, potential);

- consequences (general (concerning the whole Ukraine), local (separate Ukrainian regions), private (individuals).

Threat sources of technogenic origin are determined by the condition inherent in a technical system, an industrial or transport object, which can occur in the form of negative impacts of the technical system on a person and the environment in case of a technogenic emergency. The negative impact reveals itself as direct or indirect damage to an individual and the environment as compared to standard functioning of technical objects.

Threat sources of social origin are determined by the condition inherent in a country's social and political regime which results in a set of living conditions not meeting people's vital interests and needs [1]. This social and economic condition can turn into a social conflict, which is the highest level of social and political contradictions in the society and characterized by acute collision of aggrieved parties (people, social and political groups). The Ukrainian Revolution of Dignity, which took place in 2014, is a present-day example of a conflict. The threat of social origin in the subsequent period (2014-2018) is noted for Ukrainians' deteriorated living standards resulting from economic stagnation, corruption, able-bodied population withdrawing abroad, adoption of some faulty legislative decisions, etc.

Natural threats include: global disasters (floods, earthquakes, volcano eruptions, tsunami, tornadoes, hurricanes, landslides, temperature changes, magnetic storms, solar and moon eclipses, ozone holes, greenhouse effect, contamination, destruction of natural balance, epidemics, disequilibrium of natural self-regulation mechanisms, exhaustibility of the planet's resources, etc.

To eliminate natural threats, Ukraine's economic development priority is step-by-step steadfast introduction of technological, managerial and other decision-making systems enabling increased efficiency of natural resources use, improvement, or at least, maintenance of the environment quality on local, regional and global levels. This development type is called sustainable, which, according to Cambridge English Dictionary, means causing little or no damage to the

environment and, thus, able to continue developing for a long time. It is the only widely-recognized long-term type of economic development of the world economy and therefore of the Ukrainian one as well.

Threats to the community can be external and internal. The basic external threats include:

- 1) a trend of turning Ukraine into a fuel-raw material periphery of developed countries that has an inefficient economic structure;
- 2) increase of the external debt and unsatisfactory balance of export-import operations;
- 3) excessive dependency on super state financial and political organizations;
- 4) a low level of the country's energy independence;
- 5) imperfect migration policy.

Internal threats include:

- 1) the ineffective structure of the gross domestic product and unsatisfactory dynamics of its growth;
- 2) excessive monopolization in the key areas of the economy;
- 3) the country's low investment and innovative activity;
- 4) currency withdrawal from the country;
- 5) destruction of the scientific and technical potential;
- 6) deepening of property stratification of Ukraine's society;
- 7) corruption and criminalization of the economy;
- 8) a low level of state institutions' efficiency;
- 9) an unsatisfactory level of independence of legal proceedings.

To prevent social threats, a complex strategic programme of Ukraine's economic development should be developed and implemented to partially or fully eliminate the mentioned negative phenomena. This will both eliminate part of the threats and increase the economy's and society's resistance to those remaining.

Under Law of Ukraine No. 2469 "On National Security of Ukraine" dated 21.06.2018, Ukraine's national security strategy implementation is based on the

country's economic and intellectual potential using mechanisms of state-private partnership with international consulting, financial, logistics support [4].

The appendix to Ukraine's Cabinet of Ministers Resolution No. 1277 dated 29.10.2013 defines economic security as "a state of the national economy that enables maintenance of resistance to external and internal threats, providing high competitiveness in the world economic environment and characterizes ability of the national economy for sustainable and balanced growth" [5].

An imperative of the national economic security (NES) is:

- the internal material basis;
- a rather high level of productive forces able to provide essential part of natural and cost elements of the extended reproduction of the national product;
- the stable internal social and political basis of economic security;
- a rather high level of social consensus concerning long-term national ideas that enables formulation and adoption of a social and economic development strategy to be implemented through the state policy steadily supported by the majority of the population.

As a rule, major factors and tasks of increasing economic security of any country are as follows:

- provision of continuous economic development;
- formation of the efficient economic structure;
- reduction of the budget deficit and government debt;
- increase of living standards and social protection levels.

These tasks determine the country's economic security strategy which implies substantiation and formation of major priorities of national development at a certain historic stage within the framework of certain national interests, and creation of mechanisms to address current problems.

In the course of globalizing, national economic security is becoming more integrated into the international one. Manifesting itself in spheres of influence of other kinds of national security (social, political, military, environmental, legal, technological, cultural, intellectual, informational, demographic, genetic,

psychological etc.), penetrating into and interacting with them, economic security accumulates their influences but still stays a basis for national security.

A state is a major subject of providing security.

Besides the state, producers of goods and services, households and individuals are also security providing subjects.

A state's economic system on the whole and its main components, a society and its institutions, economic entities of all levels of the economic system are objects of economic security.

Security is achieved through a single state economic security provision policy, a system of economic, organizational, political etc. actions responding to threats to individual's, society's and country's vital interests.

To create and maintain the necessary level of protection of security objects, a system of legal standards is being developed to regulate relationships in the sphere of security. For this purpose, principle directions of government bodies' activities and management in the sphere are also being determined; and bodies responsible for security as well as mechanisms for controlling and supervising their activities are being formed.

The current system of Ukraine's economic security requires improvement: it should exercise a number of principal functions, prompt determination of potential and real threats, their analysis and neutralization (or prevention) through relevant legal, administrative, economic and information actions. At present, Ukraine does not have a complex system of threats monitoring, determination of their level and developed measures for their prevention or neutralization.

National economic security comprises the following components: macroeconomic, financial, foreign economic (international), investment, scientific and technological, energy, production, information, demographic, social, food security etc.

Production security is the state of the country's production which ensures the most efficient use of available production capacities, their modernization and

extended reproduction, increase of the production innovation and national economy's competitiveness levels;

- demographic security is the state of the country, society and labor market protection against demographic threats which ensures development of Ukraine considering the whole range of balanced demographic interests of the country, society and individuals in accordance with constitutional rights of citizens of Ukraine;

- energy security is the state of economy that facilitates efficient use of the country's energy resources, availability of the sufficient number of energy producers and suppliers, availability, differentiation and environmental compatibility of energy resources;

- foreign economic security is the state of compliance of foreign economic activities with national economic interests that ensures minimal losses caused by negative external factors and creates favorable conditions for economic development due to the country's active participation in the world division of labour;

- investment and innovation security is the state of the country's economic environment that stimulates national and foreign investment into expansion of the country's production, facilitates development of high-tech production, integration of research and production spheres in order to increase efficiency, enhance specialization of the national economy when manufacturing products with a great added value share:

- macroeconomic security is the state of economy with balanced macroeconomic reproductive proportions;

- food security is the state of the country's food production capable of complete satisfaction of needs of every member of society in food of appropriate quality, assuming its balance and general availability;

- social security is the state of the country's development which enables decent and qualitative living standards for its population regardless of the people's age,

gender, income level, promotes development of the human capital as the most important component of the country's economic potential;

- financial security is the state of the country financial system which allows of creation of financial prerequisites for stable social and economic development, provision of its resistance to financial shocks and imbalances, creation of conditions for maintaining integrity of the country's financial system. In its turn, financial security consists of the following:

- banking security is the level of financial stability of the country's banking institutions that enables efficient functioning of the country's banking system and its protection against external and internal destabilizing factors regardless of conditions of its functioning;

- security of the non-banking sector is the level of stock and insurance market development that enables complete satisfaction of society's needs for definite financial tools and services;

- debt security is the level of internal and external debts with considered costs of their servicing and efficient use of internal and external borrowings and the optimal correlation between them, sufficient for satisfaction of urgent social and economic needs that does not threaten the country's sovereignty and financial system;

- budget security is the state of solvency and financial stability of government finance that enables government bodies to most efficiently exercise their functions;

- currency security is the state of exchange rate formation which is characterized by the society confidence in the national currency unit, by its stability, and creates optimal conditions for steady development of the national economy, attraction of foreign investments, integration of Ukraine into the world economic system and defends from shocks on international currency markets;

- monetary and credit security is the state of the monetary and credit system that provides all the national economy subjects with qualitative and available credit resources in the amount and under conditions beneficial to achieving increase of the national economy.



In its turn, financial security comprises the following:

- 1) banking security;
- 2) security of non-bank financial market;
- 3) debt security;
- 4) budget security;
- 5) currency security;
- 6) monetary and credit security.

In terms of levels of economic security system building there can be singled out the following components: global (international) security, national security, enterprise security, and security of an individual.

Global economic security is the state of protection of international economic relations against threats of their destabilization. It is provided through creating conditions for execution of international agreements that stipulate protection of each country's national economic interests against external threats.

Enterprise security is the state of protection of an enterprise against negative impacts of the economic environment and ability of the enterprise to function steadily and develop in accordance to its statutory goals.

Security of an individual is the state of protection of vital interests of an individual in the economic sphere against disservice and living standards degradation.

It should be noticed that the components are similar at different levels of economic security system building, i.e. one may talk about both the countries and enterprise financial security or draw a parallel between social security of a country and personnel security of an enterprise.

International economic security (IES) is a complex of international conditions of co-existence of agreements and institutional structures when each member country of the world community is enabled to choose and implement its own strategy of social and economic development without any external pressure and interference, in the climate of mutual understanding and collaboration.

This can be implemented through abandonment of imposing development models, economic and political enforcement. It is essential to understand that in a long-term outlook all countries will benefit from other countries' progress rather than from their plunder. Legal guarantees of IES consist in recognition of the principle of equality of countries regardless of their social and political order. IES should ensure collaboration of countries in solving both national and global problems. IES should become a basis for peaceful nuclear-free co-existence.

It should be noticed that building systems of national security in various countries is one of the factors of ensuring international economic security.

Advanced countries of the world demonstrate worth-while practices of building national security systems. For instance, Japanese scholars have developed the concept of "comprehensive national strength" [6] to the order of the National Economic Planning Agency. According to experts, the concept is synthesis of traditional and new methods. The method of calculating the so-called "comprehensive national strength" index embodies three great parts consisting various components.

The category "ability to contribute to the international community" is the centerpiece of the comprehensive national strength index. This means countries' financial- economic, scientific-engineering and political-diplomatic potentialities to commence creation and development of international social and economic projects, systems, organizations, corporations. The components of the index are:

- 1) basic potential consisting of the economic force, financial capacities, science and technology;
- 2) opportunities for implementing the basic potential globally that include currency and financial resources, consensus for international policy issues, ability to perform efficiently on the global stage.

The second category of the "comprehensive national strength" index reveals ability to survive in crisis and extreme international conditions. It consists of the following components:

- 1) geographical conditions;

- 2) population size;
- 3) natural resources;
- 4) economic force;
- 5) defense forces;
- 6) national morals;
- 7) diplomacy and collaboration in the field of defense.

The third category estimates the potential of “possible power pressure”, i.e. ability of a country to lobby their own interests. This means that each country is guided by its own interests that are supported by:

- 1) military force;
- 2) strategic materials and technologies;
- 3) economic power;
- 4) diplomacy.

After calculating values of each of the three above-mentioned components, weighted average values of the three elements of the “comprehensive national strength” index are determined for each country which is the “comprehensive national strength” index.

The concept of determining the “comprehensive national strength” index can be applied to comparing states of national security in various countries.

The President of Ukraine plays a leading role in the national security issues. All executive authorities responsible for fulfillment of the key security types report to him.

Under section 5 of Ukraine’s Law “On the National Security of Ukraine”, dated 21 June 2018, the President of Ukraine governs the national security and defense field in compliance with the Ukraine’s Constitution. In particular, he:

- 1) ensures state independence and national security;
- 2) heads the National Security and Defense Council of Ukraine, brings into force its decisions in the statutory manner.
- 3) indicates real and potential threats and hazards and takes required actions to eliminate them.

Under section 85 of Ukraine's Constitution, The Verkhovna Rada of Ukraine executes parliamentary control and passes the laws of Ukraine which determine and regulate the activity of security authorities.

Within the authority determined by Ukraine's Constitution, it ensures various types of national security, economic security as well.

The Cabinet of Ministers of Ukraine as the highest authority within the system of executive authorities:

- ensures the state sovereignty and economic independence of Ukraine; conduct of national and international policy; implementation of Ukraine's Constitution and laws;

- ensures the conduct of financial, price, investment and tax policy; labour and employment policy; social welfare; education, science and culture; conservancy of nature, environmental safety and environmental management;

- establishes and ensures the conduct of international business activity and customs affairs;

- directs and coordinates the work of ministers and other executive authorities in the national security field.

The National Police of Ukraine perform the following key functions ensuring national security of Ukraine:

- 4) financial crimes enforcement within the most criminogenic and vital for Ukraine's economy fields, first of all credit and financial and banking;

- 5) anticorruption efforts;

- 6) illegal migration combating;

- 9) involvement in environmental security provision;

- 10) involvement in data security provision;

- 11) involvement in international security provision (cooperation establishing with worldwide national security organizations; partaking in peace-keeping, rescue and humanitarian operations under UN and OSCE auspices).

State Border Guard Service of Ukraine conducts the state policy in the field of the state border security as well as Ukraine's sovereign rights protection in its economic zone [7].

The National Bank of Ukraine establishes and conducts monetary policy in the interests of the state security of Ukraine according to the main concepts of monetary policy [9].

The National Bank of Ukraine establishes and conducts issuance financing policy in the interests of the state security of Ukraine. The following functions of The National Bank of Ukraine can be related to the national security field:

- 1) provision of Ukraine's currency unit stability;
- 2) establishing and conduct of monetary policy;
- 3) determination of development trend of current electronic bank technology; creation, coordination and control of electronic payment facilities, payment processors, automation of bank operations and bank data security facilities;
- 4) representation of Ukraine's interests in central banks of other states, international banks and other credit institutions where collaboration is maintained at central banks level;
- 5) provision of foreign-exchange reserves accumulation and storage, operating them and precious metals;
- 6) evaluation of monetary, financial, price and currency relations;
- 7) the state policy implementation on the state secrets protection within the National Bank system;
- 8) identification of the peculiarities of Ukraine's banking system functioning in the event of a martial law or a special period introduction, preparedness activity of the National Bank system;
- 9) elaborating the Monetary Policy Fundamentals and presenting them to the Verkhovna Rada of Ukraine for reporting, monitoring of compliance with the Monetary Policy Fundamentals;

10) analyzing the impact of Ukraine's monetary policy on the state of social and economic development of Ukraine and developing proposals for introducing appropriate changes in it;

12) banking regulation and supervision in order to ensure the security and financial stability of the banking system, protecting the interests of depositors and creditors.

General jurisdiction courts conduct legal proceedings in cases over Ukraine's national security diminishing.

Public control over the national security provision is carried out by citizens of Ukraine through public associations.

In accordance with Ukraine's Constitution and laws, as well as the constitutional provisions, public associations registered in the statutory manner are ensured the right to receive the information on security sector activity from the state authorities, receive information from the state authorities in accordance with the established procedure, information on the activities of the components of the security sector.

Mass media, covering issues of national security and defense, inform the society about the state of Ukraine's national interests' protection.

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## **A NEW PARADIGM OF UKRAINE'S ECONOMIC SECURITY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT**

Economic security is an important component of Ukraine's national security. The main task is to define a paradigm that will increase the level of economic security. The synergetic paradigm allows us to determine the degree of influence of the constituent elements on the level of national security in general. An important

task is to provide scientific substantiation and practical demonstration of research results from a synergetic approach. The influence of economic, political, institutional, ecological and social components on the volume of agricultural production is proved. The influence of the ecological component on the level of national security, which actualizes the principles of sustainable development of the state, is established. The ecological orientation of the state policy will contribute to raising the level of national security of Ukraine.

**Introduction.** Development of Ukraine's national economy is conditioned by the country's economic security. Modern economics comprises two basic conceptual approaches to forming the country's economic security: the concept of a structural rigid economic system with a high level of protection against external threats and the concept of the market system. Within the first concept, theoretical foundations for the idea of dependency of economic security on external factors are worth considering.

**The article is aimed at** forming a new paradigm of economic security of Ukraine which is based on the synergetic approach, actualizes the theory of external dependency and is directed at achieving tasks of sustainable development.

**Main Part.** To form a paradigm of Ukraine's economic security, attention should be paid to representatives of the external dependency school of thought. The external dependency theory emerged in 1970s and resulted from loss of popularity of models of stages of growth and structural transformations in underdeveloped countries. Institutional, political and economic constraints set by developed countries are the main reasons for the retarded development of the third world countries. Within this theory there are three basic directions: the neocolonial dependency model, the false paradigm of development and the dualistic development theory (Fig. 1).



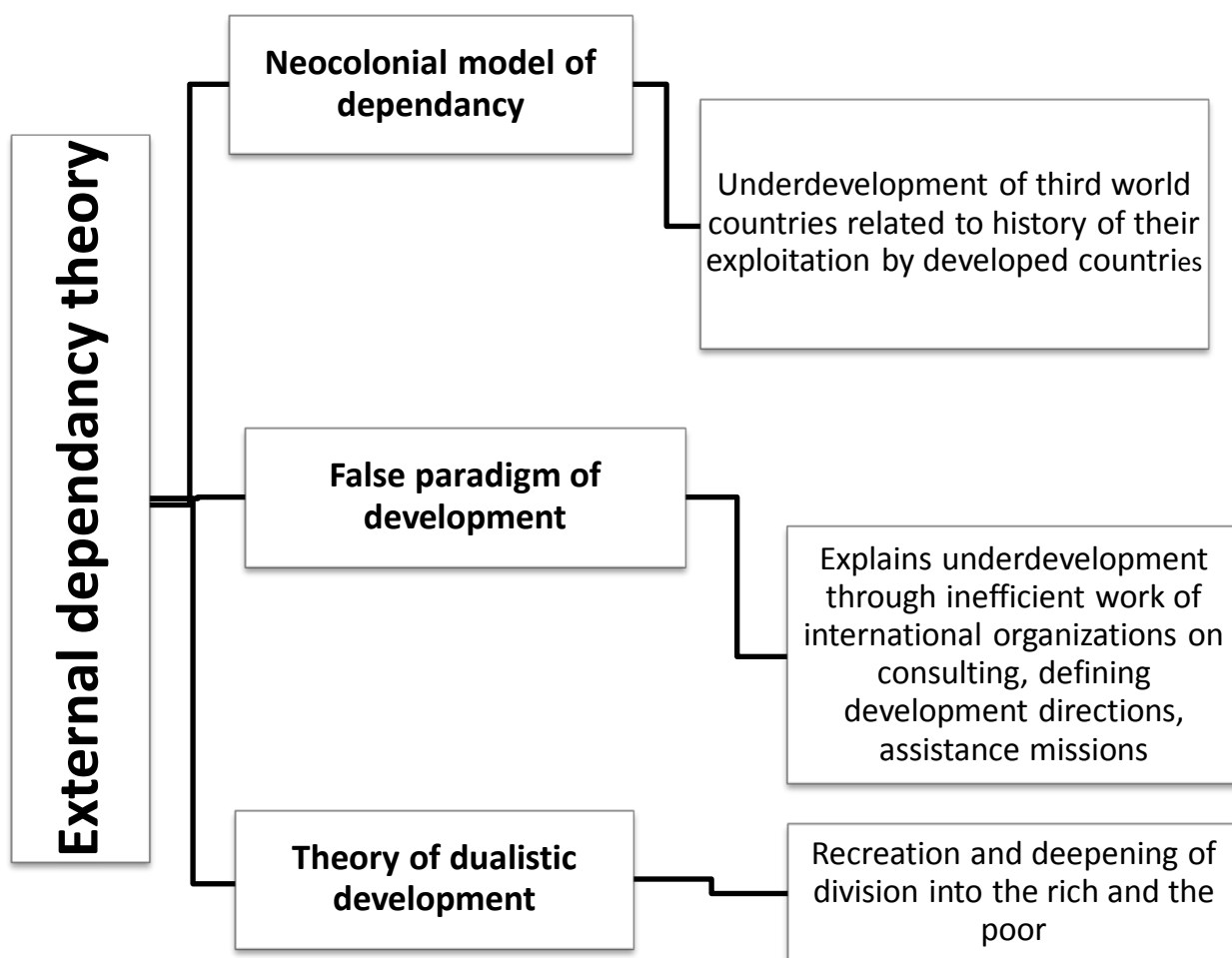


Fig. 1 Fundamental directions of the external dependency theory

The first direction connects underdevelopment of the third world countries with historical exploitation of these countries by developed ones. According to this theory and unlike in the models of stages of growths and structural transformations that only consider internal constraints of development, economic underdevelopment is an externally imposed phenomenon [1, p. 20-22].

Another direction of the theory of external dependency - the false paradigm of development – explains the third world countries’ underdevelopment through inefficient work of international organizations on consulting, defining development directions, assistance missions. Here, neglecting the specific character of institutional factors, unavailability of credit resources for people, a particular group’s control over disproportionately large property within a country and abroad do not allow application of the policy based on advanced western theories.

Existence of rich and poor nations built into the models of structural transformations themselves and dependency theory is called a dual society [3].

The notion “dualism” was used in the theory of development based on deepening of division into the rich and the poor. Existence of specific conditions for emergence of the system of subordination within one system underlies the theory of dual development. The theory can be exemplified by simultaneous existence of modern and traditional sectors in A. Lewis’s model, availability of the rich well educated elite and a great number of barely literate poor population [4]. Internationally, specificity of subordination conditions emergence is characterized by co-existence of powerful industrial and underdeveloped agricultural countries in the global economy. The principal provision of the dual development theory is continuing recreation of double structures: maintaining inequality between higher and subordinate elements of the global community with continuing growth of income gaps between developed and poor countries and absence of their collaboration.

Within formation of the new paradigm of economic security attention should be paid to finding of representatives of the transitology school. In particular, Hernando De Soto (Latin America) stated that political and economic stability is first of all based on principles of democracy, necessity of competition in the economic environment and monopoly exclusion [5, 6]. The researcher prioritized confirmation of property rights as the basis of the society self-organization and further development. The author’s findings concern determination of importance of random factors: the starting moment of transformations and features of a leader’s who initiates them [5]. This scientific idea enables considering random factors as a prerequisite for forming a country’s economic security that requires research into economic transitology, first of all the left-wing radical theory R. Prebisch [7], C. Furtado [8] and I. Wallerstein [9] who substantiated the hypothesis of cardinal modernization of economic systems of developing countries into modern global economic systems. Within its scope, on the basis of W. Sombart’s (Germany) concept of economic development, R. Prebisch (Argentina) [7] defined the

socioeconomic system of the third world countries as “peripheral capitalism”. He singled out principal features of such countries: the imitative character conditioned by impacts of global capital; uneven development of society’s spheres of life; deepened property inequality, impoverishment of the majority of their population; aggravation of the investment climate for international partners in specific economic sectors. The researcher believed overcoming non-equivalent exchange on the global market and orientation to the countries’ own efforts to be main directions of coping with the situation.

I. Wallerstein’ investigations into general global analysis contribute greatly to solution of the third world countries’ problems. He focused on evolution of historical systems, first of all, the capitalist one as the major obstacle for national development of underdeveloped countries. I. Wallerstein substantiates conclusions concerning impossibility simultaneous progress of global community members [9, p. 229–236-272].

Research into evolution of conceptual principles of traditional economic transitology allows conclusions that the simplified approach to economic security problems in underdeveloped countries based on contrasting “inefficient and backward traditions” and “progressive contemporaneity” is not capable of complete reflection of the specific character and internal dynamics of transitional societies. The major shortcoming of the approach that only considers the internal mechanism of a national economy partially influenced by external factors is exclusion of impacts of the evolutionary time gap in development of countries, disregard of institutional factors of social transformations [10].

Thus, under globalization, economic security of a country is formed in conditions of the intensified policy of international borrowings, this fact constraining use of borrowed finances. Due to this, transformations of a national economy lose the system character; the forecast economic development slows down and gets complicated by social tension. Low efficiency of transformation of Ukraine’s economic system is mainly caused by economically imperfect production, suppression of natural monopolistic foundations of the agricultural

sector and artificial deceleration of progress in science and technology resulting in the nation's economic security weakening. That is why; the scientific approach should be applied to issues of economic security, i.e. not only development of the economic component of economic security but also institutional, political, environmental and social components become of importance. Developed countries' practices emphasize importance of the environmental component which is now determines the general strategy of development of advanced countries' societies.

To define an economic security paradigm of national economy in terms of being influenced by different potential threats of various probabilities, the development of key sectors of economy is evaluated. In 2018, GDP increased by 3.2%. The dynamics of GDP, calculated according to a production method, indicates a slight increase in industry, and an increase in the position of agriculture. For example, in 2018, compared to 2017, the index of industrial production in Ukraine amounted to 101.6%, including 102.2% in mining and quarrying; 101.2% in processing industry; 102% in power, gas, steam and conditioned air supply [11].

Note should be made of big decline in metallurgical production (up to 5.3% per year) as a result of overhaul repairs at some metallurgical plants, and complex conditions of raw materials and finished products transportation through the Azov Sea ports. Respectively, there was a decrease in demand for products of auxiliary industries, first of all reduction of coke production (up to 1.6%), reduction of coal production (by 1.1%) and slow down of metal ores mining (up to 0.4%) [12].

During the period of 2017-2018, the growth of retail turnover intensified. In January-November 2018, the index of physical volume of retail turnover reached 106.2% in comparable prices against January-November 2017. The largest growth of retail turnover in January-November 2018 was observed in Luhansk (27.8%), Donetsk (14.7%), Poltava (12.4%), Zakarpattia by 12.0%) and Vinnytsa (11.4%) regions compared to the corresponding period in 2017.

The positive dynamics of the agricultural product index in January-November 2018 compared to January-November 2017 at the level of 108.2%, including 111.2% for crop production and 100.4% for livestock production,

indicates the development of agricultural production in Ukraine. The agricultural sector was driven primarily by agricultural enterprises, as indicated by the indices of agricultural products in January-November 2018 compared to January-November 2017 at the level of 113.4, 116.5 and 102.9% respectively [11, 12]. At the same time, there was a decline in livestock production and increase in crop production at households in January-November 2018 compared to the same period in 2017.

Export-oriented crop production (grains and oilseeds) became a leading trend within agricultural enterprises. The slowdown of livestock production at households is related to significant costs of its production and complicated marketing conditions. An important factor for the national economy development is activation of the construction sector through road building. In particular, in January-November 2018, compared to January-November 2017, the index of construction product of this type was 106.3%, the index of construction product of engineering structures amounted to 111.3%. Non-residential construction develops as well; the volume of construction increased by 1.8% in 2018. The volume of housing construction exceeded the same index only by 0.9% compared to 2017 and was carried out only in Kiev, Kiev, Odesa and Lviv regions.

Describing transport industry, it should be noted that in 2018 the volume of cargo turnover of all means of transport in Ukraine amounted to 303.7 billion t / km, or 97.0% of January to November 2017 volume. Rail road serviced domestic and export needs by 3.2% less compared to 2017. Out of total volume of sea transportation, foreign goods made up 43.8%, which is 2.9% less than in the previous year. Apart from that, the volume of pumping through the pipelines decreased by 6.0% for gas transportation and by 3.9% for oil [12].

As for the foreign trade development, export of goods in the amount of USD 38797.8 mn made 110.3% of that of the previous year. The volume of imports is USD 46747.6 mn made 117.0% of of that of the previous year. The export-import balance amounted to 0.83 (0.88 in January-October 2017). Foreign trade operations were carried out with partners from 218 countries. Thus, the growth rate of imports

to Ukraine exceeds the growth rate of exports. In this case, the deficiency of foreign trade in goods in 2018 was not compensated by the surplus in foreign trade in services.

Thus, Ukraine's national economy is characterized by the inertial development with a stable economic growth of the agrarian sector. The main impacts are internal and external threats of a political and economic nature being the result of contradiction between the cause-and-effect functioning of nature and society, the evolution of nature and society. These problems are solved by synergy which divides the time span of economic system in conditions of the inevitable change of time within the limits of existence and evolution includes qualitative transitions of the system from one state to another.

The uniqueness of the synergetic approach is in the multidisciplinary of this science, which allows for simulation of natural and humanitarian processes, focusing on the study of nonequilibrium situations, the boundary points of development in phase transitions. The synergetic approach allows exploring the development of complex open systems, in particular economics, and to establish the effective development on the basis of self-organization. A synergetic scientific paradigm represents economic security as a component of national security, being a system itself with its own set of components. The aim of the synergetic paradigm is at establishing a rate of impact and strength of relationship between the components of national security: economic, political, environmental, institutional and social [13]. Economic security includes a number of components required for increasing a level of national security by improving well-being of population (Fig. 2).

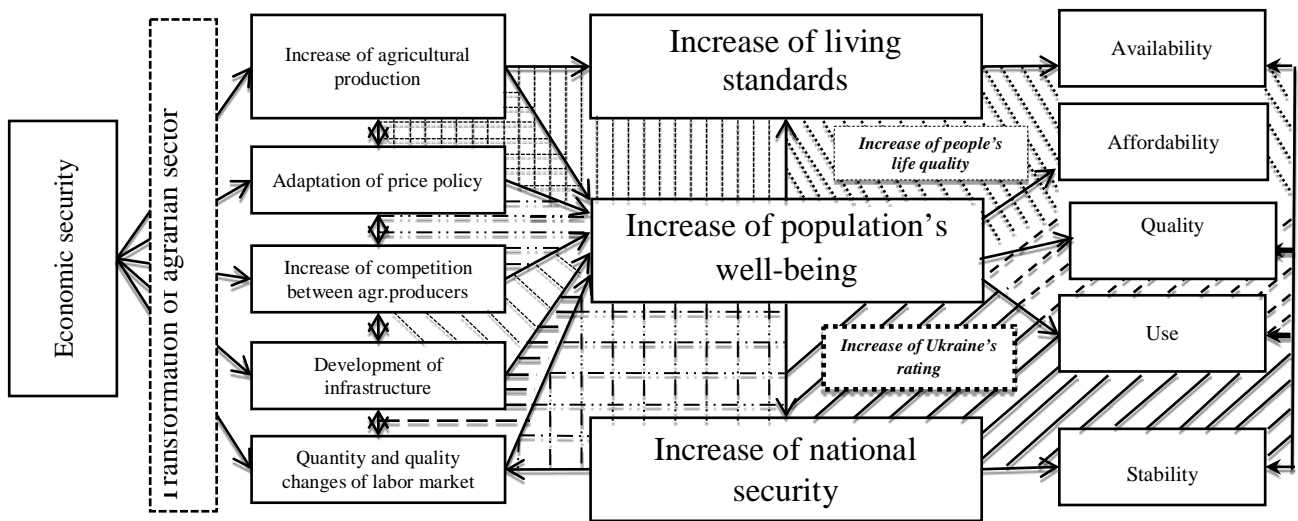


Fig. 2 Components of national security

The suggested econometric model of economic security of transformations taking into account the synergetic coupling effect of explanatory variables (political - corruption perception index, institutional - Ukraine's rating in the world, economic - GDP of the country, social - human development index, ecological - environmental protection costs) on dependent variable  $y$  (gross output of agriculture) is presented in the formula (1):

$$\begin{aligned}
 y = & -1171,38 + 16,84 \cdot x_4 + \\
 & + 0,62 \cdot x_1 \cdot x_2 - 0,22 \cdot x_1 \cdot x_4 - 1,66 \cdot x_1 \cdot x_5 + \\
 & + 1,05 \cdot x_2 \cdot x_3 - 0,14 \cdot x_2 \cdot x_4 + 0,54 \cdot x_2 \cdot x_5 + 0,04 \cdot x_4 \cdot x_5
 \end{aligned}
 \tag{1}$$

In the course of the research, it was decided to consider food security as part of economic security, since the of agricultural production is a key indicator of food security. It is argued that the increase of gross agricultural production by 14% is conditioned by the interaction of political and institutional components, by 5% by economic and political; by 39% by political and environmental; by 25% by institutional and social; by 3% -by institutional and economic; by 13% by institutional and environmental; by 1% by economic and environmental components

**Conclusions.** Thus, the importance of the environmental component was determined. Combined with other components it provides for a significant increase in the level of economic security. The obtained results confirm the necessity of

observing the principles of sustainable development as the basis of national security, and the synergetic paradigm combines all components of the society's existence and proves the necessity of their comprehensive consideration during the formation of general strategies of state development.

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## **FORMATION OF THE ECONOMIC SECURITY OF THE REAL SECTOR OF THE ECONOMY ON THE PRINCIPLES OF COMPLIANCE**

**Abstract.** *The article is devoted to the adaptation of the theory and practice of compliance function to the conditions of the real sector of the economy in order to ensure economic security. Based on the analysis of the current state of the Ukrainian economy, the presence of a corruption component in it is revealed, using which cases of fraud, money laundering, corporate ethics violations, etc. are carried out. Scientific and methodological proposals were developed for using the compliance function in the practice of the real sector of the Ukrainian economy. Today, compliance is an important element of the corporate governance system of the organization as a whole, begins in top management and is broadcast at all levels of business. It was proposed to introduce into scientific use a new term “compliance security”, which is supposed to be used when determining the level of economic security of enterprises and organizations. It is proved that the new term requires the creation of a methodically methodological base for determining the integral index, which would determine the level of compliance threats in an industrial enterprise. Methodical provisions for determining the integral indicator of the efficiency of the compliance program (compliance safety) at an industrial enterprise are proposed. It has been proven that this methodology can be used to a certain extent to assess the activity of an industrial enterprise in countering compliance threats. It is substantiated that compliance security of an enterprise can be considered as one of the*

*components of a broader concept - economic security. An algorithm for the practical use of the compliance function in the practice of industrial enterprises is proposed.*

**Keywords:** *compliance, economic security, compliance security, integral indicator*

Introduction. In recent years, the international scientific community has been actively discussing the possibilities of the compliance function. It defines the standards for doing business around the world, directly influences the stability of the global economy as a whole, and the business of a particular company in particular. Compliance (English Compliance - consent, compliance; comes from the verb to comply - to perform) - translated from English means an action in accordance with the request or instructions; humility, compliance (engl. compliance is an action in accordance with a request or command, obedience). Compliance is the compliance of specific actions of an enterprise (organization) as a whole, a separate team or employee of any rank with any internal or external requirements (laws, standards, norms, regulations, etc.). It should be noted once again that ensuring control, transparency and observance of legality in the company's activity is the key to its own security. At the same time, the economic and information security services now being created in large numbers, as well as the integrated security services for business structures and anti-corruption measures, are just a superstructure. The foundation for ensuring the security of a business should be the properly built corporate management of the enterprise, it contains an integrated system of internal compliance control and management of compliance risk in the economic security system of the enterprise.

Over the past few years, the frequency of investigations into violations in the area of compliance, the size of the consequences and the size of sanctions for a business, whose activities were found to comply with various compliance standards, have increased significantly and become a significant risk that any manager should be aware of and production, commercial, client or legal analysis of the national or international activities of an industrial enterprise. Therefore, the development and implementation of compliance functions in the practice of the

real economy is extremely relevant and important for industrial enterprises of Ukraine.

Purpose of the article. The purpose of this study is to create in an industrial enterprise existing mechanisms for identifying and analyzing particularly corrupt dangerous areas of activity, assessing and managing risks when confronted with corruption, providing comprehensive protection from the threat of crisis, violation of exclusive rights, and corporate ethics.

Analysis of the achievements and literature. The review of the theoretical and practical principles of the interaction of internal audit with the compliance system at industrial enterprises indicates the urgent relevance of a more detailed study of this problem by domestic researchers. A number of scientists in their work address issues of the compliance program and the work of the internal audit service, not only in financial institutions, but also in industrial enterprises. Theoretical and practical issues of the compliance function of industrial enterprises were considered in detail in their research and development by M.M.Aloshin, E.I.Aloshina, O.S. Bogma, M.O.Zitar, P.G.Pererva, T.V.Romanchik , O.V.Skoruk, O.Sosnovska, L.M.Hudolii, D.Kotsiski, M.Veres Shomoshi, M. Sikorski and others [1-18]. In their scientific developments, the basic terminological concepts of the compliance system are reproduced, the main areas of its use are substantiated, and factors of the effectiveness of the compliance program at industrial enterprises and financial organizations are identified. Based on a study of existing primary sources, it can be concluded that domestic and foreign scientists are paying quite a lot of attention to developing methodological approaches to ensuring compliance security of the country as a whole and industrial enterprises in particular, but a common opinion on this matter in the scientific community is still No, that suggests the need for further research. At the same time, there are practically no methodological approaches to determining the effectiveness of the compliance program, recommendations on the formation of an integral indicator of the efficiency of use of the compliance function in industrial enterprises. His further research urgently requires the formation and evaluation of the effective use of the

organizational mechanism of the compliance service, the development of effective mechanisms for evaluating the results of compliance programs, and on this basis the development of recommendations for its improvement.

