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The fourth issue contains articles by scientists from different countries, prepared on the basis of their scientific work. It is designed for university teachers, graduate students, undergraduates, practitioners in economics, finance, accounting and auditing, as well as other branches of economics.

EDITORIAL TEAM

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CHAPTER 1
CURRENT TRENDS IN ECONOMIC DEVELOPMENT

CLUSTERING IN THE TOURISM HOTEL BUSINESS TO INCREASE THE ECONOMIC EFFICIENCY OF THE NETWORK STRUCTURE

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Abstract. *The article delves into an important problem known as clustering in the tourism hotel business. The authors attempted to examine the different aspects of the formation of the tourist hotel cluster which allow to increase the economic efficiency of the network structure. The researchers concentrated on the system of formation of tourist hotel cluster for increasing the economic efficiency of the network structure. The network structure of tourist hotels has a number of advantages, which is examined in this article. The key aspect of the system of formation of tourist hotel cluster is creating a structural basis, marketing activities, formation of internal standards. The formation of tourist hotel cluster includes the following elements: inventory of fixed assets of participants, SWOT-analysis, assessment of the potential of all participants of the tourist hotel cluster, analysis of marketing internal and external environment in hotel services, identification of all possible risks and benefits of the cluster, implementation of organizational, legal, social, psychological adaptation of participants to integration in the cluster, the formation of strategies for the development of the tourist hotel cluster, coordination the conditions for participants to join the cluster and further activities in the cluster, preparation for the concluding and signing of contracts. In the study motivational factors and benefits of merging enterprises into tourist hotel clusters were identified by the authors. These motivating factors allow to increase the economic efficiency of the network structure.*

Keywords: tourism hotel business, *tourist hotel cluster*, network structure, *system, elements.*

JEL Classification: Z32, Z39

Formulas: 0; fig.: 1; tabl.: 1; bibl.: 9

Introduction. Modern conditions of economic development force the tourist hotel business to create various connections and form networks. Networking can be an effective way to overcome negative situations, both in modern conditions and in the future. This is due to the small capacity of hotels as an independent participant in the market of hotel services, and the small chances of gaining an advantage over competitors [1]. In this context, the actual conditions for the operation of the tourism hotel business in the national environment and the goals of networking may be different. Therefore, the role of links between organizations operating in the hotel market for increasing the economic efficiency of the network structure is becoming increasingly important.

The integration of different types of hotels allows to create better conditions for the maximum satisfaction of the desires of customers with different financial

capabilities. Globalization processes have created an environment for the creation of international hotel chains that maintain high standards of service.

Increasing the level of functioning and development of tourist hotel business is possible due to the implementation of the cluster form of enterprises.

Literature review. Foreign and domestic scientists give significant attention to the study of factors influencing the network structure of the tourism hotel business and cluster form of interaction. Świstak E., Świątkowska M., Stangierska D. (2016) [2], Todeva E. (2010) [3] describe the features of creating a sustainable development strategy in the hotel industry on the example of the Accor group. Piwoni-Krzeszowska E. (2015) [4] believes that the network structure of hotels has a number of advantages and disadvantages. But such structuring does not take into account modern global problems of development of tourist hotel business. Robson M. J., Kadile V., Watson K., Clegg L. J. (2017) [5] explore the issue of formation of franchise agreement. Wiggins J. M. (2020) [6] sets feature of contract management and investigates mergers of hotels through the conclusion of management contract between the owner of the organization and the management company. Richard B. (2017) [7] analyzes problems of survival strategies of hotel chains.

Aims. The purpose of the article is to study the features of clustering in the tourism hotel business in order to increase the economic efficiency of the network structure.

Methods. During the scientific research, the method of synthesis, systematization and analysis has been used (in the study of clustering in the tourism hotel business; the network structure); structural and logical (to build a system of formation of a tourist hotel cluster, to systematize the motivational factors and benefits of merging enterprises into tourist hotel clusters); induction synthesis, (to solve the problem of the formation of a tourist hotel cluster); schematic, graphic images for the visual display the results of the study.

Results. The connection of the tourist hotel business to the network can be in the form of contract management or a franchise agreement. Such organizational and legal forms do not require large costs from the operator and increase profits for the tourism hotel business.

The franchisor is the owner of the trademark (brand), reservation system, know-how. The franchisor gives the franchisee the right to use the franchise and receives periodic deductions, which are calculated as a percentage of gross income. At the same time, the franchisor does not interfere in the operational management of the hotel, but only monitors compliance with standards [5].

A management contract is popular in business. The merger of hotels is due to the conclusion of a management contract between the owner of the organization and the company. The main activity of the company is professional hotel management in the tourism and hotel market. A company that enters into contract management does not receive any rights to the organization's assets. Under the contract, the company usually has limited financial liability and receives income that depends on the size of the hotel's profits [6].

In order to adapt international tourist hotel chains to the national environment, it is advisable to use the following strategies:

• growth strategy, which has different methods of integration and forms of expanding the presence of participants in foreign markets (eg, mergers, acquisitions, participation in the construction of tourism hotel business, management contract, franchising) [2]. This strategy is focused on expanding the activities of operators in the national market, accumulation of resources, capacity building. In the national market there is a change in the hotel market, the development of innovative competitive advantages and profit maximization. The main tools are: updating business plans and business models, expanding the range of functional development strategies, which are focused on making fundamental changes;

• stability strategy [3], which is based on the principles: preservation and development of the network, profit optimization, increasing the degree of specialization, maximizing the level of absorption, expanding the network, diversifying hotel services, balancing competitive positions in the market.

The network structure of tourist hotels has a number of advantages in the crisis and post-crisis periods for Ukraine:

1) promotes the survival of the economic entity and strengthens its competitive position through multilateral relations and cooperation;

2) allows you to focus on key skills that are used in a coordinated manner;

3) provides intellectual and collective use of network resources and knowledge, the benefits of internationalization;

4) promotes competitiveness by improving the quality of services, increasing the level of security of guests, professional competencies of staff, effective use of fixed assets [4, p. 36];

5) ensures the implementation of a common strategic idea in order to increase the efficiency of hotels. This is due to the occupancy of hotels and similar accommodation, reducing the cost of staff training, booking rooms, marketing and sales of hotel services.

Transnational companies (TNCs) are important in global integration processes. TNCs promote the development of network members, concentration and capital flow to support livelihoods.

Integrated hotel chains are a good example of creating TNCs in the tourism hotel business. The headquarters of many large hotel chains are in the United States. However, the role of other countries in the management of the hotel business is constantly growing. Hotel chains from Hong Kong ((«Shangry-La», «Regal Hotels», «Mandarin Oriental»), Singapore, Mexico, and Brazil increased their economic activity. According to experts, 50% of the world's largest hotel chains were of Asian origin [8].

Integration processes allow us to focus on finding the best methods of cooperation in the network, which contribute to the best results in each segment of the tourism hotel business. This is due to constant relationships with other entities or is the result of the formation of effective networks (process, functional and organizational). Inter-organizational networks have the following types: integrated, federal, contractual, direct relations, social, bureaucratic, local, global [9].

Networking in Ukraine has some difficulties. These problems are related to the creation of clear «rules of the game» and tools for their observance. This applies to common for all pricing, marketing, logistics and service policies, increasing the volume of hotel services by all network members, strategic innovation management and planning their implementation. It is about the need for synergistic interconnection of all network components.

Clustering involves the involvement in the service destinations of enterprises and organizations from other sectors of the economy (education and science, industrial and agricultural production, etc.), the development by coordinating organizations of strategic documentation agreed at the regional and national levels.

The formation of tourist hotel cluster in Ukraine is at an early stage. Leading countries have developed and implemented various initiatives in the field of tourism and hospitality.

The system of formation of tourist hotel cluster for increasing the economic efficiency of the network structure is shown in Figure 1.

The formation of tourist hotel cluster includes the following elements: inventory of fixed assets of participants, SWOT-analysis, assessment of the potential of all participants of the tourist hotel cluster, analysis of marketing internal and external environment in hotel services, identification of all possible risks and benefits of the cluster, implementation of organizational, legal, social, psychological adaptation of participants to integration in the cluster, the formation of strategies for the development of the tourist hotel cluster, coordination the conditions for participants to join the cluster and further activities in the cluster, preparation for the concluding and signing of contracts.

Creation of tourist hotel clusters in Ukraine depends on economic, social and legal conditions. The process of formation of tourist hotel cluster requires a smooth approach. First of all, it is necessary to create a structural basis and identify strong links between regionally close hotel enterprises.

Motivational factors and benefits of merging enterprises into tourist hotel clusters are given in Table 1.

The effect of scale makes it possible to reduce the risk of possible crises and the risk of closing the tourism hotel business in the post-crisis period; reduce the cost of hotel services; successfully promote hotel services; effectively use resources and expanded infrastructure; increase the number of suppliers, customers and stakeholders; to establish cooperation; to promote the development of a system of contractual specialization and labor cooperation; to increase the economic efficiency of economic activity; to combine enterprises into a joint business; provide access to the latest innovative developments; create an opportunity to accumulate financial resources through participation in various investment projects; effectively realize the internal potential.

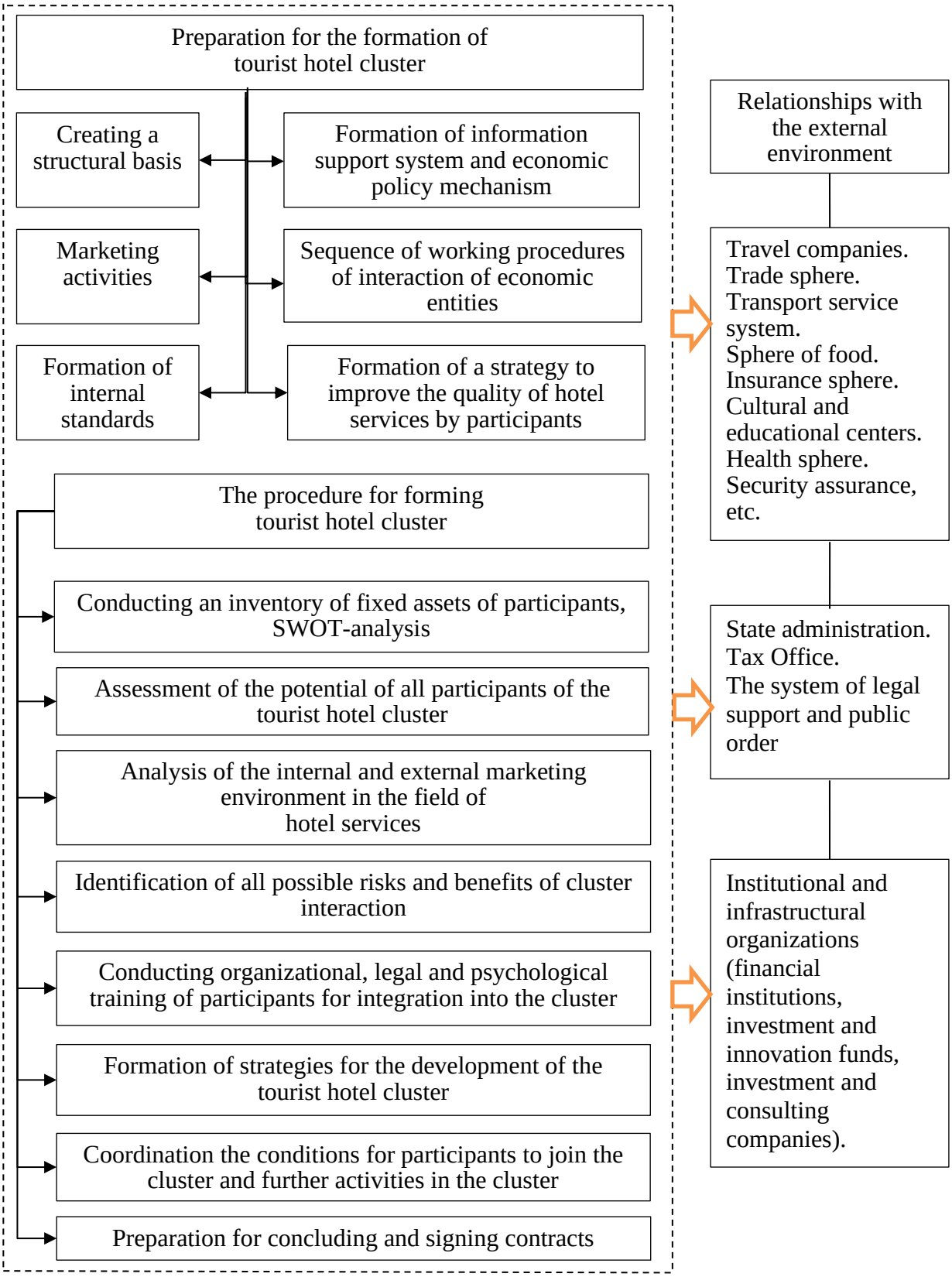

Figure. 1. The system of formation of tourist hotel cluster for increasing the economic efficiency of the network structure