The results of the study. In the system of ensuring the national security of any country, economic security is the basis of its sustainable, crisis-free socio-economic development. Defining the essence of the term "economic security" can proceed from a variety of approaches. First, economic security can be defined as the ability of the country's economy as a whole and its regions separately to ensure stable development and corresponding to the economic interests of individuals, economic entities, regions and the country. Secondly, the economic security of the country can be viewed from the standpoint of ensuring the protection of the vital interests of all residents of the country, society and the state in the economic sphere from internal and external threats (Fig. 1).

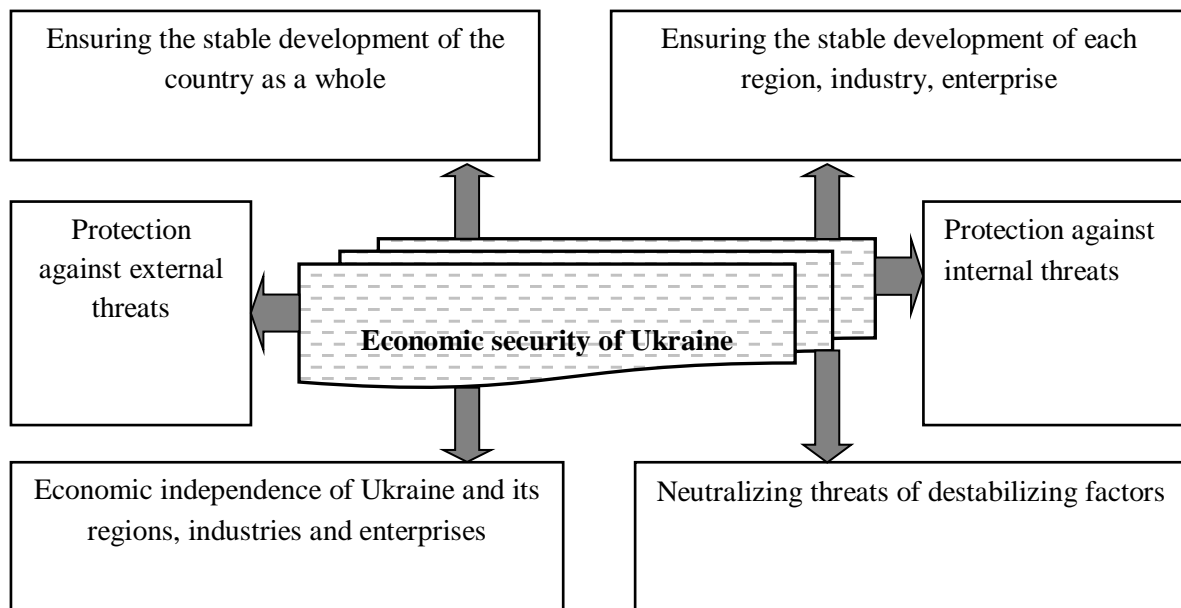


Figure 1 - The main components of the economic security of Ukraine

Source: authoring

To determine the level of economic security of Ukraine as the main component of the national security of the state, the integral index of economic

security is used. The dynamics of this indicator since 2005, calculated in accordance with the Methodological Recommendations for calculating the level of economic security of Ukraine, approved by Order of the Ministry of Economic Development and Trade of Ukraine No. 1277 of October 29, 2013, [5], presented by us in Fig.2.

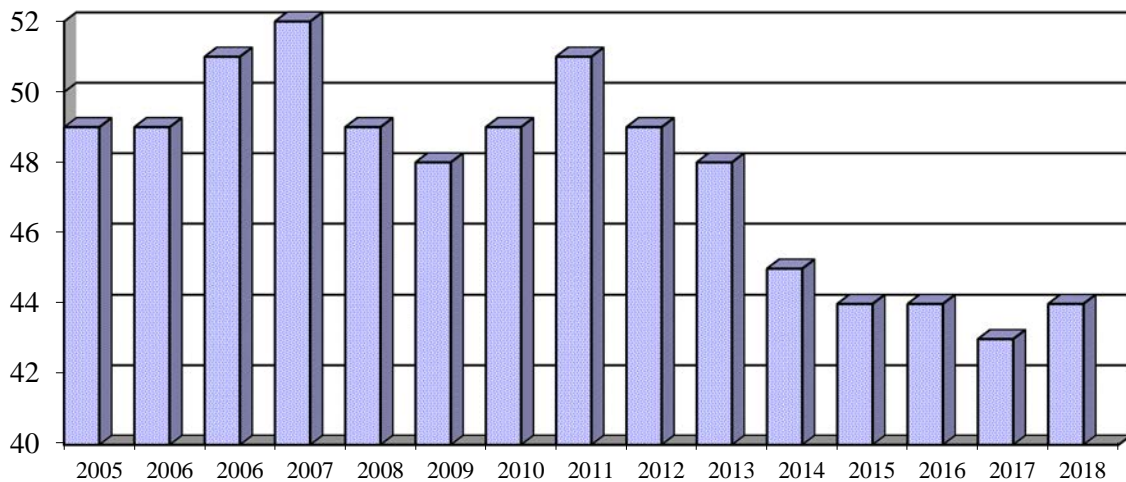


Figure 2 - Dynamics of the integral indicator of the economic security of Ukraine  
Source: built by the author according to [5]

Over the past years, the Ukrainian economy has been practically in crisis, the overwhelming majority of the most important economic indicators have a steady downward trend, which indicates an increase in macro and microeconomic threats and an unsatisfactory level of economic security index. Therefore, it can be concluded that in the sphere of ensuring the economic security of our country, there are many important problems, as evidenced by the low level of the integral indicator of economic security (Fig. 2).

The data presented in Figure 2 indicate that in 2007. There was a steady increase in the level of economic security up to 52% (maximum value). In 2008-2009 There was a decrease in the economic security index to 48% and an increase of 3% during 2010-2011. In 2012, compared to 2011, the index level decreased by 3%. This situation has arisen, in our opinion, due to a decrease in economic growth rates, a shortage of investment resources, insufficient credit activity and an

unsatisfactory foreign economic situation. The scientifically grounded optimal level of the economic security index is 100%, therefore, the current values of the Ukrainian index are more than two times less than the optimal one.

Unsatisfactory trends can also be observed when analyzing the level of economic security of our country by security components (Table 1).

Table 1 - Dynamics of economic security indicator of Ukraine and its enterprises by sub-index components

| Components of economic security         | Year of observation |      |      |      |      |      |      |      |
|---|---------------------|------|------|------|------|------|------|------|
|   | 2011                | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| energy                                  | 32%                 | 34%  | 39%  | 45%  | 47%  | 49%  | 51%  | 52%  |
| financial                               | 48%                 | 46%  | 50%  | 36%  | 44%  | 43%  | 41%  | 48%  |
| production                              | 57%                 | 53%  | 53%  | 52%  | 54%  | 53%  | 57%  | 56%  |
| macroeconomic                           | 47%                 | 38%  | 40%  | 33%  | 37%  | 34%  | 42%  | 44%  |
| Investment Innovation                   | 36%                 | 37%  | 35%  | 30%  | 32%  | 35%  | 33%  | 35%  |
| Social                                  | 59%                 | 62%  | 64%  | 57%  | 56%  | 63%  | 59%  | 61%  |
| Food                                    | 92%                 | 93%  | 86%  | 94%  | 92%  | 89%  | 91%  | 93%  |
| demographic                             | 52%                 | 45%  | 46%  | 46%  | 45%  | 44%  | 43%  | 43%  |
| Foreign trade                           | 35%                 | 30%  | 32%  | 35%  | 34%  | 33%  | 36%  | 34%  |
| Economic security of Ukraine as a whole | 50%                 | 48%  | 49%  | 45%  | 44%  | 44%  | 43%  | 44%  |

Source: according to the Ministry of Economic Development [5]

Data analysis table.1 provides for the establishment of an estimated distribution of the levels of economic security of the enterprise and its components. The study of scientific and methodological proposals on this subject, presented in the scientific works of various authors and in the recommendations of the Ministry of Economy of the country [2, 3, 4, 6, 7], allows using the following distribution of economic security levels of an industrial enterprise, %:

- 0-19% - the interval of the critical level of economic security;
- 20-39% - the interval of the dangerous level of economic security;
- 40-59% - interval of unsatisfactory level of economic security;

- 60-79% - the interval of a satisfactory level of economic security;
- 80-100% - the interval of the optimal level of economic security.

The specified interval values in this case are not sufficiently economically justified, but their practical use allows for a certain degree of substantiated analysis of both the current and retrospective state of economic security at different levels of its assessment.

Based on these recommendations, we can state that almost none of the components of economic security is within the critical state interval (the worst situation). But in general, the situation is quite dangerous, since the innovation-investment and foreign-economic components correspond to the interval of the dangerous state of security. In our opinion, these components have a close relationship with each other, as well as the level of renewal of production, and its financing have a high level of dependence on the positive perception of the Ukrainian economy by the international community.

The fact that most of the components of the economic security of Ukrainian enterprises (energy, financial, industrial, macroeconomic, demographic) are characterized by an unsatisfactory level of economic security does not cause positive emotions. From the dynamics in the estimated values of the components of economic security given in Table 1, it can be seen that their maximum deterioration occurred in 2014, when destabilization of the foreign exchange and monetary market was observed in our country, significantly affected the build-up of financial instability.

At the same time, it should be noted that the presence of a tendency, though not essential, but clearly present, of a definite improvement in performance indicators over the overwhelming majority of the economic security components of industrial enterprises in recent years, causes some optimism about this.

The methodological essence of the economic security of an industrial enterprise naturally follows from the definitions and characteristics of the current state of the country's economic security as a whole and of industrial enterprises in particular. An analysis of current studies of economic security in the works of

various authors [6, 9, 11] suggests The topic of the research is very important and relevant both at the global, international (mega level), national (macro level), regional, sectoral (mezouro Shade), as well as at the enterprise level (roriven ma). This implies the importance and necessity of forming a hierarchical decomposition structure of economic security (Fig. 3).

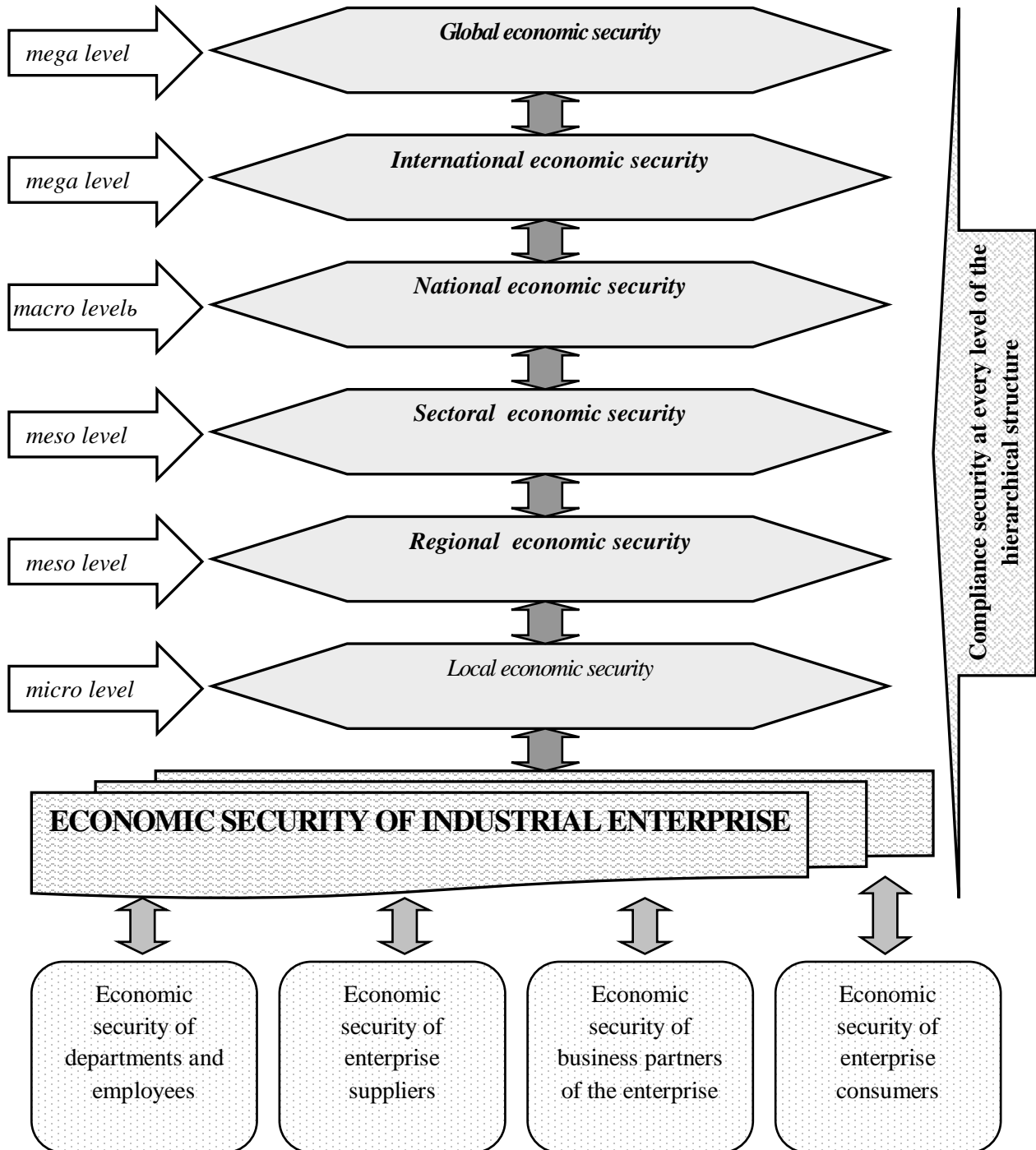


Figure 3 - The hierarchical decomposition structure of the economic security of an industrial enterprise

Source: authoring



The conducted studies allow us to draw another important conclusion. Virtually none of the components of economic security at the country level or at the level of an industrial enterprise at the present time takes into account phenomena that are extremely dangerous for each business entity, such as corruption, fraud, money laundering, raiding, tax manipulation, antitrust violation, legislation, abuse of officials and senior officials of industrial enterprises, criminal actions of criminal groups in the establishment and implementation of governmental and entrepreneurial activity, etc. At this time there is a need to account for, evaluate and eliminate all these negative manifestations.

The term “compliance” in Ukraine is enshrined at the legislative level in the Resolution of the Board of the National Bank of Ukraine dated December 29, 2014 No. 867 “Regulation on the organization of internal control in banks of Ukraine”. According to this document, compliance is the organization’s compliance with laws, market standards, as well as the organization’s standards and internal documents [7]. To achieve the main goal, it is necessary to create a system of measures that provide business with the conditions for strict compliance with legal requirements. Such a system of measures provides for the mandatory compliance of all aspects of economic activity with ethical norms (codes of conduct), anti-corruption laws, rules and instructions. And ultimately, with the help of the compliance program, the necessary conditions are created for building a sustainable (successful and long-term) business.

Based on these assumptions, the term compliance should be used to denote the continuous efforts of an organization (enterprises, institutions) to comply with all national and international laws, standards and regulations applicable to its activities, including its own internal corporate policies and procedures.

The practice of using compliance in various spheres of economic activity shows that the main thing in this concept is to ensure unconditional compliance with the requirements of the current legislation, the current norms and regulations (Fig. 4).

Today, the term “economic security of an enterprise” is quite common in scientific research. According to L.M. Hudoley, “the system of economic security of an enterprise is a complex concept consisting of subjects, objects, and the mechanism for implementing security in an enterprise” [12].

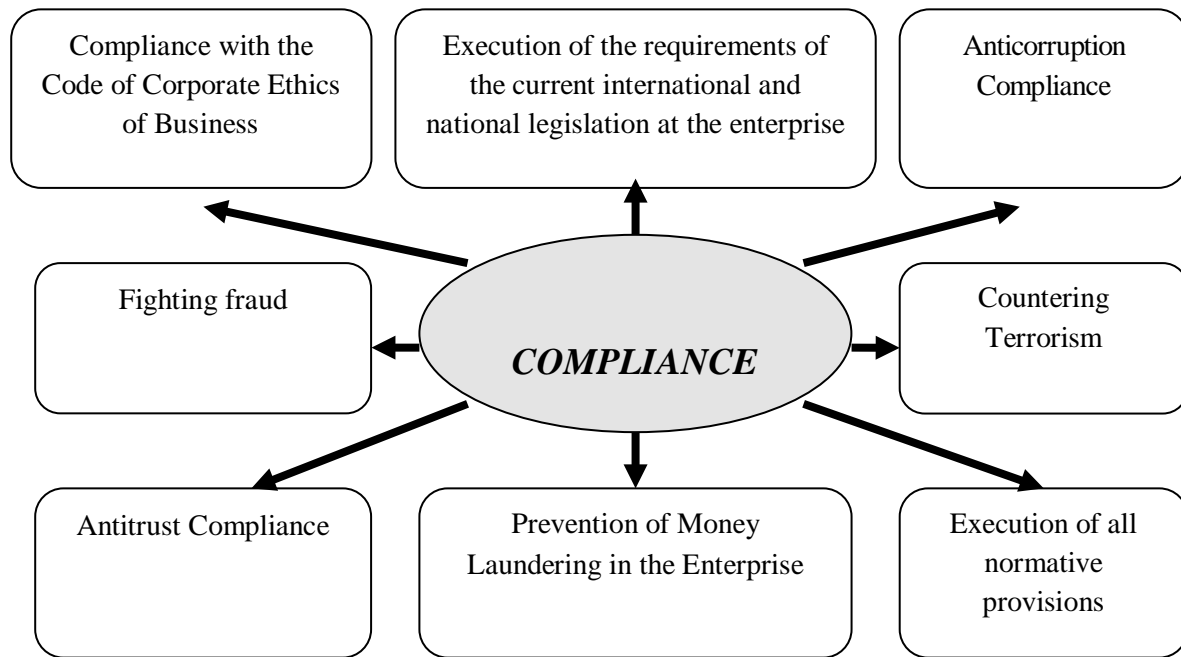


Figure 4 - The economic essence of compliance

Source: authoring

Usually, the mechanism of ensuring the economic security of each enterprise is formed individually, its components and controls depend on many factors, among which, most often, researchers identify the most important components, the list of which is shown in Fig.5.

These components (Fig. 5) are usually taken into account when determining the integral indicator of the economic security of an enterprise. But far from always, when it is formed, indicators of corruption, fraud, money laundering, violation of corporate ethics, antitrust, tax laws, etc. are taken into account. In the past 20 ... 25 years in the global economy, all this is the subject of compliance research. Based on these references, we propose to introduce into economic terminology the definition of “compliance security of an enterprise”. The new term

requires its theoretical and methodological substantiation and definition as an economic category.

The essence of the term “compliance security” comes from the definition of both the term “compliance” and the concept of “economic security”. Therefore, it is proposed to define the concept of compliance security of an industrial enterprise as *the protection of vital interests of an industrial enterprise from external and internal violations of laws, regulations, standards, constituent and internal documents of an enterprise by determining, assessing and minimizing (eliminating) compliancej risks.*

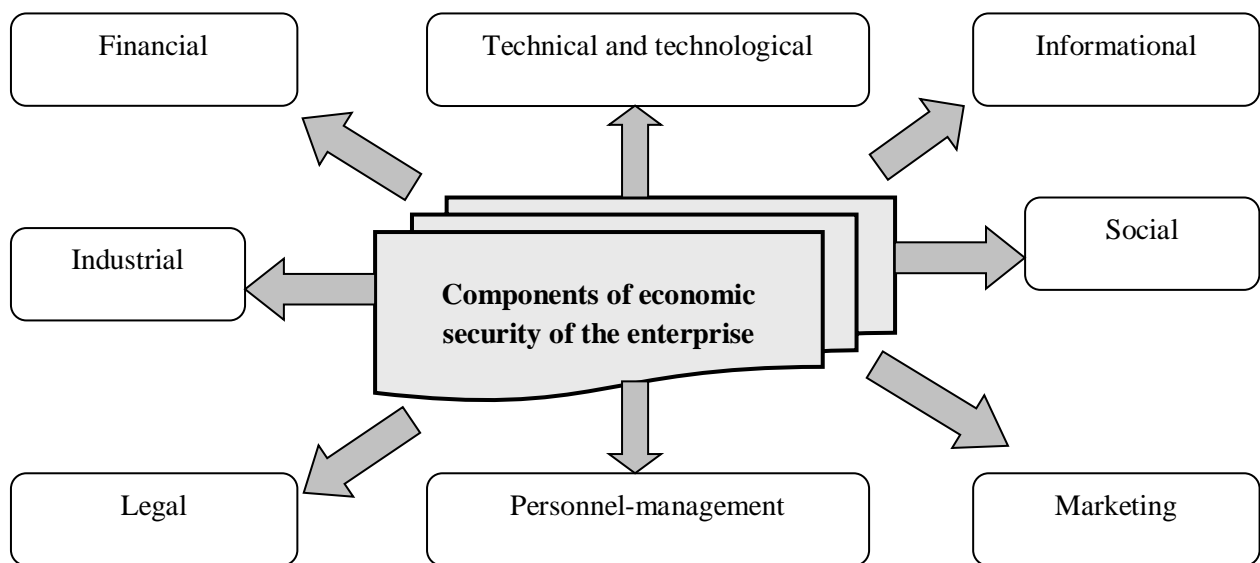


Figure 5 - Components of the economic security of an industrial enterprise

Source: authoring

Such a definition allows, firstly, to show the dynamic compliance of safety in space and time; secondly, to determine the importance of both internal and external factors influencing the size of safety compliance; thirdly, to show close interaction on the legal basis of the state and corporate systems of ensuring economic security; fourthly, to determine the presence and level of compliance risks as the main instrument for compliance safety of an industrial enterprise.

The study of the methodological essence of compliance security involves the definition of functions, policies and principles of this area of economic work in an

industrial enterprise. The functions, principles and policies for ensuring compliance security in an industrial enterprise are presented in Table 2.

For the first time in our country, the term “compliance risk” was defined in Article 1, Clause 12 of the Resolution of the Board of the National Bank of Ukraine dated March 28, 2007 No. 98 “Guidelines for Improving Corporate Governance in Ukrainian Banks”: compliance risk is the risk of legal sanctions, financial losses or loss of reputation due to the organization’s failure to comply with the requirements of Ukrainian legislation, regulations, internal regulations and rules, as well as the standards of organizations, apply to its activities.

Table 2 - Functions, principles and policies for ensuring compliance security of an industrial enterprise

| Compliance safety of an industrial enterprise  |  |  |
|--|--|--|
| <i>Functions</i>   | <i>The principles</i>  | <i>Politicians</i>                             |
| Anti-Corruption and Ethics   | Responsibility of top management   | Policy Code of Corrupt Ethics                  |
| Assessment of enterprise compliance risks  | Responsibility of the executive bodies on compliance risks               | Anti-corruption policy of the enterprise       |
| Advising staff on ethical business compliance issues   | High official status of compliance service and its head                  | Anti-Fraud Policy                              |
| Staff training on compliance issues  | Independence enterprise compliance function                              | Anti-Money Laundering Policy                   |
| Administration hotline (primary verification of received messages)                                     | Full access to information and staff                                     | The policy of accepting and giving gifts       |
| Investigation of compliance violations (corruption, business ethics, conflict of interest, reputation) | Availability of resources for compliance services, including outsourcing | Ethics Violation Policy                        |
| Industrial safety, labor protection and ecology  | Staff professionalism  | Counter Terrorist Policy                       |
| Antitrust compliance   | Compliance - the overall task of the team.                               | Policy that governs a conflict of interest     |
| Protection of personal and confidential data   | Identification, assessment and analysis of compliance risk               | Securities purchase control policy             |
| Respect for human rights in the workplace  | Monitoring, verification and reporting                                   | Privacy Policy                                 |
| trade sanctions  | Interaction with internal audit  | The principle of the system compliance program |
| Countering Money Laundering and the Financing of Terrorism   | The complex of specific duties compliance function                       | “Know Your Customer” Policy                    |

|  |   |   |
|--|---|---|
| Preventing insider trading and market manipulation   | Foreign economic integration  | Regulatory policy   |
| Compliance in the field of product marketing (for example, providing complete and honest information about the company's products) | You should not make a fetish of compliance (compliance for business, but not business for compliance) | The policy of sharing access to information - the policy of the «Chinese Walls» |

*Source:* authoring

Failure to anticipate the impact of inappropriate actions of employees of the organization can lead to negative public response and damage the reputation of the organization, even if the requirements of the legislation of Ukraine were not initiated [4].

The methodological essence of compliance safety provides for the identification of the scope of compliance risks in ensuring compliance with safety of an industrial enterprise:

- the risks of criminal sanctions by the state for violating the law;
- risks of financial losses of an enterprise due to violation of mandatory business rules and obligations of an enterprise;
- risks of deterioration of the business reputation of the enterprise (decrease in the value of goodwill)
- risks of personal liability of top management of the company (members of the board of directors and executive management of the company);
- the risks of crime within the enterprise, crimes against the enterprise and the involvement of the enterprise in criminal activity.

The introduction of the compliance safety program at Ukrainian industrial enterprises opens up new opportunities for business development, eliminating or reducing risks, and improving the quality of corporate governance in general. Table 3 summarizes the main advantages of the compliance safety program at industrial enterprises and the implications for enterprises that implement and do not use the basic provisions of compliance safety.

Table 3 - Main scopes of the compliance safety program at an industrial enterprise

| Spheres of influence of the compliance safety program in an industrial enterprise |                                     |   |
|---|-------------------------------------|---|
| Anti-Money Laundering and Currency Control  | Accounting, reporting, presentation | Legislation on the securities market and derivative financial instruments |
| Antitrust laws  | financial statements                | State secrets, personal data  |
| Customs legislation   | tax law                             | Corporate Law and Enterprise Law  |
| Banking legislation   | insurance legislation               | Consumer rights Protection  |
| Labor law   | Listing & Exchange Requirements     | Professional Association Rules  |
| environmental regulations   | Anti-fraud                          | Safety rules  |

*Source:* summarized by the author using [1, 6]

Conclusions and recommendations. The introduction of the term “compliance security” into scientific use makes it possible to consider the problem of ensuring the economic security of an industrial enterprise in a completely different way. The economic security of the real sector of the economy should be ensured not only by the efficiency of the production and commercial activities, but also by the attitude of the production system, top management and all personnel of the enterprise to indicators of corruption, fraud, money laundering, violation of corporate ethics, antitrust, tax legislation, etc. . . Along with the protective measures carried out by the state, the enterprise must protect itself on the basis of active resistance to violations of laws and regulations at all levels. All this essentially methodologically expands both the term “economic security of an enterprise” and considerably enriches the theoretical and methodological tools used in conducting various kinds of measures aimed at ensuring the economic security of an industrial enterprise.

Ensuring the economic security of the real sector of the economy is not the prerogative of any one state or corporate department or service. It should be supported by the entire system of state bodies, all links and structures of management of an industrial enterprise. Prospects for further research in the field of compliance security of the real economy are associated with these tasks. There is an urgent need to develop theoretical and methodological guidelines for determining and evaluating compliance risks, determining the level of corruption and fraud in an enterprise, the level of violations of antitrust and tax legislation,

and developing a system of ongoing monitoring of both the violations themselves and the system of punishments for such actions.

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## ***ENSURING MECHANISM OF UKRAINE'S ECONOMIC SECURITY***

***Abstract.*** *The situation in the economy of Ukraine nowadays requires a clear definition of the economic security strategy, since the majority of economic reforms are of fragmentary and non-systemic character. The economic security mechanism of Ukraine should ensure implementation of a number of important functions, such as protective, regulatory, preventive, innovative and social. Two options have been worked out. The first option is based on the formation of a modernized mechanism of state economic regulation as well as existing market*

*relations in Ukraine. The second option involves the use of market inner regulation mechanisms as well as mechanisms of market self-regulation.*

*The preventive function of the ensuring mechanism of Ukraine's economic security aims at foreseeing and further preventing formation of internal and external threats, risks, crises, and critical situations in social and economic processes.*

*The innovative function of the mechanism of ensuring Ukraine's economic security is based on the development and application of innovative solutions and efforts in order to overcome potential and real threats to the national economy.*

*The social function of the mechanism of ensuring Ukraine's economic security is focused on solving the following main tasks: realization of the rights and freedoms of citizens; achievement of the highest living standards of people through mutual partnership of businesses.*

*As a result, a set of mechanisms for ensuring economic security such as organizational and economic means, tools and methods, in order to protect the national economy as a functioning system from threats that arise under the influence of internal and external destabilization factors should be worked out.*

*Considering the regional policy of Ukraine, the regional specific features in the national structure should be taken into account. Transferring the main economic reforms onto the regional level, state support of local self-government and entrepreneurship, solving regional socio-economic problems, and rational use of natural resources should be considered.*

**Key words:** *state, economy, security, threats, region, territory, policy, production, resources, mechanisms.*

The state economic security is a top priority for modern Ukrainian politicians, scholars and people at large. Global financial crisis conditions aggravate threat scales and real damages to the country's economic security among other problems of state management. The state economic security is a complicated mechanism of power institutions which are to guarantee protection of national economic interests, social and economic development of Ukraine as a whole, its stability and sufficient defense potential.

The problem of the economic security has long been studied abroad. Franklin Roosevelt used the term "economic security" in 1934.

These problems were ignored in the Soviet Union times, the KGB focusing its efforts on economic crimes and foreign trade issues only.

Introduction of the notion of the state economic security into the science and practice of state management confirms supremacy of economy in ensuring the state's domestic and foreign security that results in formation and realization of the efficient national development strategy.

Academician L. Abalkin, Chairman of the Federal Reserve System of the USA Alan Greenspan, and state functionary Zbigniew Brzezinski considered

economic security a component of the state security system [1, pp. 4 – 14; 2, pp. 62 – 63; 3, pp. 34 – 37]. It includes the following elements:

- economic independence actualized by the fact that the international labour distribution makes national economies interdependent, while economic independence denotes an opportunity to control national resource use;
- stability and sustainability of the national economy which provides protection of all property forms, creation of guaranties for business activity, control of destabilizing factors;
- capacity for self-development and advance which are essential in the modern dynamically changing world.

The level of conformity of the current economic policy with the credibility both inside the country and abroad is a criterion of the state economic security. The inconformity of the economic policy to the effective national strategy and lost credibility both inside and outside the state is an alarming sign of a threat to the state security. The conformity of the economic policy to the effective national strategy is essential here.

At the same time, the state economic security as a component of the national security provides the foundation to form other components of security (military, information, political, social, sanitary-epidemiological, scientific-technical).

Thus, the state security is a broader notion than that of the economic one. As practice shows, the reliable and efficient system providing the state economic security can guarantee the state's sovereignty and independence, its stable and steadfast social and economic development. Economic methods of state control (regulation) are primary tools ensuring the state economic security.

It is worth mentioning that many countries are deprived of a competitive scientific-engineering potential and dependent on equipment and technologies produced by advanced countries. In present-day conditions, world countries depend, to some extent, on the policy of the International Monetary Fund and the International Bank for Reconstruction and Development which are financial structures of developed countries.

For example, in the middle of the 1960s, the USSR was lagging behind developed capitalistic countries by 10-15 years, in the 1980s the difference was 20-25 years and in the early 2000s the Russian Federation's technological lag made 50 years [2, pp. 315 – 320].

The American statesman, diplomat and international politics expert, the Nobel Prize winner, Henry Kissinger indicated that for many years, the community of nations that was maintained in every possible way existed within “the American consensus”. The states cooperated with each other expanding the world order ranks, observing generally accepted rules and norms, developing the liberal economy and giving up territorial claims in honour of national sovereignties [4, c. 5 – 6].

Liberalized domestic and foreign economic policies create conditions for regionalization of Ukraine's economic development. The regional economy as part of the state economic system is a specific object of state control. Various economic areas of a region, its industry-related structure, social and economic processes are taking place in the transition economic context characterized by dynamic development of the property structure and economic regulators.

For instance, over the past twenty years, there has been a growing interest in territorial consequences of decisions (primarily, in the countries of the European Union and the Community) made under the influence of integrated efforts to reduce some regional disproportions of economic development [5, p.7].

Different forms of property and economic regulators of a region greatly affect the processes and structures characterized by high ambiguity and diverse origin. Controlling regions' economic development is part of the state economic policy aimed at territorial economic advance. The appropriate policy targets certain economic entities and has clear objectives to reach. To fulfill corresponding tasks, one needs some regulation mechanisms to create and implement as well as some regulation means of certain amount and structure.

It is worth noting that the world is experiencing a transition to the sixth technological mode with the innovative product being created by means of nano-,

bio-, information- and cognitive technologies which are greatly in advance of mining industries [6, p. 156].

The implemented state policy (reforms) contradicting real-life economic conditions have increased the number of threats to Ukraine's national security. The open economic system has allowed foreign producers to occupy the national market, this resulting in rapid stagnation of the Ukrainian production and acute aggravation of social problems. Considering this, it should be pointed out that there remain some threats not only to the country's economic security, but also to Ukraine's national security.

It should be recognized that security is a state of keeping economic interests of a person, a community and a state protected from external and internal threats on the basis of independence, efficiency and competitive capacity of the country's economy.

Taking account of this, a person, a community, a state and basic elements of the economic system including institutional relations are objects of Ukraine's economic security. It is impossible to solve the most urgent issues of the state both on the national and international levels without ensuring economic security.

So, the state strategy of economic security is an essential component of Ukraine's national security. It is intended to provide people's protection by improving their living standards, solving internal economic and social problems in an efficient way and influencing regional processes in the international context considering national interests. Be it noted that the current economic situation in Ukraine calls for clarifying an economic security strategy as current economic reforms (processes, measures, etc.) are mostly fragmentary and non-systematic in character. Yet, it should be noted that in spite of the complexity of modern development of external and internal environments, Ukraine has a potential sufficient enough to provide its own internal and external economic security.

In our opinion, the external economic orientation of the state strategy is to envisage efficient implementation of advantages of international labour distribution, Ukraine's participating in its equal integration into the world

economic system, reducing its dependency on foreign countries in terms of economic and technical cooperation. We are convinced that a state is the most efficient organization form capable of ensuring both national and economic security types. It is the state (without public institutions intruding) that is capable of and obliged to provide all the types of national security, political, economic, social, defense and environmental being the basic ones. All citizens' efforts irrespective of their national affiliation should be aimed at creating the conditions encouraging protection of their own interests and those of the state. Using its authority bodies, the state adopts laws and regulatory and legal acts and ensures their implementation. It is the state which has monopoly on creating laws and making others obey them. A state is a united community of people with its interrelations with other countries and peoples. The system of state mechanisms establishes and maintains political and economic agreements and contracts, creates regional and international organizations and unions intended to protect citizens' political and economic rights and freedoms. By elaborating the national strategy and targets, the state forms and introduces an integrated conscious idea (a value, a system of values) to implement which the efforts of all social strata and groups are concentrated. In this way, a system-based approach to providing all the components of the national security including the economic one is fulfilled.

In our opinion, the state is to own and control a significant part of material and financial resources necessary, among other things, to form people's economic motivation, encouragement and development of required (useful, relevant, advanced) types of activity and restriction of other (harmful, out-of-date, regressive) ones.