Source: developed by the authors

Table 1. Motivational factors and benefits of merging enterprises into tourist hotel clusters

№	Motivational factors and benefits
1	Increasing the profitability of participants, reducing the cost of hotel services, the ability to accumulate financial resources through participation in various investment projects, the effective realization of internal potential
2	Opportunity to participate in several associations
3	Independence of all cluster members
4	Advocacy of own interests, branch and regional interests
5	Expansion of scientific and technical cooperation between participants, promotion of competitive relations, synergy of cluster components, establishment and synchronization of cooperation, development of contractual specialization and labor cooperation
6	Exchange of data, new ideas, technologies and personnel, access to the latest innovative developments
7	Adherence to established standards and principles of equality
8	Low level of administrative and centralized influence on the work of cluster elements
9	Successful promotion of improved and shared hotel services, efficient use of available resources and expansion of infrastructure
10	Ensuring proportionality in pricing policy, balanced and optimal use of a range of hotel services
11	Reducing the risk of possible crises and closing the hotel business
12	Increasing the number of suppliers, customers and stakeholders in cooperation
13	Improving the economic efficiency of economic activity, the combination of tourist hotel enterprises in joint business

Source: developed by the authors

The tourist hotel cluster can unite different number of hotel enterprises and auxiliary segments of economy of different scale. This contributes to the unification of hotel enterprises and related organizations that interact with other institutions (travel agencies, enterprises of trade, insurance, health and transport services, food, cultural and educational environment, authorities, institutional institutions and infrastructure organizations, etc.), to improve the competitiveness of hotel services.

Discussion. The tourist hotel cluster should establish mutually beneficial cooperation, exchange of data and personnel, the latest ideas and technologies, promote the development of competitive relationships and the combination of all components of the cluster. Preparation for the formation of tourist hotel cluster involves the creation of a system of information support and a mechanism of economic policy, the formation of procedures for interaction of economic entities and strategies to improve the quality of hotel services by participants, and so on.

Tourism hotel cluster is characterized by a low level of administrative and centralized influence on the work of cluster elements, compliance with established standards and principles of equality, ensuring proportionality in pricing policy, compliance with balanced and optimal use of hotel and tourism services. Economies

of scale play an significant role in bringing down the costs in clusters and management cluster's activities.

Regrettably, the merging enterprises is made up of segments with vastly varied motivational factors and benefits. This becomes a key impediment to increase the economic efficiency of the network structure becoming an essential sector of the Ukrainian economy. New study is needed to rather understand all the features of clustering in the tourism hotel business. It is essential to figure out the elements of formation of tourist hotel cluster for increasing the economic efficiency of the network structure in order for them to be successful.

Conclusion. Thus, based on the above, a contemporary view of tourist hotel business in which a hotel is an autonomy and active business unit operating in conditions of tough and high competition should be expanded to take into account a new global tendencies of creation of business structures and methods for the formation of clusters as modern tools of network structures management. The main conditions for the formation of clusters are the identification of motivational factors and benefits of merging enterprises into tourist hotel clusters, and elements of the system of formation of the tourist hotel cluster; introduction of new ways of increase the economic efficiency of the network structure.

Author contributions. The authors contributed equally.

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DEMOGRAPHIC SECURITY: KEY THREATS AND MEANS OF THEIR REGULATING

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Abstract. *The approaches to the interpretation of the concept of "demographic security" have been examined in this article, and it is established that some authors when defining "demographic security" focus on the preservation of quantitative and qualitative parameters of the population, others proceed from security concepts and emphasize protection from internal and external threats, and some others still take into account the impact of social institutions on the level of demographic security. Based on the results of the study, demographic security is proposed to consider as "the state of protection of the people's gene pool, demo-reproductive processes and the formation of demo-structures (gender, age, ethnic) from real and potential threats to strengthen the national security of the state". Proceeding from this, the object of demographic security, its subjects and goal have been established. It is established that the assessment of the level of demographic security is determined depending on the purpose and depth of the study, and it itself is formed under the influence of various threats, both internal and external. The main threats to demographic security are characterized, among which the aging of the population is the most significant. The existing methods for determining the parameters of population aging are analyzed. The level of demographic aging of the population in Ukraine and in the countries of the European Union is studied. It is established that the main reasons for the population aging are decrease in the birth rate, increase in the average life expectancy of a person and reduce in the mortality rate of children and the elderly. Their level and dynamics and interrelation with the demographic security of the country are analyzed. The results of the study showed that in Ukraine the aging of the population takes place against the background of a significant decrease in birth rates, a partial increase in mortality and a corresponding deepening of the natural population decline. In the European Union, population aging is exacerbated by a slight decline in birth rates, increased mortality and reduced natural population growth. It has been established that the aging of the population entails the emergence of a number of demographic, social, economic, political and other problems. According to the results of the study, a system of measures to address the problems of population aging is proposed.*

Keywords*: demographic security, population aging, threats, level of demographic security, population ageing parameters, birth rate, fertility, mortality, life expectancy.*

JEL Classification: H56, J11, J13, J14

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Introduction. Among the important components of the country's national security, the serving demographic security is especially prominent, a kind of reflection of the socio-economic level of the country's development, the well-being of its citizens, and state domestic policy. Demographic processes also have a significant impact on the formation of the country's labor potential, the size of its aggregate national income and position in the world community.

Loss of the ability of the state and society to ensure such type of reproduction, which contributes to natural population growth, the formation of optimal gender and age structure of the population, strengthening the health of citizens and increasing their active life duration, establishing rational internal and external migration flows, preserving family values; encourages us to talk about the loss of human capital of the country, the demographic crisis and demographic security of society and the country, as well as actively seek ways out of this situation.

Literature review. The separation of demographic security from the composition of national security took place objectively due to the deepening demographic crisis, which grew into a demographic catastrophe. Demographic security is one of the key ones in the national security system of the state. It is closely linked to social and economic security. Still some authors consider demographic security as a functional component of economic and social security. Demographic security is also closely related to other components of national security, such as political, military, environmental, etc.

All of them are closely connected and interdependent and only in a complex form the national security of the state. Thus, demographic security is possible only if economic, environmental, social, food, cultural and other types of security are achieved. In conditions of demographic danger or crisis, there is a decrease in the birth rate, an increase in morbidity and mortality, and depopulation. As a result, a quantitative and qualitative shortage of labor resources increases, the level of economic development and defense capability of the state decreases, etc.

Scientists consider the essence of demographic security in different ways. Mainly, when defining demographic security, two approaches are distinguished: instrumental and axiological or value-based.

According to the instrumental approach, demographic processes are not considered in themselves, but in terms of their impact on other processes of social life. The axiological approach focuses on demographic processes and the achievement of precisely the demographic interests of the individual, society and the state, which can be considered more objective, based on the name of the term itself. There are interpretations of the demographic security of some authors who try to combine instrumental and axiological approaches (Table 1).

In addition, when defining “demographic security”, some authors focus on the preservation of quantitative and qualitative parameters of the population [11, 12], others proceed precisely from the concepts of security and emphasize protection against internal and external threats [7, 9], and some others take into account the influence of social institutions on the level of demographic security [10].

Taking into account the above interpretations of the concept of “demographic security”, we propose to understand it as “the state of protection of the gene pool of the people, demo-reproduction processes and the formation of demo-structures (gender, age, ethnicity) from real and potential threats to strengthen the national security of the state”.

Table 1. Approaches to the definition of "demographic security"

Author	Definition
Instrumental Approach	
V. Kazushchyk [1]	"An integral part of national security, which is such a state in which, due to compliance with relevant legislation, timely identification and elimination of demographic threats, the demographic development of the country is ensured in accordance with its national interests and the demographic rights of citizens."
O. Kachan, J. Turchyn [2]	"The state of protection of the individual, society and the state from real and potential demographic threats, in which the development of Ukraine is ensured in accordance with its demographic interests."
Methods of calculating level of economic security of Ukraine [3]	"Demographic security is such a state of protection of the state, society and the labor market from demographic threats, in which the development of Ukraine is ensured, taking into account the totality of balanced demographic interests of the state, society and the individual in accordance with the constitutional rights of citizens of Ukraine."
V. Steshenko [4]	"The state of demo-reproduction processes, which does not generate real or potential negative impact on the development of the country."
S. Tyvodar [5]	"Demographic security" as a phenomenon of political and legal reality is a type of national security, which as a system ensures the vital interests of the individual, society and state and is based on a common strategy (concept), which aims to ensure human security based on its needs and interests, elimination of threats and risks directed against it; security of society as the main condition for the realization of needs and interests and the main way (technology) to prevent threats and risks; the presence of a favorable environment and its preservation as a natural condition of human existence."
L. Shapotko, L. Anisov [6]	"The state and development of the demographic situation, the socio-economic consequences of which do not worsen the economic and social situation in the country, regardless of other external and internal conditions."
Axiological Approach	
V. Ananin and others [7]	"Protection of the gene pool of the people from various negative influences and the creation of favorable conditions for its existence, development and self-realization."
A. Vyshnevskiy [8]	"Demographic security is understood as the protection of the process of the life process and the continuous natural recovery of generations of people, and its strengthening is associated with the prolongation of human life, increasing the efficiency of demographic reproduction."
O. Grishnova, Y. Kharazishvili [9]	"Demographic security is the state of protection of the main vital demo-restorative processes from real and potential threats."
O. Ivanisov, H. Agaverdieva, O. Lebedynska [10]	"Category that characterizes the demographic system and its inherent mode of reproduction, gender, age, ethnic structure of the population, as well as the state of social institutions that ensure the socio and cultural aspect of demographic reproduction, which in turn affects the national security of the state."
O. Perebeinos [11]	"The state of demographic development, which, in terms of volumetric and structural indicators, will contribute to the achievement in the future of population reproduction of an ever higher quality, the creation of a predictable, controlled flow of main demographic processes, ensuring of such a combination of internal and external conditions in the country that would be most favorable for demographic development."
I. Tsvigun [12]	"Protection of life and processes of natural continuous reproduction of people".
Combination of Instrumental and Axiological Approaches	
I. Hudzelyak, N. Verchyn [13]	"Demographic security is the protection of the life process and the vital interests of a person and citizen, society and the state, which ensures continuous natural restoration of generations of people, extension of human life, expansion of demographic freedom, sustainable development of society, timely identification, prevention and neutralization of real and potential threats, in accordance with the national interests of the state, related to ensuring the integrity, sovereignty, independence and preservation of geopolitical status."
N. Mazur, L. Kobylochna [14]	"Such a demographic situation, in which there is a qualitative and quantitative development of the population as a whole and each person individually in accordance with the priorities of national development and security, and which strengthens the national and economic security of the state, which, in turn, contributes to the balanced and safe demographic development of the country."

Source: compiled by the author's team

Thus, the object of demographic security is the gene pool of the state, and the subjects of its regulation are bodies of the state power.

The aim of demographic security changes in accordance with the needs of demo reproduction: if depopulation of the population is observed, then measures are taken to increase the birth rate, improve people's health and reduce mortality; with a population explosion, a policy of reducing the birth rate is being pursued. In general, I. A. Tsvigun notes that "the goal of demographic security is to ensure regulation of the country's population while preserving the ethno-proportional structure and genetic health of people" [12].

Aims. The goal of the article is to study the essence of demographic security, the main methods of its assessment and threats, population aging and its causes, as well as ways of regulation.

Methods. Achieving the goal of this study requires the use of general scientific methods, including analysis and synthesis, as well as empirical methods such as historical, statistical observation, averages and relative values, statistical groupings, time series analysis, tabular and graphical method.

Results. The approaches to the interpretation of the concept of "demographic security" have been studied, its object, subjects and goals have been established; it has been found that the assessment of the level of demographic security is determined depending on the purpose and depth of the study; the main threats to demographic security have been characterized, among which the most significant is the aging of the population; the state and causes of population aging in Ukraine and the countries of the European Union have been analyzed; a system of measures is proposed to solve the problems of population aging.