In fact, all branches of power (legislative, executive and judicial) deal with economic security issues. Herein, delimitation of their authorities concerning security issues of the country and its regions is important. The president of Ukraine is a guarantor of state sovereignty and territorial integrity, Commander-in-Chief of the Ukrainian Armed Forces. It means he is charged with general oversight of state security bodies. As this activity is too complicated and requires professional

knowledge and skills in various areas, there is a special body, the National Security and Defense Council of Ukraine that prepares President's decisions as for ensuring all the components of the national security including the economic one.

Except for state bodies and institutions of state control ensuring economic security, there is a system of non-governmental organizations, public associations, movements, business structures, associations of legal and natural entities.

From the institutional point of view, economic security is to envisage development and implementation of a state strategy of economic security which comprises: a) a characteristic of external and internal threats to Ukraine's economic security as a set of conditions and factors threatening vital economic interests of a person, a community and a state; determination and monitoring of factors undermining stability of the social and economic system of the state in the near- and medium-term perspectives; b) determination of criteria and parameters characterizing national interests in terms of economy and meeting the requirements of Ukraine's economic security; c) formation of the economic policy, institutional transformations and required mechanisms enabling either elimination or mitigation of factors undermining stability of the national economy.

The state economic strategy is to be implemented by means of certain measures elaborated on the basis of qualitative indicators and quantitative indices (macroeconomic, demographic, foreign-economic, economic, technological, etc.).

Some authors define a mechanism of ensuring economic security as a system of managerial, economic and legal actions intended to prevent economic threats through distinguishing its basic components, namely, objective and detailed monitoring of economy and society conditions in order to forecast and prevent threats to economic security; development of threshold values of social and economic indices which if neglected lead to instability and conflicts; the state's activity aimed at revealing and preventing internal and external threats to the country's economy [7, p. 23].

The general structure of the system includes national interests, priorities, targets, tasks in the economic area (strategic, long-term, short-term); threats and

challenges (internal and external); indicators with signaling functions; threshold values distinguishing safe and unsafe conditions of economy; assessment of security by comparing actual and forecast conditions of indicators with threshold values; the concept and the strategy of ensuring economic security; the managerial block.

In our opinion, the mechanism ensuring economic security should target a complex of optimal conditions for a person's activity and development, social-economic and military-political stability of the Ukrainian society, preservation of state sovereignty and territorial integrity of Ukraine, counteraction to internal and external threats. To do this, a state strategy of ensuring economic security is required. It should be aimed at defending Ukrainian people, increasing educational, scientific, technical and industrial potentials.

The strategic goal of the mechanism ensuring Ukraine's economic security in modern conditions is to provide the whole range of tasks and functions and be considered as part of global processes. To our mind, the most essential tasks of the mechanism of ensuring Ukraine's economic security in globalizing economic conditions should be the following [8, pp. 329-334]:

- legal, customs, managerial, economic, etc. regulation of foreign trade and foreign-economic relations considering Ukraine's interests under conditions of its globalization and integration into the world economic space;
- improvement of the foreign trade structure by developing export potentials and introducing the import substitution policy followed by exclusion of products from developing countries and struggle against Chinese products expansion of the country's economy;
- support of national high-tech producers and stimulation of their export activity to introduce more competitive products on world markets and strengthen their positions there;
- improvement of state and regional controlling bodies' activity, optimization of the state controlling system to prevent and overcome external and internal threats to Ukraine's economic security [9, p. 435];



- implementation of a rational protectionism policy of national goods and services producers who are not monopolists on the Ukrainian market within established and efficient procedures;
- activities aimed at enhancing stability of the Ukrainian hryvna and creation of the most favourable conditions for serving and repaying debts to foreign countries and international organizations (funds) [10, p. 73];
- development of the information-communication sector to provide reliable and timely connection of Ukraine and external markets as well as efficient and optimal organization of product and service flows on the internal market;
- boosting of the country's scientific, technical, industrial, educational, technological potentials and improvement of Ukrainians' living standards.

The mechanism of ensuring Ukraine's economic security is to implement essential functions including protective, regulatory, preventive, innovative and social ones.

The protective function of the mechanism of ensuring economic security is intended to reduce external and internal threats to Ukraine's economy. To fulfill the protective function, there should be available and effective use of social and economic resource; efficient use and protection of available natural resources; improvement of managerial and staff resources on central and local levels; protection of the national economy from external impacts, neutralization of external invasions and risks.

The regulatory function of the mechanism of ensuring Ukraine's economic security, in our opinion, can have two variants of threat neutralization - "top down" and "down top". The first variant can be based on forming a modern mechanism of state control over economy and current market relations. The state economy control either enhances the market mechanism or restricts its potential and aims at ordering and transforming relations of market self-regulation. At the same time, state regulation should target not only potential threats, but also extra opportunities and benefits for Ukraine. Considering this, the most essential goal of state regulation should be defined as improvement of the economic security level aimed

at ensuring equilibrium between savings and investments, macroeconomic stability, reliable economic growth, conditions of economic entities' functioning and their economic security [8, p. 330].

The second variant can envisage application of internal mechanisms of market regulation and self-regulation. Conditions of external and internal environments of economic entities, basic market characteristics, primarily, competition and price levels are essential elements of self-regulation.

Optimal proportions of prices and competition can facilitate economy's transition to equilibrium. Yet, it should be noted that the market self-regulation mechanism does not always work as economic entities in Ukraine are noted for their weakness and inability to make relevant objective decisions. This causes uncertainty on the market and dependency on the state and corresponding state decisions.

The preventive function of the mechanism of ensuring Ukraine's economic security, in our opinion, is to predict and prevent further internal and external threats, risks, crises, and critical situations in social and economic processes. This function can be fulfilled on the basis of the developed system of social, economic, technological and managerial measures, the most important of which are those involving protection of the country's economic system and formation of the information system of the state economic security.

Elaborated preventive measures can be based on the information-based component of information security provision. Taking this into account, one needs high-quality, exhaustive, authentic, and timely data to work out some efficient measures, relevant forecasting of potential risks and crises (threats). Information resources can greatly enhance opportunities for making the most efficient decisions by preventing and overcoming threats and risks to Ukraine's economic and social systems.

The innovative function of the mechanism of ensuring Ukraine's economic security can be based on working out and implementing innovative decisions and steps to overcome potential and real threats to the country's economy. In this case,

implementation of this function can be strongly associated with the action of Ukraine's compensation economic potential which is revealed in two forms - state regulation and market self-regulation similarly to the regulatory function. The goal of the compensation potential can be triune (elimination of threats, overcoming of negative consequences, and compensation of losses) [11, p. 307].

The social function of the mechanism of ensuring Ukraine's economic security should be aimed at solving the following problems: realization of people's rights and freedoms; achievement of higher living standards by mutual partnership of economic entities (state-private partnership) and various social groups and creation of conditions to meet their various interests. One should note that there are some factors threatening Ukraine's economic security (unemployment, income differentiation, crime, corruption, etc.). Considering this, it is the state's responsibility to develop and implement a social-economic mechanism of leveling and eliminating risks associated with these threats.

Ukraine's economic security as a multilevel structure is to envisage a set of mechanisms of ensuring it in terms of time and management as well as their integration, subordination and interconnection.

To do this, firstly, it is expedient to create safety conditions for an industry (a region, a district) which include investigation into its functioning in the past and determination of its basic, input (static) state at present.

Secondly, formation of mechanisms of ensuring the country's economic security is to provide dynamics of a system (an industry, a region, a district, a community), changes of its qualitative parameters, indices and expected trends that correspond to its condition in the future period under the action of growth and development factors.

Thirdly, mechanisms of ensuring Ukraine's economic security should envisage expedient mobilization of resources to eliminate and neutralize current risks and threats and elaborate active steps to reduce and minimize actual damages and losses. The accepted level of risks and threats can denote availability of methods, means and ways of assessment, detection and elimination of various

forms and types of insecurity that occur in corresponding, managerial, technical, financial and economic conditions [12, p. 43].

One of methodological approaches to forming mechanisms of ensuring economic security of Ukraine's industry can be finding its three-sided managerial and economic foundation determined by a three-dimensional peculiarity of the security object, i.e. a static character, dynamics and reality of the social-economic system (an industry, a region, a community) caused by external and internal threats. With this in mind, formation of mechanisms of ensuring Ukraine's economic security is aimed at achieving safe conditions of functioning of a current system and reduction of its actual losses. The notions of conditions, factors, safety can characterize economic security from different points of view. With this respect, a condition is treated as an environment in which economic security occurs and is provided. A factor should be treated as an acting force, a reason for economic security both in terms of its intensification and reduction as well as its decrease and transition to the state of insecurity. Safety characterizes the level of security implementation and the accepted level (scale) of risks of the system functioning in relevant conditions [13, pp. 258-266].

Thus, mechanisms of ensuring economic security should present a set of managerial and economic means, ways and methods aimed at protecting the national economy as a functioning system from the threats occurring because of internal and external factors of destabilization. It can include basic elements of regulation, interaction and coordination of state-enterprise (organization) relations to perform industrial, economic, managerial, investment and innovative activities as well as steps aimed at overcoming technical backwardness and degradation of the industrial and technological apparatus, leveling crises and negative conditions of the Ukrainian economy.

Each mechanism of ensuring Ukraine's economic security should reflect interplay and dependency of developed means and methods both in statics and dynamics and in terms of further detected strategic challenges and risks in the social and economic system functioning.

The state regulation of economic security is of great strategic importance.

The regional economy being part of the country's economy is a specific object of state regulation. Various areas of the region economy, its industrial structure, social and economic processes occur under transition economic conditions with property relations and economic regulators developing dynamically.

A set of property forms and regulators of the region's economy form the processes and structures noted by great ambiguity and diverse origin. It should be noted that regulation of regions' economic development is part of the state economic policy targeting territorial economic advance. As any other state policy this one targets certain objects and is aimed at fulfilling established goals, while solution of corresponding tasks implies regulation mechanisms and search for the amount and the structure of regulation means.

The state regional policy is to solve a dual problem:

- to intensify integration processes aimed at enhancing the Ukrainian statehood;
- to localize regional conflicts, eliminate their consequences, reasons and factors causing them.

The regional social and economic policy is a sphere of the state activity controlling political, economic, social and environmental development of the country in spacious and regional terms by reflecting interrelations between the state and regions as well as those among regions. Basic objects of the regional policy comprise industrial, social, monetary and financial relations. Certain representatives of the state (central) and regional authorities, institutions, organizations, and enterprises can be considered subjects of regional regulation. In view of this, please note that the regional policy is closely connected with region development and changes in the region internal social and economic structure.

Spacious differences of resource provision, the economic development level, living standards, infrastructure availability, environment conditions, and acuteness of national and social conflicts are characteristic of all countries. Thus, goals and

tasks of the regional policy of different countries can vary greatly. Yet, there are some mutual goals common to all countries' policies. In our opinion, they include creating and intensifying the single economic space and ensuring economic, social, legal and managerial foundations of statehood; leveling conditions of regions' social and economic development to some extent; prioritizing development of regions of strategic significance for the state; taking advantage of natural (resource) peculiarities of regions; preventing environmental contamination, greening regional resource use, protecting the regional environment, etc.

Thus, regionalism is an approach to considering and solving economic, social, political and other problems in view of the region's interests.

The regional policy of Ukraine should take account of regions' specific features within the all-state structure, transfer basic issues of economic reforms onto the regional level, support local self-government and business, solve regional social and economic problems, and make use of natural resources in a sustainable way. At the same time, the regional policy should prioritize enhancement of the Ukrainian statehood, formation of conditions for regions' efficient and harmonious development and increase Ukrainian people's wellbeing.

To achieve this goal, the policy should envisage the tasks of maintaining Ukraine's single domestic market, integral infrastructures of energy, transport, communication, monetary-credit systems, joint control over product export and import under free economic, scientific-technical and other contractual relations among all Ukrainian enterprises, free competition of producers of various property forms, free movement of goods and capital, creation of conditions for increasing people's wellbeing in each region, step-by-step improvement of living standards, elimination of excessive contrasts in social conditions, expansion of horizontal connection among regions, formation of the labour market and the interregional employment control, creation of capital markets by developing corporate companies, stock exchanges, commercial banks, overcoming of the system crisis and economy reforms, overcoming of political instability, interethnic tension and contradictions of the state regime.

Formation of the regional economic policy considering prevention of economic threats can encapsulate the concept of the regional economic policy, the economic security strategy, the forecast and the programme of the region's social and economic development, the region's monetary and credit policy, the regional concept of economic security.

Keeping in mind this, it is expedient to implement and provide the system of monitoring economic security indicators, accurately and objectively control observation of requirements to making decisions accompanied by their preliminary analysis according to the economic security strategy, efficiently introduce required changes into the regulatory and legal base of the economic policy, perform unbiased expertise of legal by-laws to meet the requirements of the economic security strategy, to initiate draft decision making to correct the current economic policy.

The following essential tasks should be performed by the regional control system: analysis of the social and economic situation and the regional budget progress, formulation of proposals to correct some decisions, development of efficient decisions in relevant areas to improve implementation of the economic policy, interaction with other controlling bodies to perform expertise of draft regulatory documents.

Basic strategic tasks of the regional authorities include arrangement of systematic analysis of statistic and online information on the economic policy progress in order to detect pre-crisis (pre-critical) conditions and trends of the region's/country's social and economic development, creation of opportunities for examining decisions in terms of economic security provision, development of the region's economic security strategy, analysis and adoption (rejection) of the economic security strategy draft and procedures for its implementation to consider its influence on achieving the goals of the economic security strategy, and development of programmes for designing required regulatory by-laws.

Special attention should be paid to the socially oriented model of the market economy as a precondition for developing integration processes in contrast to the

liberal one. The former envisages selective support of regions deprived of sufficient potential. The life-support and social systems and infrastructure are in urgent need for this support and they require investments which are unfavorable for private investors as well as businesses opportunities which are promising in terms of taking beneficial positions on the domestic and foreign markets.

The mechanism of the state (republic) support can be chosen according to the backward region's specifics (obsolete industry, single-industry orientation, environmental hazards, border proximity, high social tension, consequences of military actions requiring restoration).

The differential approach can provide individual customs benefits for different areas, namely:

- import of equipment and machines for technical modernization of operating enterprises in industrial regions;
- import of agricultural machines made by Ukrainian producers for agricultural regions;
- export of raw materials and import of technical equipment for reconstructing mining enterprises in raw-material regions.

The state support of regions in any form is to be implemented according of the following principles: target orientation, systematic influence including counteractions, multilevel participation of the state power to choose areas for mutual actions, preventive actions involving managerial and other obstacles to prevent depressive situations turning into disastrous ones, reality and control, i.e. conformity of obtained results with the targets set.

The following directions of forming a single capital market should be distinguished as important factors of integration: formation of the market mechanism of state regulation and control over financial activity to ensure harmonious and beneficial development of Ukraine's regions. To do this, an efficient legislative base is required to control financial interrelations between the country's centre and regions, implement principles of budget centralization (decentralization), reform the current tax system to intensify regions'/territorial



communities' advance and facilitate their own tax potential, provide an investment essence for financial resources coming from the budget as well as regions' or communities' own resources, create an economic mechanism facilitating attraction and efficient application of self-sustainable financial resources and foreign investments within the state economy as a whole and its separate regions.

Regional financial systems are to solve three basic territorial problems - forming a multichannel territorial system of business financing, creating a set of interregional, regional and territorial-community financial institutions to enable additional profits for regions and free financial resources from different sources, and ensure efficient financial interaction among regions as well as with central authorities and foreign investors.

Enterprises' and organizations' financial security growth can be achieved by protectionist tax and amortization policies, structural transformation of regional economic complexes, active investments from various sources including foreign ones, efficient systems of crediting for enterprises, reduction of inflation trends, stabilization of money circulation, solution of mutual non-payment problems, active interaction with regional and central authorities, organizations, enterprises of other regions and states.

Steps ensuring mutual interests of the center and regions are of particular importance. They may include the regional policy aimed at leveling social and economic levels of regions, supporting the regions which are backward, have low financial potential and per-capita incomes, providing necessary conditions for developed and promising regions, intensifying the practice of making contracts and agreements between central and regional authorities as well as self-government bodies, improving technologies of coordinating central authorities' decisions with those of regions, forming a single economic space by conducting a single tax-budget policy and pricing, accelerating reforms of local self-government, completing creation of a single state power system, improving inter-budget relations, creating a transfer system aimed at leveling regions' budget supply, regions' participating in developing the credit-monetary policy.

Thus, participation of the Ukrainian central power in ensuring regions' economic security implies supporting state programmes of regional development, increasing the amount of state orders for socially important products, ensuring equal interaction of the central and regional systems, developing a well-grounded economic strategy for interaction with regions that guarantees efficient decision-making, creating favourable conditions for increasing regional exports, maintaining life-support industries and scientific-intensive, high-tech production in crisis regions, providing direct budget guaranties and investments for technical and technological updating of industries, specialization of crisis areas, encouraging formation of territorial scientific-industrial complexes.

It should be noted that along with economic stabilization, there will be more opportunities for regions' self-protection without diminishing the state's role as an economic security guaranty.

Thus, we can conclude that regions' economic security can be enhanced by improving the state regulation of economic advance and developing conceptual and programme documents of interregional and territorial planning, creating an integral system of risk control including active state anti-inflation, currency, exchange-rate, monetary, credit, tax and budget policies aimed at encouraging the market of innovations, science-intensive products and high value-added products, developing promising general-, dual- and specific-purpose technologies.

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## **ECONOMIC SECURITY PARADIGM AS A FRAMEWORK OF REGIONAL ECONOMIC SYSTEMS IN TERMS OF STRUCTURAL CHANGES**

Transformational changes in Ukraine, reform of public administration towards decentralization of powers of central government taking place towards a new regionalism formation in Ukraine require securing of existing and prevention of new threats emerging functioning regional economic systems and social and economic development in general.

Research interpret the essence of the concepts of "regionalism" and "regionalization" makes it possible to assert that these concepts have a dual nature. The scholars point out that regionalism and regionalization, consisting in deepening democratic processes of socio-economic development, shaping under the influence of internal and external factors regional consciousness and identity, which may be related to the emergence of threats of a political nature, namely, the polarization of society and the territorial integrity of the state. It is also confirmed by the experience of the new regionalism, for example, in European countries such as Spain, Italy, France and the UK. The aforementioned, as well as the socio-political situation that has developed in Ukraine in recent times, necessitates the provision of economic security of regional economic systems and the country as a whole.

According to the Decree of the President of Ukraine "On the decision of the National Security and Defense Council of Ukraine on May 6, 2015" On National Security Strategy of Ukraine "" objectives National Security Strategy of Ukraine is "minimize threats to national sovereignty and create conditions for the restoration of the territorial integrity of Ukraine within internationally recognized state border of Ukraine, guaranteeing the peaceful future of Ukraine as a sovereign and independent, democratic, social, legal state; the establishment of the rights and freedoms of man and citizen, ensuring a new quality of economic, social and humanitarian development, ensuring Ukraine's integration into the European Union and creating the conditions for joining NATO [6]. Among the main areas of state policy of national security, economic security has been declared.

At the same time, economic security, being an integral part of national security, is its material basis, as it is possible to achieve ecological and informational security, effective defense capability, financial independence of the state, and the provision of national security in the foreign policy sphere under conditions of stable socio-economic development of the state and its regions.

Economic security is multidirectional, since its objects are individuals, households, groups of people, enterprises, communities, separate territories,

industries, groups of industries, regions and the state as a whole. The effectiveness of security depends on the consistency of state interests and regions, their powers and timely means to the necessary protection. In the context of a new regionalism formation in Ukraine, the regions become subjectivity in the international market, which, in turn, actualizes the issue of ensuring the economic security of the regions, because, having its unique features, the regions of Ukraine have their own special threats, which are connected, for example, with climatic and natural conditions, the status of border areas, energy dependence, etc.

In general, the economic security of the region should be considered as a certain system with inherent properties of any system, which, in turn, is a subsystem of the national level.

Economic security of the regions, in our opinion, should be considered as an integrated system of measures to ensure the provision of competitiveness, stability, as well as the necessary production, financial, labor, technological and other resources of the entities of the regional social system for the socio-economic development of the regions, taking into account the interests of each citizen and diverse population groups, combining them with regional and national interests in the face of various threats of internal and external environment.

Economic security of the regions, acting as a system, has its own components of the subsystem. Analysis of research [3, p. 67; 8, p. 75; 2, p. 31] allows you to highlight the following:

- production – due to the availability of resources and production capacities, the state of depreciation of fixed assets, the formation of an extended reproduction system taking into account the production regional specificity;

- financial – characterized by a regional budget system, a surplus or a deficit of the regional budget, tax revenues to the regional budget;

- environmental – is to ensure certain environmental standards; technogenic condition of the region;

- public – the criminal situation, the degree of corruption and the development of the shadow economy;

- food – providing high-quality food products;
- innovation and investment – the investment attractiveness of the regions and the capacity of innovation development of the regions, the ability to produce new knowledge, the volume of research and development work, the development of scientific, technical and innovative potential;
- socio-demographic – characterized by the state of the labor market and its structure, motivation in the labor market, quality and living conditions of the population of the region, life expectancy, the level of socially-conditioned diseases, migration processes, income differentiation.

In the opinion of scientists [8, p. 94; 7, p. 65], the internal structure of economic security of the regions is characterized by three parameters:

- firstly, economic independence, which is essentially relative, since the economic security of the region has a systemic basis and acts as a subsystem of economic security of the country, and also the region depends on the policy of central authorities. However, independence is the ability of the region to control the attraction of regional resources to production, which can effectively produce high-quality competitive products on the world market, make decisions on the prevention of economic threats or the localization of their consequences. Also, given the fact that Ukrainian legislation declares the principles of the economy openness to international economic relations, including at the regional level, the foreign economic relations of the border regions require special attention to ensure economic security. When forming cooperation and establishing international relations, it is necessary to focus on flexible, mutually beneficial forms of cooperation with the possibility to realize regional interests in the international sphere, since too openness to international economic relations leads to dependence on the situation of world markets, the adverse changes which lead to increasing the negative impact on the socio-economic development of the regions, and it may also threaten the national interests of the country;

- secondly, the stability of social and economic development, which serves as the basis for the development of regions, is to protect property rights of subjects

of regional economic systems, prevent the destabilization of the socio-economic situation in the region, the fight against criminal structures and corruption, etc.;

– thirdly, the focus on self-development and modernization of regional economic systems, with the focus on creating favorable conditions for attracting investment resources to the region, expanding the production of innovation activities, attracting intellectual capital to production, improving the skills of the workforce, etc.

Ensuring economic security of regional economic systems and the country as a whole should be a system of continuous monitoring and strategic measures to prevent and mitigate threats and threats at both the state and regional levels, aimed at integrating the regions into a single political, economic, spiritual environment of the country. with the preservation of regional peculiarities of socio-economic development (Fig. 1).

The system of economic security of regional economic systems in a new regionalism formation in Ukraine should be able not only to timely prevent violations of social and economic development that can occur under the influence of both internal and external threats, as well as taking into account that the new regionalism provides regions of subjectivity in the global space, contribute to the growth of the competitive position of the region in the world market.

This requires the system to ensure the economic security of regional economic systems in a new regionalism formation in Ukraine meets such criteria as self-reliance, which is to build capacity and its resource base to independently solve problems in the region under the influence of internal and / or external threats, in the context of providing a positive dynamics of socio-economic development of the region. Such resources that can be formed by the region as a percentage of the regional budget revenues and / or its surplus will enable regions to more effectively provide economic security, respond quickly to critical situations, counteract threats, and restore social and economic processes.

Agree with the scholars [8, p. 154, 5, p. 73], who believe in economic security of regional economic systems in a new regionalism formation in Ukraine



should include compensatory mechanism that is able to counter threats diverse regions.

The purpose of creating a compensation mechanism is to respond as quickly as possible to emerging threats by providing social assistance, international and interregional cooperation, insurance systems, functioning of funds for supporting socio-economic development of regions, flexible system of retraining, creation of mobile health care measures, etc. Creating a compensation mechanism in the system of ensuring the economic security of regional economic systems in the conditions of the emergence of a new regionalism in Ukraine is not able and should not eliminate all the consequences of existing threats, but it is capable of timely localizing some of them and / or reducing their consequences at the expense of the time factor.

Monitoring the socio-economic development and threats to economic security of regional development must also be complemented by tools of alternative solutions to regional authorities within the operational decision making process.

A special place in the economic security of regional economic monitoring takes socio-economic development in conditions of new regionalism.

In studies devoted to the issues of regional economic security, much attention is paid to the threats that may arise in relation to the subjects of the economy, classifying them according to various features, depending on [1, p. 45; 2, p. 78; 4, p. 39; 5, p. 22]:

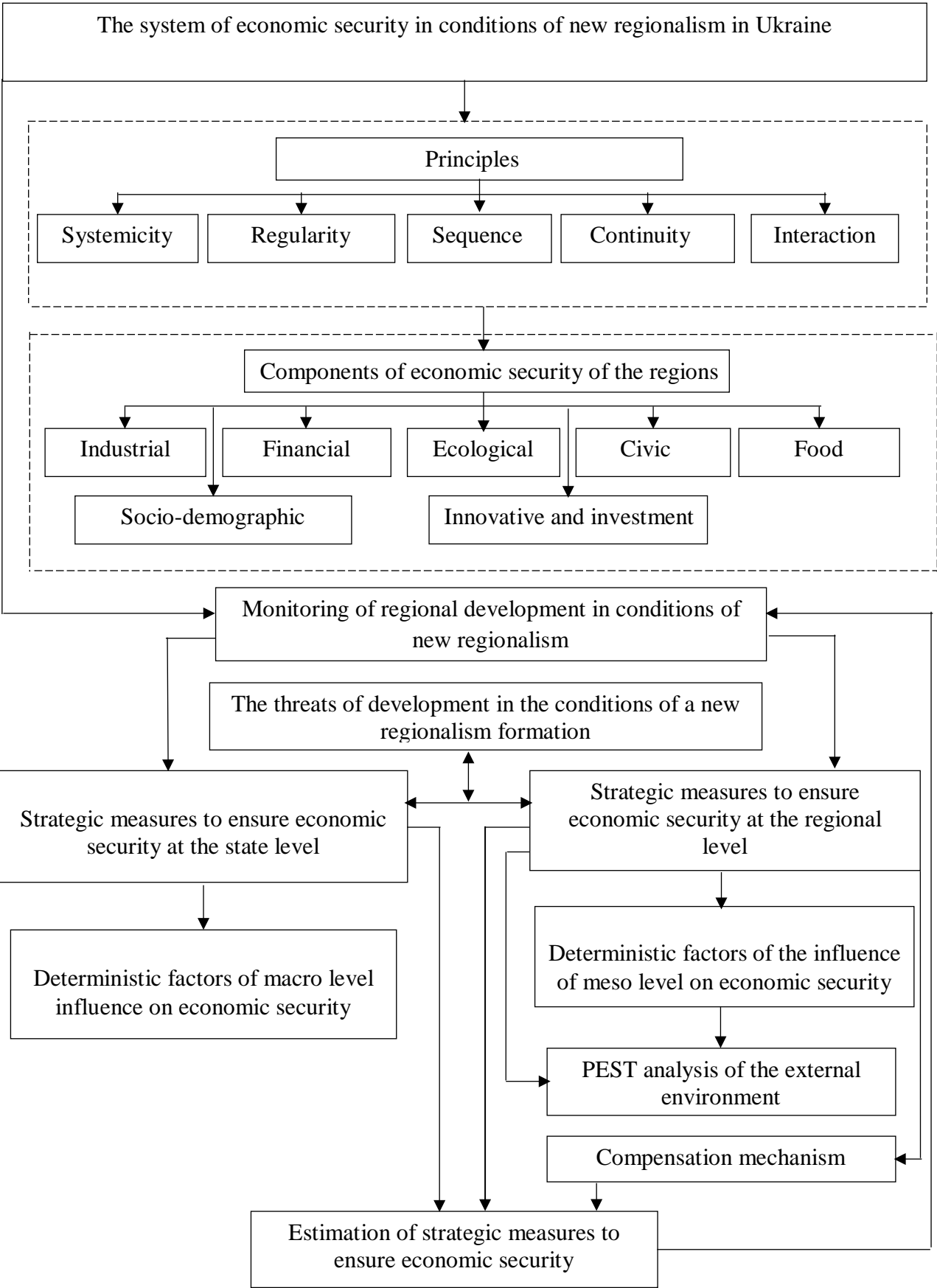


Fig. 1. The system of economic security of regional economic systems in a new regionalism formation in Ukraine

Source: constructed by the author.

- spheres of danger (factors in the resource, production, marketing spheres);
- nature of occurrence (political, economic, environmental, social, international factors);
- relation to the subject of the national economy (external or internal);
- possibility of occurrence (probability, low probability, high probability);
- time of occurrence (in the short, medium, long-term period);
- magnitude of losses for subjects (catastrophic, significant, tangible, insignificant);
- impact on the object (property, intellectual, financial, technological factors), etc.

Agreeing with the scholars on the classification of threats, it should be noted that the new regionalism, as well as any complex phenomenon, has positive and negative manifestations. Possible threats to the socio-economic development of regions and the state as a whole, in the context of a new regionalism formation in Ukraine, include:

- deepen differentiation of socio-economic development;
- shifting responsibility to the public between the central and regional authorities from violations interlevel interaction power vertical "center-regions", in terms of fuzzy distribution functions between them;
- weakening of internal consolidation and aggravation of inter-regional relations as a result of increasing concentration of regional economic systems and the growing role of foreign economic relations of the regions;
- the inability to solve certain problems, including those associated with considerable expenditure of financial resources and / or overcoming certain consequences of environmental disasters at the regional level;
- increasing polarization of society under the influence of regional imbalance social interests and deploy social conflicts;

- deformation structure of the national economy caused by the violation of economic ties, for example, due to loss of transport infrastructure;
- strengthening the resource dependence of the regions, first of all on energy;
- low competitiveness of regional enterprises due to the use of imperfect technologies and processes;
- groundlessness of managerial decisions, due to imperfection of management at the regional and local levels and lack of managerial skills;
- aggravation of socio-political conflicts, the emergence of cells of social tension.

In our opinion, to determine the external threats of regional economic systems in conditions of new regionalism in the Ukraine affecting the socio-economic development of regions should be used, PEST analysis. PEST analysis methodology makes it possible to analyze processes that promote and / or threaten the socio-economic development of regions by political, legal, economic, socio-cultural and scientific and technological factors.

PEST-analysis is part of the economic security of regional economic systems in a new regionalism formation in Ukraine and promotes the development of strategic measures to ensure economic security.

Implementation of continuous monitoring and policy measures to ensure the economic security of regions is because there is a low efficiency of the developed strategies for regional economic development, and there is an incomplete and inefficient use of available resources to counter external threats and risks.

The system of regional economic systems economic security in a new regionalism formation in Ukraine should be developed and implemented in accordance with the following principles:

- systematic – strategic provision of economic security of the regions should take into account all components of the economy of the region as a certain system, be aimed at various directions of ensuring economic security as subjects and objects of economic development of the regions; strategic measures should have

the systemic nature of interconnected processes of economic security management in the context of a new regionalism formation;

- regularities – to take into account the laws of development of regions in the conditions of a new regionalism formation and to have institutional support;

- consistency and continuity – policy measures should have some continuous nature areas to ensure economic security – conflict and not consistent with each other at different levels of governance, reflected in comprehensive regional programs;

- interactions – measures should be aimed at ensuring the economic security of the regions' development and accompanied by coordinated actions of all participants in this process, including by bringing information to actors on strategic management measures.

Commitment to economic security system of regional economic systems in a new regionalism formation in Ukraine will increase the effectiveness of measures to ensure economic security of regions and economic security of the system as a whole.

Structural and functional relationships are important for the effective functioning of the economic security of the regions, as well as for any other system. Structural communications systems providing economic security regions characterize its composition and interaction of the subsystems of the upper and lower order. Functional communications systems are informational in nature and provide system efficiency.

These include:

- firstly, organizational communications – provide systems for ensuring the economic security of the regions logical, purposeful, coordinated;

- secondly, information links – based on the aggregation and transmission of objective and timely information about the internal and external threats, as well as monitoring of social and economic development provide stable functioning of regional economic systems;

– thirdly, communicative communications – provide horizontal and vertical interaction between subsystems providing economic security of the regions;

– fourth, feedback – between the actors of regional economic system and economic security regions, and other systems.

A sort of link between macroeconomic strategy of economic safety at regional level and the national policy of regional development, economic security system regions in the context of a new regionalism formation is essentially a strategy meso level.

The efficiency of regional economic security becomes a significant factor of socio-economic development under conditions of a strategic approach to identifying and implementing the principles of economic security of regional economic systems in a new regionalism formation in Ukraine. It should be noted that in Ukraine, for a long time, used short-term business planning, by reconciling the receipts and expenditures of budgets of different levels. We believe that to effectively ensure the economic security of regions need to use the strategic approach.

In our view, the strategic economic security of regions – it is a strategic action plan that aims to develop the regional economy in conditions of new regionalism, which in turn manifests itself in the development of social, cultural and other areas of the region.

Strategic provision of economic security of the regions in the context of a new regionalism formation in Ukraine has a certain specificity inherent in strategic programs. Strategies provide orientations and priorities for medium-term plans and programs and ongoing activities that must be agreed upon and consistent with each other.

Strategic economic security at the regional level to the national under conditions of new regionalism has certain features which include:

– direct proximity of multi-sectoral regional producers that are able to react quickly to changes in solvent demand;

– availability of local labor funds with concentration of specific skills;

- involvement of regional actors in transnational networks;
- development of industrial and social regional infrastructure, which contributes to economic security.

Also, the introduction of a system of economic security at the regional level provides an opportunity:

- conduct regions their own socio-economic policies, taking into account regional needs and peculiarities for securing the economic security of the regions, taking into account the vector of state policy;
- take into account the state of socio-economic development of the region at a specific stage of development and specific features of the regions;
- to carry out more timely measures to prevent possible threats and localization of the negative consequences for the region of various unforeseen events;
- to ensure the regional economic systems' balance of interests and public economic interests;
- provide assistance to other regions on a contractual basis, and so on.

In turn, the strategic provision of economic security of the regions in the context of a new regionalism formation in Ukraine will help:

- reduce the degree of differentiation of economic development of regions;
- to stimulate the development of those regions and territories which for certain objective reasons cannot work in the mode of self-development;
- to form the institutes that will promote socio-economic development and implementation of the intellectual, labor, cultural, moral, spiritual potential of the population, etc.

The priority directions of economic security of the regions are:

- ensure a high social standard of living and quality of life of the region;
- reducing property differentiation of the population in the region;
- effective and full use of available resources, intellectual, economic and other potential of the region;

- improvement of the ecological, criminal status in the region;
- implementation of the socio-economic strategy of regional development according to planned prospects;
- balancing national and regional interests;
- prevention of aggravation of political, socio-economic, religious, interterritorial and other conflicts in the region;
- maintenance of socially important objects in an appropriate condition;
- promoting the development of the most efficient, cost-effective and competitive, including in the foreign market, enterprises;
- innovative direction of industrial and agricultural enterprises;
- development of regional infrastructure, etc.

When developing strategic measures to ensure the economic security of the regions, it is necessary to rely not only on financial and technological resources, ie material benefits, but also on the potential intellectual capabilities of the regions, to take into account certain priority directions in ensuring the economic security of the regions, which can change under the influence of various factors on the macro - and the micro level.

The system for ensuring the economic security of regional economic systems in the context of a new regionalism formation in Ukraine should also take into account certain factors of the meso-macro level, which can have both positive and negative synergy effects.