Assessment of the level of demographic safety. At present, there is still no unified methodology for assessing the level of the country's demographic security. The indicator system can vary depending on the purpose and depth of the study.

The system of indicators most often includes indicators of natural population growth, demographic burden, average age and average life expectancy, migration, marriage and divorce, gender and age structure of the population, etc.

The level of demographic security is formed under the influence of various threats, which are phenomena and processes that entail such quantitative and qualitative changes in demographic indicators which have a negative impact on the development of the country.

The biggest internal threats to the country's demographic security should be considered: depopulation of the population (the population of Ukraine tends to decrease due to the excess of mortality over birth rate); population aging (population aging in Ukraine has its own specifics, as it arises as a result of a decrease in the birth rate, while in European countries the population is aging due to the increase in life expectancy); deterioration of physical, reproductive and mental health of the population (has a significant impact on birth rate, mortality and life expectancy); unregulated migration of the population (illegal labor migrants, mostly of working age, remain out of the attention of the state services; outflow of qualified personnel abroad, refugees from disadvantaged places and illegal migrants who change the ethnic and

genetic face of the country); degradation of the institution of the family (strong families, strong kins are formed by strong personalities, good citizens of their country, but in Ukraine families often break up, children are born by single women who cannot always provide their comprehensive upbringing), etc.

External threats to demographic security should be grouped into: socio-economic (declining living standards, rising unemployment, lumpenization of the population, mass impoverishment, a decline in the level of qualifications of the working force, lack of housing, low level of social infrastructure, etc.); social (loss of cultural heritage, departure from traditions, unsatisfactory level of school and extracurricular education, demoralization and criminalization of society, unsatisfactory working conditions and labor safety, quality and timeliness of medical care, quality of roads and road safety, unhealthy lifestyles, alcoholism, tobacco and drug addiction); environmental (state of the external environment, safety of environmental components, overcoming the negative consequences of the Chernobyl accident); food (quality and safety of food) and economic (low level of real wages and social benefits to the population, inflation, insufficient level of economic development of the country, etc.).

The aging of the population is the most significant demographic threat. Population aging is a demographic threat that accumulates almost all other types of threats. This is the most characteristic demographic process of our time, requiring increased urgent attention.

Population aging is one of the important demographic processes, which is especially relevant both for Ukraine and for European countries. In the countries of the European Union, birth and death rates are decreasing, and life expectancy is increasing. According to forecasts of the EU Statistical Office, the population will continue to grow. At the same time, the number of elderly people (65 years and older) will also increase. Thus, by 2050, their share in the total population of the European Union will reach 29.5%. As a result, the demographic burden of older people per 100 people of working age will increase by 15.2% compared to 2018 and will reach 45.7% [15].

The population aging is causing a number of economic and social problems: an increase in the shortage of labor resources, a decrease in the number and growth of the average age of the economically active population, an increase in the demographic burden on people of working age and the economy, stress on the labor market, stress in the tax and financial system, economic growth, decrease in savings, etc. Thus, the employed population is obliged to support an increasing number of persons of retirement age, as well as children, unemployed, disability pensioners and other categories of citizens of working age who are not employed in the national economy.

In this regard, the issue of ensuring an adequate standard of living for citizens arises: living and working conditions, the state of the environment, the level of income and social security, etc.

Population aging is a volatile and changeable phenomenon, therefore it requires constant monitoring and regulation. Thus, the problem of population aging requires close attention to the causes and development of government programs for its regulation and solution of pressing problems.

Population aging is a shift in the distribution of the population according to the age towards older age, or an increase in the proportion of older people in the population structure. In this connection, the question of identifying the age range arises.

According to the UN methodology, the population is considered "old" if the proportion of elderly people (65 years and older) exceeds 7%, if this indicator is less than 4%, then the population is considered young, and if it is within 4-7%, then the population stable and on the verge of old age. At the same time, the Polish demographer Edward Rosset believes that demographic aging of the population begins if the proportion of people aged 60 and over reaches 10% [16] (Fig. 1).

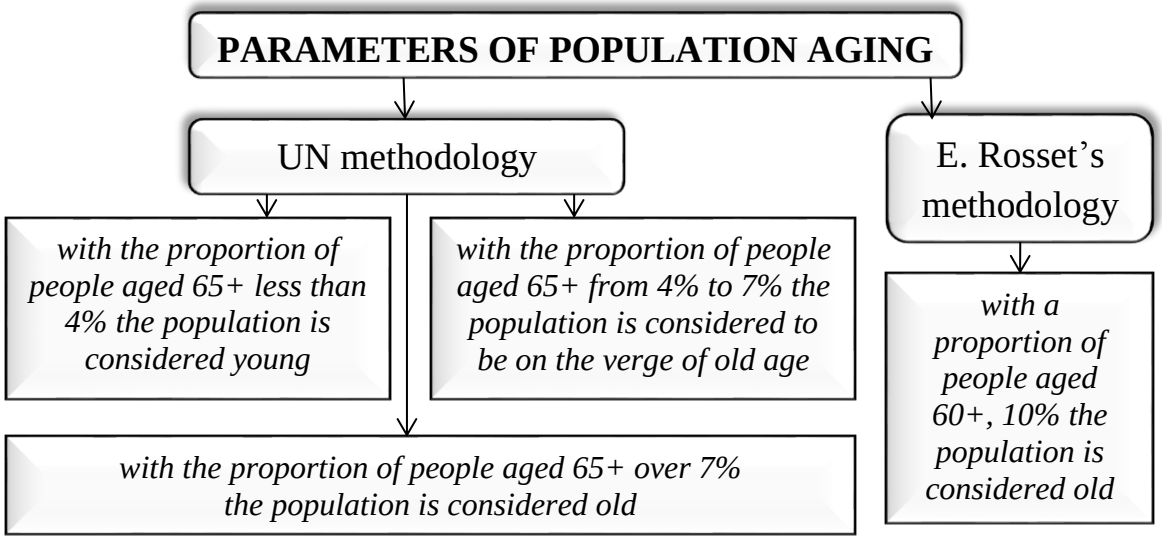

Figure 1. Methods for determining the parameters of population aging

Source: designed by the authors

According to the UN demographic aging scale, in Ukraine as of January 1, 2020, the proportion of people aged 65 and over in the population structure was 17.1%, which indicates a high level of population aging. In addition, the last ten years have confirmed the existence of a steady trend towards a deepening aging of the population. There is also an increase in the number of regions in which the proportion of persons aged 65 exceeds 17%, which is 2.4 times higher than the critical limit of aging (Table 2).

Table 2. Distribution of regions of Ukraine by the level of demographic aging of the population (proportion of people 65+)

Year	elderly population (over 7%)				Average in Ukraine
	7-14%	14-17%	17-20%	20% and more	
2010	5	13	6	0	15,3
2015	5	11	8	0	15,9
2020	3	9	10	2	17,1

Source: calculated by the authors according to the State Statistics Service of Ukraine [17]

A very high level of demographic aging of the population of Ukraine is also confirmed according to E. Rosset's scale. Only in Zakarpatska region the level of demographic aging is slightly below 18%, and Luhansk region has passed the threshold of demographic old age by 30%.

Significant "aging" of the population is observed in all countries of the European Union, where the average proportion of people aged 65+ in the population structure is much higher than 7%, which, according to in four of them had the proportion of people over the age of 65 years of age below 17%, and in 9 countries this figure exceeded 20% (Table 3).

Table 3. Grouping of EU Member States by Demographic Aging (65+), 2019

Elderly population (above 7%)		
14-17%	**17-20%**	**20% and above**
Ireland 14,1	Austria 18,8	Bulgaria 21,3
Cyprus 16,1	Belgium 18,9	Greece 22,0
Luxembourg 14,4	Denmark 19,6	Italy 22,9
Slovakia 16,0	Estonia 19,8	Latvia 20,3
	Spain 19,4	Germany 21,5
	Lithuania 19,8	Portugal 21,8
	Malta 18,7	Finland 21,8
	Netherlands 19,2	France 20,0
	Poland 17,7	Croatia 20,0
	Romania 18,5	
	Slovenia 19,8	
	Hungary 19,3	
	Czech Republic 19,6	
	Sweden 19,9	
EU average 20,2%		

Source: calculated by the authors according to the EU statistical service [15]

At the same time it should be noted that the level of old age of the population in Ukraine in 2020 was slightly lower than in the EU countries (17.1% versus 20.4%).

The aging of the population of European countries is deepening over the years: if in 2011 this indicator averaged 17.8% across the EU countries, in 2019 it was 20.25.

According to the UN, the world's fastest growing population is in the countries of North Africa, East and Southeast Asia, Latin America and the Caribbean.

According to the UN's forecasts, the aging process will only deepen:

– in 2045, the number of people over 60 years old will exceed the number of children under 15. In the most developed regions of the world, where aging occurs especially rapidly, such an imbalance was already observed in 1998;

– today the average age on the planet is 28: half of the population is older than this age and half is younger. By the middle of the 21st century, the average age will reach 38 years;

– statistics show that aging affects almost all countries of the world and is accompanied by a decrease in fertility.

Research into the main causes of population aging. The main causes of the population aging should be considered:

1. Decrease in fertility;
2. Increase in the average life expectancy of a person;
3. Reducing the mortality rate of children and the elderly.

According to the results of the study, it should be noted that in Ukraine the aging of population occurs against the background of a significant decrease in birth rates, partial increase in mortality and a corresponding deepening of the natural population decline (Fig. 2).

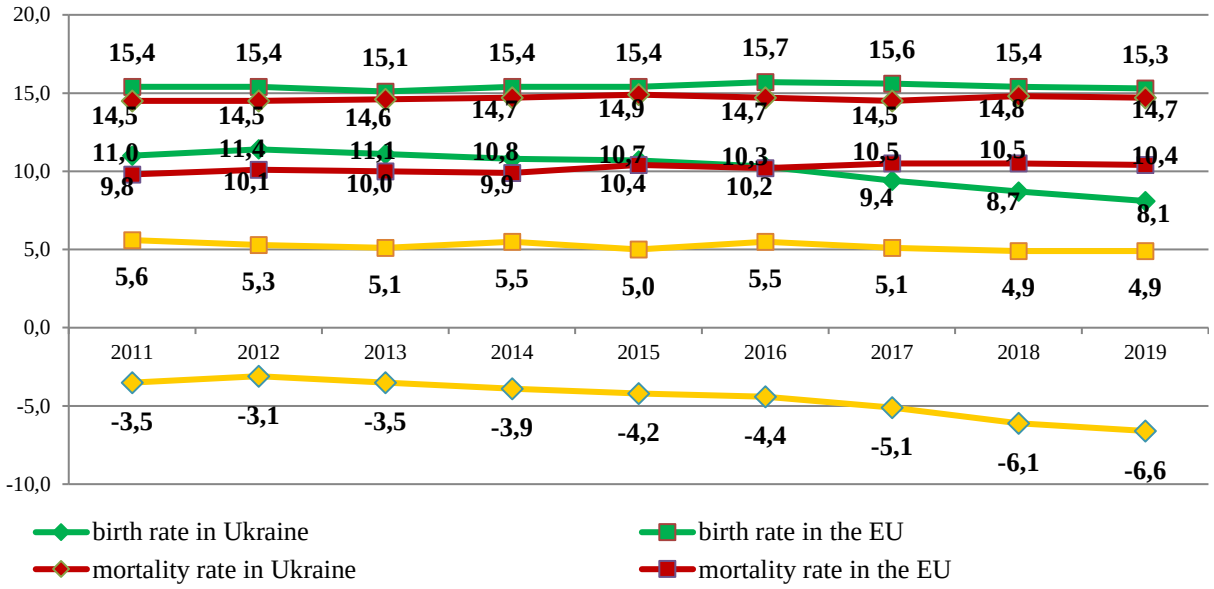

Figure 2. Natural movement of the population in Ukraine and the EU (persons per 1000 population), 2011-2019

Source: calculated and constructed by the authors according to the EU Statistical Service [15] and the State Statistics Service of Ukraine [17]

In the European Union, population aging is deepening as a result of a slight decrease in birth rates, increased mortality and reduced natural population growth (Fig. 2).

The reasons for the decline in the birth rate of the population in Ukraine and around the world, among other things, are the unwillingness of women to give birth, their preference for a career over motherhood; reluctance of young people to start a family; uncertainty about the future; negative socio-economic living conditions of the population; difficult ecological situation, etc.