In our opinion, the factors of meso-geometry should be considered, first of all, with regard to the territorial aspect, that is, with respect to the regions. Factors economic security meso level on the territorial aspect include the following regions' features:

- resource provision and potential of the regions;
- regional features;
- development of regional infrastructure;



– attractiveness of the region (regional level of employment and unemployment, living standards in the region, investment attractiveness and availability of innovation– active enterprises; geopolitical location, availability of natural and other resources; rampant transport infrastructure, the effectiveness of regional governance, etc.). To the factors of the macro level it is necessary to attribute:

– political determinants affecting the activities of economic entities (changes in the markets for sales, including abroad, and the supply of resources as a result of a change in the political situation);

– economic: the impact of the macroeconomic situation (inflation, phases of the macroeconomic cycle, exchange rate fluctuations, interest rates, etc.);

– social: changes in solvent demand (living standards, volumes of consumption, consumer preferences);

– technological: the pace of technological progress, development and innovation (the cost of research and development, spur innovation);

– institutional: changes in the regulatory and legislative framework (changes in taxation, refinancing rates and depreciation charges, changes in the legislation of entrepreneurial activity);

– ecological: the impact of changes in the environmental situation (changes in environmental control parameters, climate and environmental changes).

Consequently, the economic security of regional economic systems in a new regionalism formation in Ukraine deterministic factors affecting meso and macro level, enabling to consider: territorial, political, economic, social, technological, institutional and environmental aspects of natural and economic security of regions.

The development of strategic measures to ensure the economic security of the regions should take into account:

– the main directions of economic security on the subjects and objects of the regions in accordance with existing objectives, tasks and proposed specific actions

to ensure economic security through the implementation of complex operational and long-term strategic measures;

- deviation of actual results from planned predictive indicators of socio-economic development;

- the results of ongoing monitoring of deterministic factors affecting the economic security and their possible changes for the timely adjustment of appropriate measures in the regions;

- available resources and their potential use changes and to ensure the economic security of regions.

It should be noted that the effectiveness of the economic security of regional economic systems in a new regionalism formation in Ukraine greatly influenced by administrative barriers and corruption component of economic activity, distrust businesses to methods of public administration reform and economic relations and so on.

In turn, the system of economic security of regional economic systems in a new regionalism formation in Ukraine based on the principles: consistency, regularity, consistency, continuity and cooperation, taking into account ongoing monitoring of socio-economic development in the context of a new regionalism formation, conducting PEST- analysis, monitoring of deterministic factors of influence of macro- and meso- levels for ensuring economic safety and security and the creation of a compensation mechanism is an effective factor in socio-economic development.

Strategic management of economic security in the region will strengthen the competitive business environment, the motivation of local government and regional entities, and more efficient use of resources.

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## **INEQUAL ACCESS TO LIFELONG LEARNING AS A RISK CONTRIBUTING FACTOR OF ECONOMIC SECURITY OF THE HIGHER EDUCATION SYSTEM**

***Abstract.** The purpose of the article is to justify the more active role of the higher education system for implementation of lifelong learning. Analyzing the documents and policy guidelines in the field of lifelong learning, summarizing scientific works of other scientists, we came to the conclusion that an inclusive economy is built taking into account the creative features of each employee. The post-industrial economy grows into a creative economy. Implementation of inclusion becomes its main factor.*

*As a result of the study, it is proved that training opportunities should be accessible to all citizens on an on-going basis. From a socioeconomic point of view, lifelong learning helps to improve unskilled labour. Workers get more knowledge, both for themselves and for the society as a whole. Open and flexible education, continuing education should be at the center of attention and the national higher school.*

*Prospects for further research in this area are development of individual components of strategies and business models for lifelong learning. They should be adapted to the local situation, taking into account financial options and requirements of the local labour market.*

**Key words:** *inclusive economy, higher education, lifelong learning.*

**Introduction.** The role of education along with awareness of necessity of lifelong learning and education for all and throughout life is gaining crucial significance in the postindustrial society. This important feature is expressed in the principle of continuing education which enhances synergy between economic growth and social inclusion.

Under modern challenging conditions, enhancement of economic security and economic development can be ensured by competitive education, cutting-edge science and innovative technologies. Educational processes should be revitalized considering global tendencies in the sphere of higher education.

At present, both national governments and international organizations affirm availability of a range of economic and social reasons for improved access to higher education (HE) for those population groups that were earlier excluded from this process. Human life is longer now and older people want to change professional, career and life pathways and work actively. Professional competence actualization should be on-going.

International and European organizations, first of all the UNO and UNESCO, are actively developing conceptual documents and policy guidelines in the sphere of lifelong learning. P. Lengrand was the first to substantiate the concept of lifelong learning. V.V. Kolos, A.I. Kravchenko, V.N. Skvortsova, O. Toffler studied prerequisites to emergence and development of the term lifelong learning. Economically, importance and necessity of development of continuing education are substantiated by exchangeability of economic, cultural and social forms of capital (P. Bourdieu).

To provide accessibility of lifelong learning is the task that ensures defense of national educational interests and development of the educational sphere in compliance with priorities of the country's social and economic development. All this motivates us to analyze accessibility of lifelong learning in conditions of the inclusive economy.

**Basic Material Presentation.** Inclusive growth is a strategy aimed at transforming economic efficiency growth into economic empowerment and prosperity for the greatest possible number of people. The final aim of national economies is a large-scale and sustainable progress in living standards, the concept that comprises all kinds of incomes as well as economic opportunities, security and quality of life.

A person is a particular live being that has consciousness and self-consciousness. Every person possesses a complex of socially significant psychological properties, relations and actions formed in the course of our development and determining our behavior (personal features) [1].

The inclusive economy considers all these personal features maintaining equal treatment of employees despite their different inclinations, abilities, predilections, diseases, strong and weak competences, low-quality education and high-quality training. One may say that inclusion is a “personalized economy”, i.e. the economy built on the basis of consideration of every employee’s creative traits. As the postindustrial economy grows into a creative one, implementation of inclusion becomes the major factor of economic growth [2].

Within inclusive growth, learning opportunities should be accessible to all country's citizens on an on-going basis. In practice, it means that every citizen has their own path of learning which addresses their needs and interests at all stages of their life. Impossibility of realizing one's right to higher education and continuing education is a risk contributing factor for the country's economic security. Considering the significance of lifelong learning for the society’s and economy’s welfare, this risk is connected with not only socioeconomic and personal but also state-level losses. Due to this, access to lifelong learning opportunities is one of major problems of both economic security and human rights issues.

The Report to UNESCO of the International Commission on Education (1996) states that the concept of learning throughout life is one of the keys to the twenty-first century. This fact is conditioned by the four pillars that underlie education: learning to know, learning to do, learning to live together, and learning to be [3].

Universal education is one of the basic requirements of the modern society and the main catalyst of socioeconomic and personal development. The wider access to HE should not be limited to continuing professional training; the growing demand for personal development and cultural enrichment offered by it should be responded as well. Education at all levels is treated as a human right as it results in a great number of benefits on social, economic and personal levels. The Commission of the European Communities’ “Making a European Area of Lifelong Learning a Reality” states that the strategy of learning is the lifelong and lifewide

one, i.e. associated with “from cradle to grave” learning and encompassing the whole spectrum of formal, non-formal and informal learning [4].

Lifelong learning provides both “second chance” opportunities for renewing basic skills and higher level education opportunities. Primarily, this refers to delayed access to higher education – use of the advantages which appear, or must appear, for an individual at a certain stage of their human potential development, when reaching this or that educational level. With two basic elements of adult education - catching-up and further – the latter is the most requested by the society [5].

The present day employees work longer, this fact arousing interest of people of the tertiary age (40+) in lifelong learning. The need for longer stay on the labour market requires lifelong acquisition and development of new skills. In the OECD member countries 50-64-year-old people having jobs average 60%. For 25-49-year-olds this proportion makes 75%. That is why it is dramatically important to increase the older workforce segment and change the situation when people of over 50 are the last to get a job and the first to be dismissed [6, p. 67]. In this process higher educational institutions should no doubt take their niche.

Besides corresponding professional skills, employers increasingly demand skills of teamwork, creative thinking and problem solving. The combination of these skills is also important for people who think about launching their own business. However, curricula are insensitive to such skills. Besides, they are difficult to be assessed formally. Interdisciplinary professionals, i.e. people able to combine work in various spheres, are rare on labour markets and highly valued by employers.

The “Europe 2020” strategy states that about 80 million people have low or basic skills. By 2020, 16 million more jobs will require high qualifications, while the demand for low skills will drop by 12 million jobs [7, p.16]. By 2025 almost half of all job openings in the EU will require higher qualifications, usually awarded through academic and professional programmes at tertiary level. Skills developed through these programmes are generally considered to be drivers of



productivity and innovation. Graduates have better chances of employment and higher earnings than people with only upper-secondary qualifications [8].

Lifelong learning is a decisive factor allowing employees to compete in the world economy. Education and learning, too, increase social capital and help build human capital, increase economic growth and stimulate development. Besides educational results, social capital improves indicators of public health, child welfare, enhances tolerance, increases civic freedom and justice, decreases rates of crime and tax avoidance and evasion.

Along with the social function, adult education has a pronounced economic potential meaning that education accessibility provides training and re-training of working-age population at a certain moment of time and in a certain volume [5]. Links between education and economic growth gain strength along with the increased rates of transfer of technologies.

From the socioeconomic point of view, lifelong learning serves improvement of unskilled labour to acquire more knowledge for both individuals and society. To a great extent this means education up to the Bachelor's level. From the point of view of higher education, lifelong learning means not only enhancement but also broadening of knowledge.

In 2001, European ministers of higher education stated that lifelong learning is a key element of the European higher education area. The EU headline target is to reduce the drop out rate to 10%, whilst increasing the share of the population aged 30-34 having completed tertiary education to 40% in 2020 [9].

As of 2010, in Ukraine the share of population with higher education made nearly 25%, people with complete secondary education accounting for about 39% [10]. That is why, combination of further training of low skilled workforce and broadened access to higher education for skilled employees appears to be the most optimal option.

The strategic framework of the European collaboration in the field of education and professional training adopted in May, 2009 sets a number of criteria to be reached by 2020, including adults' participation in education. Not less than

15% of adults aged 25-64 should participate in lifelong learning [11]. In 2017, the share of adults aged 25-64 who participated in education in the EU-28 made 10.9%. The majority of the population is recorded in Denmark, Sweden and Finland. The great share of “adult learners” is recorded in Iceland (23.6%), Switzerland accounts for the largest proportion of 31.2%. In 2017, the Netherlands, France, Luxemburg, Austria and Estonia cleared the 15% barrier and Great Britain practically came close to it. On the contrary, in Romania, Bulgaria, Slovakia, Croatia, Poland and Greece the adult education level makes 4.5% or less.

People live longer lives, want to change professions and career paths, work actively at the older age. Professional competence actualization should be ongoing. The system of adult professional training and re-training is of great importance. Unfortunately, in this part there is not yet an adequate response to requirements and challenges of the modern economy.

Thus, among the trends of society developments that condition expansion of the “lifelong learning” concept, the following ones are topical for Ukraine:

- Increase of the role of human capital in the national income increment. In the national income, human capital makes 64%, natural capital – 20%, physical capital – just 16%.
- Unfavorable demographic trends. Falling birth rates and population ageing necessitate creation of conditions for middle and older aged people learning.
  - Accelerated renewal of professional knowledge. At present, about 5% of theoretical and 20% of professional knowledge is renewed annually.
- Establishment of the “lifelong learning”[12] concept in the European education area.
  - Retirement-age increase that causes need of education throughout life for tertiary-aged (40+) people. Necessity of staying on labour markets as long as possible requires acquisition and development of new skills throughout the lifecycle.

- Benefits for personal development: fineness of intellect, positive self-esteem, high adaptability to changes, mental and emotional health.
- Further re-training for individuals with “intuitively” obtained professions or those with higher education who have less popular but budgetary (i.e. free of charge) specialties.

Accessibility and continuity of lifelong learning is a strategic direction of education development stated in the National Strategy of Development of Education in Ukraine for 2012-2021. The Law “On Education” stipulates that every individual in Ukraine has the right to receive qualitative and affordable education throughout life. Also, the Law of Ukraine “On Higher Education” states that one of the principles underlying the national policy in the sphere of higher education is promotion of sustainable development of society through training competitive human capital and creating conditions for lifelong learning. However, the education of the kind is not yet of the system character.

Recently, lifelong learning has become more noticeable on the agenda of higher education in the world. Open and flexible education, continuing education should become the focus of interest of the national higher school, too. We should focus on developing strategies and business models for lifelong learning.

Formal learning still prevails in the national higher education. But most learners who study throughout the lifecycle are interested in learning itself but not in formalities. That is why, universities should offer non-formal programmes aimed at meeting certain requirements of companies, organizations or local authorities that would give complete financial support to them.

Globally, many universities already allow of access to their curricula or small open courses for independent learning within the framework of open educational resources. This can be considered as part of the wider movement to democratize tertiary education that, in its turn, treats tertiary education and lifelong learning as a human right. The right to continuing education focuses not on socioeconomic and personal benefits generated by education but on the effect education produces on others [13].

**Conclusions.** Inclusive economy is a major driver in creating socially oriented approach. It is aimed at providing people with equal access to economic independence and unhindered interaction between social groups.

An individual's life is associated with periodic accumulation and renewal of knowledge, skills, approaches to the extent conditioned by constantly changing environments and the high purpose of personal fulfillment. Lifelong learning comprises all the existing – formal, non-formal and informal - practices. In our country, the system of lifelong learning has the huge potential for accumulating and renewing human capital. However, its successful application requires expressed learning motivation and skills to use various forms of further education for adults.

Development of lifelong learning strategies and business models which are to be adjusted to local environments and consider financial options and local labour market requirements is an urgent task to ensure economic security of Ukraine's higher education system.

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## **THEORETICAL AND METHODOLOGICAL BASES OF EFFICIENCY OF ECONOMIC SUSTAINABILITY MANAGEMENT AT FLOUR MILLING ENTERPRISES**

***Abstract.** There are analyzed the scientific and methodological approaches to the essence of the concept "economic sustainability" and the factors determining its level and constituent elements are systematized. The peculiarities of functioning and mechanism tools of achieving of economic sustainability in the current conditions are substantiated. The scientific and methodological approach to the synthesis of the integral indicator, which is based on the aggregate of components evaluated both by quantitative and qualitative indicators, is specified. The research of the current state of flour-mill industry has been conducted. The algorithm of the process of formation and use of integral index of economic sustainability is developed. The levels of economic sustainability on the developed scale with the quantitative and qualitative evaluation of the integral indicator are determined. The peculiarities of functioning of flour-mill enterprises and tools of the mechanism of economic sustainability providing in the modern conditions are substantiated.*

***Key words:** economic sustainability, flour milling enterprises, flour milling industry, economic sustainability management, management efficiency, integral indicator, functional strategies, economic sustainability management system.*

The economic development of the state largely depends on the situation in the agrarian area and, in particular, in the processing subcomplex. The problems of increasing the economic sustainability of the flour milling industry are gaining particular currency. The effectiveness of their functioning, as complex production-economic systems, depends on the ability to respond quickly and adapt to changes in external and internal environments, and involves the application of integrated management approaches, the implementation of which will ensure a high level of economic sustainability and respond to market prospects.

Problems of forming, estimating, forecasting and ensuring economic sustainability of enterprises are reflected in the scientific works of such Ukrainian and foreign economists as O.M. Ananieva, S.N. Anokhin, I.V. Bryantseva, V.O. Vasilenko, I.V. Gonchar, V.V. Grechaniy, Y.O. Dzherelyuk, V.L. Ivanov,

S.P. Kobets, O.V. Kondratiev, S.O. Klimenko, P.V. Okladskiy, N.V. Osokina, G.G. Savina, I.O. Soloviev, A.I. Chuzhmarov, N.V. Shandova, O.V. Shevrina and others. The scientific works of these economists are the basis for further research.

In justice to their contribution, we indicate that the problems of diagnosing the level of economic sustainability of the processing industry enterprises are not given enough attention, there are no developments regarding its integrated assessment in the new economic conditions.

The necessity for further deepening of theoretical and applied developments actualized the formulation and solution of the problem – the development of scientific approaches and practical recommendations for the formation and increase of the efficiency of economic sustainability management of the flour-mill industry enterprises.

In current conditions of economic development one of the priority tasks of enterprises is to increase the efficiency and provide conditions for development in the long-term perspective by providing the necessary level of economic sustainability. Unfortunately, the problem of defining this category is not sufficiently investigated and therefore there is a need to deepen the understanding of the concept of "economic sustainability" as one of the most informative indicators of management efficiency.

So, for example, I.V. Gonchar considers the economic sustainability of the enterprise as one of the forms of manifestation of the laws of economic development, namely, as a form of display of the law of increasing the production efficiency. From the author's point view, the economic sustainability of an enterprise in market conditions is a constant movement of cash flows and the availability of land, material, technical, labor and financial resources that enable solvency and enhanced reproduction at the level of the whole enterprise [1, p. 23].

In turn, V.L. Ivanov defines this category as the ability of the economic system not to deviate from its static or dynamic state with various internal and external destabilizing influences through effective formation and use of financial, production and organizational mechanisms [2, p. 26].

N.V. Shandova, in her work devoted to the development of a comprehensive assessment of enterprises' economic sustainability, defines this category as the ability of an enterprise to maintain and build its own production potential over a relatively long period of time in order to preserve and expand the busy segment of the market. In order to assess the level of economic sustainability of the organization, the author proposes to use a system of financial ratios, consisting of existing in the theory of financial analysis indicators of financial sustainability, profitability and business activity [11, p. 29].

By definition of K.V. Slupian economic sustainability is a managed process of increasing the resource potential of the production system by ensuring its dynamic balance, motivation of economic agents to increase competitiveness, innovative and rational management and expanded reproduction [10, p. 5].

Y.S. Larina considers that in order to comprehensive assess of the economic sustainability of the enterprise and determine the mechanisms for its ensuring, this category should be considered as a set of interconnected components that ensure the enterprise's ability to organize a break-even business, achieve a stable market position, sufficient resource potential, and a balanced functioning process. Balance is achieved by providing optimal quantitative relationships between elements of the general system [3, p. 29].

In our opinion, the essence of the category "economic sustainability of flour mills" is proposed to be understood as a system of forms, methods, techniques and norms that form the adaptive capacity of the enterprise to react promptly to changes in the environment and allow to ensure its balanced functioning and efficient use of the resource potential.

The generalization of the main approaches to the category of "economic sustainability" made it possible to conclude on the need to use an integrated approach to the formation and increase of the economic sustainability level of flour mill enterprises, which optimizes the use of resources of all kinds and deepens the understanding of this concept [4, p. 26].



Therefore, in today's economic conditions it is quite logical to represent this multidimensional scientific category, as one consisting of two groups of functional components (Fig. 1).

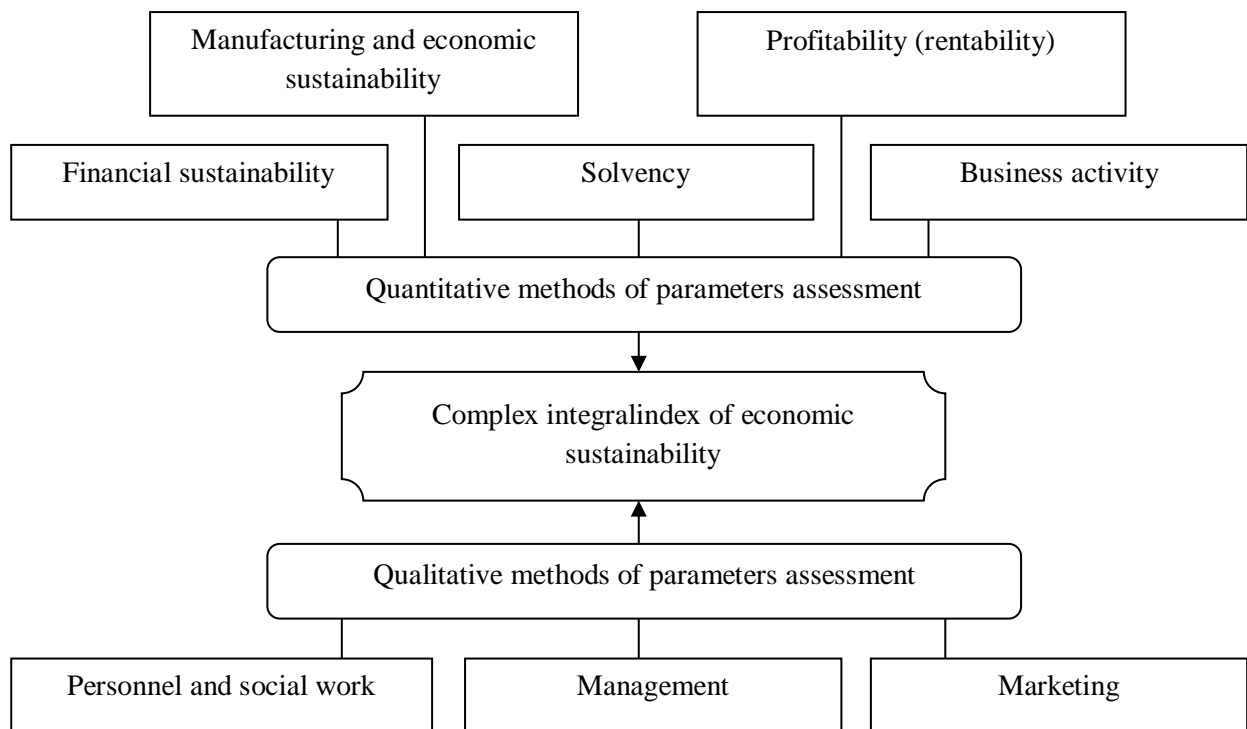


Fig. 1. Functional components of economic sustainability of enterprises

The first group combines the following elements: production and economic activity, finances, profitability, solvency and business activity. Indicators of the state of these components are measured by standard methods of economic analysis and can be evaluated fairly precisely and objectively.

The second group includes elements that are difficult to assess by quantitative methods. Make it operational and get objective results is possible only by using expert methods.

In this group we also propose to include the status of work with personnel (human resources and social work), the state of the management system and marketing activities. Certain difficulties appear when forming a complex integral index of economic sustainability, as quantitative and qualitative indicators need to be reduced.

Synthesis of the main groups of indicators determines the necessity of using the scientific and methodological approach to the integrated assessment of the economic sustainability of enterprises, which consists in the formation of a balanced system of complex indicators providing theoretical and practical tools for maximizing the main determinants and industry specifics, the possibility of achieving a synergistic effect in the formation management process and raising the level of economic sustainability.

Many authors denote the impossibility of achieving economic sustainability in conditions of unstable market conjecture and competition in the markets of raw materials, finances, labor resources and the growth of risks of all kinds without the orientation of the enterprise on the strategic goals and objectives of sustainable development.

Therefore, in order to carry out the tasks of the integrated assessment of economic sustainability in the current conditions of the operation of flour milling enterprises, an algorithm for the process of its formation and use can be proposed (Fig. 2).

In order to determine the level of economic sustainability of the flour milling industry, the distinction of the peculiarities of their functioning becomes important.

The flour milling industry is one of the largest branches of the agro-industrial complex that can fully satisfy the needs of the population in high-quality grain-based cereal products, as well as export its products outside Ukraine, provide the population with flour and cereals, and use its wastes for the production of mixed fodder.

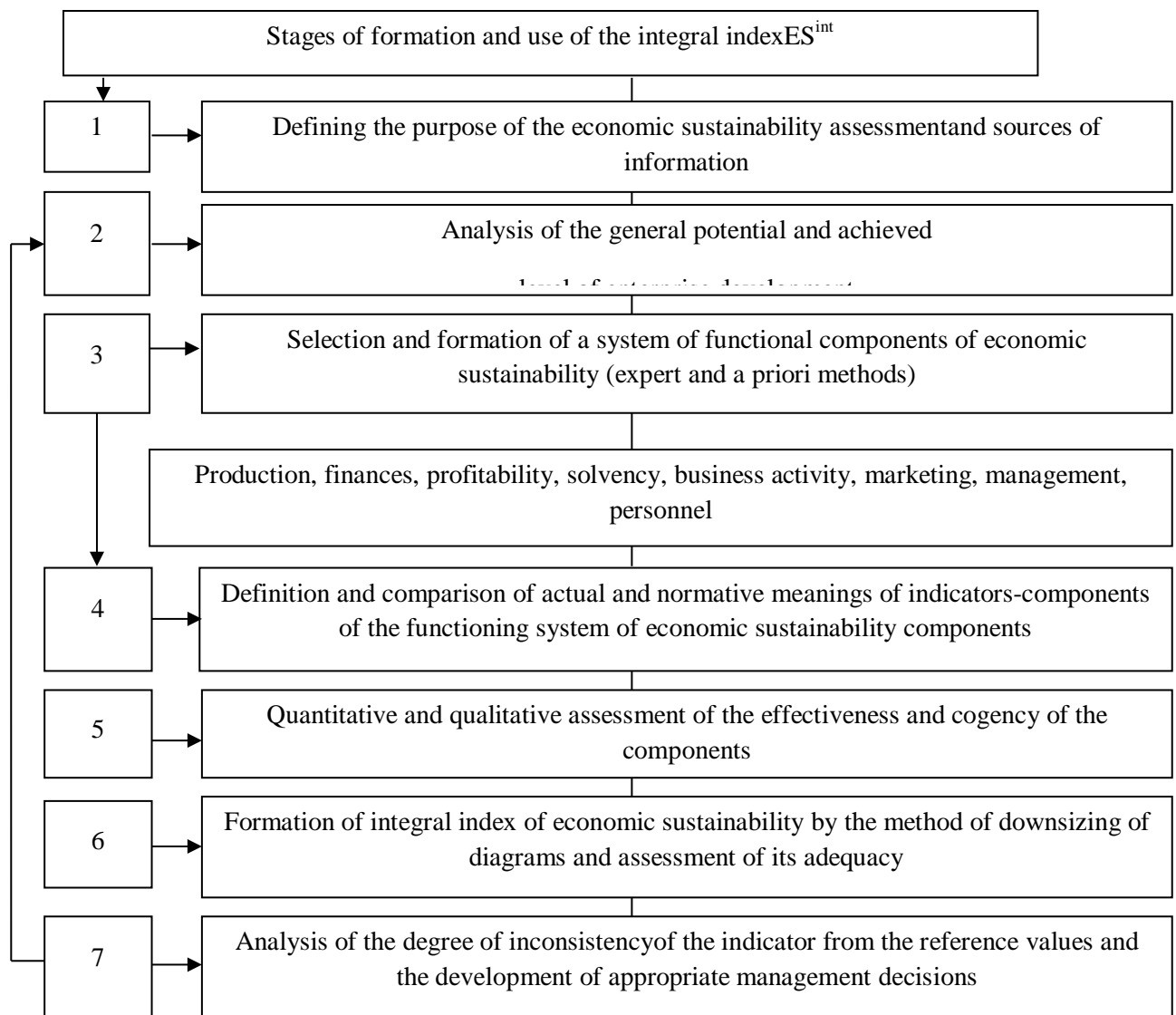


Рис. 2. Algorithm for the formation and use of the integral index of economic sustainability of  $ES^{int}$  flour milling enterprise

Currently, there are about 600 flour milling enterprises operating in the country, most of which are loaded on 30-60% [5].

Approximately half of them are small enterprises producing less than 1 thousand tons of flour of low quality per year (Table 1).

Ukrainian flour mills are engaged in the processing of wheat grains, storing and processing more than 10 types of grain crops, including sunflower seeds, rape, mustard, flax, feed and food wheat, fodder barley, millet, oats, sunflower meal, as well as granulated siftings.

Table 1

Dynamics of the structure of flour production in Ukraine, thnd., tons.

| Type of flour | Dynamics of flour production |      |      |      |      |      |      |      |
|---------------|------------------------------|------|------|------|------|------|------|------|
|               | 2010                         | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
| Wheat         | 2300                         | 2322 | 2331 | 2284 | 2118 | 1883 | 1702 | 1676 |
| Rye           | 321                          | 267  | 246  | 274  | 231  | 268  | 224  | 198  |
| Corn          | 11                           | 7    | 5    | 7    | 9    | 10   | 14   | 16   |
| Total         | 2632                         | 2596 | 2582 | 2565 | 2358 | 2161 | 1940 | 1890 |

In general, the current state of the flour milling industry is defined as close to the critical one. Among the main factors forming the current state of the enterprises, the following are distinguished: physical and moral wear of equipment, the use of outdated technologies, incomplete loading of capacities, which has the consequence of lowering the profitability and economic sustainability of enterprises, and the Ukrainian flour-milling industry itself is mainly focused on domestic consumption, the volume of which annually decrease.

The main flour milling enterprises operating in the South of Ukraine include JSC “Kherson Cereal Integrated Plant” [7], JSC “Kalanchak Cereal Integrated Plant” [8], Ltd. “Pivdenmlyn” [9] and JSC “Mykolaiv Cereal Integrated Plant [6], which are the objects of our study (Table 2).

Table 2

The main flour mills and cereal enterprises of the southern region

| №<br>п/п | Enterprises                                  | Volumes of manufacture, tons. |       |
|----------|--|-------------------------------|-------|
|          |  | 2016                          | 2017  |
| 1        | JSC “Kalanchak Cereal Integrated Plant”      | 19500                         | 17350 |
| 2        | JSC “Kherson Cereal Integrated Plant”        | 24650                         | 23150 |
| 3        | Ltd. “Pivdenmlyn”                            | 17540                         | 16760 |
| 4        | JSC “Mykolaiv Cereal Integrated Plant        | 21415                         | 21045 |
| 5        | Private agricultural holding “Tavriyskiylan” | 2775                          | 2480  |
| 6        | Ltd. “Agroproduct Kherson”                   | 2600                          | 2140  |
| 7        | PE “Agro – Miller”                           | 1640                          | 1505  |
| 8        | Ltd. “Agricultural Holding “Grad. KAAgro”    | 2160                          | 1880  |
| 9        | PE “Ekselsior– A”                            | 1610                          | 1300  |
| 10       | Ltd. “Agroinvest Kherson”                    | 2070                          | 1760  |

Taking into account the experience and results of flour-milling enterprises work in the region, the results and proposals of economists, it is proposed to assess

the levels of economic sustainability of the next scale with a quantitative and qualitative (semantic) assessment of the integral indicator (Fig. 3).

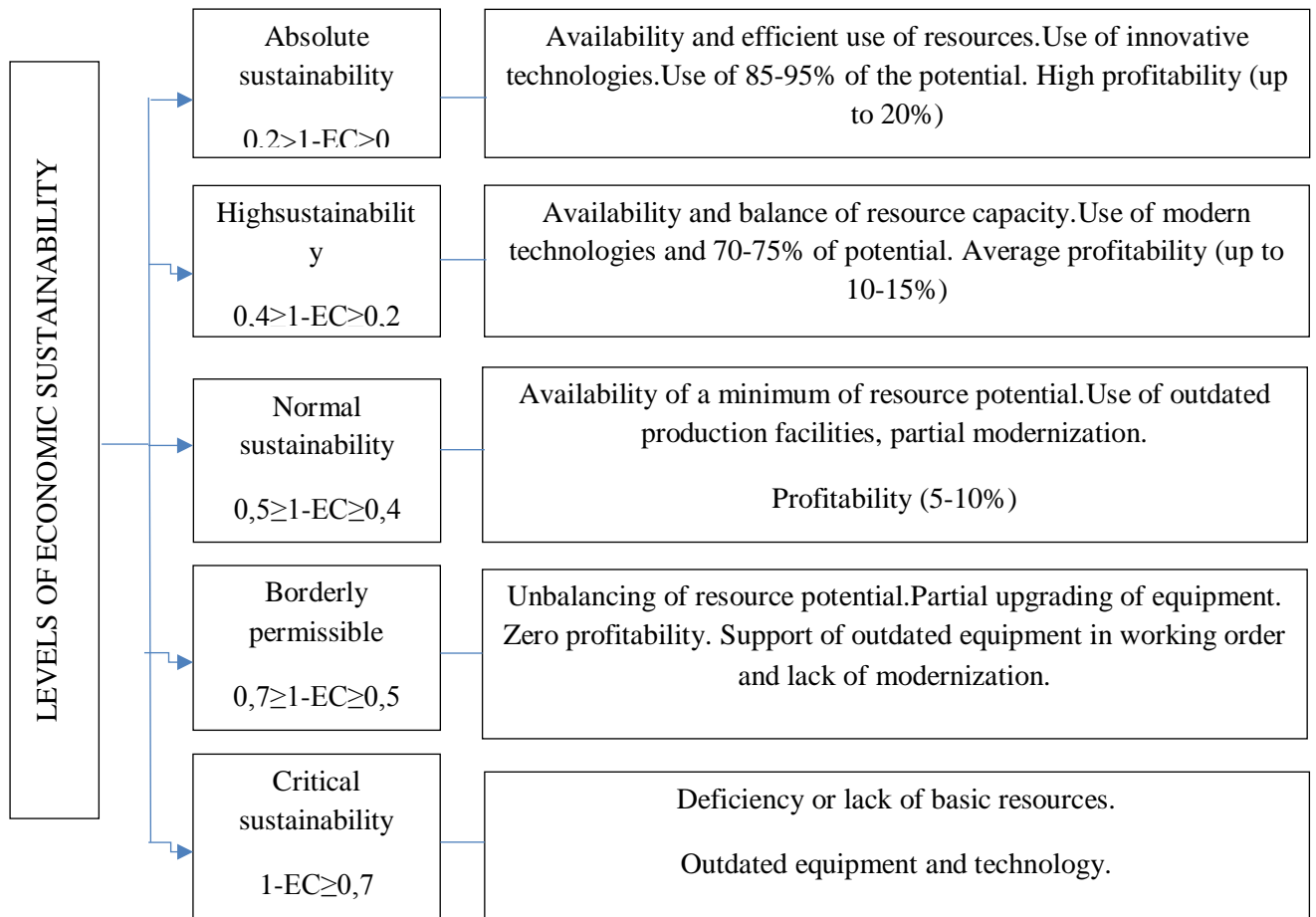


Fig. 3. Levels of integral index of economic sustainability and their content

The results of the analysis made it possible to develop a methodology for calculating the integral indicator - an indicator of the ability of an enterprise to function effectively in unstable conditions of external and internal environments change.

According to the estimation data, the integral index of economic sustainability of Ltd. "Pivdenmlyn" is  $ES^{int} = 0.78$ , that is, the deviation from the ideal value of the total stability of structural components is 22%, which indicates a high level of efficiency of production activity. JSC "Kalanchak Cereal Integrated Plant" is in the zone of normal stableness ( $ES^{int} = 0.52$ ).

Table 3

Value of functional components of the integral index of economic sustainability of  
flour milling enterprises

| Components of economic sustainability  | Four milling enterprises                |                                       |                                       |                   |
|--|---|---------------------------------------|---------------------------------------|-------------------|
|  | JSC “Kalanchak Cereal Integrated Plant” | JSC “Kherson Cereal Integrated Plant” | JSC “Mykolaiv Cereal Integrated Plant | Ltd. “Pivdenmlyn” |
| Industrial and economic sustainability | 0,61                                    | 0,28                                  | 0,21                                  | 0,88              |
| Financial sustainability               | 0,40                                    | 0,54                                  | 0,36                                  | 0,91              |
| Business activity                      | 0,57                                    | 0,75                                  | 0,69                                  | 0,94              |
| Profitability                          | 0,63                                    | 0,10                                  | 0,01                                  | 0,67              |
| Solvency                               | 0,71                                    | 0,56                                  | 0,01                                  | 0,94              |
| Marketing sustainability               | 0,33                                    | 0,26                                  | 0,14                                  | 0,52              |
| Management sustainability              | 0,32                                    | 0,27                                  | 0,24                                  | 0,59              |
| Personnel and social sustainability    | 0,42                                    | 0,31                                  | 0,21                                  | 0,68              |
| 1-ES <sup>int</sup>                    | 0,48                                    | 0,59                                  | 0,63                                  | 0,22              |

The significance of indicators of production and economic and financial sustainability illustrate the possibility of simple reproduction with the transition to an expanded, which should be based on innovative technologies, JSC “Kherson Cereal Integrated Plant” and JSC “Mykolaiv Cereal Integrated Plant” have a value of the indicator 0.41 and 0.37, respectively. The level of their economic sustainability is extremely permissible and is accompanied by a misbalance of resource potential and negative profitability. It is possible to note indicators of weak marketing stability and low level of personnel and social stability. Enterprises have a low level of financial sustainability, resource provision and efficiency of production and technical potential, which has allowed identifying levels of integrated economic sustainability as the most acceptable and critical.