The mortality rate of the population is growing mainly due to an increase in the level of morbidity: in Ukraine it is, first of all, diseases of the circulatory systems, neoplasms, as well as external causes (suicide, road accidents, murders, drowning, fires, poisoning, military operations, terrorist attacks, natural disasters, etc.). In 2020-2021, the spread of Covid 19 was a significant reason for the increase in mortality worldwide. In addition to these direct causes of mortality, indirect ones can be distinguished, such as an imperfect level of basic medicine and an inadequate standard of living of the population (decrease in real incomes of the population, failure to comply with sanitary conditions and hygiene, poor nutrition, the need for vaccination, etc.).

Another reason of the world's aging population is the increase in life expectancy, which is closely linked to general health and mortality. Also, life expectancy is an indicator of the level of socio-economic development of the country and the quality of life: the higher the quality of human life, the longer he/she lives.

In Ukraine, the average life expectancy of the population is rather low in comparison with the countries of the European Union. At the same time, in all countries it shows a clear growth trend (Fig. 3).

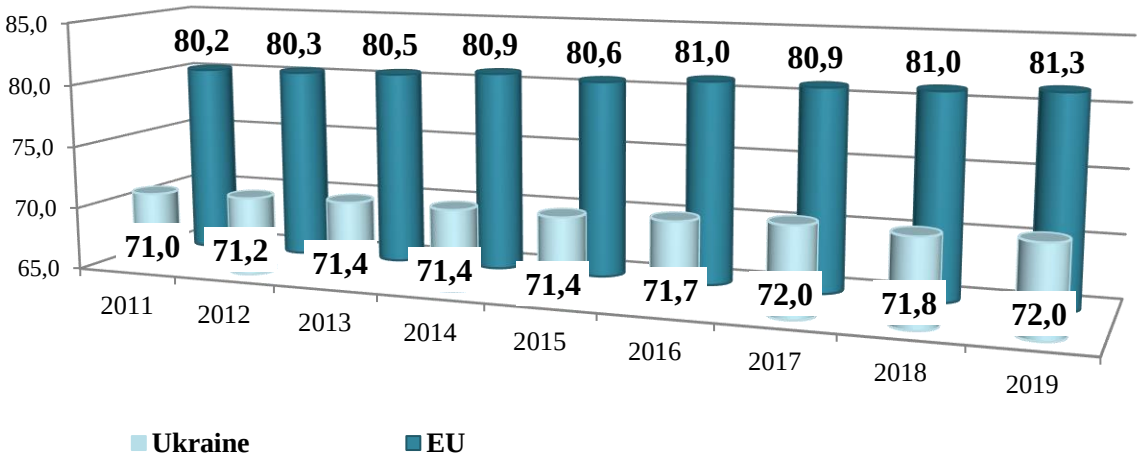

Figure 3. Average Life Expectancy, 2011-2019

Source: calculated and constructed by the authors according to the EU Statistical Service [16] and the State Statistics Service of Ukraine [17]

Changes in these demographic indicators affect both the population size and its gender and age composition. Thus, in Ukraine, as in most European countries, the population is declining at a significant rate. During the period 2011-2019, the population decreased by 3.6 million people or 7.9% (with an average annual decrease of 450.0 thousand people or 1.0%). The decrease in the population was due to a decrease in the number of people of working age (15-64 years) by 3.6 million people or 11.1%, while the number of people under the age of 15 and 65 years and older within the entire analyzed period were approximately at the same level (Fig. 4).

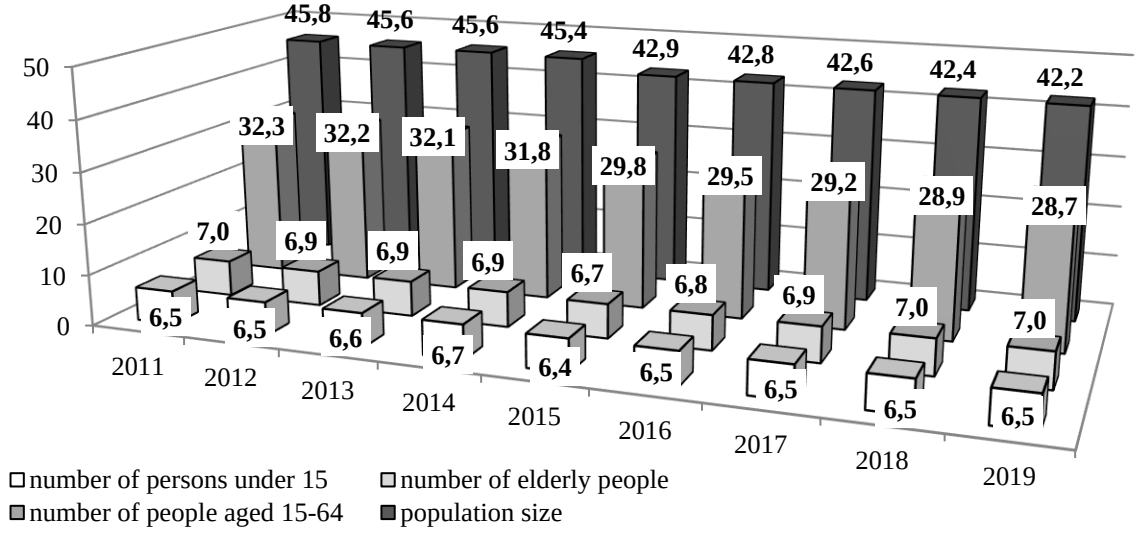

Figure 4. Number and Composition of the Population of Ukraine, million people

Source: calculated and constructed by the authors according to the State Statistics Service of Ukraine [17]

In Europe, the demographic situation is somewhat different: the aging of the population is accompanied by an increase in the population. In general, the number of residents of the countries of the European Union during the analyzed period increased by 6.6 million people or 1.5%, which is on average 825 thousand people or 0.2% per year. At the same time, in eight countries out of twenty-seven, the population in 2011-

2019 decreased: in Latvia – by 9.5%, Lithuania – by 6.7%, Croatia – 4.7%, Bulgaria – 4.1%, Greece – 3.6%, Romania – 3.5%, Portugal – 2 , 8%, Poland – 0.3% (tab. 4).

As a result of these changes, the structure of the population is changing, the demographic burden on people of working age is growing, and the demographic basis of population reproduction is narrowing (Fig. 5).

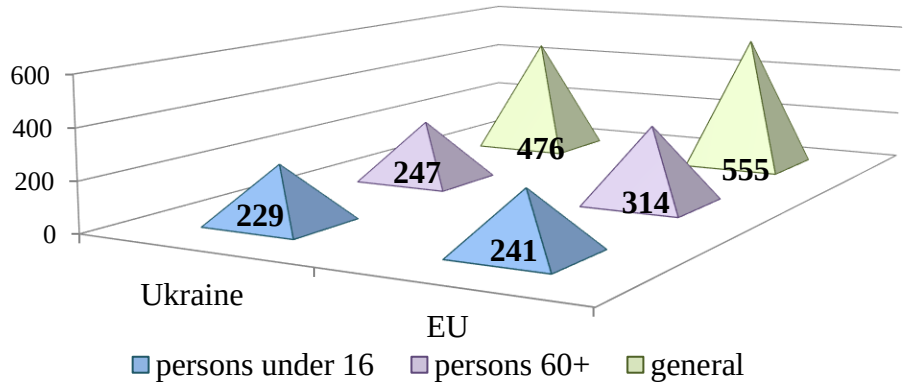

Fig. 5. Demographic Burden (per 1 thousand people of working age) in 2019, million people

Source: calculated and constructed by the authors according to the EU Statistical Service [15] and the State Statistics Service of Ukraine [17]

Table 4. Population of the Countries of the European Union, million people

Country	2011	2019	absolute growth, million people	relative change, %
Total	440,3	446,9	6,6	101,5
Latvia	2,1	1,9	-0,2	90,5
Lithuania	3,0	2,8	-0,2	93,3
Croatia	4,3	4,1	-0,2	95,3
Bulgaria	7,3	7,0	-0,3	95,9
Greece	11,1	10,7	-0,4	96,4
Rumania	20,1	19,4	-0,7	96,5
Portugal	10,6	10,3	-0,3	97,2
Poland	38,1	38,0	-0,1	99,7
Estonia	1,3	1,3	0,0	100,0
Cyprus	0,9	0,9	0,0	100,0
Slovenia	2,1	2,1	0,0	100,0
Hungary	10,0	10,0	0,0	100,0
Italy	59,4	59,7	0,3	100,5
Spain	46,7	47,1	0,4	100,9
Slovakia	5,4	5,5	0,1	101,9
Finland	5,4	5,5	0,1	101,9
Czech Republic	10,5	10,7	0,2	101,9
France	65,1	67,2	2,1	103,2
Germany	80,3	83,1	2,8	103,5
Denmark	5,6	5,8	0,2	103,6
Netherlands	16,7	17,3	0,6	103,6
Belgium	11,0	11,5	0,5	104,5
Austria	8,4	8,9	0,5	106,0
Ireland	4,6	4,9	0,3	106,5
Sweden	9,4	10,3	0,9	109,6
Luxembourg	0,5	0,6	0,1	120,0
Malta	0,4	0,5	0,1	125,0

Source: calculated by the authors according to the EU statistical service [15]

Thus, in 2019, for every 1,000 people of working age in Ukraine, there were 476 persons, including 229 those under the age of 16 (48.1%) and 247 persons aged 60 and over (51.9%). At the same time, in the countries of the European Union these figures are slightly higher: 555 persons per 1,000 people of working age, including 43.4% of young and 56.6% of the elderly (Fig. 5).

It should also be noted that excessive demographic burden, especially by the elderly, leads to changes in the structure of employment, production and consumption, welfare of various segments of the population, and, ultimately, to reduce the efficiency of the national economy. Public consciousness, moral values, the role of older people in society and attitudes towards them are also undergoing changes.

During the analyzed period (2011-2019) in Ukraine and in the EU countries, the demographic burden on people of working age and the elderly had a clear upward trend (Fig. 6). At the same time, in Ukraine this indicator grew slightly slower during this period (13.8%) than in the EU (17.2%).

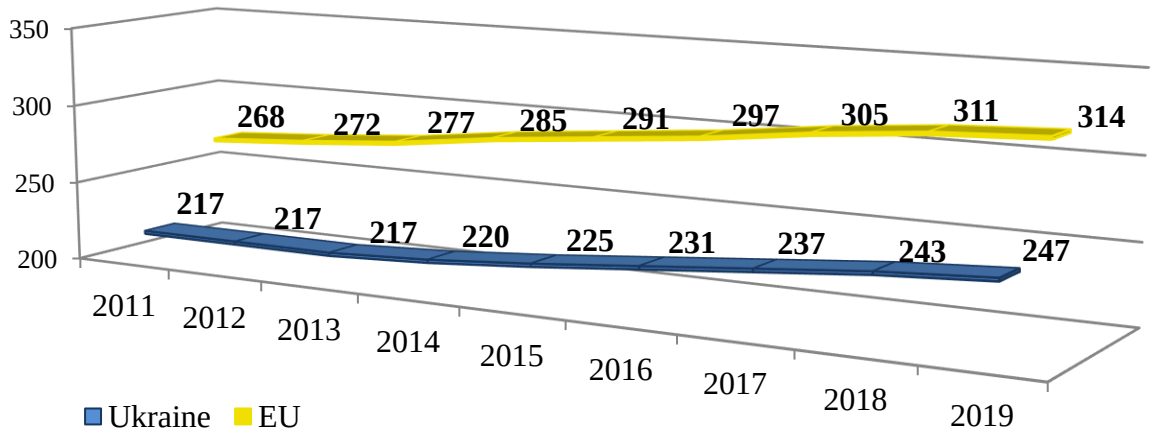

Figure 6. Demographic burden per thousand persons of the working-age population by elderly people, persons

Source: calculated and constructed by the authors according to the EU Statistical Service [15] and the State Statistics Service of Ukraine [17]

In the nearest future, depopulation, migration stagnation, population decline and aging will continue at a rapid pace. These trends determine not very flattering demographic forecast for Ukraine. By 2050, the population will decrease by 5.5 million people. At the same time, the number of people of working age (20-59 years) will decrease by 6.6 million, while the number of people aged 60 and over will increase by 2.6 million, and their proportion in the population (aging level) will increase to 33% . The ratio of the age contingents of working (20–59 years old) and retirement age (60 years and more) will decrease from the current 2.6 to 2 in the early 2030s and to 1.5 at the end of the forecast period [18].

Discussion. The aging of the population brings with it a number of problems. In particular:

– demographic (an increase in the demographic burden and a narrowing of the demographic basis of population reproduction; a decrease in the working-age population);

– economic (reduction in the labor supply and its productivity; slowdown in economic growth; deterioration of the investment climate; decline in the service market, etc.);

– fiscal (decrease in tax revenues; increase in the volume of pension expenditures);

– social (the emergence of the problem of loneliness, poverty and neglect of the elderly; the growth of additional demand for medical care and social protection).

All these problems in Ukraine are exacerbated against the background of low economic activity of the population, significant informal employment and external labor migration of the working-age population, low income and participation in social insurance.

The importance and seriousness of the problems caused by aging of the population requires immediate regulation, development and implementation of measures to address the problems of population aging (Fig. 7).

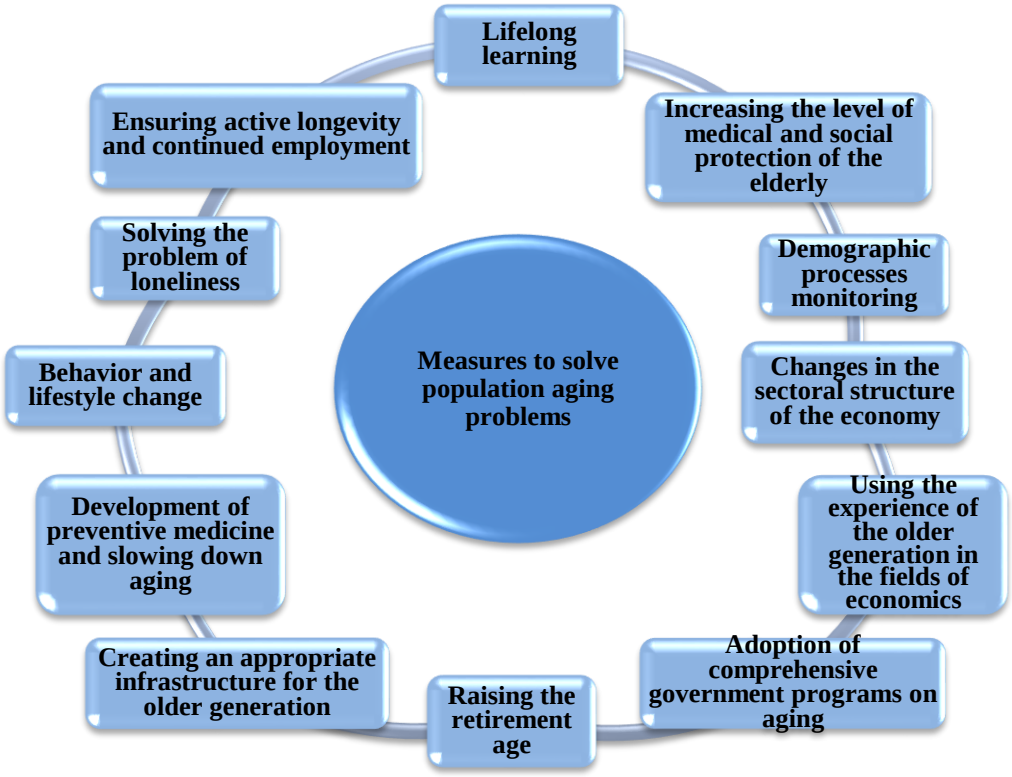

Figure 7. System of measures to solve the problems of population aging

Source: designed by the author's team

Constant monitoring of changes in the demographic processes of Ukraine and Europe will contribute to the timely identification of trends and the development of necessary recommendations for solving urgent economic and social problems. With regard to demographic problems, it is impossible to develop uniform standard measures

to solve them. At each stage of human development, for each country, its region, the causes of demographic problems will be different, and therefore will require specific solutions.

Among other things, it is necessary to pay due attention to the problem of finding means of slowing down aging in the physical sense, i.e. the suspension or postponement of the loss by older people their physical strength, vigor, activity, mental abilities, etc. Ensuring a meaningful life for the elderly, a number of socio-economic problems related to population aging could be solved.

The Madrid International Plan of Action on Aging provides opportunities for older people to continue employment in order to maintain their social status. The key to this process can be lifelong learning to ensure labor mobility of older people.

In tackling the problem of population decline and aging, it is necessary to introduce family assistance and fertility promotion programs. Women refuse to have children not only because of financial problems, but also because of the desire for self-realization, avoiding additional significant household chores, increasing emancipation, and so on. These are some of the reasons that women often refuse to get married.

Since demographic processes are closely related to a number of socio-economic, political and environmental problems, their overcoming requires the development of comprehensive programs taking into account the necessity to help families, single parents; to reform health care system; to improve the environmental situation, to promote a healthy lifestyle; to stabilize the social and political situation in the country, etc.

Taking into account the aggravation of a number of socio-economic problems caused by the aging of the population, it is necessary to create a favorable working environment, introduce methods of age-oriented management, develop specific medical technologies aimed at the elderly, improve their institutional support, develop housing and transport infrastructure in accordance with the needs of the elderly, provide assistance to families caring for the elderly, etc.

Conclusions. In the conditions of deepening demographic crisis and decrease of demographic security of the state it is necessary to carry out more thorough analysis of possible and existing threats in the development of a system of measures of their counteraction.

National health policies need to be developed and actively implemented to help overcome threats to demographic security, and this will be the subject of further research.

Author contributions. The authors made the equal contributions.

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SUSTAINABLE DEVELOPMENT AS A CONCEPT IN THE RAPIDLY GLOBALIZING WORLD ECONOMY

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Abstract. *The article studies the concept essence of the "sustainable development" as the basis of the threefold concept of ecological, socioeconomic development. The issue of the peculiarities of the current stage in the world economy development, its nature, factors and relationship with globalization has been studied. The aim of the article has been to prove the need to find new forms of economic processes organization of the global economy, focused on dematerialization of production, its intellectualization, digitalization, the use of genetic engineering and biotechnology. To conduct the research presented in the article, the methods of comparative analysis were used to compare the indices of sustainable development of post-socialist countries in the UN global ranking of sustainable development; graphical method - for visualization growth rate of SDIs; generalization method - to form the conclusions of the study. It has been concluded that the transition from the ideology of accumulating material wealth to the ideology of "reasonable sufficiency", from the ideology of competition to the ideology of mutual assistance, the formation of a balanced system of environmental management and greening of technologies in industry, the creation of social systems of standards that would help maintain the required level of equity in the distribution of benefits will let achieve global sustainable development.*

Keywords: *sustainable development, globalization, balanced development, harmonization of the world economy.*

JEL Classification: F20, F29, C10

Formulas: 0; fig.: 1; tabl.: 1; bibl.: 13

Introduction. In recent years, the term "unsustainable development" has become a common sign of our civilization crisis, which is constantly approaching. We should note that "instability" is a system-wide crisis that cannot be overcome without a well-balanced strategy for the development of objectively interconnected subjects and objects of the world process. On the other hand, it is no longer possible to conduct long-term planning within individual countries or large-scale areas of human activity without a serious comparison with global sustainability criteria.

Literature review. The basis for the development of a threefold concept of sustainable ecological, socioeconomic development, which systematically combines three main components – economic, environmental and social, should be considered the teachings of V. Vernadsky on the noosphere [1]. This concept was summarized at the UN World Summits in 1992 and 2002, which were attended by more than 180 countries, well-known international organizations and leading scientists of the world.

Aims. The aim of the article has been to prove the need to find new forms of economic processes organization of the global economy, focused on dematerialization of production, its intellectualization, digitalization, the use of genetic engineering and biotechnology.

Research methods. To conduct the research presented in the article, the methods of comparative analysis were used to compare the indices of sustainable development

of post-socialist countries in the UN global ranking of sustainable development; graphical method - for visualization growth rate of SDIs; generalization method - to form the conclusions of the study.

Results. A large number of political, economic, financial, environmental, technological, informational, ideological, demographic and other problems that marked the end of the second millennium, identified the need in front of the world community to develop a concept of sustainable long-term development. Well-known scientists and politicians are assessing the modern market society and its consequences for the whole world more and more critically, which is proclaimed with great concern all over the world. This is due to the awareness of resource and ecological limits of growth, the destruction of intellectual values, the degradation of the environment and a human being. In view of this, it becomes obvious that a society based on mercantile values has no future. A situation has arisen in which the survival of mankind dictates the need to unite all national interests, national resource potentials into a global one. These problems were announced at an international forum in 1992 in Rio de Janeiro and confirmed at the Sustainable Development of World Civilization Summit in Johannesburg in 2002. In this regard, the issue naturally arose about the peculiarities of the current stage of economic development, its nature, factors and relationship with the development of rapidly globalizing world economy.

The concept essence of sustainable development. The concept of sustainable development has become a logical transition from the greening of scientific knowledge and socioeconomic development, which began to develop actively in the 1970s. To study globalization and its consequences, such international non-governmental organizations for studying global processes on the earth were established as the International Federation of Advanced Research Institutes (IFARI), the Club of Rome (with its famous report "Growth Limits"), the International Institute for Systems Analysis, in the USSR – All-Union Institute for Systems Research, in Ukraine the issues of globalization are dealt with by the National Institute for Strategic Studies, the Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine, the Institute of Applied Systems Analysis of NTU of Ukraine "KPI" and others.

In 1972, the United Nations Conference on the Environment was held in Stockholm and the United Nations Environment Program (UNEP) was established, marking the beginning of international action at the state level to address environmental issues that have hampered socioeconomic development. In the 1980s, the concept of eco-development, development without destruction appeared, and the need for sustainable development of ecosystems was emphasized. The first mention of sustainable development appeared in the World Conservation Strategy (WCS), which was adopted in 1980. The second edition of the WCS, entitled “Caring for Planet Earth – A Strategy for Sustainable Life” published in 1991, emphasized that development should be based on the conservation of wildlife, the protection of the structure, functions and diversity of the Earth's natural systems on which species depend. To do this, it is necessary to maintain life support systems, preserve biodiversity and ensure the sustainable use of renewable resources.

The term "Sustainable Development", the literal translation of which, taking into account the context, means "viable development", and its expanded interpretation means a comprehensively balanced development.

The concept essence of sustainable development at the initial stage (1992) was defined as meeting the vital needs of the current generation while maintaining a similar opportunity for future generations. The emphasis was on the environmental component. The theory of sustainable development is an alternative to the paradigm of economic growth, which ignores the environmental danger of development according to the extensive model [2].

World Bank experts have identified sustainable development as a process of managing a set (portfolio) of assets aimed at preserving and expanding the opportunities that humanity has. Assets in this definition include not only traditionally calculated physical capital, but also natural and human capital. In order to be sustainable, development must provide growth (at least not a decrease) in time of all these assets (and not just predict economic growth) [3].

The concept of human development became the basis of the first Report on World Human Development in 1990. It interprets human development as a goal and criterion of social progress, as a means of increasing income that acquires value only with a real impact on people's well-being. Human development is defined as a process of human capabilities growth – a person must live a long life, not get sick, be educated, enjoy political and economic freedoms, public respect for the individual [4, p. 8; 5, p.10].

In 1994, in the UN report "On Human Development", the concept of sustainable development was supplemented by a humanistic component, which became the main one. In the new modification of the concept, sustainable development was defined not only as one that generates economic growth, but also as one that fairly distributes its results, reproduces the environment to a greater extent than destroys it, increases people's opportunities, not impoverishes them" [6, p. 6-7].

The "Agenda for the XXI Century" (Chapter 1 of the Preamble) states: "Humanity is experiencing a crucial moment in its history. We face the challenge of perpetuating disparities both between and within countries, exacerbating poverty, hunger, deteriorating health and illiteracy, and continuing deterioration of the ecosystems on which our well-being depends. However, an integrated approach to environmental and development issues, paying more attention to them, will help meet basic needs, improve the living standards of the entire population, promote more effective protection and rational use of ecosystems and ensure a safer and more prosperous future. Individual countries are not able to achieve this alone, but we can achieve this together – through a global partnership for sustainable development" [5].

A global partnership to achieve global goals. Thus, we can conclude that the concept of sustainable development emerged as a result of combining three main points of view: environmental, economic and social.

The economic component in the concept of sustainable development is based on the theory of the maximum flow of total income of Hicks-Lindahl, which can be produced provided that the total capital is preserved, which is the source of this income. This concept provides for the optimal use of limited resources and the use of

environmental – natural, energy and material-saving technologies, including in the field of extraction and processing of raw materials, creation of environmentally friendly products, as well as minimization, processing and disposal of waste. However, when deciding what capital should be stored and to what extent, different types of capital are interchangeable, as well as when valuing these assets, especially environmental resources, there are problems as for correct interpretation and accounting.