The results of the research for JSC “Kherson Cereal Integrated Plant” indicate that business activity, marketing, personnel and social sustainability have the most essential influence. The integral index of economic sustainability (ES<sup>int</sup>), business activity and marketing sustainability have the major impact on JSC “Kalanchak Cereal Integrated, and business activity, solvency and marketing sustainability – in case of JSC “Mykolaiv Cereal Integrated Plant”. The main

attention at Ltd. “Pivdenmlyn” is given to business activity and management sustainability.

In general, the analysis of the integral index of economic sustainability and its functional components provides an opportunity to analyze the state of the enterprise, the efficiency of the use of resources, to develop management decisions to increase economic sustainability. Just this analysis of the results of most types of business activities and their comprehension with the help of the developed methodology provides planning process with information, check and evaluation of the implementation of plans and organization of feedback at all stages of the management cycle.

The conducted research of theoretical and methodological aspects of the efficiency of economic sustainability management at flour milling industry enterprises made it possible to draw the following conclusions:

1. The generalized theoretical substantiation of the essence of economic sustainability provides an opportunity to propose its definition as a set of interconnected elements and relationships that determine the ability of an enterprise to adapt to external and internal risks, to ensure balanced functioning, enhanced reproduction, to adhere to selected strategies of balanced functioning, to formulate effectively and to use the resource potential, to maintain the positive dynamics of the main indicators of production and sales activity.

2. Taking into account the specifics of the functioning of the flour milling industry, their economic sustainability can be provided by a set of diverse components, each of which covers a certain functional area of activity. It is proposed to include production and economic activity, finance, profitability, solvency, business activity, personnel and social work, management and marketing in the structure of this aggregate.

3. It has been established that an adequate assessment of the economic sustainability of flour mills requires taking into account the maximum possible number of determinants. It is proposed to solve the problem of constructing an integral index of economic sustainability using the method of multidimensional

analysis of aggregate indicators, which allows obtaining reliable and well-founded estimates.

4. On the basis of the conducted research, it was concluded that most enterprises of the flour milling industry are in a pre-crisis condition, as there is a decrease in the consumption of bakery products under the influence of a number of macroeconomic factors. Most indicators of production and sales activity of enterprises have a negative dynamics. Manufacturers are not able to respond adequately to market demands due to the exhaustion of resource potential and the lack of financial resources that can be addressed through a system integrated approach to managing economic sustainability.

5. Integral indicator of economic sustainability of flour mills provides an objective assessment of the efficiency of their work and an exhaustive description of the production and financial state and makes it possible to monitor changes in the intermediate and final results of activities, helps to establish and correct goals, identify the directions and content of actions aimed at strengthening market positions.

6. The study of economic sustainability using the developed indicator makes it possible to conclude that the investigated enterprises are in the zone of boundary permissible sustainability, which is associated with the use of outdated technologies and the imbalance of resource potential. Ltd. "Pivdenmlyn" is in the zone of high sustainability, which testifies to the availability and effective use of balanced resource potential.

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## **TALENT MANAGEMENT IN THE SYSTEM OF ADMINISTRATING ECONOMIC SECURITY OF A UNIVERSITY**

***Abstract.** The article discusses the relevance of the talent management direction in modern personnel management of Ukraine's universities. Talent management is considered as a modern approach to improve the efficiency of universities. Authors analyses the impact of talent management technologies on improving the economic security of universities. The article identifies negative factors that influence efficiency of the measures on talent management. Authors developed and presented recommendations for the management of talented personnel to improve economic security and competitiveness of universities. This changes work on talent management in accordance with the current needs and strategic goals of universities. A key factor in the use of the concept of talent management is the corporate innovation ecosystem of universities.*

**Key words:** talents, talent management, university, economic security, young teachers.

The issue of talent management in the system of protecting economic interests of higher education institutions has not been studied in full. Meanwhile, higher education in Ukraine operates under a large number of systemic challenges and threats. The main threats to economic security are: increased competition in the educational services market and the emergence of new educational intermediaries; the need to ensure international quality of education; entrepreneurial approaches to the management of the universities; the shortage of applicants connected with the demographic gap in the early 1990s and 2000s; the drift of applicants from the regions to the metropolitan universities and abroad; change of generations (the generation of millennials is succeeded by the generation Z – people born after 2000, the so-called "digital generation". They have absolutely new learning approaches).

The strategic goal of each institution of higher education is to train personnel demanded by the labour market; to develop educational, scientific and innovative activity; to increase the competitiveness and economic security of the institution and to have access to the global sources of information. Effective talent management system at the universities will enable achieving these goals. The system will identify, form and develop the goals. The issue of talent management in the system of economic security of the university has a particular *topicality* in today's research.

Talent management at universities of different countries has become the subject of special attention of foreign scholars such as J. Fitz-enz [1], B. Davison [1], C. McCartney [2] and others. Issues of talent management as a tool for forming an employer's brand are investigated in the works of K.A. Nefedova [3], problems and prospects of talent management in modern organizations are the subject of the studies of M.S. Tatarevska [4] and O.V. Soroka [4]. The issues of creating an innovative model of talent management in a higher educational institution are considered in the work of M.A. Boychenko [5]; the role of talent management as an integral part of the organization's success is studied in the works of O.I. Prodius [6], A.I. Zhuravel [6] and M.O. Sitor [6].

Factors threatening the economic security of universities are studied in the works of Snigir L.P. [7] and the issue of ensuring the economic security of the educational sphere in the new funding conditions is highlighted in the works of Antonova O.M. [8], Tarasenko I.O. [9], Stetsiv I.S. [10] studies the methodological principles for assessing the economic potential of a university in the context of managing economic security. O. Levchenko [11], O. Tkachuk [11], I. Tsarenko [11] investigated the problem of national security in the context of globalization. The overwhelming majority of researchers relate the concept of economic security with the staffing, intellectual potential and competitiveness of higher education institutions.

The analysis of the threats related to the inefficient talent management of a university is the less investigated problem in terms of economic security of a

university. Despite high significance of the research done by the above-mentioned authors, it can be stated that the theoretical and applied issues of the relationship between talent management and the economic security management of a university have not yet been disclosed in the works of the Ukrainian scholars.

*The purpose* of this article is theoretical substantiation of practical tools of talent management in the system of ensuring economic security of universities.

The scientific literature has at least two approaches to the definition of "talent". On the one hand, talent is a characterization of a person (general intelligence, unique abilities of a person, natural gift and mental agility). On the other hand, talent is an employee who has necessary skills and creative potential, knowledge, intelligence, professional competencies, experience for organizing work, ability for studying and self-development, communicative skills. All of them are aimed to achieve the unique results.

The second approach gives a generalized definition of talent from a management point of view. To characterize talent management process at a university, it is fair to state that talent is inherent in every teacher and employee without exception. But teachers who play the main role in achieving the success of a university have leading positions due to their abilities and high efficiency of scientific and pedagogical work.

Talent management at a university can be defined as the process of identification, formation, efficient use and development of talents with the help of appropriate set of tools and levers of influence.

Today, universities have a serious challenge to identify, form, use and develop talents. The economic security of universities and the interests of their employees greatly depend on the external and internal threats. After all, the main threat for the economic security of a university is the destruction of its potential, primarily human resources. Currently, there are manifestations of the financial and economic crisis in the system of higher education, consisting of an active outflow of talent from educational institutions and closing up scientific and innovation work.

In general, the core of talents of a university is its staff potential which is a complex feature of the educational capabilities of the teaching staff. At the same time, the staff potential reflects not only the readiness of the teachers to perform their functions at a certain moment, but also their capabilities in the long-time prospect. In this case we should take into account the age, scientific and pedagogical qualifications, practical experience, business activity, quality of scientific and pedagogical activity (including effectiveness), professional mobility, innovation and level of motivation. Based on these positions, talent should be the central object of management in the institution of higher education.

If we analyse the dynamics of the number of scientific and pedagogical staff with academic degrees and titles at universities, academies and institutes we may see that it has been decreasing over the last five years. Thus, according to the State Statistics Service of Ukraine, during the period of 2012-2017 the number of doctors of sciences has decreased by 5,4%; professors by 8%; candidates of sciences by 10%.

It is worth pointing out a number of problems specific to the system of talent management in the sphere of higher education. The delay in solving the problems may in the near future destruct the position of higher education in Ukraine, particularly in the context of its entry into the international educational environment.

The aging problem of pedagogical and scientific staff is not new for Ukraine. It existed even ten years ago. Nevertheless, today about one third of doctors and candidates of sciences are persons aged 60 and over.

Analyzing the state of talent formation in higher education of Ukraine, one can confidently state that its quantitative indicators deteriorate every year. Thus, the number of institutions with post-graduate courses and the number of post-graduate students for the period of 2010-2017 has decreased (Table 1).

Table 1

**Analysis of main indicators of post-graduate courses in Ukraine**

|   | 2010  | 2015  | 2016  | 2017  | 2017 to 2010, % |
|---|-------|-------|-------|-------|-----------------|
| <b>Total in Ukraine</b>   |       |       |       |       |                 |
| Number of institutions that have post-graduate courses at the end of the year | 530   | 490   | 481   | 475   | 89,6            |
| Number of post-graduate students at the end of the year, persons              | 34653 | 28487 | 25963 | 24786 | 71,5            |
| Number of persons enrolled to post-graduate courses per annum                 | 10626 | 9813  | 6609  | 7274  | 68,5            |
| Number of persons graduated the courses per annum                             | 8290  | 7493  | 6703  | 6087  | 73,4            |
| Number of post-graduates who got PhD  | 1954  | 1958  | 1708  | 1438  | 73,6            |

*Source: [12, c. 4]*

The number of post-graduates in 2017 compared to 2010 decreased by 31.5%.

The significance and role of universities in training and managing young talents are determined by the fact that the goal of a university is not only the training of professionals and specialists, but also the intellectual elite of the country. At the same time, our surveys conducted among university teachers in Ukraine made it possible to conclude that today there is a shortage of highly skilled talented teachers, and talent management is not a priority component of personnel management in the universities (Fig. 1).

At the same time, university top management in Ukraine do not fully understand the role of talent management and the essence of talent management tools in the system of ensuring economic security.

In general, Ukraine needs to implement the policy of retaining talents and to create conditions for their self-actualization within the country. So far, the process of talent outflow continues, and competitiveness of the country is decreasing. Thus, according to the global competitiveness rating, Ukraine has significantly lost its position and in 2017-2018 compared with 2012-2013 it shifted to 8 positions, from 73th to 81st place. Ukraine's position in the rating of the country's capability to retain talents, which ranks 129th out of 137 countries, looks particularly alarming [13].

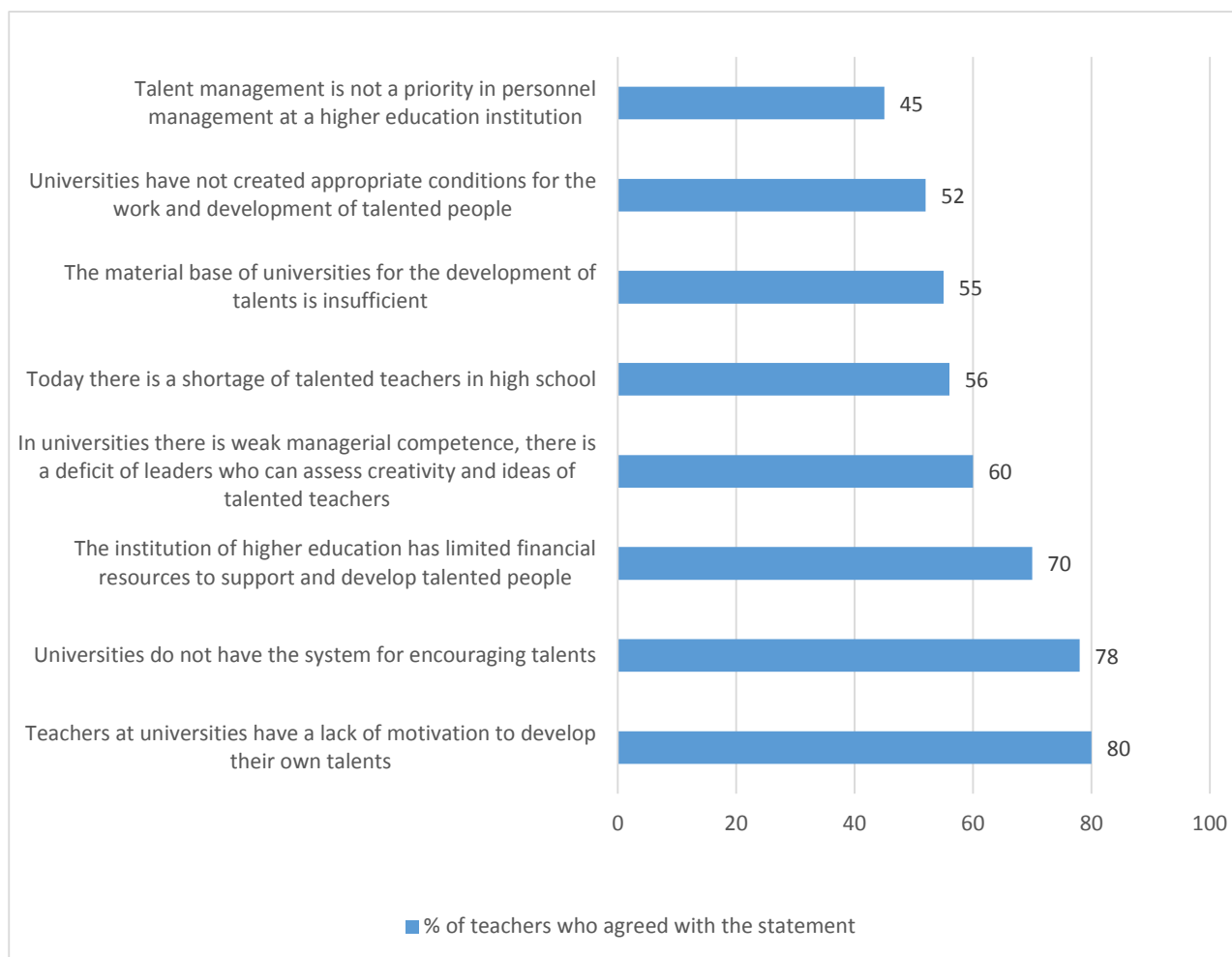


Fig.1 Factors hindering the development of talented students at the universities of Ukraine

*Source: the results of the survey conducted by the authors*

In general, Ukraine needs to implement the policy of retaining talents and to create conditions for their self-actualization within the country. So far, the process of talent outflow continues, and competitiveness of the country is decreasing. Thus, according to the global competitiveness rating, Ukraine has significantly lost its position and in 2017-2018 compared with 2012-2013 it shifted to 8 positions, from 73th to 81st place. Ukraine's position in the rating of the country's capability to retain talents, which ranks 129th out of 137 countries, looks particularly alarming [13].

A separate problem that creates barriers to the effective use and development of talents in higher education institutions is dissatisfaction with the teachers'

salaries. The viewpoints of scientific and pedagogical staff on their salaries are illustrated in Table 2. It should be noted that Table 2 shows the salaries without taking into account additional payments for the academic titles (professors – 33%, associate professors – 25%), extra payments for the degree (Doctors of Science – 25%, PhD – 15%), seniority pay (more than 3 years – 10%, over 10 years – 20%, over 20 years – 30%). The indicated amount of payments is marginal and is currently compulsory in accordance with the applicable legislative and regulatory documents. But even taking into account the maximum amount of additional payments, the salary of a professor, for example, today is UAH 13,144, or 484 US dollars.

The results of the survey of teachers indicate that the vast majority of associate professors estimate their personal financial need in the amount of 25 000 UAH, which is four times higher than the official salary; professors are convinced that their personal financial need is five times higher than their official salary.

Therefore, it is not surprising that about 28% of the teachers surveyed are disappointed with the development of the Ukrainian higher education and consider the possibility of moving abroad to develop their scientific and creative potential. By the way, the works of other Ukrainian researchers prove the high emigration intentions of the Ukrainian scientists [14].

Table 2

Comparison of salaries and financial needs of university teachers

| Indicator                              | Teacher | Senior lecturer | Associate Professor, PhD | Professor, Doctor of Science |
|--|---------|-----------------|--------------------------|------------------------------|
| Position salary, UAH                   | 5360    | 5763            | 6570                     | 6992                         |
| Personal financial need per month, UAH | 10 000  | 15 000          | 25 000                   | 35 000                       |
| Family financial need per month, UAH   | 20 000  | 35 000          | 50 000                   | 60 000                       |

*Source: the results of the survey conducted by the authors*

Therefore, the main problems of talents formation at universities in Ukraine are the aging of scientific and pedagogical staff, poor performance of post-graduate courses as the main source of talents replenishment; the outflow of young talents from the sphere of research, especially in the natural sciences and engineering



sciences; emigration of talented people. All these factors create threats to the economic security of higher education institutions in Ukraine and indicate the need to improve the system of talent management.

The recommendations for improving talent management system, increasing university competition in the market of educational services, ensuring international quality of education, adapting educational process to the needs of a new generation of students (generation Z) can be as follows:

1) periodic analysis of university talents in order to determine their current and future needs, as well as to effectively use the reserve of talents among students;

2) ensuring work quality of university professors through the function of material motivation; strengthening motivation and stimulation of talented teachers who got the degree (PhD or doctoral), as well as won or participated in the development of grants, carried out innovative developments in educational and scientific activities;

3) regular review of the results of teachers' creative work and covering them in mass media (social networks, electronic publications, television);

4) encouragement of teachers to develop their own talents through additional education, studying foreign languages, participating in trainings, various educational projects and grants to adapt to the new generation of education conditions;

5) active involvement of young talented teachers in management activities of various councils, commissions, etc.; to use them as the reserve of potential applicants for management positions;

6) development of a feedback mechanism and open communication between university management and teachers to adjust the trends of development of talents in accordance with the results obtained;

7) development of a monitoring system that would promote transfer of knowledge about corporate culture, as well as methodological, scientific, pedagogical and organizational experience for young teachers;

8) active use of the practice of assigning young talented teachers with complex and responsible tasks (providing opportunities to improve their qualifications, focusing on training in promising areas of scientific and pedagogical activity, engagement in paid activities for participation in innovative solving social and economic regional problems, creation of creative troubleshooting groups, teams of project developers, etc.);

9) active work on the formation and development of corporate innovation ecosystem as an anthropometric creative environment at the university in order to create conditions for creative self-realization and formation of a functional and comfortable climate for the formation and development of talents;

10) formation of the programmes of foreign internships for teachers to study best modern methodological and scientific-pedagogical practices abroad.

Therefore, talent management determines the main features of university efficiency, its competitiveness and economic security. Talent is a key factor in the success and effectiveness of a university functioning, and the right selection of talented staff, its identification, formation, efficient use, development and support is one of the main competitive advantages of the university. The need to ensure the security of institutions of higher education and increase their competitiveness requires solving the issue of improving the quality of scientific and pedagogical staff, which, accordingly, should ensure the quality of education. Therefore, analysis of work with young people is very important, namely: teachers and graduate students from the point of view of attracting and consolidating talented youth.

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### ***AGRICULTURE: STATE, PROBLEMS AND PROSPECTS***

***Abstract.** The article is devoted to the definition of modern trends in the development of the insurance sector of agricultural crops and animals. It was found that the agribusiness market is actively developing. The analysis of functioning of the insurance market of agricultural crops in the period from 2005 to 2017 is carried out and it is determined that the market output after a protracted crisis began in 2016. The state of insurance of farm animals for 2017 is covered. An*

*assessment of such development in terms of: the number of concluded contracts, the insured area, the insurance amount, insurance premiums, insurance rates and the level of payments. It is indicated what problems today are facing both insurance companies and agrarians, which hinder the effective functioning of the agri-insurance market. It is determined what insurance products are presented at today's agri-insurance market and on what conditions. It was revealed what further development of agricultural insurance should be directed towards.*

**Key words:** *agriculture, agro-insurance, agro-insurance market, insurance contract, insurance premiums, insurance sum, insurance programs, index insurance.*

In the conditions of protracted political and economic crisis, devaluation of the national currency, groundless state policy and a number of other factors led to a violation of the effective functioning of the economic system of Ukraine. Under these conditions, stabilization of the situation can be achieved through the development and quality functioning of agriculture, which will provide solutions to the issues of improving its food and financial security [1]. Today, agriculture is a promising branch of the country's economic development. But at the same time it is one of the most risky, because the success of the industry depends largely on weather conditions. The prices of agrarian products are constantly increasing, so the loss or lack of harvest leads to significant material damage to producers and leads to loss of benefits. Ukraine's accession to the WTO in 2008, the launch of the free trade zone with the European Union in 2016 sets new requirements for agricultural products, requires the creation of a more competitive environment in the country. Reliable protection of producers of agricultural products from risks provides insurance [2].

Agriculture is traditionally a risky area of activity. This is especially true of Ukraine, in which the successful results of the agricultural producer are largely determined by weather conditions. The development of agricultural production is affected by the risks of natural disasters and unforeseen extraordinary events. The unforeseen natural phenomena reduce the quantity and quality of crop crops and destroy thousands of hectares of land, causing significant losses to agricultural producers. To protect the property interests of agricultural producers and to ensure the further development of agriculture, insurance is used as one of the most important areas of state agricultural policy.

Agroinsurance, according to Yu.V. Samoylyk is a "kind of civil law relationship in protecting the property interests of individuals and legal entities involved in agricultural production in the event of certain events (insurance cases) identified by the insurance contract or current legislation." According to her, the essence of "agri-insurance" consists in "compensation of losses of an agricultural producer caused by the influence of foreign economic instruments and adverse natural and climatic conditions responsible for this person" [3, p. 345-354]. O.V. Kravchuk interprets agricultural insurance "... as a combination of measures to protect property interests of citizens, organizations and institutions engaged in agricultural activities in the event of certain events at the expense of insurance reserves organized by specialized insurance state and non-state structures" [4, p. 85-91].

Agricultural insurance is an economic relationship with regard to the insurance protection of property interests of agricultural producers in the event of certain events (insurance cases) determined by law, due to money funds formed by the insurer by paying insurers insurance payments (insurance premiums) and income from the placement of these funds funds. The main purpose of insurance of agricultural risks is partial or complete compensation of the economic entity for losses due to unfavorable, mainly natural, phenomena. The objective economic necessity of using insurance in agriculture is explained by the insufficient capacity of the state and the market to ensure a wide maneuverability of financial resources of business entities.

The purpose of agri-insurance is the monetary compensation of losses incurred as a result of the lack of crop yields lost or damaged by weather-climatic factors, fires and other adverse events that may occur during the cultivation of agricultural crops and as a result of the death or disease of farm animals . Insurance plays an important role in the development of agrarian production, as insurance protection adds confidence to farmers and provides the opportunity to plan for further development, and also stimulates agrarian enterprises to introduce more perfect production processes. The organization of insurance protection helps to

increase the creditworthiness of agricultural producers and their access to credit resources, and as a consequence, the introduction of new technologies. In addition, insurance increases the level of settlement discipline and reduces the risk of non-fulfillment of obligations to counteragents as a result of unforeseen events. Therefore, the organization of agricultural risk insurance with state support is a prerequisite for the development of the agrarian sector of the economy.

The development of the agrarian insurance system in Ukraine was very thorny. Thus, at the time of the USSR, compulsory insurance was provided for crops at state farms and other state agricultural enterprises, and it was completely monopolized. It is believed that this system was very effective, because with the help of Ukrderzhstrakh ensured reliable insurance protection of the harvest at rather low rates of insurance.

The system approach to insurance of agrarian risks was made by adopting the Law of Ukraine "On Stimulation of Agricultural Development for the Period 2001-2004" [5]. An important stage in the development of the system of insurance of agricultural risks was the adoption in 2004 of the Law of Ukraine "On State Support to Agriculture in Ukraine" [6], in which the insurance procedure was significantly regulated and the allocation of the State Budget funds to reduce the cost of insurance premiums (fees) paid subjects of the agrarian market. The main purpose of this instrument is to create a more favorable environment for the financing of agriculture by banks

For the first time the state budget funds under the Program of cheaper insurance payments were allocated in 2005, in the amount of 54 million USD, in 2006 - 10 million UAH, in 2007 - 50 million UAH, in 2008 - 200 million UAH. In 2008, due to the fact that the level of utilization of funds under the program was low, out of the anticipated expenditures of 200 million UAH, 111.3 million UAH were directed to other agrarian support programs. Under the program of subsidized insurance, UAH 88.7 million was left, of which UAH 60.1 million was used, and the payables arrears, which arose as of January 1, 2009, amounting to UAH 12.2 million, were settled.

To protect the property interests of agricultural producers and to ensure the further development of agriculture, insurance is used as one of the most important areas of state agricultural policy. The main objective of insurance in the agrarian sector of the economy is to stabilize production by compensating losses as a result of adverse events, which can not be predicted in time and space.

The whole set of risks that arise in agriculture can be divided into four groups, which are presented in Table 1.

Table 1

Main types of risks in the activities of agroindustrial enterprises \*

| Types of risk           | Forms of influence   | Negative impact   |
|-------------------------|--|---|
| Natural                 | Natural-erosive processes  | Lack of agricultural products due to adverse weather conditions   |
| Technogenic             | Physical and chemical pollution of soils, the use of mineral fertilizers and pesticides is not in accordance with norms, soil contamination with pesticides, fuel and lubricants, waterlogging and wind saltiness of land and increase production of energy inputs | Deterioration of soil quality and reduced yields of environmentally friendly products   |
| Anthropogenic           | Water and wind erosion, deterioration of soil structure, mechanical damage and soil compaction, constant impoverishment of humus and nutrients   | Soil degradation, loss of soil cover, reduction of nutrients in the soil and disturbance of natural balance.                                |
| Radiation               | Ionizing radiation of radiation materials in the environment   | the distribution of radioactive materials to agricultural products, which leads to a decrease in its quality or makes it unsuitable for use |
| Ecological and economic | Use of ecologically dangerous technologies in the process of production of agricultural products   | Reducing the quality and competitiveness of agricultural products   |

\* According to [7]

The agribusiness market in Ukraine began to develop actively in the early 2000s. During these 17 years, Ukraine has twice attempted to introduce a system of state support, which has directly affected the increase of indices of the insurance market of agriculture. Having analyzed the trends of the agrarian risk insurance market development in the period from 2005 to 2017, we can conclude that 2016



was the first year of recovery after prolonged stagnation. In 2017, the growth dynamics spread to more indicators. Trends in the development of the market of agri-insurance can be seen from the data in Table 2 and in Figures 1-2.

Thus, compared with 2016, the number of contracts increased by 164 contracts, which is 21%. In 2017, 427 contracts were concluded - for the winter and 530 for the spring-summer period. The volume of collected insurance premiums in the hryvnia has increased for the third year in a row, in particular, in 2017, it grew by 30% and amounted to UAH 204.4 million. Also, in 2017, the volume of insurance premiums increased in dollar terms. In 2017 it amounted to 7.7 million dollars, which is 28% more than in 2016. The total insured amount in 2016 was higher by UAH 327 billion than in 2017 [8].

Table 2

Dynamics of insurance of agricultural crops in 2005-2017 \*

| Indexes                         | Year |      |       |       |       |       |       |       |       |      |      |      |                  |
|---------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------------------|
|                                 | 2005 | 2006 | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014 | 2015 | 2016 | 2017             |
| Number of concluded contracts   | 910  | 1330 | 4397  | 1637  | 1980  | 1217  | 2710  | 1936  | 1722  | 1392 | 1062 | 793  | 957              |
| Insured area, thousand hectares | 390  | 670  | 2360  | 1171  | 510   | 553   | 786   | 727   | 869   | 732  | 689  | 700  | 657              |
| Amount of bonuses, mln UAH      | 12,8 | 28,5 | 116,7 | 155,4 | 42    | 72,1  | 136,3 | 130,4 | 135,4 | 73   | 78   | 157  | 204              |
| Subsidy, mln UAH                | 5,8  | 12,5 | 47,8  | 72,8  | -     | -     | -     | -     | -     | -    | -    | -    | -                |
| Average rate of bonuses, %      | 3,79 | д/в  | 4,54  | 4,93  | 3,24  | 3,84  | 3,74  | 3,77  | 3,1   | 2,4  | 2,0  | 2,5  | 3,5              |
| Payout level, %                 | д/в  | д/в  | д/в   | д/в   | 36,48 | 50,94 | 28    | 41    | 9,7   | 7,6  | 12,9 | 44,2 | 3,7 <sup>2</sup> |

\* Formed by authors according to [8]

Thus, compared with 2016, the number of contracts increased by 164 contracts, which is 21%. In 2017, 427 contracts were concluded - for the winter and 530 for the spring-summer period. The volume of collected insurance premiums in local currency increased for the third consecutive year, particularly in 2017, the year it grew by 30% and amounted to 204.4 million. Also, in 2017, the volume of insurance premiums increased in dollar terms. In 2017 it amounted to

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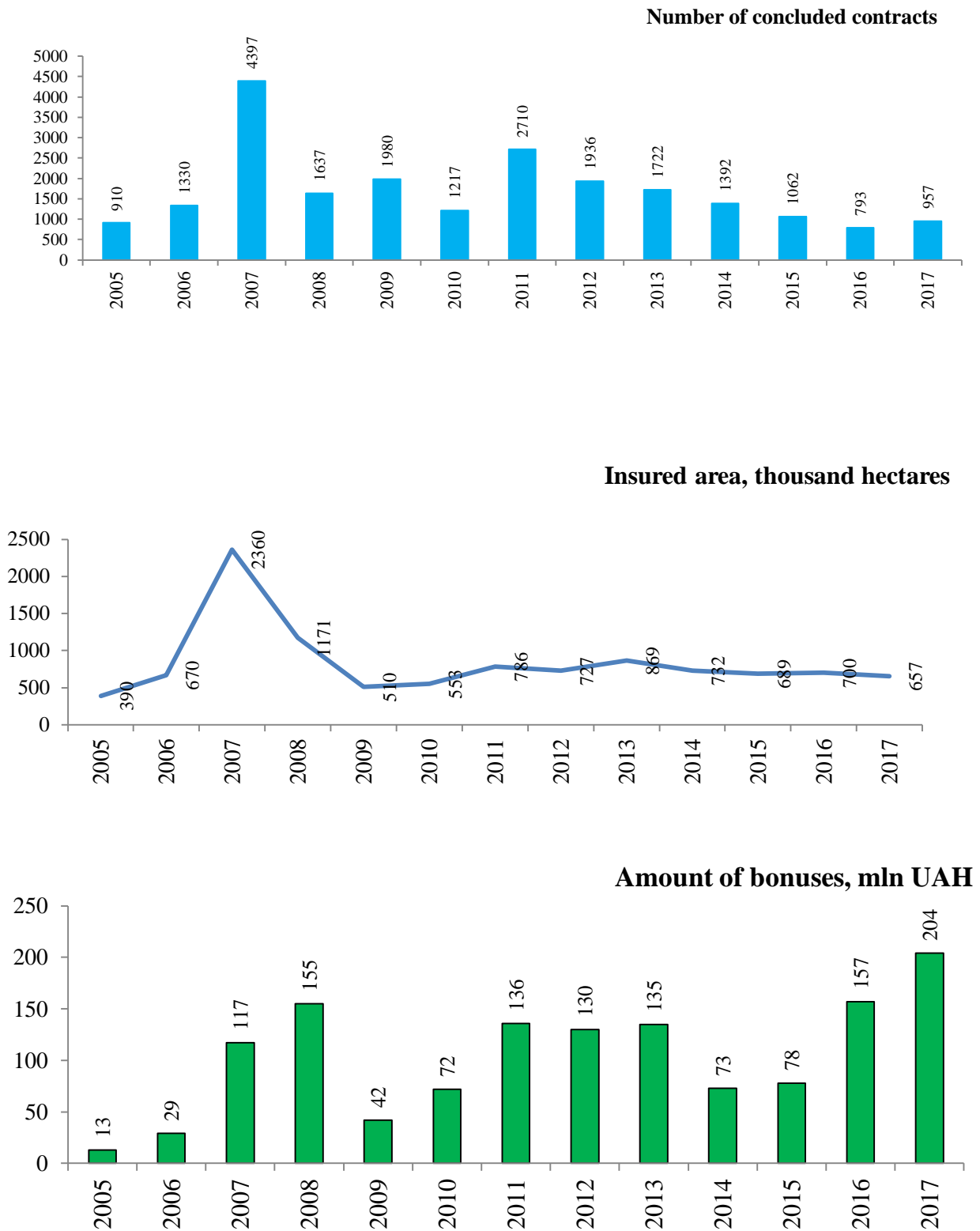


Fig. 1. Dynamics of agricultural insurance market development \*

\* Formed by authors according to [8]

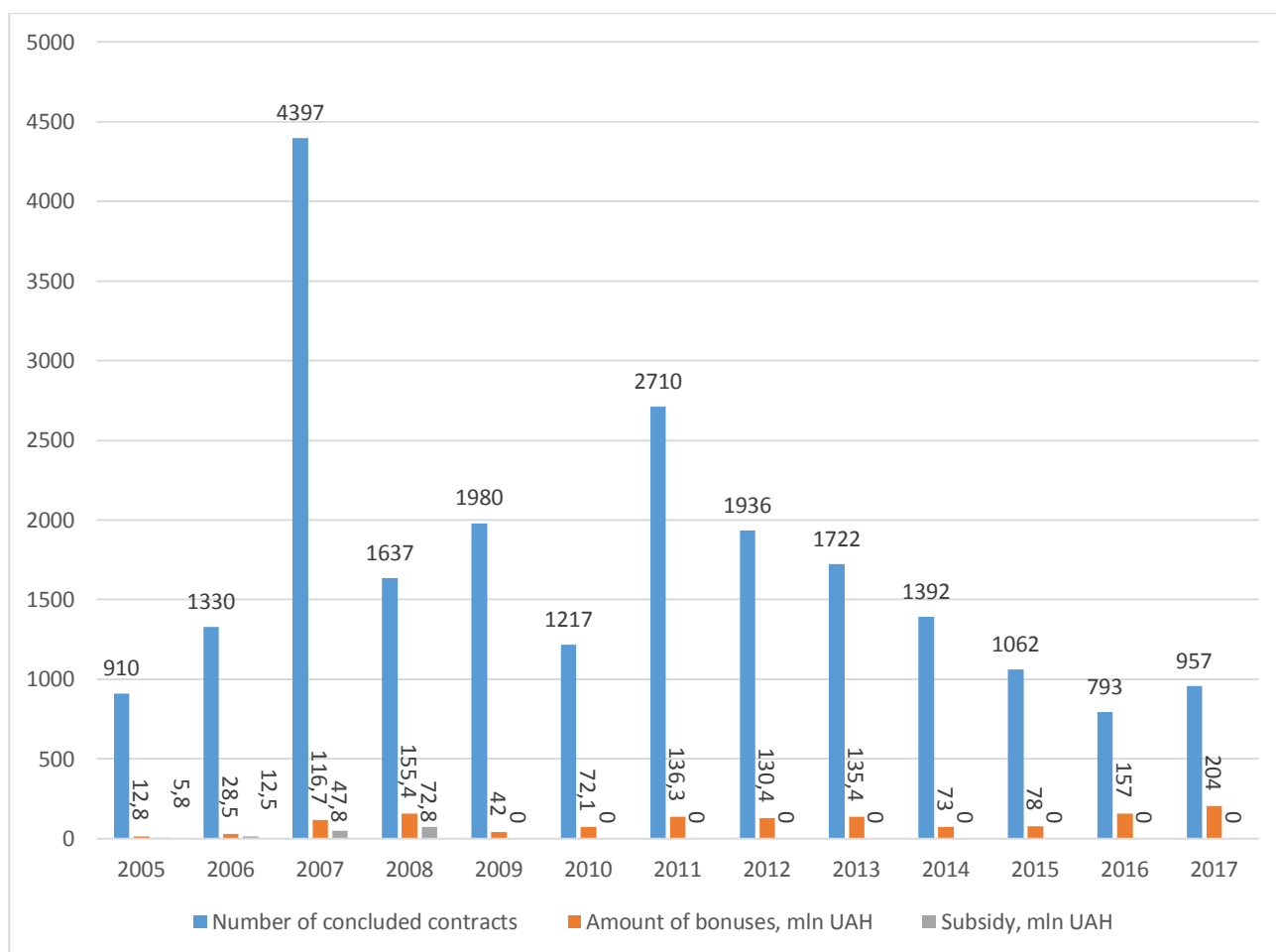


Fig.2 Trends in the agricultural insurance market for 2005-2017 \*

\* Formed by authors according to [8]

The largest number of contracts was concluded in Ternopilska (98) and Dnipropetrovska (94) oblasts. According to the index of the insured area, the championship belongs to the Poltavska (75.6 thousand hectares) and Khmelnytsky (75.3 thousand hectares) areas. Table 3 shows the insurance data by region.