The social component of sustainable development is human-centered and aims at preserving the stability of social and cultural systems, including reducing the number of destructive conflicts between people. An important aspect of this approach is the equitable distribution of wealth, as well as the preservation of cultural capital and diversity on a global scale, the fuller use of sustainable development practices that exist in non-dominant cultures. To achieve sustainable development, modern society needs to create a more effective decision-making system that takes into account historical experience and is based on pluralism; to strive for justice not only within one generation, but also between different generations; to intensify the processes that form the sphere of human life, to facilitate the adoption and implementation of decisions, to control their implementation.

From an ecological point of view, sustainable development must ensure the integrity of biological and physical natural systems, the viability of ecosystems, on which the global stability of the entire biosphere depends. The concept of "natural systems" and habitats is widely understood, including as a man-made environment, such as cities. Particular attention is paid to maintaining the ability to self-reproduction and dynamic adaptation of such systems to change, rather than maintaining them in some "ideal" static state. Degradation of natural resources, environmental pollution and loss of biological diversity reduce the ability of ecological systems to self-reproduce.

Coordinating the various components (environmental, social, economic) and confirming them with specific measures that are a means of achieving sustainable development is a task of extreme complexity, as all three elements of sustainable development must be considered in a balanced way.

As for the very concept of "sustainable development", it should be noted that despite the existence of a large number of interpretations, none of them has become commonplace. But in any case, sustainable development means development within the economic (ecological) capacity of the natural environment, which does not make irreversible changes in nature and does not pose a threat to the long existence of man as a species of homo sapiens [7]. Thus, this category combines the well-being of man and nature. We should note that the term "sustainable development" is associated with the concepts of development – balanced, stable, constant. However, the latter is the least adequate to the concept essence of "sustainable development".

The paradigm of a sustainable development society differs significantly from the paradigm of an industrial (economic) society, which is based on the priority of economic growth through the widespread use of industrial methods of production, including in agriculture. In an industrial society there is a concentration of production and population, urbanization, the formation of a system of values focused on

efficiency, rationality regardless of the natural environment. Social and economic progress in industrial society occurs along the lines of increasing the production of material goods and obtaining economic benefits at any cost. Under such conditions, environmental protection is subject to economic development, which makes it fundamentally impossible to effectively protect the environment [8].

However, the industrial society of developed countries has provided its population with a high level of material well-being and quality of services, although it used an incredible amount of natural resources and destroyed the natural environment so that there is a real threat to human survival as a species. Under the Soviet model of industrial society, the material basis of a high quality of life was not created, although resources were used not less, but even more per unit of GDP, compared to the West.

According to the structure of priorities, post-industrial society (post-economic) is almost indistinguishable from industrial (economic), but economic growth is achieved on the basis of new technologies, there is a transition from an economy based on the production of goods to a service one [8]. The production of services and information plays a dominant role. A new socially active class is being formed – the intellectual elite and technocrats, who control material production and the process of creating high technologies through the information used in the production of the final product. Knowledge and information become the leading productive force, and such a society is called informational. If the post-industrial (informational) society in economic growth perceives the limitations of the ecological imperative, it acquires the characteristics of a society of sustainable ecologically safe development, based on an organic trinitarian combination of economic, social and environmental spheres, with the latter playing a decisive role.

Given the new modification of the concept of sustainable development, which is provided in [6, p. 6-7] and based on the proposed definition of development [8, p. 7], it is proposed to supplement the definition of sustainable development and set it out as following: sustainable development is a process that involves harmonious, natural, purposeful changes in matter and consciousness that generate economic growth and ensure fair distribution of its results, environmental reproduction and economical consumption all kinds of resources, their preservation for future generations for the harmonious development of all members of society.

In other words, sustainable development must ensure the harmonization and combination of social, economic and environmental goals, their implementation in a single sociology-ecological-economic system. The imbalance between individual subsystems is evidence of the inconsistency of the development of a particular object (country, region, industry, enterprise) of the concept of sustainable development. The result of economic development (growth) in the sociology-ecological-economic system is the provision not only of material but also of the whole complex of human needs, including spiritual, social, ecological and others.

Recently, the problem of sustainable development is of concern to many scientists and politicians around the world. Russian scientist E. Charmanski (Member of the Central Council of the Russian Ecological Party "Greens", Director of Programs of "Clean Waters of Russia" of the Russian Ecological Congress and National nature park

"Ecological Center"), given the social, environmental and economic needs and the possibility of transition to a new environmental socioeconomic paradigm of development, noted that this is prompted by a number of circumstances [9]. First, the history of the origin and evolution of the environmental factor that determines the need to move to a new paradigm of development. The need to block a real global ecological catastrophe transforms the problem of regulating the rights to develop the economic capacity of the territory into a universal task of returning to the permissible level of consumption of ecological potential of the biosphere and distribution among states not only rights to use it, but also corresponding obligations. The implementation of this task is inextricably linked with virtually all areas of economic activity, all areas of interaction with nature around the perimeter of consumption of its resources from development, processing and production to its use and processing of waste, with social and economic factors. Secondly, the development of globalism and the social factor. In the modern world there are two main types of interactions: the first is the interaction between all mankind and the Earth's biosphere; and the second is interaction within the world community.

In the early 1990s Dennis and Donella Meadows [8] proved that the traditional world with the current rate of economic growth and population, with its socioeconomic systems due to limited natural resources will collapse. This is confirmed by the results of research presented in the work of A.P. Fedotov "Globalism: the beginning of the modern world science" [9], which states that to prevent the collapse that may occur, it is urgent to base the development of strategy of individual countries and the world as a whole to lay scientific and practical principles of self-preservation and intelligent evolution, the embodiment of which is a new model of the world, consisting of 3 elements: the biosphere, the world as a whole and the individual country. The interaction of the model elements is described by a new system of social quantitative parameters of the world: the anthropogenic loading index; sustainability index; rent number; index of socioeconomic disharmony [9, 10].

The indices dynamics of sustainable development of the group of countries of the post-socialist space (the PPC group) and the progress in improving the integrated indicator are given in Table 1. As the analysis of Table 1 data shows, almost all countries of the PPC group during the observation period (from 2000 to 2021) have made progress in changing the indices of sustainable development, as evidenced by the data of group 11 in the Table 1, because the values of all base growth rates exceed 1.0. At the same time, it should be noted that the greatest results were achieved by Estonia, which moved from the 6th place among the countries of this group to the 1st and in the global ranking took the 10th place among 165 countries studied (base growth rate was 1.12). As for Ukraine, in 2021 it took the 36th place, due to positive results in achieving 10 of 17 goals that determine the sustainable development of the country in the economic, social and environmental spheres [13], without deteriorating its position in any of the basic goals of sustainable development in the economic, social and environmental spheres. It should be noted that Ukraine has shown the greatest progress in achieving the goal of “universal eradication of poverty in all its forms”.

Table 1. Indices of sustainable development of post-socialist countries in the global ranking of sustainable development of the UN

Country	Place in the PPC group, 2020	Dynamics of Sustainable Development Indices (SDIs) of countries, %						Place in 2021		Growth rate of SDIs, 2021/2000
		Years						in the PPC group	in the global ranking	
		2000	2004	2008	2012	2016	2021			
Estonia	6	72,58	75,59	77,19	78,74	80,87	81,60	1	10	1,12
The Czech Republic	1	75,14	76,43	77,66	79,07	80,65	81,26	2	12	1,08
Slovakia	3	73,38	75,03	75,94	77,27	78,74	79,43	4	19	1,08
Hungary	1	75,14	76,41	77,07	76,95	78,54	78,65	6	25	1,05
Latvia	5	72,78	74,46	75,24	77,05	78,35	79,15	5	22	1,09
Poland	2	74,35	75,11	76,09	77,36	79,72	80,22	3	15	1,08
Bulgaria	1	66,66	68,54	71,92	73,00	72,34	73,81	9	45	1,11
Moldova	10	67,43	69,51	70,13	71,40	72,29	73,53	11	48	1,09
Ukraine	7	71,47	71,75	71,96	73,22	73,67	75,51	8	36	1,06
Lithuania	8	71,45	73,23	73,95	75,02	76,26	76,70	7	31	1,07
Belarus	4	73,26	74,86	75,55	75,87	77,47	78,65	6	24	1,07
Russia	9	67,89	67,57	68,51	69,63	72,10	73,75	10	46	1,09

Source: summarized and calculated by the authors according to [11, 12]

In addition, according to data [11, 12], Ukraine is ahead of Greece (37th place), Israel (38th place), Luxembourg (42nd place), Russia (46th place). It should be noted that the progress made by Ukraine is the result of the systematic work that was carried out by the country during 2016-2017, when a large-scale and comprehensive adaptation process of the Sustainable development goals took place, considering the Ukrainian context [12]. At the same time, each global goal was revised taking into account the specifics of national development. The result of this work is the national system, which consists of 86 national development objectives. National tasks, indicators for monitoring the implementation of tasks and targets to be achieved by 2030 are reflected in the National Report "Sustainable development goals of Ukraine" [13]. The created national system of tasks and indicators of the Sustainable development goals provides a solid basis for further comprehensive monitoring of the results of the country's sustainable development. In general, 17 goals and 86 national tasks have been incorporated in 145 normative legal acts of the Government, 1052 tasks and 3465 measures enshrined in these acts are directed to implement the goals and objectives [12].

At the present stage, for many countries, the issue of finding ways and mechanisms to manage the country's sustainable development, bringing it to a new higher level of existence is especially acute.

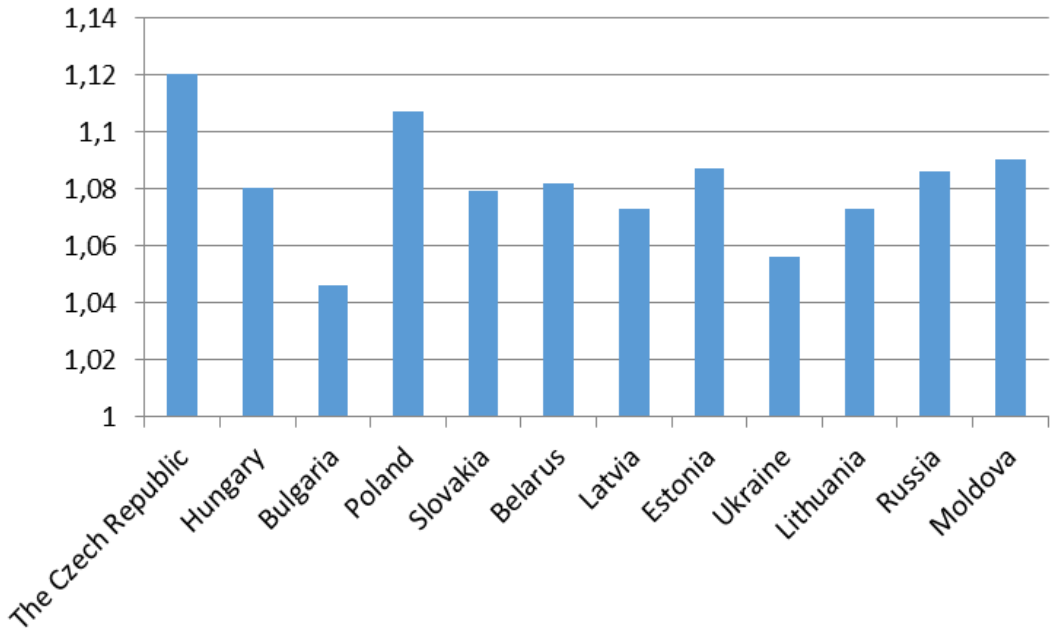

Figure 1. Growth rate of SDIs, 2021/2000

Source: summarized and calculated by the authors according to [12]

Discussion. Thus, the new ecological-sociology-economic paradigm on the basis of sustainable development is to use existing opportunities and take into account the state of environmental, social and economic factors. In view of the above, the requirements for the economy of the transition to sustainable development are:

- dematerialization of development, which means the optimization of human needs (including changes in the style of human consumption) and their satisfaction with minimal costs of natural resources by increasing the efficiency of resource use;
- global and national solidarity and a consistent increase in the level of justice in the distribution of goods and resources;
- severe territorial limitations of economic activity;
- significant changes in society, in the factors of production, in economic policy, ensuring the innovative nature of development. The new (informational) revolution must bring changes due to new known and still unknown technological achievements not only in technology but also in wildlife and energy on the basis of amateurism and self-regulation and actual reproduction processes, fundamental changes in labour productivity;
- the high-tech sector must ensure positive changes in the scale of the whole economic organism and serve as a guarantee of the stability of trends in general economic development and increase productivity.

However, such changes are not yet happening (or are not happening on a large enough scale and too slowly), and information technologies, which are expected to increase productivity, according to observations, do not yet provide answers about the positivism of the necessary changes. At the same time, the system of relations, first of all, economic, which developed and is bein developed in the conditions of industrial revolution and its consecutive transformation according to technological changes, came to a standstill as development reached such level of anthropogenic loading on the

nature that there was a threat of ecological catastrophe, and globalization as an inevitable stage of the modern process of modernization of society, economy, state, which should provide the opportunity to ensure social progress in recent times, moved from the virtual direction of development to the real world of events and also became threatening.

Conclusions. Thus, the interests of survival and development, the imperatives of the future global economy require the search for new forms of economic processes focused on dematerialization of production, its intellectualization, digitalization, the use of genetic engineering and biotechnology, the use of extraterrestrial energy. A special role in the implementation of ecological, socioeconomic paradigm of development is given to the support of the public, and, above all, scientific one.

From the above we can conclude:

- development, at the center of which there is only material production, is increasingly questioned by both foreign and domestic scientists. Most of them increasingly advocate the need to reconsider the entire paradigm of world economic development, the transition from the ideology of accumulation of material wealth on earth to the ideology of "reasonable sufficiency", from the ideology of competition to the ideology of mutual assistance;

- it is unlikely to be legitimate to raise the issue of stimulating the highest possible rates of economic growth without taking into account its impact on the environment, assessing the impact on income and consumption of the entire population, analysis of environmental and social consequences. The feedback mechanism identifies environmental and social factors and constraints that affect economic growth and determine the nature of economic development. For a long time, the rate characteristics of economic growth in industrialized countries have been dominant. However, the idea of "growth for growth" came into conflict with the laws of ecosystem development and led to the constant depletion of natural resources, environmental pollution, the death of entire animal populations. A new approach to understanding the nature, sources, limits and factors of economic growth is designed to resolve the contradictions between production and consumption at a qualitatively new level. The negative environmental and social consequences of the boundless growth of production and consumption have forced scientists to shift the emphasis towards the growth quality ;

- one of the main areas of solving problems that occur in the environmental and economic sphere is the formation of a balanced system of nature management and greening of technologies in industry, energy, construction, agriculture, transport;

- in order to achieve global sustainable development, humanity must create such social systems and social standards that would help maintain the necessary level of justice in the distribution of wealth, to which countries are now approaching.

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CHAPTER 2
DEVELOPMENT OF FINANCE, ACCOUNTING AND AUDITING

PRACTICAL ASPECTS OF IMPLEMENTATION OF VENTURE FINANCING TOOLS FOR INNOVATIVE INDUSTRY DEVELOPMENT

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Abstract. *The article discusses practical aspects of the introduction of venture financing tools for the innovative development of industry. It was found that the introduction of a venture funding mechanism in the country in order to finance innovation activities, innovative development of industry requires the use of a set of tools for state regulation of venture investment: institutional regulatory and legal regulation of venture activities, organizational support for venture activities and state stimulation of venture financing development. The main groups of venture financing tools for innovative industry development have been systematized. It is determined that the first group of instruments are the instruments of institutional legal regulation of venture activities. The second group of instruments of state regulation of venture activity is organizational support tools and the third group of instruments is a group of tools aimed at activating and accelerating the introduction of venture investment through the introduction of financial incentives for venture investment. It is determined that an important tool for state regulation of innovations of industrial enterprises is the improvement of tax, customs and depreciation policy. The article proved that the introduction of venture financing in investment support for the implementation of innovative projects for the modernization and development of industry in Ukraine requires the use of modern effective tools for state regulation of venture investment that would provide the possibility of practical implementation of the institutional organizational mechanism of state regulation of venture investment in innovative industry development.*

Keywords: *investments, venture capital investments, state regulation of venture investment, innovation activities*

JEL Classification: E22; G18; L59; O32

Formulas: 0; fig.:0; tabl.: 0; bibl.: 12

Introduction. The current state of industry development and the need to implement the processes of its modernization, renewal with the introduction of new technologies and innovations requires significant investment resources, which are not enough in Ukraine today. Innovation is aimed at the development of industry requires investment of long-term investments and has the need for early investment, has high risks and considerable uncertainty of results. The need to invest in research, scientific and research design work, intellectual results requires a new effective state regulation of this activity, development and application of mechanisms of state regulation. The main focus of venture capital is to finance enterprises that carry out high-risk innovations. Venture capital is highly risky capital invested in new enterprises with high potential for rapid growth, development or implementation of innovation. The main purpose of venture financing is to obtain a high rate of profit. First of all, it

concerns high-tech companies with new products, active implementation of innovative production processes, innovative approaches to doing business. The introduction of venture financing of innovation activities in Ukraine, investment support for the innovative development of industry requires the creation of a venture funding mechanism, since this mechanism is an important economic tool for the introduction of innovations, the implementation of effective industrial changes.

Venture financing has significant prospects and advantages, the result of such investment is high volumes of profit, its further growth, growth of the value of tangible and intangible assets, brands of companies. Industrial enterprises implementing new technologies are entering market leaders through the introduction of radical innovations. Revolutionary innovations have an impact on further technical technological development of the market of products and services. With venture financing, enterprises have the capabilities and resources to ensure dynamic development and significant advantages.

Literature review. The issues of practical aspects of the introduction of venture financing tools for innovative industry development, the use of venture financing in investment support for the innovative development of industry and venture finance tools were studied in the works of scientists.

According to the research of A. Handrail, venture capital is defined as a system of relations between venture capital entrepreneurs, which ensures the storage of free funds of depositors and their further direction [3, p. 128]. According to O. Kuzmin, venture capital is understood as long-term direct investments that are of a share character and are invested by investors for a long period in the development of newly created innovative enterprises [2, p. 128]. According to O. Dzhusov's research, the main direction for which venture capital is directed is financing enterprises oriented to create and implement innovations [3, p. 96]. According to V. Medinsky's research, the development of venture business requires the creation of a special credit and financial institution [4, p.72]. In T. Kolinescu's research, the field of interests of venture funds is distributed, part of the funds focuses on investing in young companies, part of the funds specializes in investing in mature companies that have long and steadily functioned in the market [5, p. 52]. According to O. Stavytsky, venture funds prefer to invest in firms whose shares are not freely sold on the stock market, but are fully distributed among shareholders-legal entities and individuals [6, p. 29]. According to V. Yukhimenko, an important participant in the venture activity process is an investor who can be a legal entity or an individual and takes a share in the capital of a venture capital company through the acquisition of its shares [7, p. 29].

According to T. Vasilyeva, venture capital enterprises, investors and financial intermediaries are the subjects of venture relations [8, p. 218]. According to the general definition of J. Sergienko, venture financing is a hybrid form of providing innovative enterprises with investments that combines the most effective functions in the activities of capital markets and banks [9, p. 116].

As noted in the works of A. Antonyuk, the period for which investments are invested in the vast majority lasts from 3 to 10 years, while from 3 to 5 years goes to the development of investments and the creation of a product and another 3 to 5 years

goes to make a profit on the invested capital [10, p. 51]. As M. Pereverzeva notes, investors are not involved in the operational activities of the innovative company [11, p. 26]. According to E. Rusavina's generalization, venture investments are a modern effective mechanism of investment activity that makes it possible to solve a wide range of tasks of investment support for the creation and implementation of innovations, the development of innovative enterprises from the implementation of fundamental and applied research to the creation of new and implementation of products and processes [12, p. 106].

Aims. The purpose of the article is to study the practical aspects of the introduction of venture financing tools for the innovative development of industry. The main objectives of the study are the study of venture finance tools; systematization and classification of these tools; studying the feasibility of their application in venture financing of innovative projects of industrial development.

Methods. In order to substantiate the conceptual principles and develop practical aspects of the introduction of venture financing tools for innovative industry development, a logical dialectical approach and methods of scientific cognition were applied: observation, comparison, abstraction. In order to research and systematize venture financing tools for innovative projects, a program-specific targeted approach has been applied. Systemic and comprehensive approaches have been applied to form a mechanism for investment support for innovative development.

Results. Implementation of the institutional organizational mechanism of state regulation of venture investment in the innovative sphere with the introduction of new technologies is carried out using a set of tools for institutional, normative legal regulation of venture activities; organizational support for venture activities; and instruments of state stimulation of venture financing development.

The main aspect of the formation of the institutional, organizational mechanism of state regulation of venture investment of domestic industry is the formation of the necessary institutional and regulatory legal basis for venture financing, organizational support for venture activities and state stimulation of venture finance development, attraction of investment resources and implementation of innovative changes. Institutional regulation is a process of general influence of state regulation institutions, self-regulation institutions and public control institutions. Institutional and normative legal regulation of venture activities is aimed at creating institutional, regulatory frameworks on which venture activity will be formed and regulated in the future, that is, the formation of a regulatory legal framework necessary for the real launch and effective implementation of venture activities in the country.

The formation of such a field is carried out with the improvement of legislation on venture financing. The tools that need to be applied for this are the development of the concept of development of venture financing of the country's industry and the formation and implementation of a unified state policy for the protection of venture investors, attraction and oculation of venture investments; development of the securities market, market turnover of shares; adapting the national stock market to international standards.

The primary task is to create and adopt a regulatory framework for regulation, stimulate the implementation of venture activities, since until now there is no definition of the essence, basic functions, principles of venture companies and venture funds in the regulatory acts of the country.

An important tool in this direction is the change of civil legislation on the protection of investors' property rights in venture projects. State regulation and definition also require the improvement of legislation on the protection of intellectual property in the field of creation and implementation of innovative developments.

The implementation of the mechanism of venture financing for the development of the country's industry requires organizational support for the formation and implementation of venture activities, which will include a set of tools aimed at direct organization and ensuring the functioning of market and state institutions, as well as venture investment infrastructure in the country. Among the instruments of organizational support it is necessary to note the need to create information bases of innovative enterprises and the creation of the Unified State Bank of innovative projects for the development of industry.

Industrial enterprises will be able to use this base for the purpose of implementation, within their industries, certain innovative developments. This will combine developers, integrators and enterprises that implement, commercialize innovations and enable the rapid and effective commercialization of innovative developments, ensured a significant spread of innovative developments among industrial enterprises within individual industries and at the inter-sectoral level. Important, in terms of venture development in the country, has the presence of specialists managers who can organize, plan and carry out venture activities in venture finance organizations.

Therefore, an important tool of state regulation in this area is the placement of state order to universities for the training of managers of venture activities. The effective functioning of the venture financing mechanism requires the creation and development of venture investment infrastructure, the opening of institutes of professional, scientific technical expertise of investment innovative projects, insurance of investments in innovation activities, companies for information analytical services of the innovation market. It is necessary to state regulation and support the development of the infrastructure of venture investments: state and non-state venture funds, venture capital companies, firms for consulting information and analytical support of venture activities. It is necessary to create expert councils and a system of centers for venture entrepreneurship, this will allow attracting significant amounts of necessary venture investments to finance innovative projects of industrial development. The spread of venture funding is associated with the development of innovation infrastructure, so the development of innovative infrastructure is needed: technoparks, technopolises, business incubators, technology transfer centers. Implementation of state regulation of venture activities requires institutional basis and regulatory legal support and the formation of effective incentives for venture investments at all levels. Starting from the formation of venture capital, accumulation of resources, development of innovation activity. In this aspect, economic methods,

their tools, which include tax incentives for the implementation of innovation activities, with the use of such tools as: granting tax benefits to venture funds investing in innovative investment projects aimed at the development of industry, development and application of new technologies are of great importance; introduction of tax holidays for small and medium-sized businesses that carry out innovative activities and participate in venture activities; liberalization of public policy in the field of venture financing.

An important direction is the introduction of financial incentives for investing in venture funds of small and medium-sized enterprises and private investors. In this direction, it is necessary to provide state guarantees on loans to venture funds, which will reduce venture risks, will help attract significant amounts of investments. According to the experience of leading developed countries, it is necessary to develop and implement mechanisms of state insurance for lending to innovative projects.