Table 3

Insurance data by region, 2017 \*

| Region          | Number of contracts | Area, ha | Insurance amount, UAH | Amount of bonuses, UAH | Average premium rate | Amount of bonuses, UAH / ha |
|-----------------|---------------------|----------|-----------------------|------------------------|----------------------|-----------------------------|
| Vinnitska       | 55                  | 17,730   | 240,054,159           | 9,504,101              | 4.0%                 | 536                         |
| Volynska        | 10                  | 2,225    | 23,098,100            | 805,192                | 3.5%                 | 362                         |
| Dnipropetrovska | 94                  | 67,343   | 588,701,087           | 18,087,414             | 3.1%                 | 269                         |
| Donetsk         | 15                  | 7,709    | 43,177,595            | 906,326                | 2.1%                 | 118                         |

|                   |    |        |             |            |      |       |
|-------------------|----|--------|-------------|------------|------|-------|
| Zhytomyr          | 47 | 11,888 | 116,802,143 | 3,706,853  | 3.2% | 312   |
| Zakarpats'ka      | 3  | 573    | 2,178,592   | 90,691     | 4.2% | 158   |
| Zaporiz'ka        | 31 | 11,914 | 81,138,885  | 3,161,282  | 3.9% | 265   |
| Ivano-Frankivs'ka | 20 | 19,857 | 170,691,572 | 4,595,453  | 2.7% | 231   |
| Kievskaya         | 34 | 8,792  | 70,436,055  | 2,631,687  | 3.7% | 299   |
| Kirovogradskaya   | 55 | 27,222 | 164,257,088 | 4,241,486  | 2.6% | 156   |
| Luganska          | 7  | 3,620  | 40,061,879  | 1,708,338  | 4.3% | 472   |
| Lvivska           | 25 | 13,570 | 174,362,176 | 6,499,652  | 3.7% | 479   |
| Nikolaevska       | 23 | 24,204 | 275,635,044 | 12,526,133 | 4.5% | 518   |
| Odeska            | 9  | 7,831  | 19,243,961  | 808,106    | 4.2% | 103   |
| Poltavs'ka        | 75 | 75,645 | 771,680,987 | 33,713,141 | 4.4% | 446   |
| Rivnens'ka        | 21 | 13,873 | 322,457,325 | 14,807,476 | 4.6% | 1,067 |
| Sums'ka           | 43 | 46,959 | 623,807,675 | 17,765,292 | 2.8% | 378   |
| Ternopil's'ka     | 98 | 39,365 | 300,122,758 | 7,917,288  | 2.6% | 201   |
| Kharkivs'ka       | 46 | 57,460 | 165,196,591 | 5,061,456  | 3.1% | 88    |
| Khersons'ka       | 54 | 37,398 | 359,408,559 | 15,925,942 | 4.4% | 426   |
| Khmel'nyts'ka     | 68 | 75,326 | 497,094,091 | 15,594,123 | 3.1% | 207   |
| Cherkas'ka        | 42 | 27,178 | 380,232,455 | 11,474,045 | 3.0% | 422   |
| Chernivets'ka     | 16 | 11,439 | 163,638,437 | 4,607,752  | 2.8% | 403   |
| Chernihivs'ka     | 66 | 48,023 | 319,888,911 | 8,307,642  | 2.6% | 173   |

\* Source [8]

According to the index of the insured area, the championship belongs to Poltava (75.6 thousand hectares, or 11.5%) and Khmelnytsky (75.3 thousand hectares, or 11.5%), regions. According to them, there are Dnipropetrovsk (67.3 thousand hectares, or 10.2%), Kharkiv (57.5 thousand hectares, or 8.7%), Chernihiv (48.0 thousand hectares, or 7.3%), Sumy (46.9 thousand hectares, or 7.1%) and Ternopil (39.4 thousand hectares, or 6.0%). The volume of collected awards of the oblast of Ukraine was in the following order: Poltava (UAH 33.7 million, or 16.5%), Dnipropetrovsk (UAH 18.1 million, or 8.8%), Sumy (UAH 17.8 million, or 8.7%), Kherson (15.9 million UAH or 7.8%), Khmelnytsky (UAH 15.6 million, or 7.6%), Rivne (UAH 14.8 million, or 7.2%), Mykolaiv region (UAH 12.5 million, or 6.1%) and Cherkassy region (UAH 11.5 million, or 5.6%). [2]. Figure 3 shows the state of insurance of agricultural crops by regions.

In 2017, the majority of concluded agricultural insurance contracts determined the winter wheat (47.3% of the concluded contracts), 25.2% for winter rape, 8.9% for sunflower seeds and 6.4% for winter barley, . The leading position of winter wheat is also observed in the overall structure of insurance payments

(about 54%, moreover, most payments were made under insurance contracts from total death for the period of overnight). Among the main products of insurance in agriculture, according to the results of 2017 were the following programs: total death (10.4% of contracts), total death + spring frosts (2.0%), named risks (14.8%), partial and complete death + spring frosts (32.2%) (Table 4).

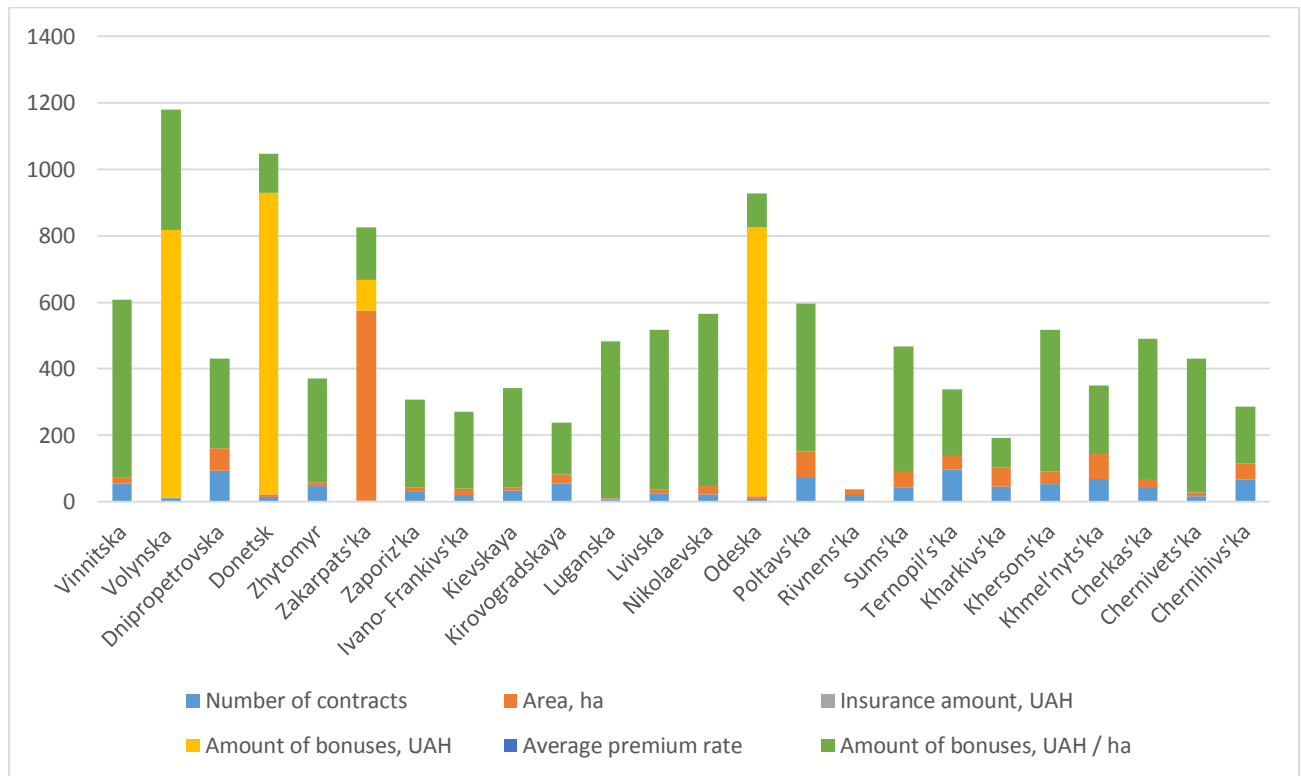


Fig. 3. A consolidated insurance diagram in terms of areas

\* Formed by authors according to [8]

Table 4

Analytical data of major agricultural insurance products in 2017

| Indicator  | The share of concluded contracts | The share of the insured area | Percentage of the sum insured | Percentage of bonuses collected |
|--|----------------------------------|-------------------------------|-------------------------------|---------------------------------|
| complete death                                   | 10,4                             | 6,5                           | 2,7                           | 3,6                             |
| named risks                                      | 14,8                             | 13,3                          | 16,2                          | 5,8                             |
| full death + spring frosts                       | 32,2                             | 43,2                          | 10,1                          | 9,6                             |
| partial and complete destruction + spring frosts | 2,0                              | 1,1                           | 0,1                           | 1,7                             |

Today, there are about 450 insurance companies in Ukraine that have the right to take out risk insurance. In 2017, only 24.6% of them, ie 58 companies out of 445, took part in subsidized insurance. Such an indicator once again emphasizes the complexity of insurance in the agrarian sector. Not all insurance companies understand the features of such insurance. Not all insurance companies in the state have appropriate specialists - agronomists, zootechnics, etc.

In 2017, insurance of agricultural crops was carried out by 13 insurance companies. Indicators of insurance for this period are shown in Table 5.

Table 5

Consolidated insurance data by insurance companies, 2017 \*

| Company      | Number of contracts | Area, ha | Insurance amount, UAH | Amount of bonuses, UAH | Average bonus rate,% | Payments, UAH |
|--------------|---------------------|----------|-----------------------|------------------------|----------------------|---------------|
| AXA          | 82                  | 49705    | 269939806             | 6518798                | 2,4                  | 278056        |
| Aska         | 108                 | 127559   | 551139192             | 17497926               | 3,2                  | 1512775       |
| Aska DC      | 1                   | 72       | 289224                | 13015                  | 4,5                  | 37760         |
| Brokbiznes   | 30                  | 19281    | 383315791             | 5705248                | 1,5                  | 3071547       |
| Gardian      | 25                  | 10199    | 88587217              | 4093767                | 4,6                  | 0             |
| Zdorovo      | 5                   | 3707     | 25725027              | 824562                 | 3,2                  | 584111        |
| Ingo Ukraine | 137                 | 147893   | 602567349             | 17554086               | 2,9                  | 1857209       |
| Kraina       | 84                  | 39613    | 337395892             | 14353506               | 4,3                  | 171500        |
| Oranta Sich  | 1                   | 203      | 2740850               | 19186                  | 0,7                  | 0             |
| PZU Ukraine  | 306                 | 118745   | 879962338             | 15974039               | 1,8                  | 115585        |
| TAS          | 5                   | 2107     | 8976765               | 369556                 | 4,1                  | 0             |
| UASK         | 21                  | 6502     | 200279764             | 12006526               | 6,0                  | 0             |
| Universalna  | 152                 | 131557   | 2562446940            | 109516655              | 4,3                  | 0             |
| Total        | 957                 | 657144   | 5913366125            | 204446870              | 3,5                  | 7628542       |

\* Source [8]

According to the number of concluded contracts, the championship belongs to the insurance company "PZU Ukraine" (306 contracts, which is 32.0% of the total). It is followed by Universalna (152 contracts, or 15.9%), Ingo Ukraine (137 contracts, or 14.3%), Asko (108 contracts or 11.3%), Kraina (84 contracts, or 8.8%), "AXA" (82 contracts, or 8.6%). According to the volume of the insured area of the company headed by the list, they were in the following order: "Ingo Ukraine" (147.9 thousand hectares, which is 22.5% of the total volume), "Universalna" (131.6 thousand hectares, or 20.0%) " Asko "(127.6 thousand hectares, or

19.4%), "PZU Ukraine" (118.7 thousand hectares, or 18.1%), AXA (49.7 thousand hectares, or 7.6%) and Kraina (39.6 thousand hectares, or 6.0%). The largest amount of insurance premiums was collected by the insurance company Universalna (109.5 million UAH, or 53.6%). Insurance companies Ingo Ukraine (UAH 17.6 million or 8.6%), Aska (UAH 17.5 million, or 8.6%), PZU Ukraine (UAH 16.0 million, or 7.8%), Kraina (UAH 14.4 million, or 7.0%) and UASK (UAH 12.0 million, or 5.9%). 8 insurance companies made insurance payments under agrarian insurance contracts. As can be seen from Diagram 5, according to this indicator, they are in the following order: Brokbiznes (UAH 3.1 million, or 40.3% of the total amount of payments), Ingo Ukraine (UAH 1.9 million, or 24, 3%), Asuka (1.5 million UAH or 19.8%), Zdorovo (584.1 thousand UAH or 7.7%), AXA (278.1 thousand UAH, or 3.6%), «Kraina» (171.5 thousand UAH, or 2.2%), PZU Ukraine (UAH 115.6 thousand, or 1.5%) and Asko DS (UAH 37.8 thousand, or 0.5%).

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

Table 6

Consolidated Animal Insurance Data, 2017 \*

| Kind of animals | Number of contracts | Insurance amount, UAH | Amount of bonuses, UAH | Average bonus rate, % |
|-----------------|---------------------|-----------------------|------------------------|-----------------------|
| Pigs            | 9                   | 190436212             | 1867156                | 1,0                   |
| TOP             | 13                  | 111514671             | 486070                 | 0,4                   |
| Poultry         | 1                   | 14049785              | 73059                  | 0,5                   |
| Total           | 23                  | 316000668             | 2426285                | 0,8                   |

\* Source: Analytical Study "Ukrainian Agribusiness Market in 2017 Underwriting Year"

The average rate of the insurance premium for the concluded contracts is 0.8%. The low rate of insurance premium under animal insurance contracts indicates that these contracts do not cover the main risks of livestock production.

Probably, based on the contracts, the animals were used as collateral for obtaining a loan [9].

A small share in agri-insurance is the liability insurance of legal entities for causing damage to the life and health of agricultural workers is necessary to increase the material provision of rural residents, increase their welfare. In the agrarian sector, the number of concluded personal insurance contracts is much lower than in urban areas, due to the lack of necessary funds for the conclusion of an insurance contract, lack of awareness of the rural population, distrust of the reliability of insurance coverage and other circumstances [10].

Problematic issues that complicate the development of the agrarian insurance market are:

1) from the side of agricultural producers: low level of awareness about the need to use insurance services; insufficient financial capacity, which does not allow to buy insurance services; lack of trust in insurers (in general, to insurance).

2) on the part of insurance companies: the imperfection of insurance products and services; absence of compulsory insurance, providing financial support to agricultural producers; complexity and opacity of insurance contracts; complexity and non-transparency of procedures for obtaining compensation; the limited and imperfect existing insurance services and the absence of insurance products that would satisfy different categories of producers; high cost of insurance; cases of inappropriate behavior of individual insurance companies (implementation of fictitious insurance); insufficient interest of insurance companies in the proper development of agro-insurance in Ukraine; lack of skilled personnel in the state of insurance companies that understand the particularities of agriculture.

At the same time, active political activity around agrarian insurance puts financial security in the development of agriculture in conditions of certain legislative uncertainty. For example, WTO policy implies a reduction in state support in certain aspects of economic activity, which worsens competitive conditions for potentially economically weak business entities. Instead, I note



the broad lobbying measures of the "green basket", namely subsidizing the system of agricultural insurance, the prevention of contamination and the fight against plant pests and other measures [11]. Stimulating investment in agricultural production can actively encourage the flow of capital into the industry, and therefore requires the introduction of insurance, as an active element of protecting financial resources and ensuring the financial security of all participants in the process [12].

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

The insurance of winter wheat for the entire period of cultivation is included from the moment when the insurance company's representatives left the fields, fixed the quality of the stairs and the farmer paid his part of the insurance payment. An insurance product provides an insurance covering two phases with an appropriate repayment after each phase. The first phase is winter risks, the second one is spring-summer risks. The main advantage of the first phase is that the coverage level of the area under the culture is 95%. This is the highest figure available on the market today. Insurance companies typically offer insurance coverage at 70% of the sum insured. The second advantage is the settlement of insured events and the payment for each perished hectare of cultivated area. The second phase (after the restoration of the vegetation) involves the insurance of the future harvest. The level of insurance coverage in this case is equal to 70% of the

average yield of winter wheat in the household for the last three years. The innovation of this product lies in the fact that insurance covers not only the costs incurred on sowing, but also part of the planned costs of growing and harvesting.

Nowadays, not only in Ukraine, but also in the whole world, index insurance is gaining popularity. It does not require the departure of the inspector to establish an insured event. The benefits of this approach are obvious: simplicity, cheapness and quick payout. This is a transparent and understandable method of insurance. There are many varieties of index insurance products. In particular, weather and "crop" can be distinguished [13]. Index insurance provides the right of the policyholder for compensation in the event that the yield of the insured crop will fall below the guaranteed level. Index insurance is performed on those weather risks that are measured by certain parameters. Therefore, they are limited by temperature, precipitation, wind force, snow cover thickness, and so on. But hail to this list does not fall. The index can insure autumn drought, the inability to start sowing due to the absence of precipitation or their redundancy. Unlike traditional insurance, the index does not provide for mandatory pre-insurance survey of crops and the assessment of losses incurred by the economy.

Gardening and viticulture are becoming increasingly popular in Ukraine. These industries are more vulnerable to weather conditions, diseases and pest infestations. Therefore, farmers are increasingly resorting to insurance of the plantings and harvest themselves. LLC "Universal insurance brokers and consultants" with the participation of the association "Ukrsadprom" has developed a new program of insurance of perennial plantations (trees, bushes) of stone and seed crops, as well as strawberries, raspberries, currants, grapes, walnuts, hazelnuts and their harvest.

The insurance amount for insurance of perennial plantings is determined within the limits of their book value or cost of planting material, according to the accounting data.

When insuring long-term crops, the insured amount is determined within the value of the future harvest, which is calculated on the basis of the average crop

yield of the farm for the last five years multiplied by the area of the plot and the cost of the unit of harvest.

An insured event in insurance for perennial plantings is a loss of 5% of plantations. The case is recognized as insured in the presence of plantings and their death, the fact of adverse effect, causal relationship between the fact of the onset and the fact of the death of plants. Insurance risks, in particular, are frostbite, icing, fire, freezing, storm, hurricane, rain. The agreement is concluded for one year. Franchise is from 5%. In 2019, Agrofirma "Deltrafrut" received from the insurance company ASKA 1,635 million USD for losses lost due to a thunderstorm and hail crop of apples.

From March 2019 beekeepers, whose beekeepers are officially registered, will be able to insure the families of bees. Insurance services will be provided by IC Brokbiznes. Under this insurance contract, the owner of the apiary will independently choose the amount of insurance payments. From this depends the cost of payment for the family of bees, but on average 6.1-6.2% of the sum insured, plus a further 2% deductible. At the same time, the insurance company reserves the right from the person who caused the damage to recover in its favor losses from poisoning of bees.

Consequently, given that agriculture is highly risky, the issue of using crop insurance as a method for reducing future loss of benefits is relevant and timely [2]. For agrarian enterprises, insurance should become an effective financial and economic tool for protecting the peasant's property interests during the production and processing of agricultural products. Further development of agricultural insurance should be aimed at creating favorable and safe conditions for doing business with all participants in the agrarian market, which involves the distribution of risks between agricultural producers, processing enterprises, banks, insurance companies and the state.

It is also necessary to develop a network of agents who can meet with farmers and explain how their products work. The importance of self-esteem and clear rules among insurance companies is important. After all, dishonest players in

the market can mislead customers because of the restrictions on the terms of contracts that allow you to refuse to pay. The lack of clear rules, even in the circle of insurance companies, has a significant impact on the market. A state program of regulation and support of insurance of agrarian risks is also needed. If in other countries such a mechanism for minimizing risks works and fully justifies itself, it may and must contribute to the more stable development of Ukrainian agrarian business.

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**SECTION 5**  
**CREATING AN ATTRACTIVE BUSINESS ENVIRONMENT FOR**  
**ENTREPRENEURSHIP**

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***EXPERIENCE OF APPLICATION OF OPTIMIZATION AND APPLIED***  
***ECONOMETRIC MODELS IN THE PRACTICE OF ANALYSIS OF***  
***ENTERPRISE' MARKETING COMMUNICATIONS MANAGEMENT***  
***EFFICIENCY***

*Abstract.* The article deals with theoretical and methodological provisions and proposes practical recommendations for the formation of a complex of economic-mathematical models of management of the system of marketing communications of the enterprise. The analysis of existing approaches to the decision of the task of estimation and analysis of the efficiency of management of the system of marketing communications of the enterprise is carried out. The basic concepts, structure and tasks of management of the system of marketing communications are determined.

On the basis of the developed system of indicators for assessing the effectiveness of marketing communication process management, the effectiveness of management of marketing communications is analyzed.

The dynamics of the influence of investment in the channels of marketing communications on the result indicators of the enterprise activity is analyzed.

Practical application of the developed approach allowed to determine the amount of the underreceived economic effect from investing in marketing communications both for each individual project and in their totality.

**Keywords:** *marketing communications, model, analysis, optimization, budget.*

**Introduction.** Currently, the subjects of almost all types of economic activity operate under conditions determined by the aggravation of competition and increasing requirements for the effectiveness of certain areas of the enterprise. The dynamics of both commodity and service markets is changing the emphasis and priorities of organizing the work of marketing and sales departments, which in their activity are forced to focus on existing methods of managing marketing processes and developing new approaches to marketing management processes optimization.

According to this, the results of applied research aimed at development of effective methods of evaluation and analysis of the efficiency of management of

the system of marketing communications of the enterprise will be relevant and demanded.

Without diminishing the importance of other components of the marketing system, in this work the emphasis is placed on the priority of management of the system of marketing communications of the enterprise. It goes without saying, that it is one of the most effective mechanisms for the formation of its competitiveness and development. Taking into account the advantages and disadvantages of the application of expert methods in the practice of marketing communication system management, in the study, some results of which are given in this publication, the emphasis is on use of tools of economic and mathematical modeling.

The research of the system of marketing communications management is considered in the works of such foreign and domestic authors as N. Wiener, Shreem, Westley and McLean, Weaver, Steiner, Titov, Liberov, Alexeyev, Paul Smith, Jonathan Taylor, F. Kotler, S.S. Harkavenko and others.

Taking into account a great number of positive aspects published in the works of both domestic and foreign scholars, a new approach to the question of optimization the structure of expenses for sales promotion, taking into account the lag effect of the market reaction on the activation of marketing communication channels, is required.

The purpose of the research is to develop and improve the scientific and methodological principles and practical recommendations for improving the efficiency of management of the system of marketing communications of the enterprise on the basis of economic-mathematical modeling of the processes of analysis of indicators of marketing activity.

To achieve this goal, the following tasks were solved: the role and place of marketing communications in the management of the enterprise were considered; a system of indicators has been formed for analyzing the effectiveness of marketing communication process management; on the basis of the developed optimization models, an evaluation of the effectiveness of the management of the marketing communications system of the enterprise was carried out and the relevant practical

recommendations regarding the increase of the management effectiveness of the marketing communication process; dynamic econometric models for analyzing the lag effect of the investment influence on marketing communications on the resulting performance indicators of the enterprise were developed.

The object of the study: the analysis of the effectiveness of management of the system of marketing communications enterprise.

The subject of the study: theoretical and methodological provisions, economic and mathematical methods and models for conducting analysis of the efficiency of management of the system of marketing communications of the enterprise.

The scientific novelty of the results obtained is to improve the existing approaches to analyzing the efficiency of management of the system of marketing communications of the enterprise based on the application of applied econometric and optimization models, which allow to determine the size of the unspent financial result due to the non-optimal management of the marketing budget, taking into account the lag effect of changes in economic conditions.

**Main part.** The role of communication and its efficiency in the modern world is unquestionable. The effectiveness of management, both personal and organizational, depends on the success of the planned activities. In general, the communication process implies that the sender transmits a certain message, pending the achievement of a certain influence on the recipient. In other words, the main function of communication is the transfer of information.

The basic elements of the communication process are [1]:

1. Sender of the message - the initiator of the information transfer process;
2. Message - the information coded in a certain way, which can be submitted both verbally and non-verbal means;
3. Channel - a means of transmitting information that can be stored on different media and transmitted through various communication channels;
4. Recipient - the person whom the message is addressed.



The role of marketing communications in the activity of modern enterprise is very important in terms of achieving market objectives. As one of the key factors that determine the competitiveness and market position of the company, marketing communications are designed to create a positive image of the company among consumers, as well as to convey information about the company's products and services [2].

Nowadays, in the specialized literature, you can find a significant number of approaches to the interpretation of the concept of "marketing communications". As a rule, marketing communications are understood as a formal or informal system of well-functioning information exchange between the enterprise and its target audience, which allows the enterprise to respond in a time to the challenges of a competitive environment, better adapt to market conditions, and also to predict the processes that will determine market success.

Researchers interpret the concept of marketing communications in different ways. Under the term "communications" G. Pocheptsov understands the processes of transcoding verbal records into nonverbal and nonverbal into verbal spheres [3, p.16]. J. Burnett, S. Moriarty under marketing communications understand "the process of transferring information about the product to the target audience" [4, p.29]. J.-J. Lamben is somewhat broader in treating marketing communications, in particular, considers this component of the marketing system as "a set of signals that go from the firm to the various audiences, including customers, sellers, management and their own personnel" [5, p.271]. F. Kotler considers "the general program of marketing communications, which is called a complex of promotion, and is a specific combination of advertising, personal sales, sales promotion and propaganda" [6, p.827]. S.S. Harkavenko identifies the concept of "promotion" and "marketing communications" and considers them as "the establishment and maintenance of constant ties between the firm and the market in order to increase the sale of goods and the formation of a positive image by informing, persuading and reminding of its activities" [7, p. 409].

In this publication, under the system of marketing communications should mean a system of mechanisms of targeted influence on actual and potential buyers of products and services of an enterprise, which the company uses to inform the target audience about themselves and their products, forming in the target audience a sense of the benefits of products and services of the enterprise to the products of competitors, interest in purchasing their products and services, encouraging further purchases, as well as recommendations of products and services of enterprises and to other consumers and the formation of a positive image of the company, its product or services.

Elements of the marketing communications system are advertising, sales promotion, public relations, propaganda, personal sales, direct marketing, which have their own characteristics that complement each other and form a complex.

The effectiveness of communication is one of the most important characteristics of the communication process, including marketing. In general, an assessment of the effectiveness of any process involves the need to select criteria for assessing the effectiveness. Having determined the criteria for assessing the effectiveness of communications and having statistical information about the amount of communication costs, as well as the effect of the communication process, it is possible to form a list of the most effective channels and methods of information transmission at the planning stage for the dissemination of the necessary information.

In any case, under the term “effectiveness of communication” one understand the ratio of the result obtained from the organization of communicative activities, to the cost of its receipt [11].

The generally accepted concept of the effectiveness of marketing communications includes the following criteria [12]:

- the economic effect, the essence of which is the possibility of maximizing the use of the state of market conditions under conditions of given consumer demand;

- the communicative effect, which means the ability of marketing communications to convey the necessary information to the target audience, the ability to form the desired point of view for the customer, the ability to reach the audience, etc .;

- a social effect, which is expressed in a certain impact of communication on the target audience.

Authors [20, 22] propose a scheme for distinguishing between the purpose of marketing communications and the criteria for the effectiveness of a complex of marketing communication activities.

In the case when marketing communications are used to inform consumers, the level of awareness of the target market about the relevant product or service will serve as a criterion for effectiveness. For quantitative identification and formalization of the efficiency criterion it is recommended to conduct time series analysis [20, 22], one of the final stages of which is the calculation of the received advertising effect. The value of the advertising effect is recommended to be determined as the difference in the level of awareness of the target audience before and after the end of the targeted information impact.

If the ultimate goal of the marketing communication process is to create a sense of the benefits of the enterprise itself, its products and services to its counterparts and competitors in the target audience, the measure of loyalty of the target audience to the enterprise, product or services that are provided is the criterion of effectiveness. In this case, the effect of marketing communications will be a difference in the attitude of buyers to the product, brand or company before and after the completion of the advertising campaign.

In the case when marketing communications tools are used to stimulate consumer activity, the criterion of effectiveness will be the dynamics of volumes of sold products and services [20]. In applied research, as a rule, the focus is on economic criteria of the effectiveness of marketing communications and investigate the dynamics of the values of the resulting performance of the enterprise - volumes of goods turnover in physical and value terms, profits before

the beginning of investment in marketing communications, in the process of active phase of communicative activity and after completion of events related to advertising, propaganda, and other communication channels.

Among the methods that are most often used in modern marketing communications management practices, three main approaches to assessing efficiency can be identified [11]:

- an approach according to which the effectiveness of communication is defined as the ratio of the growth of any indicator obtained as a result of communication acts to the cost of their conduct;

- an approach which involves determining the quantitative non-financial indicator, which is obtained as a result of activation of the channel (channels) of communication;

- an approach in which a qualitative indicator is defined which characterizes how communication reaches its goal, to what extent its functions are fulfilled [11].

Enterprise' successful marketing activity requires periodic evaluation and retrospective analysis of the effectiveness of marketing communication process management. Objective assessment and management efficiency analysis will help executives make informed decisions in order to increase competing positions in the market and maximize company profits.

There are many approaches to assessing the effectiveness of various channels of marketing communications, which relate either to their individual types (advertising, PR, personal sales, direct marketing, etc.), or certain results achieved in the process of their use (economic and communication efficiency) [13].

Under the term «effectiveness of marketing communications» one should understand a comparison of the income from the sale of advertising with the amount of costs for it. If the income from the sale of advertising is greater than the cost, we can clame that such communication is effective.

The effectiveness of the marketing communications complex is "the impact of marketing communications on certain target results in a given time interval,

taking into account the factors of the internal and external environment of the enterprise, which are measured by the relation of the effects (economic and communicative) to the costs of their achievement" [14].

The economic effect characterizes the change in the values of economic indicators of the enterprise as a result of investment in marketing communications. In other words, the economic efficiency of marketing communications is determined by the ratio of communication costs and any economic indicator of the enterprise. Very often such indicators are the increase in profits, physical commodity turnover and turnover in value terms, the number of contracts concluded for the sale of products, the amount of contracts concluded, the number of buyers, etc. [15]. The communicative effect - characterizes changes in the views of the target audience, which took place under the influence of marketing communications. [16].

The practice of marketing communications management shows that the communicative and economic effects of using each of the means of marketing communications are intensified in the case of their thoughtful and integrated application, that is, the so-called synergistic effect of marketing communications is achieved.

Among the set of marketing efficiency indicators, R. Shaw [17] argues that the most important is the return on marketing investment (ROMI), because it covers the two most important indicators of marketing communications channels: profit and advertising costs. In this case, advertising costs should be considered not just as costs, but as investments.

$$\text{ROMI} = \frac{(\text{GP} - \text{MC})}{\text{MC}}$$

where GP - gross profit; MC - investment in marketing activities.

Having quarterly financial statements of the investment company for 2015-2018 years, the ROMI indicator was used to assess the level of effectiveness of marketing communications management.

Thus, we obtained the results of calculating the ROMI indexes for all investment and construction projects. The results showed that for 4 years the construction company works with high profitability. The least profitable was advertising on television, radio in the fourth quarter of 2017. The amount of enterprise that spent on this type of communications was 67233 thousand UAH, and received income from the sale 90032 thousand UAH.

In the basis of the majority of methods of evaluation and analysis of the communication system, as a rule, there are tasks of analysis of structural relationships between the costs of marketing communications and the results of the impact of communications on the target audience, qualitative and quantitative description of the complementarity of the factors of the impact process on the target audience, lag effect of influence marketing costs for the market reaction evaluation, etc. [9, p.254].

In the course of the conducted research, a system of indicators has been formed, which reflect the quarterly data of enterprises for 2015-2018 years. In particular, the following cost indexes of the investment company were analyzed:

$X_1$  - Advertising in print media (newspapers, magazines);

$X_2$ - Internet advertising;

$X_3$ - Advertising on TV, radio;

$X_4$ - Services for the production of recycled materials;

$X_5$ - Outdoor advertising (boards, city lights);

$X_6$ - distribution advertising (promotional products);

$X_7$ - Other;

$Y$  – Revenue from sales in monetary terms.

In order to select the channels of marketing communications, which should be financed in the planned period, within the framework of our research, we have improved and developed the algorithm proposed for the first time in the paper [19, p.1004-1008]. The essence of the innovation is that, as a classification mark of the effectiveness of marketing communication channels, it is proposed to use the calculated values of the ROIs in marketing communications (ROMI), as well as the

values of long-term distributive lag multipliers, calculated on the basis of models for assessing the lag impact of investment in the relevant marketing channels. communications on the indicators of revenue from the sale of products of the investment company [2].

The algorithm of selection of channels of marketing communications, which is worth in investing in the planned period is described in [2, p.170]:

1. standardization (normalization) of the model variables

$$Y^* = \frac{y_i - \bar{y}}{\sigma_y} \quad Y_{ij}^* = \frac{x_{ij} - \bar{x}_j}{\sigma_{xj}}$$

2. selection of forms of analytical dependence that describe the interactions between normalized values of factor variables and resulting variables in the best way from the requirements of economic, logical and statistical compliance, as well as calculation of profitability coefficients of marketing investments and long-term distributive lag multipliers, which are determined on the basis of distributed lag models, constructed for each channel of communication;
3. choice of the factor variable  $X_j^*$  for which  $ROMI_{yx_j} = \max\{ROMI_{yx_j}\}$  either the choice of the factor characteristic for which the value of the long-term distribution-lag multiplier will be maximal;
4. choice of the next factor variable  $X_j^*$ , which has the highest value of the indicator of profitability of marketing investments / long-term distributive-lag multiplier model of the income of the enterprise from the cost of the corresponding communication channel and the construction of a two-factor model;
5. comparison of estimated determination coefficient calculated for models at stages 3 and 4. If  $\bar{R}_{k+1}^2 < \bar{R}_k^2$ , then step 6. If  $\bar{R}_{k+1}^2 > \bar{R}_k^2$ , then step 4 is repeated until  $\bar{R}_k^2 > \bar{R}_{k-1}^2$ , where  $\bar{R}_k^2$  - the estimated determination coefficient for the model with  $k$  factor variables;

6. construction of a regression model for the resulting variable and factor variables, defined at stages 3 - 5. If we have the case of multi-factor regression, then step 7, if the factor variable one - step 8;
7. Check the presence of multicollinearity in the massif of factor variables using Farrara-Glaubera algorithm. In the case of detecting multicollinearity, the transformation of the source information or the extraction from the analysis of the factor variable, taking into account the values of statistical criterion, economic content, as well as significance in the study, is performed;
8. selection of the best form of analytical dependence between the selected factors and the resulting variable taking into account the requirements of economic, logical and statistical compliance;
9. verification of the remnants of the estimated econometric model for autocorrelation and heteroscedasticity. In case of detecting these phenomena, they are eliminated in accordance with the developed methods for estimating the parameters of the econometric model.

The analysis of the relationship between the indicators in the overall enterprise has made it possible to identify the best three channels of marketing communications for the enterprise which are the best for investment. These channels are:

$X_1$  - Advertising in print media (newspapers, magazines);

$X_6$  - distribution advertising (promotional products);

$X_2$  - Internet advertising.

That is, to promote the investment company itself without mention to specific investment projects and regional markets, it is expedient to invest in these channels of communication. The model of dependence of proceeds from sales of products from the amount of costs for the corresponding channels of communication has the following form:

$$Y = 2837466,07 + 6,91x_1 + 8,77x_6 + 7,24x_2, R^2 = 0,838$$



The estimation of the parameters of the model was carried out using 1OLS method in fulfilling the basic prerequisites for its application. Since the model is adequate for the main statistical criteria, that is, it corresponds to reality and has 75 percent of the statistically significant estimates, it can be used to analyze the current impact of financing of the channels of communication on the proceeds from the sale of products.

The management of the company needs to get objective information about what profit the enterprise will receive from each hryvnia spent on the channels of marketing communications. As practice shows, in addition to instant dependencies, there are very frequent cases where there is a certain time interval between the moment of investing in marketing activity and market reaction. Such a time interval is called lag.

The distributive lag model is a type of econometric model, the right part of which contains not only the current, but also the previous (lag) values of independent variables [23].

The number of lag variables in the model of the channels of marketing communications was determined by the results of the Alt-Tinbergen method [23], which allows determining the number and list of lag variables to be included in the distributive lag models, as well as the results of calculating the values of the pair correlation coefficients determined on the basis of the sample information for the actual values of the dependent variable and lag values of the independent variables (Table 1). It should be noted that the results concerning the number of lag variables that are recommended to be included in the models are practically identical in terms of the application of the two above-mentioned approaches. Based on the results obtained in this way (the number of lag variables to be included in models), the corresponding distributive-lag models such as:

$$y_t = \alpha + \beta_0 x_t + \beta_1 x_{t-1} + \beta_2 x_{t-2} + \dots + \beta_n x_{t-n} + e_t$$

Table 1. The value of the correlation coefficients between the resulting indicator of the enterprise and the costs of marketing communications

| Correlation     | $X_1$   | $X_2$   | $X_3$   | $X_4$   | $X_5$   | $X_6$   | $X_7$   |
|-----------------|---------|---------|---------|---------|---------|---------|---------|
| $r_{y X_t}$     | 0,84458 | 0,66176 | -0,0348 | 0,62620 | 0,44873 | 0,66891 | 0,04366 |
| $r_{y X_{t-1}}$ | 0,88937 | 0,58080 | -0,1851 | 0,62808 | 0,42626 | 0,57369 | 0,07812 |
| $r_{y X_{t-2}}$ | 0,68718 | 0,59044 |         | 0,42601 | -0,0490 | 0,30502 | 0,00351 |
| $r_{y X_{t-3}}$ |         | 0,48557 |         |         |         |         |         |

From Table 1, we can see that the distributive -lag model, which allows us to determine the lag effect of the impact of costs on marketing communications of the enterprise in general without a specific tie to individual investment projects and regional markets should include information about:

- advertising in print media (newspapers, magazines) - one lag variable;
- Internet advertising - two lag variables;
- advertising on TV, radio - instant communication (no lag variables);
- services in the production of promotional materials - one lag variable;
- outdoor advertising (boards, city-lights) - one lag variable;
- outlet advertising products - one lag variable;
- the other - is one lag variable.

Using S. Almon method [23], the estimations of the parameters of the corresponding distributive-lag model were found (Table 2), and also it was determined which total result the enterprise receives from each hryvnia deposited from each type of advertising, the so-called cumulative effect. The cumulative effect was determined on the basis of the values of long-term distributive-lag multipliers based on the estimated models by the method of S. Almon.

**Table 2. Estimated distributive-lag models of dependencies of performance of investment company on expenses on marketing communications**

| Type of advertisement                              | Distributive-lag model                      | Cumulative effect |
|--|---|-------------------|
| Advertising in print media (newspapers, magazines) | $y_t = 298445 + 12,8356X_t - 7,1324X_{t-1}$ | 5,7032            |

|   |   |         |
|---|---|---------|
| Internet advertising                      | $y_t = 3153474 + 6,2911X_t - 2,7792X_{t-1} + 1,0363X_{t-2}$ | 4,5482  |
| Advertising on TV, radio                  | $y_t = 354118 + 1,2456X_t$                                  | 1,2456  |
| Production of promotional materials       | $y_t = 295657 + 32,1468X_t - 9,3009X_{t-1}$                 | 22,8459 |
| Outdoor advertising (boards, city-lights) | $y_t = 194980 + 1,3771X_t + 34,1172X_{t-1}$                 | 35,4943 |
| Distribution advertising products         | $y_t = 328622 + 2,8520X_t + 5,6816X_{t-1}$                  | 8,5336  |
| Another expenditures                      | $y_t = 323154 + 6,1532X_t - 0,6513X_{t-1}$                  | 5,5019  |

Based on the information given in the table, we can conclude that all channels of marketing communications are profitable. In this case, the company's managers need to determine the priority of investing channels of marketing communications and their impact on the market response, which will allow us to distribute the limited advertising budget of the company in optimal way.

The solution of the problem of effective management of enterprises is linked with the study of the possibilities of optimizing the structure of their costs. Currently, scientific literature can find both conceptual and formalized approaches to solving the problem of formation and optimization of the structure of costs of enterprises of various types of economic activity. In this context, special attention should be paid to the question of optimization of distribution and marketing communications policy [2].

To optimize the structure of the budget of marketing communications, as well as to conduct an audit of the effectiveness of marketing budget management, we proposed an approach to constructing an optimization model for the relevant investment process [2, p. 171]. The essence of the approach is to formulate a flow of funds, the main elements of which are the following indicators:

- resources available at the beginning of the reporting period;
- investments in selected channels of communication;
- income from invested in channels of marketing communications taking into account the lag effect of the impact of investing in the channels of communications

of previous reporting periods on the results of financial and economic activity of the enterprise in the current reporting period.

On the basis of such a scheme, conditional optimization models were formed, the target functions of which are to maximize the value of the investment company's income by the end of the planning period, and the restrictions describe the actual costs of marketing communications, taking into account the existing constraints on resources in each of the reporting periods.

Let  $x_{ij}$  - is the amount of invested funds in  $i$ - year into  $j$  - channel of investment ( $i = \overline{1,12}$ ,  $j = \overline{1,3}$ ). The model limits were recorded according to the following condition: the amount of funds invested in the current year can not exceed the amount of the balance of the last year and income for the past year. As weighting coefficients of each individual communication channel, which is recorded in the target function, the use of real shares of long-term distributive-lag multipliers, calculated on the basis of the corresponding distributive-lag model, is proposed. The developed model has the following form:

$$F = 0.328306 X_{34} + 0.200928 X_{35} + 0.207198 X_{36} \rightarrow \max$$

$$X_1 + X_2 + X_3 \leq 150925$$

$$-0.328306 X_1 - 0.200928 X_2 - 0.207198 X_3 + X_4 + X_5 + X_6 \leq 133475$$

$$X_1 + X_2 + X_3 - 0.328306 X_4 - 0.200928 X_5 - 0.207198 X_6 + X_7 + X_8 + X_9 \leq 289119$$

$$-0.328306 X_1 - 0.200928 X_2 - 0.207198 X_3 + X_4 + X_5 + X_6 - 0.328306 X_7 - 0.200928 X_8 - 0.207198 X_9 + X_{10} + X_{11} + X_{12} \leq 273081$$

$$X_1 + X_2 + X_3 - 0.328306 X_4 - 0.200928 X_5 - 0.207198 X_6 + X_7 + X_8 + X_9 - 0.328306 X_{10} - 0.200928 X_{11} - 0.207198 X_{12} + X_{13} + X_{14} + X_{15} \leq 488425$$

$$-0.328306 X_1 - 0.200928 X_2 - 0.207198 X_3 + X_4 + X_5 + X_6 - 0.328306 X_7 - 0.200928 X_8 - 0.207198 X_9 + X_{10} + X_{11} + X_{12} - 0.328306 X_{13} - 0.200928 X_{14} - 0.207198 X_{15} + X_{16} + X_{17} + X_{18} \leq 487699$$

$$X_1 + X_2 + X_3 - 0.328306 X_4 - 0.200928 X_5 - 0.207198 X_6 + X_7 + X_8 + X_9 - 0.328306 X_{10} - 0.200928 X_{11} - 0.207198 X_{12} + X_{13} + X_{14} + X_{15} - 0.328306 X_{16} - 0.200928 X_{17} - 0.207198 X_{18} + X_{19} + X_{20} + X_{21} \leq 687731$$

$$-0.328306 X_1 - 0.200928 X_2 - 0.207198 X_3 + X_4 + X_5 + X_6 - 0.328306 X_7 - 0.200928 X_8 - 0.207198 X_9 + X_{10} + X_{11} + X_{12} - 0.328306 X_{13} - 0.200928 X_{14} - 0.207198 X_{15} + X_{16} + X_{17} + X_{18} - 0.328306 X_{19} - 0.200928 X_{20} - 0.207198 X_{21} + X_{22} + X_{23} + X_{24} \leq 671496$$

$$X_1 + X_2 + X_3 - 0.328306 X_4 - 0.200928 X_5 - 0.207198 X_6 + X_7 + X_8 + X_9 - 0.328306 X_{10} - 0.200928 X_{11} - 0.207198 X_{12} + X_{13} + X_{14} + X_{15} - 0.328306 X_{16} - 0.200928 X_{17} - 0.207198 X_{18} + X_{19} + X_{20} + X_{21} - 0.328306 X_{22} - 0.200928 X_{23} - 0.207198 X_{24} + X_{25} + X_{26} + X_{27} \leq 979583$$

$$-0.328306 X_1 - 0.200928 X_2 - 0.207198 X_3 + X_4 + X_5 + X_6 - 0.328306 X_7 - 0.200928 X_8 - 0.207198 X_9 + X_{10} + X_{11} + X_{12} - 0.328306 X_{13} - 0.200928 X_{14} - 0.207198 X_{15} + X_{16} + X_{17} + X_{18} - 0.328306 X_{19} - 0.200928 X_{20} - 0.207198 X_{21} + X_{22} + X_{23} + X_{24} - 0.328306 X_{25} - 0.200928 X_{26} - 0.207198 X_{27} + X_{28} + X_{29} + X_{30} \leq 930653$$

$$X_1 + X_2 + X_3 - 0.328306 X_4 - 0.200928 X_5 - 0.207198 X_6 + X_7 + X_8 + X_9 - 0.328306 X_{10} - 0.200928 X_{11} - 0.207198 X_{12} + X_{13} + X_{14} + X_{15} - 0.328306 X_{16} - 0.200928 X_{17} - 0.207198 X_{18} + X_{19} + X_{20} + X_{21} - 0.328306 X_{22} - 0.200928 X_{23} - 0.207198 X_{24} + X_{25} + X_{26} + X_{27} - 0.328306 X_{28} - 0.200928 X_{29} - 0.207198 X_{30} + X_{31} + X_{32} + X_{33} \leq 1262131$$

By means of MS Excel, with the help of the built-in "Search solution" function, the maximum possible income of an enterprise is determined at the given limits on the volumes of resources available in each reporting period.

As we can see, the proposed approach to optimization of the marketing communication system management system in the framework of conducted research allows to identify communication channels that are appropriate to include in the marketing budget in the planned period, as well as calculate the amount of funds necessary for investing in selected channels, in which the income of the enterprise will be maximal taking into account the lag effect of the impact of costs on the corresponding channels of communications incurred in past reporting periods.

The analysis conducted using the proposed scheme in the context of the 8 major investment projects implemented by the enterprise in the market showed the following: only two investment projects actually received higher revenues from model results (correspondingly 1.73 and 2.14 per cent respectively). With regard to all other projects, the use of the proposed approach ensures that income is higher than actual depending on the project - from 2.56% to 29.41%, which suggests that there are effective mechanisms for improving the management of the marketing communication process.

As we can see, the proposed approach to optimization of the marketing communication system management in the framework of conducted research allows to identify communication channels that are appropriate to include in the marketing budget in the planned period, as well as calculate the amount of funds necessary for investing in selected channels, in which the income of the enterprise will be maximal taking into account the lag effect of the impact of costs on the corresponding channels of communications incurred in past reporting periods.

**Conclusions.** The conditions under which practically all business entities operate without exception, require the concentration of management efforts of companies to seek ways to increase the efficiency of using both their own development potential and market potential. The task of improving the effectiveness of marketing communication process management is to audit the marketing communications, further identify the channels of communication, which is appropriate to invest and determine the optimal in terms of maximizing the

resulting performance of the enterprise resource allocation between the channels of marketing communications. The formation of a system of indicators, analysis and evaluation of the effectiveness of marketing communications management helped select the channels in which it is best to invest in the promotion of investment and construction projects, as well as find their weighting factors and develop their own optimization model for maximizing profits. This model has shown that under such an investment plan, the difference between the value obtained with the proposed model and the actual value of the enterprise's income is significant.

After analyzing the influence of marketing communication channels on the market response, it can be concluded that most of them have a lag effect. The cumulative effect shows that all investment channels are profitable in the analyzed period. In this case, the company's managers need to determine the priority of marketing communications channels and their impact on the market response, which will allow the company to distribute the limited advertising budget correctly.

The mechanism of analysis and optimization of the efficiency indicators of marketing communication process offered in this paper can become the basis for further increase of level of profitability and competitiveness of the enterprises which invest in development of system of marketing communications.

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## **FORMATION OF COMPETITIVE STRATEGIES OF BUSINESS ENTITIES IN A CHANGING MARKET ENVIRONMENT**

***Abstract.** The article substantiates that for the purpose of long-term providing competitiveness of the enterprise, it is necessary to implement and use strategic management decisions, which can be considered as the basis for the creation and implementation of competitive advantages of the enterprise.*

*We are convinced that a universal ideal strategy for each particular company really does not exist. Even different departments or types of goods may require different strategies. Each company should determine which strategy will work best, considering its industry, goals, capabilities and resources. An enterprise should fully identify its competitive advantages and evaluate the most appropriate business strategy or a set of strategies.*

*It is proved that continuous provision of competitive advantages is the main strategic direction of development. Only those enterprises will be able to function effectively in the economic environment of business for a long time, which cares about their own competitiveness. The process of providing with competitive advantages generates economic incentives to ensure that the company does not reassess of the achievement, but instead has sought to intensify its efforts to attract new customers and create more favorable conditions for the sale of its own products.*

*It is substantiated that the process of ensuring competitiveness of the enterprise happens constantly and manifested in the desire of competitors to improve their own position in the market, to create the sufficient volume of resource potential, which guarantees timeliness of payments with suppliers, the budget and other parts of the financial system of the state. The higher the level of competition in the market, the more attention the company must pay to its own reproduction of competitive opportunities to obtain the maximum result.*

***Key words:** competitiveness, strategic analysis, competitive advantage, competitive strategy, market environment.*

**Introduction.** An indispensable condition for survival of enterprises in the modern market is the existence of competitive advantages. Under such conditions, the basis of business is the presence of a competitive strategy of the enterprise.

Theoretical and methodological foundations for the study of competitive strategies are presented in the works of such Western and domestic scientists as I. Anosoff, M. Porter, A. Thompson, D. Ricardo, F. Kotler, P. Sabluk, S. Kvasha, V.

Heets, L.Lipych, I. Tsymbaliuk, O. Machulka, I. Zurakovska and others [1; 2; 3; 4; 5; 6].

The purpose of the study is to generalize approaches to the classification of competitive strategies of the enterprise, to study the interdependence and interrelation between competitive strategies and ways of gaining competitive advantages in a changing market environment.

**Main part.** As noted in the publication D. Y. Doz and V. M. Lipinsky's competitive advantages are those unique tangible and intangible assets owned by the firm; those areas of activity that are strategically important for this business, which help to win in a competitive struggle. Competitive advantages exist when you can get more than higher average profitability for firms in this industry or a market segment [7, p. 136].

According to the definition of R. L. Lupack, competitiveness of the enterprise is a relative characteristic that expresses the differences in the development of enterprises from competitive enterprises by the degree of satisfaction of their products consumer needs and the effectiveness of economic and financial activity [9, p.248].

Enterprises can have sudden competitive advantages, but usually they include:

- saving in volume of production (scale);
- saving through training of personnel and improvement of the organization of work;
- improvement of a design of goods;
- automation of production processes and sales;
- firms location;
- government benefits, subsidies etc;
- culture of low expenses;
- low costs of raw materials, human resources and sale of goods;
- lower costs due to contracts with suppliers, integration, etc. [7, p. 138; 8].

We share the point of view of P. S. Smolenyuk, who believes that a competitive strategy is a way of obtaining sustainable competitive advantages of an enterprise through competitive struggle, satisfying the various and changing needs of customers better than competitors do. The competitive strategy of an enterprise allows us to answer the question of how an enterprise competes in the target market, by virtue of which it withstands competitive pressure and wins in the competition [11, p. 86].

In order to develop or change the company's competitive strategy, it is necessary to continuously conduct a strategic analysis of the company's external and internal environment. Under the strategic analysis of the external environment of the firm refers to the analysis of a set of external factors that affect or may affect the company's activities and do not depend on the internal advantages or disadvantages of the very company.

In the economic literature there is no single approach to the classification of competitive strategies and their varieties. Competitive strategies are classified according to different features: interconnections, actions and counteractions of competing companies in the market, etc. Strategies and competitive advantages, which are formed in the opinion of different authors are given in the table [10; 11, p. 86].

There is no universal ideal strategy for each particular enterprise; there may be different strategies for different departments or types of goods. Each company should determine which strategy will work best, given its state of the industry, goals, opportunities and resources.

These strategies do not exclude one another at all. Entrepreneurs often combine two or three principles into one strategy, but each of them has the prerequisites, peculiarities, constraints associated with a certain risk.

Table 1

## The most widespread qualifications of competitive strategies

| Types of Strategies // Sign (indication) / Author of classification                  |   |
|--|---|
| 1  | 2   |
| Competitive Advantage of the Firm in the Market / M.Porter                           | <ul style="list-style-type: none"> <li>- creating a high image that reduces the price elasticity of demand;</li> <li>- strategy of price leadership – achievement of the smallest expenses;</li> <li>- focus strategy - specialization and activities concentration.</li> </ul>   |
| Source of Competitive Advantage of the Firm / I. Ansoff                              | <ul style="list-style-type: none"> <li>- strategy of maximizing market share – minimizing the cost of goods and selling them at a price lower than the competitors;</li> <li>- strategy of differentiation of the market (market niche);</li> <li>- growth strategy that provides a future development.</li> </ul>  |
| Competitive position and marketing direction / F. Kotler                             | <ul style="list-style-type: none"> <li>- market leader's strategy – content of the dominant particles;</li> <li>- strategy of the challenger-company (considerable, but not the largest share) ;</li> <li>- strategy of the firm-follower (stable market position; limited impact on the market);</li> <li>- strategies of niche firms - maintaining a market share in niche</li> </ul>   |
| The company's strategic profile / D. Hooley, D. Lynch and D. Johabber                | <ul style="list-style-type: none"> <li>- the strategy of aggressors - the focus on a common market with products of higher quality than competitors produce, and at the prices of competitors;</li> <li>- the strategy of firms that occupy the segments with the best positions - the focus on market segments with products of higher quality and a price that's lower than the competition's;</li> <li>- the strategy of «medium» firms – the focus on certain market segments with the quality and price of goods as competitor's;</li> <li>- the strategy of firms that occupy high value segments – the focus on market segments with higher quality goods and prices as competitor's;</li> <li>- defense strategy – focus on individual consumers with quality and price as competitor's.</li> </ul> |
| Principle of Valuable Disciplines / M. Tressi, F. Wirsem                             | <ul style="list-style-type: none"> <li>- Functional advantage - company provides higher value, leading in its field for the price and goods convenience;</li> <li>- close relationship with the consumers – the company provides a higher value, carefully segmenting the markets, and creating goods or services specifically for the needs of the target consumers;</li> <li>- Leading position in commodity-innovations – the company provides higher consumer value, offering a constant flow of new goods or services.</li> </ul>  |
| Competitive positions and opportunities for improving these positions / A. D. Little | <ul style="list-style-type: none"> <li>- The leader's strategy is the strongest market positions;</li> <li>- a firm's strategy with a strong position - the ability to adapt an independent marketing strategy without worsening its positions;</li> <li>- the strategy of firms that are in a favorable position - the presence of a specific competitive advantage;</li> <li>- the strategy of firms that have a solid (satisfactory) position – some market opportunities for strategic development; the firm is competitive vulnerable;</li> <li>- the strategy of firms that are in a poor position is weak market positions</li> </ul>  |

|  |  |
|--|--|
| Competitive intentions of the firm concerning its commodity-market positions / R Miles | <ul style="list-style-type: none"> <li>- strategy of a searcher;</li> <li>- strategy of a defender;</li> <li>- strategy of an analytics;</li> <li>- strategy of a reacting</li> </ul>  |
| The method of firm competition in the target market / O. Walter, X. Boyd, J. Lyraos    | <ul style="list-style-type: none"> <li>- strategy of a searcher;</li> <li>- strategy of an analytics;</li> <li>- strategy of a defender-differentiator;</li> <li>- strategy of a defender - price leader</li> </ul>  |
| «Biological» approach  | <ul style="list-style-type: none"> <li>- reducing production costs and lowering prices of realization;</li> <li>- a patient (niche) strategy based on the production of a limited number of high quality products; firms are looking to find their own niche in the market, unavailable for violent</li> <li>- a commutative (adaptive, connecting) strategy aimed at the fastest satisfaction of small in volume, short-term, often variable needs;</li> <li>- an exploratory (pioneer) strategy – a strategy oriented on radical innovations and the creation of new needs and demands on fundamentally new products.</li> </ul> |
| Character (aggressiveness) of the firm's market actions / E. Race, J. Trout            | <ul style="list-style-type: none"> <li>- an offensive strategy – aggressive sales growth and the achievement of a dominant position by capturing the market attack of competitors and expanding the market; surpassing competitors;</li> <li>- a defense strategy – protection from falling or preventing it by reducing losses and increase</li> <li>- a strategy of productivity. Advantages: low financial and market risks.</li> </ul>   |
| Enterprise size  | <ul style="list-style-type: none"> <li>- a dominant strategy for big companies – strategy of service of mass demand;</li> <li>- a medium sized enterprise strategy – niche specialization; growth strategies: conservation; «Search of the invader»; leadership in the niche; go beyond niche;</li> <li>- strategies of small firms: activities in the areas that are traditionally serviced only by small businesses; the strategy of using the advantages of a large firm (franchising co-operation).</li> </ul>   |
| P. Drucker   | <ul style="list-style-type: none"> <li>- to be «the brightest among the best» - the orientation from the very beginning to achieve leadership, a dominant position in a new market or industry;</li> <li>- to hit in a weak spot. Types: creative imitation is a simulation by its very nature; aimed at achieving leadership or even conquering the market (industry);</li> <li>- search for «ecological niche» and use it. Types: «Customs bail» strategy – the conditions for implementing the strategy are tough; the product must be essential for a particular process.</li> </ul>   |

M. Porter identifies three basic competitive strategies that are universal in nature, that can be used in any competitive environment by any enterprise and provide competitive advantages:

1. Leadership by spending (makes it possible to reduce prices).

2. Differentiation (goods and market).

3. Focusing.

The strategy of leading on the basis of decrease in expenses is based on optimization of all parts of the production and management system: production capacities that use the technological advantages of large-scale production; level of expenses for raw materials, energy resources; labor productivity, that is, orientation on the high level of indicators of production efficiency.

The essence of strategy of differentiation consists in granting a product or in services of unique features; and manifests itself in the development of brands with specific characteristics, a wide range of specific brands, special design, uniqueness of products in a style and taste, the completeness of the portfolio of brands, variety of services and quality of communication with the consumer.

Focusing strategy is based on gaining competitive advantages. Securing a market position in a very narrow segment of the market (on a product or geographical basis). This strategy is relevant when the firm does not have sufficient production capacity and competitive position on a large segment of the market.

**Conclusions.** We are convinced that a universal ideal strategy for each particular company really does not exist. Even different departments or types of goods may require different strategies. Each company should determine which strategy will work best, considering its industry, goals, capabilities and resources. An enterprise should fully identify its competitive advantages and evaluate the most appropriate business strategy or a set of strategies.

Continuous provision of competitive advantages is the main strategic direction of development. Only those enterprises will be able to function effectively in the economic environment of business for a long time, which cares about their own competitiveness. The process of providing with competitive advantages generates economic incentives to ensure that the company does not reassure of the achievement, but instead has sought to intensify its efforts to

attract new customers and create more favorable conditions for the sale of its own products.

The process of ensuring competitiveness of the enterprise happens constantly and manifested in the desire of competitors to improve their own position in the market, to create the sufficient volume of resource potential, which guarantees timeliness of payments with suppliers, the budget and other parts of the financial system of the state. The higher the level of competition in the market, the more attention the company must pay to its own reproduction of competitive opportunities to obtain the maximum result.

In publications, quite often, attention is paid to the fact that the main economic feature of the enterprise is the maximum use of motivational mechanisms of human resources management in the conditions of business for effective realization of the market principles of managing, ensuring own competitiveness. It is necessary to form such an organizational system of interaction, which would be able to meet the economic needs of each participant in the formation of a mechanism for ensuring the competitiveness of the enterprise.

It is worth pointing out that the process of ensuring the competitiveness of the enterprise is based on a definite economic mechanism. This is a system of basic elements that regulate the process of developing and implementing managerial decisions in the field of economic activity of the enterprise. For an efficient and rational "life" of this system it is necessary that all structural elements function in a permanent relationship as the only mechanism for managing economic potential enterprises

Achievement of this goal is determined by the need of professional recruitment, training and staff assessment, motivation for increasing labor productivity, and the realization of social functions. Each enterprise develops its own mechanisms for providing personnel with competitiveness based on the principles of equity, consistency, labor law compliance, equality and non-discrimination.



A competitive strategy is a way of obtaining sustainable competitive advantages of an enterprise through a competitive struggle, satisfying different and changing needs of customers better than competitors do. Competitive strategies consist of a number of approaches and directions that are developed by the management of the enterprise in order to achieve the best performance indicators in a particular sphere of activities.

For the purpose of long-term providing competitiveness of the enterprise, it is necessary to implement and use strategic management decisions, which can be considered as the basis for the creation and implementation of competitive advantages of the enterprise.

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## **WELLNESS INITIATIVES AS A FACTOR OF BUSINESS GROWTH**

***Abstract.** The article discusses the possibilities and prospects of promoting wellness initiatives in the business environment. It was shown that as wellness programs become more popular, they increase the financial health of the company and contribute to the reduction of stress. The basic principles of creating successful health programs that help all employees feel included were described. The role of digital technologies in improving health and productivity was characterized. The influence of the implementation of wellness programs on the process of attracting and retaining the best employees was considered. It was demonstrated that the*

*presence of wellness-program is an excellent tool to increase brand awareness. The influence of health measures on improving the efficiency and productivity of employees in small business was shown.*

**Keywords:** *wellness programs, corporate culture, employee engagement, brand awareness, small business*

## **1. INTRODUCTION**

More and more organizations around the world are making the well-being of their employees a business priority. The growing recognition that a healthy workforce maximizes the efficiency of the company has contributed to the spread of this trend. The link between health, employee engagement and financial success has increased the demand for the best wellness packages for employees.

Poor diet, lack of exercise, smoking, alcohol and lack of sleep can lead to serious health problems that need medical attention. Studies published by the Journal of Occupational and Environmental Medicine showed that employees who received higher scores on certain risk factors had significantly higher health care costs than those who were at lower risk [1]. It was about people who are depressed, under high stress, have high blood sugar, high or low body weight, high blood pressure, smoke or lead a sedentary lifestyle.

One of the biggest challenges is increasing obesity and stress, which can negatively affect employee productivity. In particular, according to the report of the Institute of Indicators and Health Assessment of the University of Washington, more than 66% of men and 60% of women in the UAE are overweight or obese. The economic burden of obesity in the UAE is estimated at billions. In Canada, obese workers are absent from work on average 13 times more than non-obese workers and incur almost 7 times more medical costs [2].

Based on the above, we can conclude that the prospects for the creation and implementation of wellness programs in the field of large and small businesses, aimed at improving the efficiency of enterprises, are becoming an urgent issue for scientists and entrepreneurs. In this regard, the purpose of this article is to study the possibilities and prospects of promoting wellness initiatives in the business environment.

## **2. RESULTS**

One of the most widespread contemporary problems is a way of life 24/7. Very often employees feel the need to work to exhaustion from day to day, which can lead to burnout at work. The term “burnout” was first used in the 1970s, and has become a growing problem that haunts the modern culture of work. Thus, in particular, according to the Association of Physiological Sciences, in 2014, 1.7 % of the American workforce decided to quit their jobs because of burnout [3].

In this regard, more and more employers associate the health of employees with increasing productivity in the workplace, making wellness initiatives an important part of the company's culture. According to a survey by Society for Human Resource Manager's 2016 Employee Benefits, 72 % of companies offer some form of wellness program [4].

As wellness programs become more popular, they increase financial health, contribute to stress reduction, create a more comprehensive view of the health of the employee behind such indicators of biometrics as blood pressure, cholesterol and weight.

Corporate wellness programs amount to nearly \$ 8 billion in the United States alone, and the segment is expected to grow by another 7.8% by 2021 [5]. Worldwide, the industry is estimated at \$ 40 billion, despite the fact that, according to the Global Institute of Health, only 9 % of the approximately 3 billion global workforce has access to health programs [6]. As baby boomers began to retire and millennials formed the bulk of the workforce, many companies began offering wellness programs. Young professionals today are more interested in their health and well-being than ever before. As a result, more than 9 out of 10 organizations offer at least one wellness initiative, according to a 2017 survey by the International Foundation of Employee Benefit Plans [7]. And the reason for the popularity of these initiatives is obvious: health programs provide employees and managers with the opportunity to improve their health without sacrificing their free (or family) time.

Most experts recognize that it is difficult to accurately assess the corporate benefits of wellness. Lang from the CDC says it's impossible to track the return on wellness investment in small and medium-sized businesses. Instead, he suggests focusing on reducing the number of hospital days or increasing productivity. Lang also recommends to monitor participation rates in various programs, reducing less popular programs [8]. Successful wellness programmes should be designed using a variety of strategies to make all employees feel included. For example, it is advisable to combine relaxation techniques (which are suitable for all) with blood pressure monitoring and healthy eating options, as well as exercise programs that can be individually customized for each. Everything from software platforms to wearable devices can provide important information for employees looking to change their lifestyle and get results.

If the goal of company management is to improve the health of employees, digital technology can play an important role in improving their health and therefore productivity. The studies clearly connect the use of wearable devices, applications, and other technologies with the increase in productivity of employees, reduction of absenteeism and stress levels. A survey from Health Outcomes found that 90 % of employees surveyed said they wanted their company to provide a wearable device to track results. Almost half of the employers surveyed by the health improvement research organization have offered or sponsored a tracking device as part of their wellness program [9]. By investing in digital technology, employers can increase participation in corporate wellness programs. These devices are a constant reminder to employees about their health, they allow them to control their physical activity, heart rate, body temperature and even sleep.

The study found that participants in health programs are 12% less likely to face health problems caused by stress at work, and almost 10% less likely to use professional commitments as an obstacle to the ability to make healthy choices about nutrition and exercise [10]. Stress remains one of the most serious obstacles to improving productivity. More than 70% of the employees surveyed agreed that

the company's wellness programs could have at least a moderate impact on stress reduction. According to other key data, approximately 9 out of 10 surveyed workers said that participation in wellness programs improves the physical fitness of employees, as well as their overall pleasure and well-being [10]. Another problem faced mainly by small businesses is that they often have small brand awareness. Since many elements of the employee's wellness program are implemented outside the office, the availability of wellness programs is an excellent tool to increase brand awareness. All companies need is a little outside the box thinking. Instead of building a gym in the office, companies can work out with a local gym, offering employees a discount on membership. Instead of daily healthy meals, companies can organize a public garden. Instead of hiring a full-time fitness instructor or reimbursing fitness expenses, companies can offer employees one-time opportunities, such as registering in the walking or running community.

Offering wellness initiatives to employees, business leaders show that they value and support their employees, take care of their health and well-being in general. By investing in people who work for the company, business owners not only attract and retain the best candidates, but also promote employee morale and engagement.

What usually prevents the increase of involvement? Lack of time is a key factor. About half of the employees in the Humana/EIU study said they were too busy to participate in their company's wellness program. One way to compensate companies is to increase motivation to participate [10]. The Healthcare Trends Institute recommends to develop a strategy of encouraging participation in order to recoup, for example, investments in portable devices [11]. In the Wearable Life 2.0 study, more than 50 % of respondents said features such as cash rewards would motivate greater use of wearable devices; 45 % said the gamification component would promote healthy competition [12]. Gamification also contributes to the team's sense of the idea that “we are all together” which motivates to pull and support each other. This will ultimately increase morale, workplace engagement

and productivity. Time spent on developing relationships with team members and managers sets up for future success.

In a recent study by Queen's School of Business and Gallup Organization, employees who felt excluded reported lower productivity and more errors [13]. Spending time with colleagues outside of working hours is beneficial to everyone. But strong relationships do not arise immediately - they need to be fed.

Wellness programs are designed to change behavioral patterns that lead to chronic diseases such as asthma, heart disease, obesity, cancer and diabetes. A study by the University of Louisville also found that changing certain behaviors reduced the average number of health risks among workers from 5 or more health risks to 0-3 risks [14].

One of the main problems in all types of activities remain the absenteeism of employees. Survey of Bayt.com was found that the decline in overall productivity is considered the most costly effect of the lack of workers (26.8% from 9,085 respondents in the Middle East and North Africa), it also affects the possibility of loss of business or the level of customer dissatisfaction (22.3% of respondents) [15].

In 2015, the US centers for disease control and prevention reported that productivity losses associated with absenteeism cost \$ 1,685 per employee. There are also indirect costs of absenteeism, such as overtime pay, as well as training staff [16]. It is clear that employers can achieve significant savings if they can reduce absenteeism by improving the health and well-being of workers at work. According to a CDC study, absenteeism costs of small employers are between \$ 16 and \$ 81 per employee per year, and absenteeism costs of large employers are between \$ 17 and \$ 286. A survey of the International Foundation of Employee Benefit Plans also revealed that among employers that take efforts in the area of wellness, more than half have seen results in reducing absenteeism, while 66 % reported increased productivity and 67 % said that employees are more satisfied [17].

However, the significant costs of health care and sick days cannot be compared with the loss of productivity at work. Presenteeism is a term used when employees come to work but are unable to fully focus on their work. But according to *Perspectives: Culture of Health and Financial Well-Being* by Willis Towers Watson, “employees around the world lose nearly 11 days of productivity at work each year” [18].

Wellness programs, which promote proper nutrition and a healthy lifestyle, can reduce the impact of long-term conditions such as stress, depression, allergies and sleep disorders. Employers who prioritize a work culture that promotes good health and a satisfied work environment can have a significant impact on employee productivity and, ultimately, on their own profits.

Productivity is a significant factor of influence. Poor productivity can occur when someone is physically present at work but not mentally. The causes can be lack of sleep, headaches, mental health problems or even financial problems. A survey by *Employee Benefit News* magazine found that 31 % of respondents rated mental illness as the cause #1 of productivity loss [19].

We all lead fast lives, and this can lead to increased levels of stress. Wellness programs have become more than just a foundation for physical health. But now the struggle for psychological health must be added to the general understanding of wellness.

In addition to improving of individual performance, a wellness program can also benefit employee relationships. People who make steps to a healthy lifestyle are happier and therefore easier to work with. In 2010, a large-scale analysis of studies published in the American journal *Health Affairs* showed that for every dollar spent on health programs, medical expenses fell by about \$3.27, and the cost of absenteeism fell by about \$2.73 [20]. Another study published in the *Harvard Business Review* reviewed a sample of 185 employees and their spouses who all worked for the same employer. The group was transferred to a program of cardiac rehabilitation and exercise lasting six months. By the end of the initiative, 57% of those who were classified as “high-risk” because of various factors, such as body



fat and blood pressure, moved to the low-risk group [21]. Meanwhile, a similar group of staff who had not received any training showed no improvement.

Small businesses have fewer employees, so it is more important for small businesses to maximize employee efficiency and productivity, and improve employee relationships. Small and medium-sized enterprises at the present stage become the most convenient form for the implementation and promotion of innovations [22]. The implementation of wellness programs helps small businesses not to spend time and resources on training and conflict resolution. Implementing a wellness program for employees can help small businesses in several ways. Healthy employees can work better physically. Healthy people have more energy, work more efficiently, and can even be more focused. All this affects the productivity of individual workers.

A small team of workers is a problem when it comes to hiring. It is important to find quality employees, but it can be difficult without a lot of resources for salaries, bonuses and benefits. Wellness programs can serve as a corporate differentiator. Wellness programs increase employee morale, which helps in recruiting and retaining talented employees. A company that is willing to spend time and resources on the health of its employees is a company that takes care of its employees. People recognize this and in turn feel good knowing that the employer values them. More and more talented millennials enter the labor market every day. The values of millennials are very different from those of previous generations. This generation wants something more than just a job. They need opportunities for personal growth and strong relationships that organically fit their personal lives. The health program contributes to the “increase” of the factor of work. This helps to turn a good job into a great job that talented employees are looking for.

### **3. CONCLUSION**

Research shows that a strategic focus on employee health can help business growth. Employee recovery programs can improve productivity, help attract staff,

and increase brand awareness. All this supports business growth and can contribute to effective promotion without investing significant funds in a new initiative.

Healthy workers are productive workers, but employers and corporate leaders must ensure that health programs are comprehensive. They have to admit that the more they invest in their employees, the more benefits they get.

A variety of ways to create and implement wellness initiatives are not only great options for developing business relationships, but also great opportunities to draw attention to employees who are working to achieve their goals. To increase brand awareness of the company, it is possible to provide all participants of the wellness program with a branded shirt or a bottle of water. The implementation of the wellness program is a cost-effective strategy that promotes business growth, because healthy and happy employees build healthy and efficient companies.

Employers that implement wellness initiatives receive a lot of benefits. Research shows that good health means successful business. Creating a healthy and happy team on the basis of investment in a comprehensive recovery plan, customized to the needs of employees, will form the basis for the development of modern business. Wellness initiatives will benefit only if the employer is strategically focused and committed. The implementation of wellness programs can not only increase the productivity and profitability of the enterprise, but also to distinguish the organization from competitors.

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## MAIN ELEMENTS OF MANAGING THE QUALITY OF AGRICULTURAL PRODUCTION

**Abstract:** *The emergence of a market for quality and safe food is the most important strategic task of the national economy. Practical actions on this issue are conditioned by the objective necessity of a civilized approach to the organization of environmentally safe agricultural and industrial production, preservation of the health and gene pool of the nation, formation of state measures for the integration of environmental constraints into the legal basis of international foreign trade relations. The indicators of quality of agrarian products and their significance and essence are presented. The methods of assessing the quality level of agrarian products and the role of standards are highlighted in the most effective promotion of the active introduction of new technology and technologies, the economical use of raw materials and the extension of the shelf life of products and the preservation of nutrients in it. The quality standards of agrarian products ensure its safety for the life and health of people, animals, plants and the protection of the natural environment. The main directions of quality management of agrarian products are analyzed through promotion of demand satisfaction, improvement of the material base of production, provision of expanded reproduction of agrarian production, etc. Improving the quality of agricultural products affects the level of productivity and the structure of production; ensures increased efficiency of agrarian enterprises, improvement of material incentives and social development.*

**Key words:** *quality, agrarian products, consumer, indicators, standard, standardization, management.*

**Relevance.** In a market economy, the quality of agricultural products plays an extremely important role in increasing its competitiveness and in creating an attractive business environment for agrarian production. Economic competition of agrarian enterprises, their struggle for markets is concentrated not only on the price, but also on non-price factors. Among these factors is advertising, creation of favorable conditions for the implementation of agrarian products and a special place takes its quality. At the same price, higher quality products are in demand. Significant improvement of the quality of agrarian products by the company compared to similar products of competitors gives him the opportunity to raise the price for it without losing their consumers, and in some cases even increasing sales.

**The state of scientific development.** The analysis of recent researches and publications shows that such domestic scientists have made a significant contribution to the study of the problems of the quality management of agricultural products and its importance on life and health of the population: Andriychuk V.G., Gorbonos V.F., Dementiev V.V., Garmashov V.V., Golubeva U.R., Zagorodniy A.E., Ivanov Yu.B., Kapshtik M.V., Kovalchuk S.Ya., Likhopyi V.I., Overkovskaya T.K., Semeniuk E.O., Tunytsia Yu.T., Shpyl'ovyj V.A., and others like that. Despite a significant number of studies, problems in the field of management and effective standardization of quality of agricultural products and its approximation to international standards are relevant and require further study especially in terms of innovative development.

**The aim of the work** is to study the peculiarities of quality management of agrarian products and its impact on the life, health of people and on the efficiency of the national economy. To highlight the quality indicators of the main types of agricultural products and methods for determining its level.

**Main part.** The quality of products is a set of its properties that characterize the extent of the capacity of this product to meet the needs of consumers in accordance with its intended purpose. World experience convinces that the quality of products is a function of the level of development of scientific and technological

progress and the degree of implementation of its results in production. The higher the quality of products, the more fully satisfied the needs of consumers and more effectively solve socio-economic problems of society. Raising the quality of agricultural products is regarded as a decisive condition for its competitiveness on the domestic and foreign markets. The competitiveness of agrarian products determines the prestige of the country and is a decisive factor in increasing its national wealth [1, p. 3].

The consumer demands certain agrarian products to meet his own needs. The most important of them are its quality, trademark, style, size, service, warranty, etc. Each type of agrarian product should be a carrier of various specific properties, which reflect its usefulness and meet certain requirements of the person. Its usefulness is characterized by consumer value, and consumer value must be determined by the appropriate quality. The consumer value and quality of these products are directly related. Consumer cost may not be useful to the same extent, and the quality of products characterizes the extent of its suitability for consumption, that is, the quantitative side of consumer value. Each type of agrarian products has its own quality indicators. Under the indicator of quality, understand the quantitative expression of one or several homogeneous properties of products that meet certain consumer needs in relation to its intended purpose and conditions of use.

The quality indicator of agricultural products quantifies the degree of its suitability and can be expressed in terms of class, grade, in percentage points, etc. The following requirements, such as suitability for fast cooking, proper storage, good taste, high starch content, etc., can be put forward on the potato. The value of sunflower is estimated by its content of fat, which varies within 42-53%; wheat - on the content of gluten (within 23-40%). Milk can be extra class, first, second grade and unsorted. Meanwhile, the protein content and fat content, which is equal to 2.8- 5.2%, is determined. Qualitative indicators of flax fiber are estimated on the varietal dimension scale from the second to the 28th, but the production quality index is fiber flax - from 18-25%. Some types of agrarian products have specific

quality indicators. All Quality Scores are divided into unit and complex. Units characterize someone property of products (the content of starch in potatoes), while complex represent several properties of the product - varietal dimension fiber flax fiber [2, p. 84].

We characterize the main quality indicators agricultural products:

1. Biological indicators characterize the suitability of agrarian products for consumption in food. They depend on the biological and physiological characteristics of plants and animals, in the process of cultivation and care of which these products are obtained. Among these indicators, the content of macro- and microelements, protein, vitamins, sugar, starch, fat, and the like is of paramount importance. For many types of products, its appearance is also important. Biological indicators of the quality of agrarian products are dynamic, very dependent on weather and soil conditions, may improve or deteriorate under the influence of man. In compliance with all agrotechnical requirements in the growing and harvesting of winter wheat and the cultivation of grain, the protein content in it may increase, under other identical conditions, by more than 6 percent. The biological quality indices are significantly influenced by the natural and economic conditions, the observance of agrotechnical requirements, the technology of growing and harvesting crops, methods of keeping animals, etc.

2. Performance indicators characterize the following properties of agrarian products that are necessary and important for its efficient industrial processing or for industrial use in subsequent cycles of agrarian production. According to these indicators, the quality of intermediate products and agrarian raw materials is estimated. Seeds of cereals must have the appropriate similarity, varietal purity, moisture content, do not exceed the marginal depth of litter, etc. Sugar beet entering the processing of sugar factories should not contain impurities of the hinges or be contaminated above the established norms, their shrinkage is not allowed. The feeds must have a certain level of nutrition, digestible protein, macro- and microelements. Indicators of production directly affect the productivity of agrarian production in its subsequent stages: seeds - on the level of productivity of



crops, feed - on the productivity of animals; agrarian raw material - on the productivity and efficiency of processing enterprises and the quantity and quality of final products.

3. Indicators of transportability are important for all three types of agrarian products - end-use, intermediate, raw materials, they characterize the degree of its suitability for transportation and to loading and unloading by appropriate means and methods. The most important indicators of transportability are the class and dimensions of products, time and money for the preparation of products for transportation, the cost of packaging and packaging, the cost of loading and unloading, the cost of transportation.

4. Reliability indicators are important at all stages of the movement of products to consumption - personal or industrial. They indicate the suitability of products for the preservation of biological and a number of technological indicators of quality in its storage and transportation. Quantitatively, reliability indicators are measured by the shelf life of products for different methods of its implementation and the distance of its transportation on roads of different classes.

5. Environmental indicators characterize the environmental purity of products and their suitability for consumption by human beings or for feeding animals. These indicators include the content of products of radionuclides, nitrates, nitrites, residues of pesticides and other life-threatening elements and substances that must be carefully monitored in order to prevent excess of their concentration beyond the maximum permissible standards.

6. Safety indicators are presented by those features or properties of agrarian raw materials, characterizing the degree of safety of workers in the process of its production and production use. These indicators, as well as environmental indicators, are tightly controlled in order to take appropriate precautionary measures. In the post-Chornobyl period, the indicator of the content of radionuclides in the dust, which is formed during the processing of linseed or chips in flax mills, is carefully monitored.

7. Economic indicators characterize the degree of economic benefits of production of agrarian products of the corresponding quality. The most important of these are the price and profit per unit of output; price competitiveness of it; the share of agrarian products for which a quality certificate has been obtained; the share of exported products in the total volume of its sale.

8. Aesthetic indicators are of particular importance for final products consumed fresh and for consumer goods. They characterize the product's appearance (turgor, size, color, and for consumer goods, and the integrity of the composition, the perfection of the production performance of products, the rationality of the form, etc.).

9. Patent-legal indicators are inherent in those types of products that are protected by a patent. They describe the quality of new inventions that are embodied in agrarian products, their weight. Patent-legal indicators characterize the patent purity of agrarian products, its potential for unhindered realization on the domestic and foreign markets [3, 4].

To fully understand the quality of agrarian products, it is necessary to quantitatively express its properties. Finding specific ways to improve the quality level can only be done by counting unit and group quality indicators and comparing them with standards. Three methods are used to assess the quality level of agricultural products:

1. The differential method is based on the direct use of individual indicators, it is simple and allows you to detect a lag or advance on each property. However, it does not give an unequivocal answer to the benefits of a particular agricultural product. An unambiguous answer can only be obtained if all the indicators that are evaluated are better or worse than the standards. In other cases, further study of the quality level of other methods is necessary.

2. The complex method is based on the calculation of the complex indicator, represented by the main weighted average or integral indicators. Complex indicator aggregates all or partly individual indicators, it characterizes the real quality and reflects the main technical and operational properties of agricultural products and

gives the most important assessment of its quality. However, it does not always reflect all the properties that make up the quality of this product. The main advantage of the complex method is to ensure the widespread use of simultaneous accounting of any and in any number of individual indicators. However, this method has significant disadvantages, reduces the accuracy and reliability of the evaluation due to subjectivity in determining the weighting factors and due to the interdependence of individual indicators, which leads to multiple accounting of the same property in the complex indicator.

3. Integral quality index provides the most complete assessment of the quality of agricultural products, takes into account the entire set of costs for its creation and determines the economic efficiency of production. An integral indicator provides an unambiguous economic assessment of quality. Such an approach corresponds to the role of improving the quality of agrarian products as one of the most effective directions of direct increase of the efficiency of agrarian production. The integral indicator of the quality of agrarian products is the most important for measuring its level of efficiency [5, p. 142].

In the market conditions of mass production, it is necessary to treat the quality in a special way, as to the economic category. In assessing the quality of products, its main properties are checked: reliability; compliance with technological requirements; compliance with hygienic and physiological norms; economy; environmental friendliness; transportability and so on.

The improvement of the mechanism for the formation of a quality management system in the agro-industrial complex, which serves as the guarantor of the ability, organization and management of the stable production and supply of products of a certain quality, takes on a priority character. The development, implementation, certification and maintenance of a quality management system in the capacity state is one of the strategic directions of activity of agrarian enterprises, which greatly increases their efficiency, economic efficiency and competitiveness in the world market [1, p. 4].

The economic aspect of the quality problem is to increase the efficiency of the national economy, increase the profit of enterprises, increase the competitiveness of products both in the domestic and foreign markets, rational use of material and energy resources. All issues in the field of quality, such as raising its level and managing it, are related to economic costs, which should result in a sound economic effect.

The modern innovative aspect of the problem is based on the interconnection of the process of improving the quality of products and the pace of the introduction of innovative technologies. Because of scientific and technological progress, information systems, transport communications, technological processes are being improved, thereby ensuring a higher level of product quality, which in turn leads to a new development in science and technology.

The quality and safety of agricultural products are subject to the rules of obligatory standardization and certification for compliance with product standards, which may endanger the life, health of citizens and the environment, established by the decree of the Cabinet of Ministers of Ukraine "On Standardization and Certification" from 10 May 1993. Depending on the type of agricultural products, the relevant standard sets requirements for the content of toxic elements, pesticides, mycotoxins, antibiotics, hormonal preparations, radionuclides, identification of microbiological parameters, sweeteners, nitrates, nitrites, synthetic dyes, sulfur dioxide, histamine, wormholes, erucic acid, etc. [6, p.235].

Rapid change and innovative technological development allowed chemicals that were not known before to be used for the production and storage of agrarian products. The Law of Ukraine "On Standardization" defines standardization as an activity, which consists in establishing the provisions for general and multiple application in relation to the existing tasks in order to achieve the optimal degree of ordering in a particular field, resulting in an increase in the degree of conformity of products, processes and services to their functional purpose, elimination barriers to trade and promotion of scientific and technological cooperation [7, p. 181].

The purpose of standardization specifies the main tasks, which are intended to ensure: the safety of agricultural products for the life and health of people, animals, plants and the protection of the natural environment; protection and preservation of agricultural products, in particular during transportation or storage; the quality of agricultural products in accordance with the level of development of science, technology and people's needs. As to the safety requirements, the content of harmful substances in wheat grain should not exceed the following maximum levels (mg / kg): lead - 0,5; cadmium - 0,1; arsenic - 0,2; mercury - 0.03; copper - 10.0; zinc - 50,0. The maximum levels of radionuclides are measured in Bq/kg: strontium-90 - 20; cesium-137 - 50 [8, p. 93].

Confirmation of compliance of agricultural products with the requirements of standards for its quality and safety is carried out through the certification procedure. This procedure is carried out by the authorized certification bodies - enterprises, institutions and organizations in order to prevent the sale of products dangerous to life, health and property of citizens and the environment, promoting the consumer in a competent choice of products, etc. The State certification system is created by State Consumer Standard of Ukraine, which conducts and coordinates the work on certification.

According to Art. 13 Decree of the Cabinet of Ministers of Ukraine "On Standardization and Certification" the certification of products in Ukraine is divided into mandatory and voluntary. The list of products subject to mandatory certification in Ukraine is determined by the order of the State Committee for Consumer Rights of Ukraine dated February 1, 2005 No. 28, registered with the Ministry of Justice of Ukraine on May 4, 2005, No. 466/10746. Section 26 of this legal act establishes a list of food products and food raw materials subject to compulsory certification [9].

In accordance with the requirements of the standard milk at procurement is divided into three varieties: higher, first and second. Milk should be obtained from healthy cows, cooled and filtered. The standard regulates the length of storage of milk from the manufacturer to the purchase. It should not exceed 24 hours at a

storage temperature not exceeding 4 ° C, 18 - 6 ° C and 12 hours - at a temperature not higher than 8 ° C. Milk is evaluated by such quality indices: density, acidity, total bacterial insemination, somatic cell content, purity (by the presence of mechanical impurities), fat and protein content.

The milk density should not be less than 1027 kg / m<sup>3</sup> at a temperature of 20 ° C or correspond to a freezing point -0,52 ° C. If the density indices are less than the indicated level, this indicates the presence of water in the milk. Acidity is an important indicator that characterizes the technological quality of milk, the ability to use it to produce such valuable products as cheeses. For the higher and first varieties of milk, the acidity should be within the limits respectively 16-17 and 19 ° T (Turner), for the second grade - 20 ° T. This standard increases the requirements for bacterial contamination of milk, although they are still inferior to the level of requirements that apply in EU countries. For the higher grade, this quality index should not be more than 300 thousand bacteria per cm<sup>3</sup>, for the first one - 500 and the second grade - 3000 thousand bacteria per cm<sup>3</sup> (in the EU - not more than 100 000). To ensure this quality index, it should be kept in mind that bacteria, which are cooled to 10 ° C, practically do not develop for 12 hours and when cooled immediately after milking to 4 ° C, 48 hours. The mass fraction of dry matter for higher grade milk should be not less than 11,8%, for the first one - 11,5 and for the second grade - 10% [10, p. 6].

The purpose of standardization specifies the main tasks, which are intended to ensure: the safety of agricultural products for the life and health of people, animals, plants and the protection of the natural environment; protection and preservation of agricultural products, in particular during transportation or storage; the quality of agricultural products in accordance with the level of development of science, technology, technology and people's needs.

The objectives of agricultural standardization are achieved by developing, implementing and applying the relevant regulatory documents. Generally normative is a document that establishes rules, general principles or characteristics of various activities or their results. According to the levels of subjects of

standardization in Ukraine, the following normative documents are compared: national ones; organizations.

Standards for agrarian products, depending on its features, contain appropriate groups of provisions or requirements: classification; basic parameters and sizes; general technical requirements and safety and environmental protection; marking; packaging; transportation and storage rules; control methods; admission rules; rules of operation, repair, utilization, etc. [11].

Thanks to the improvement of quality and rational use of other non-price factors, the agrarian enterprise can receive not temporary advantages over competitors, as at a price reduction, but long lasting, since the latter need a lot of time to improve the product and make the necessary changes in the technology of its production.

The modern market economy puts forward fundamentally new requirements for the quality of agrarian products. The survival of any enterprise, its stable position in the agrarian market determines the level of competitiveness, which is characterized by two indicators - the price level and the level of product quality, and the quality of products becomes almost the most important factor in consumer behavior when it chooses a product.

The growth of product quality is the basis of the activities of all enterprises. It as a factor of competitiveness extends to the entire national economy. Reducing the quality of agricultural products leads to negative consequences. From an economic point of view - it is unjustified loss of material and labor resources associated with the production, transportation and storage of products. Application in the process of production of raw materials and materials of poor quality, as well as machines, equipment of doubtful qualitative characteristics leads to ineffective use of resource potential, the increase in prices of products and reduce its competitiveness, reducing the profitability of the enterprise.

Quality is a set of product properties that determine its ability to meet certain consumer needs in accordance with its purpose. This is one of the most important indicators of the enterprise. For quality products, there is always demand, it is

realized at a higher price and, accordingly, the enterprise will receive more profit. It is the improvement of the quality of agrarian products that ensure the survival of the company in a market, because it is equivalent to an increase in its production, but with significantly lower costs, the economy of all types of resources [2, p. 85].

Modern innovative technologies open up great opportunities for increasing the well-being of people, if they are developed and used with the observance of appropriate environmental and human health measures. It takes into account the exceptional importance of centers of origin and centers for the genetic diversity of plants and animals for human nutrition. The limited capabilities of many developing countries to respond to the nature and extent of known and potential risks associated with living modified organisms should be taken into account in trade and environmental agreements that complement each other in achieving sustainable development.

The main directions of quality management of agrarian products: to promote full satisfaction of the needs of the consumer and the formation of the image of the enterprise; improve the use of labor resources and save on raw materials and materials; provide enhanced reproduction, improve the efficiency of the enterprise, improve material incentives and improve social development; influence the level of labor productivity and the structure of agrarian production [12].

**Conclusions.** Improvement of the quality of agrarian products is ensured through integrated, interrelated, permanent measures that control its quality. Application in agrarian enterprises of the quality management system of production is aimed at the establishment, maintenance and maintenance of its required level in the planning, production, sales and consumption. In the field of production of quality and safe agrarian products, standards most effectively promote the active introduction of new technology and technologies, economical use of raw materials and materials, extending the shelf life of products and preserving its nutrients This will ensure the prevention of the sale of products that is hazardous to life, health of citizens and the environment, will promote the consumer in a competent choice of products. Quality agricultural products provide



higher profitability of production and financial stability of the enterprise, increases its image, promotes the company's exit to the world market, more fully satisfies the needs of society in it, thanks to which a more favorable socio-psychological climate is formed in the state.

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## **CULTURAL COMPONENT IN THE SYSTEM OF BUSINESS ENVIRONMENT**

***Abstract.** Business environment is an indicator of country's economic development and an important tool for influencing operations of business entities. The field of study of business environment cultural component has a wide conceptual and theoretical basis in view of the multidisciplinary nature of both concept of business environment and challenges it faces. Entrepreneurship is rooted in economic conditions of societal life, although cultural and social environment is an important factor influencing business activity as it establishes the fundamentals of relations and socially-oriented policy. Any interconnections and interrelations are based not only on economic interest, but also on values and moral codes forming a base of culture. Since values are the core of culture, they affect all processes occurring in business environment of business entities. In view of the expansion of integration processes and the formation of international business environment, an important task is emerging - the formation of intercultural communicative competence, aimed at enriching world practice. The scientific novelty is in the conceptual approach, suggested by the authors, to the consideration of business environment in the context of the cultural factor, which is the basis of the socio-humanist paradigm of social and economic development, and which should become the methodological basis for the formation of transformational management paradigm and ethical entrepreneurship and society, in which confidence will dominate, and moral values will become a special indicator of public consciousness. The research resulted in the development and supplement to theoretical and conceptual provisions aimed at in-depth coverage of the essential understanding of business environment in modern realities and its transformation impacted by new challenges. The development of a category and terminology apparatus, in particular the author's definition of entrepreneurial culture, information and environmental culture in the context of business environment, is also the result of research and novelty aspect.*

***Key words:** business environment, cultural factor, information culture, environmental culture, values, intercultural communication, social partnership.*

**Introduction.** Successful economic development of Ukraine is possible under the condition of dynamic transformation economic model, real innovation breakthrough and competitive entrepreneurship availability. Entrepreneurship functions in market business environment which comprises an array of consumers, competitors and counteragents, as well as other stakeholders giving this environment a status of cumulative market entity. Interests in the market field are quite contradictory and changeable, therefore provoking indefinite, unpredictable

and risky atmosphere. These are the conditions under which the domestic entrepreneurship functions combining a wish to succeed at domestic market, become a decent participant of foreign markets and observe business ethics in multinational business environment.

Challenges of globalization, as well as uncertainty and turbulence of economic processes, determine study urgency of business environment development trends. However, researchers are mainly focused on institutional or financial and legal component of business environment as undoubtedly important in terms of regulatory impacts. Entrepreneurship is rooted in economic conditions of societal life but cultural and social environment is an important factor influencing business activity as it establishes the fundamentals of relations and socially-oriented policy. A cultural factor is an ideologic ground of business environment; it facilitates innovation development, encourages not only consumption, but production processes.

The analysis of various studies and publications considering specified topic shows that the issues of social and cultural aspects of business environment as an important component are studied superficially. Normally, researchers are focused on general characteristics of business environment [1; 2; 9; 11], suggest various schemes of business environment classification [3; 6], or consider these issues in the context of a general condition of national entrepreneurship [5]. A broader view of business environment under globalization and its development influenced by IT progress is suggested by the researchers that reveal peculiarities of network culture and information culture formation [4; 8]. Global processes enhance development of international business environment, but also cause problems. Typology of these problems within ethic framework is suggested by Petrashko L.P. in the article [7], while in-depth analysis of cultural differences in terms of globalized business is made in the research paper [10].

The following review of modern research substantiates and stresses scientific justification, viability and urgency of developing the research strand we have suggested.

Taking into account the above-said, the purpose of this study is to highlight the cultural context of business environment.

**Main part.** The research area of cultural component of business environment has a broad conceptual and theoretical basis in view of the multidisciplinary nature of both the very concept of business environment and challenges it faces. Business environment is normally interpreted by scientists as “a set of individual entities (with their interconnections and relations) and environment (external) factors that affect them” [6, p.254.]. Any interconnections and relations are established not only on economic interest, but also on values and standards of morality being the foundation of culture. Since values are the core of culture, they affect all processes occurring in business environment of business entities.

Theoretical expediency of business environment consideration in the context of cultural aspect is proven by many factors.

In particular, today the concept of culture creates a methodological basis for the formation of an entirely different managerial paradigm and for the development of ethical entrepreneurship and society, in which trust will dominate, and moral values will become a special indicator of public consciousness. In fact, cultural aspect is the basis of a socio-humanistic paradigm of social and economic development as, according to scientists, today we can observe “gradual, but remarkable dematerialization of social development. This is implemented in the dematerialization of wealth, the structure of production, the reorientation of the nature of labor towards the socio-cultural sphere, changing the structure of needs. Consequently, supereconomic dominant of the Ukrainian socio-cultural tradition is closely interwoven with the narrower post-economic tendencies of current development” [9, p.110]

The structure of business environment is rather diverse. However, along with economic, institutional and legal, innovation and other components, social and cultural component takes its full-fledged niche, which is confirmed by research papers, namely the research devoted to business environment classification states that “by its function business environment is divided into “economic (industrial,

financial, communicational), institutional and legal, innovation, social and cultural, geopolitical, political, information, international, natural and climatic and environmental, scientific and technologic” [6, p.253].

A role of cultural aspect in business environment is also made actual due to a fact that respectable relations between entities have not become a common practice so far, while unethical behavior remains normal. Researchers stress that “a range of unethical behavior reasons in companies is rather high: a lack of legislative and regulatory base; a high rate of shadow economy; competition between market entities; absence of proper incentive mechanism of ethical behavior; general decline of ethics’ role in society; pressure put on regular employees aimed at finding compromises of their values and top managers’ values; low moral qualities of society members” [7, c.113]. All these facts urge a need to increase business responsibility and ethics as “a key element uniting people (participants of production process) in a company with other participants of external business environment into one social organism (community). A company based on uniform worldview and value concepts is the most balanced and dynamic form of production community achieving its strategic goals” [7, c.113].

An applied value of cultural aspects of business environment is explained by challenges of globalized world, establishment of international corporations with its specific system of values and different worldview tools of entrepreneurship. Globalization and integration processes created a peculiar system of market society characterized by a specific worldview model and cross-cultural orientation. Specificity of social existence of global world made national cultures melt in uniform behavioral models of business doing. However, it should be noted that each country produces its business ethics based on unconsciously learnt modes of economic behavior caused by national mentality. In this context, the basic principle of world-market-oriented entrepreneurship is corporate interests balancing through common values. Therefore, the urgent task of today is to form intercultural communication competence aimed at enriching world practice based on a dialogue between cultures, a synthesis of mentality modes with European standards.



Today's reality requires the combination of economic discretion and responsibility in business culture. The objective necessity of cultural accents of entrepreneurship characterizes the degree of perfection, determined by its values (cultural aspect) and compliance with current legislation. Business activity is legal, if it is conducted in accordance with the legal norms established by the state, it is considered to be ethical if entities observe moral principles.

Culture is an incentive for economic success determined by many parameters: a level of intellectual potential, technological breakthrough, active and real innovation, etc.

Consequently, here is the author's definition of business culture considered as a system of relations established in business environment based on common values, traditions and general norms of behavior either of individual entities or the market as a whole. Namely, these are relations of a particular business entity with its environment which comprises all the stakeholders, "relations with society (social responsibility of a company), environmental conservation (protection, conservation and efficient use of resources, waste management, etc.), relations with partners and competitors (discharge of obligations, inclusion), relations with consumers (quality products, fair advertising and marketing)" [7, s.110]. In the internal dimension, culture embraces the relations between a business entity and its staff.

It is advisable to systematically consider cultural context of business environment of entrepreneurship, firstly, distinguishing culture of a leading actor – an entrepreneur, and secondly, culture of relations between business entities and, thirdly, culture of doing business comparing the national and European cultural tradition as it affects a model of business behavior. At the same time, as researchers note, "Ukraine, based on its own culture, has developed a certain type of business environment, effective only in a corresponding local area" [9, p.110]. However, all sections of business environment culture are initially connected with values. These are the values that present a special social substance that evenly combines dynamics and statics, traditional and innovative. Depending on the

historical era, values are subjected to some evolvement. **Values characterize mental level of culture, while norms determine universal requirements - samples of social behavior, or business entities specifically, but considering values.** Norms are perceived, first of all, as regular behavioral rules of a moral, legal, political character. These norms fulfill a different regulative function. The relation between values and norms are confined to the fact those social values: firstly, are implemented through legal and moral standards; secondly, act as standards and models for individuals; thirdly, they are manifested as an ideal, although in real life norms contradicting these values are used.

Challenges and trends of the twenty-first century have led to the emergence of new types of culture within business environment, offering new values, however, preserving the root ones. In this regard, research papers emphasize that “according to their characteristics, Ukrainian social and cultural values are intertwined with the values of information society and may have good prospects in it. The Ukrainian businessman, his value orientation and potential he holds create a certain benefit for the development of the civilization or a region” [9, p.111]. Thus, information culture is a projection of technological globalization, internationalization of national economies and deeper differentiation of cultural space. It operates due to information interaction reflecting the entire chain of information processes that occur between its participants regarding production, transmission and use of information. Respectively, information culture is interpreted as relations established in business environment between all the participants of information process relying upon basic values and ethical standards of conduct. Dynamic informatization, along with intellectualization of all spheres of life of a society, lead to the expansion of business environment, therefore the natural environment is complemented by virtual business environment (online business). “Emergence of virtual environment leads to emergence of virtual economy, where world cyberspace performs a function of “a playing ground” [6, p.256.]. The scale of informatization and virtualization reinforces the need for the development of information culture as an element of economic and national security.

In the context of information culture of business environment, research papers suggest another type of culture - network business culture described as “a set of sustainable forms of network interaction for their implementation in competitive conditions of business space structuring. Network culture is a set of triggers that determines economic behavior of individual agents of a network and manages it in accordance with the standards and principles of a particular network” [4, p.283]. This subtype of culture does not deny norms of traditional corporate culture, since participants of networks are mentally united, share common values, but enriches it with the new content of information and communication technologies. “Single information environment, wider possibilities of information exchange, and communication technologies enable selecting from a number of potential business partners the network associations with which will bring the maximum effect to other participants in a network” [4, p.283]. Thus, thanks to this culture, effectiveness of cooperation, quality of its outcome and public good are combined.

An ambition of some corporations to achieve a leading position at a competitive market promotes an increase of pseudo innovations, which often fill the market with unnecessary, or even harmful products and technologies that damage natural environment. As such, it is important to specify environmental culture in the system of culture factors of business environment. Environmental culture reflects relations of business entities with the environment that contribute to environmental protection, sustainable socio-economic development, environmental security of a country and every person. A level of environmental culture is determined by cultural heritage, information resources, environmental policy of a state, environmental investments aimed at improving the environment and ecological situation, and by operational efficiency of environmental institutions and a level of environmental education. The state of environmental culture largely determines environmental security of a country as it is an integral part of the overall national security, so that this type of business environment culture is to be thoroughly observed.

Business culture establishes rules of relations with partners not on the basis of legal, but moral responsibility to them. In this regard, culture develops and supplements the norms and rules of behavior formed within economic space, giving them a harmonious, not contradictory character.

Harmonization of relations between business entities is of particular importance in the development of integration processes as, according to researchers, “the greater integration of the world economic space is, the bigger its function as a single mega environment with common features of conjunctural dynamics. A classic example of mega environment is the Internet, where global business environment forms” [6, p.254].

In addition, migration processes, which are rather active today, exacerbated the situation becoming a challenge to the customary cultural areas and systems of values of national states. There are concepts that suggest different correlation of the national and international, in particular transculturalism, multiculturalism having reflected in entrepreneurship. The concept of transculturalism supports the idea of “European affiliation” and the formation of “transnational cultural orientations” as an inevitable consequence of globalization. The concept of multiculturalism has a multivariate interpretation in Western and Eastern Europe and Canada, but is generally perceived as a definition of the very fact of the existence of cultural diversity and multi-ethnicity of a particular society, which affects the ideology and mechanism of economic coexistence of representatives of different communities. In order to reconcile interests of various international market entities, it is required to show high consciousness, transcultural awareness and the ability to achieve a sensible compromise.

Being in business environment, business entities should take into account that the market has its natural laws of development, a person can unlikely change. Although, it is possible to manage certain market processes. Harmonization of relations between business entities of local and global business environment is reachable via integrity principles and development of various forms of social partnership. The spread of socio-humanistic processes encourages companies to

develop socially-oriented standards of labor, industrial management, participatory management and harmonious relations which will be based on equal conditions and opportunities for self-development of entire staff. It is advisable to arrange joint ventures, even with competitors, satisfying common interests; promote cooperative social programs, and minimize a negative tendency towards rejection because of unipolarity of international and national policy. Cooperation, rather than isolation, should prevail in business environment.

Business environment, based on cultural factors, should encourage fair competition, solidarity in finding socially-oriented projects, active social interaction, collaborating dialogue. Formation of the developed civil society with high social standards and creation of a specific socially-oriented institution, in particular: establishing and maintaining the National Register of Socially Responsible Market Entities; provision of favorable environment for establishing cooperation not only between companies, but also with public and other organizations, and state authorities to form a single social policy; information support of the practice of domestic socially responsible companies and assistance in shaping their image by regional state authorities; the adoption of the Code of Entrepreneur's Honor or the Code of Corporate Culture, the Code of Honor in the market, as well as other areas of social activity of national companies in the moral and ethical field will contribute to the development of social partnership practice and the integrity of all business entities in Ukraine. Moreover, we agree with the opinion of the researchers who suggest some other actions aimed at raising a level of culture in business environment. In particular, generalizing ethical problems of global business environment, Petrashko L.P. argues that “these problems can be solved through the use of ethical standards (codes) describing the general system of values and ethical rules to be observed by employees; the formation of ethic committees that daily evaluate the compliance of business activities with ethical standards; introduction of an ethics lawyer position; conducting social audits to analyze and evaluate company's reports and programs of social responsibility; ethical behavior training for managers and ordinary employees” [7, p.113].

Thus, we can conclude that the potential of business environment development provides unique opportunities for competitive advantages both at the domestic and foreign markets. “The ability of business environment to maintain and use competitive goods and services, its integrity, qualification, discipline and solvency of the participants are the key qualitative features of business environment at the present stage of development of economic relations,” emphasize the scholars [6, p.255]. However, the effective implementation of this potential is possible due to the synthesis of all components of business environment, in which the socio-cultural component plays an important role. Challenges of globalization, rapid activation of information processes, and virtualization of economy make business environment change and modify, although its fundamental component is still the integrity.

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