The directions of state stimulation of venture activity development and venture financing in industry are improvement of state tax, customs, credit and depreciation policy. In terms of improving tax policy, the tools of state incentives are to reduce income tax rates from venture activities and introduce tax breaks for enterprises during the implementation of innovative venture finance projects. In the direction of improving the customs policy, the necessary tools of state regulation can be a reduction in import duties on technological equipment, a reduction in taxes on the import of modern equipment. Improvement of the state credit policy of venture financing should be carried out using the following tools: partial compensation of interest on loans for the purchase of new equipment, equipment for technical technological upgrades, modernization of industry.

In general, the introduction of venture financing in Ukraine in the investment provision of innovative industry development requires the formation and implementation of a mechanism for such financing, since this mechanism is a fundamental economic tool that is effectively used by economically developed countries to introduce innovations and implement effective industrial changes. The essence of this mechanism is the collection of financial resources, the selection of innovative projects for further financing, the direction of venture investment placement and control over the timeliness of the return of invested investments.

However, the introduction of venture financing mechanisms for innovative projects aimed at the development of industry in the context of the transition to new technologies has certain differences from the general mechanism of venture financing. Venture financing of industry requires the creation and implementation of new technologies for industrial use, radically new technologies that have a long payback period, are tangible and intangible assets of enterprises. Leading innovations put the production capacities of the industrial complex of the country to a new technological level and are of national importance. Important elements of the venture funding mechanism are the formation and application of tools to stimulate and regulate such activities. The introduction of venture financing of innovation activities in the development of industry in Ukraine will require the formation and implementation of an institutional organizational mechanism and its tools.

Discussion. The introduction of a venture funding mechanism in the country in order to finance innovation activities, innovative development of industry requires the use of a set of tools for state regulation of venture investment, namely: institutional regulatory legal regulation of venture activities, organizational support for venture activities and state stimulation of venture financing development.

Conclusion. Summarizing the research, it should be noted that the instruments of the institutional organizational mechanism of state regulation of venture investments in the innovative development of industry generalize can be divided and classified into three main groups.

The first group is a tool for institutional legal regulation of venture activities. Such tools are the development of the Concept for the development of venture financing of the country's industry; formation and implementation of a unified state policy for the protection of venture investors attracting and oculating venture investments; development of the securities market; adaptation of the national stock market to international standards; creation and adoption of a regulatory framework for regulating and stimulating venture activities; improvement of intellectual property protection legislation; development of local organizations and opening of regional cents of venture activity.

The second important group of instruments of state regulation of venture activity are organizational support tools, which include the formation of information bases of enterprises with innovative activities; formation of innovative projects bank; information support for information companies to form public opinion, the need to participate in joint investment; placing a state order for the training of specialists in the organization of venture activities; development of venture investment infrastructure and development of innovative infrastructure.

The third group of instruments of state regulation and stimulation of venture financing development is a group of instruments aimed at activating and accelerating the introduction of venture capital investments through the introduction of financial incentives for investing in venture funds: providing state guarantees on loans to venture funds; state insurance of loans provided for the implementation of innovative projects; improvement of tax policy: granting tax benefits to venture funds; introduction of tax holidays for small businesses engaged in innovative, venture activities. Important tools are the improvement of customs policy: reducing taxes on high-tech equipment and improving credit policy: partial compensation on loans for the purchase of new equipment and technologies. An important tool for state regulation of innovations of industrial enterprises is the improvement of depreciation policy and revision of the period of normative use of equipment.

It should be noted that the use of instruments of state regulation of venture investment, which differ in combination and consistency and include tools for institutional, regulatory and legal regulation of investment support for innovative development; organizational support and state incentives for the development of venture financing, and as a result, create the prerequisites for the development of venture investment, the formation of its regulatory legal framework to protect the interests of all investment participants and the conditions for the constant flow of

investments in the process of investment support for innovative development of industry.

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STANDARDIZATION OF IMPLEMENTATION OF THE MANDATORY PRIVATELY MANAGED PILLAR OF THE PENSION SYSTEM OF UKRAINE

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Abstract. *According to the current legislation, the modern Ukrainian pension system is not yet fully formed. In Ukraine, PFU contributions are currently a source of pension benefits for today's retirees. Pay-as-you-go pension system is essentially failing, because as in the rest of the world, our country is experiencing a trend in which the nation is aging: the share of retirees is growing, and the share of able-bodied people is declining. The search of new ways to save for old age is moving toward the creation of mandatory accumulation under the supervision of the state, in particular, this is also caused by the signed by Ukraine Memorandum of Cooperation with the IMF. However, despite the long-term pension reform in Ukraine (in started back in 2004), today, in fact and in law the second level of the pension system doesn't function and doesn't exist – the mandatory accumulative one; as well as very underdeveloped, almost non-functioning and completely unpopular among the population is non-state pension system, which forms the third level of the national pension system. Still, against the background of active cooperation with the IMF a number of reforms continue in Ukraine, so in 2019 work on new legislation on the defined contribution pension system began. It is this level of the pension system that can technically increase the level of pensions and their differentiation. Yet the experience of countries that have already carried out such reforms shows that the real effect can be expected for at least 10–15 years, or even 25 years, and in some cases such an effect will not be reached at all. The article is devoted to the issues of legislative implementation of defined contribution pensions. According to the results of an expanded analysis of 27 bills on the referred issue in the period from 2016 to 2021, it can be stated that there is no unifying concept for the reform in the legislative field, so most bills are either withdrawn or sent for revision. In general, the bills of 2016–2020 drew attention to the scattering of changes, which mostly concern certain issues of pension legislation, mainly for vulnerable groups. The new projects, which were sent for consideration in 2019, mainly deal with defined contribution level of pension system. However, even they are constantly rejected, refined, returned for consideration and go through the whole procedure again from the beginning.*

Keywords*: pension system, pension reform, mandatory privately managed pillar, legislation.*

JEL Classification: J1, H55

Formulas: 0; fig.: 0; tabl.: 1; bibl.: 16

Introduction. It is well known that since Soviet times Ukraine has had a pay-as-you-go pension system, which is based on the fundamental principle – solidarity of generations. That is, the able-bodied population with official employment pays contributions to the Pension Fund of Ukraine, and it in its turn uses these funds to finance pensions for today's retirees. It also follows from this principle that in the future the next generations of Ukrainians will provide pensions for people who work today. For the whole world and Ukraine, in particular, the tendency is the aging population

that is characterized by a decrease in the birth rate (as a result of a smaller share of the working population) and an increase in life expectancy (as a result of increasing the number of retirees). It is because of these demographic reasons that it is becoming increasingly difficult to supply retirees at the expense of the working population: as of 2021, there are 11 million retirees in Ukraine and less than 10 million citizens who pay Single Social Tax (SST). Accordingly, every year the government is forced to grant the Pension Fund from the state budget. In 2022, the amount of such a grant will be 200 billion hryvnias [1]. In such circumstances, there are risks of violating the stability of public finances due to the need to increase the allocation of funds to cover the deficit of the Pension Fund. Therefore, in order to prevent failures, it seems logical to look for updated ways to save for old age. Mandatory accumulation under state supervision is one of them.

Literature review. The reform of the pension system, in particular, and its accumulative component in Ukraine, began in 2004. But in fact, the second level of the pension system worked neither in 2005 nor in 2012, as expected, and has not worked yet, even, specific legislation on these issues did not exist until recent years. However, in the last few years the issue of the accumulative pension level has been actively reflected not only in the scientific field, but also at the legislative level. In particular, on June 5, 2021, an active process of legislative implementation began through the establishment of a working group on the introduction of mandatory accumulative pension provision and the development of private pension provision [2]. The group included representatives of many Ministries and directors of departments, as well as other experts on these issues. In the scientific literature, the issues of prospects and the need for the introduction of accumulative level is reflected in the works of such domestic scientists as: G. M. Grabovska, V. P. Zaika [3], V. V. Yurovska [4], O. P. Koval [5] and others.

Aims. The purpose of this article is to analyze the legislation on pension reform and the implementation of mandatory accumulative level in Ukraine, as well as to evaluate already proposed projects, in particular, of the Ministry of Social Policy and the Ministry of Finance of Ukraine.

Methods. The study used general scientific methods, such as analysis and synthesis, as well as the method of comparative analysis for the comparison of regulations, as well as analysis of draft laws on pension reform, registered at the sessions of the Verkhovna Rada of Ukraine.

Results. According to the World Bank methodology, there are five pillars of pension systems [8]: a "zero pillar" without contributions (these are direct payments from the budget to citizens in need); "first pillar" – a system of accumulation – with obligations for various contributions, which depend on the level of wages, and in the future is a source of livelihood, replacing a certain part of earnings; a mandatory "second pillar" that is typically an individual savings account (i.e. a defined contribution plan) with a wide set of design options including active or passive investment management, choice parameters for selecting investments and investment managers, and options for using accounts at the withdrawal stage; a voluntary "third pillar" taking many forms (e.g. individual savings for retirement, disability or death;

employer sponsored; defined benefit or defined contributions by economic agents) but is essentially a flexible and discretionary option; and the "fourth pillar", which does not contain a defined balance of sources and corresponding financial benefits, but includes access to informal support (for example, ensuring family well-being through subsidies and benefits).

The Law of Ukraine "On Compulsory State Pension Insurance" [9] provides for the existence of the second (accumulative) pillar since the adoption of this act. However, discussions on these issues are still ongoing. In the last 5 years alone, more than 27 bills have been promulgated, including two completely new laws and amendments to existing ones. Still there was no consensus at the initial stage of the pension reform on the financial mechanism that could be implemented taking into account the spatiotemporal features of one or another round of Ukraine's economic development, and it hasn't been yet.

Ukraine passed an important stage of pension reform in 2017. Until now, more than 70% of retirees had pensions that were lower, even below the subsistence level. In fact, the pay-as-you-go pension system did not fulfill its main function even then and created a real financial burden for the state. This difficult situation has been improved through the adoption of the Law "On Amendments to Certain Legislative Acts of Ukraine on Increasing Pensions" [10]. There was a so-called "modernization of pensions" – they were recalculated on the basis of a "new" salary base, so the government was able to increase pension payments to a significant number of retirees.

However, it should be noted that such periodic changes in the form of "pension indexation" were carried out in Ukraine until 2017, and among the government's plans is possible consolidation of the indexation of pensions as an annual – March 1 [11]. Such changes are positively perceived in society, although, in fact, in our opinion, it is only an element of fiscal self-discipline aimed at mitigating the shortcomings of previous changes. Thus, today there are no other improvements and innovations for existing retirees in the field of discussion.

In 2020, at the initiative of the President of Ukraine, the government introduced monthly surcharges of 500 UAH to retirees aged 80 and older, and in 2021 plans compensation payments of 400 UAH within the average salary, which is taken into account for calculating pensions in 2020, and setting the minimum pension payment at 2,500 UAH for persons over 75 years of age and persons with pension insurance record of 20 years for women and 25 years for men from October 2021 [11]. However, according to World Bank experts, retirees under the age of 75 also need compensation for their unsatisfactory low pensions.

After the entry into force of this resolution of the Cabinet of Ministers of Ukraine [2] work on the concept and bills on the mandatory savings system intensified. Firstly, it is the pension reform that the International Monetary Fund requires for further cooperation with Ukraine, and secondly, it is obvious to all that the current system is not viable. The consensus was reached in the format of the introduction of the mandatory accumulative level and the development of non-state accumulative insurance as a tool that can increase both the differentiation of pensions and their size. But the international experience of countries that have carried out such reforms shows

that it is impossible to get a quick result, because for decent pensions in the future it is necessary to save money for a significant period of time, measured in decades. Moreover, the amount of the accumulated amount will depend on both the amount of salaries and investment income in conditions of a stable socio-economic situation.

One of the main problems can be considered the proposal to finance the accumulative level through the use of part of the SST and/or PIT, or through public funds. According to World Bank experts, such a decision will increase the deficit of the pay-as-you-go pension system and will become another obstacle to achieving adequate pensions. Such funding parameters do not solve the main problems faced by the government today whatsoever – a significant part of public funds goes to cover the deficit of the Pension Fund, and pensions remain the same low.

In fact, this may lead to the compensation of small future pay-as-you-go pensions with a small accumulative component, and it is these accumulative pensions that will contribute to the reduction of pay-as-you-go pensions (through the transfer of the share of SST). That is, future retirees will not see a real change or any financial effect, and in any case, the winners will be financial intermediaries – asset management companies. For a real increase in future pensions (we are talking about a 15-25-year perspective) – a "new" resource or additional contribution from wages are clearly needed. At the same time, public funding can be considered as an incentive or additional one-time co-financing, but not as the main one for the accumulative contribution. There are many examples of countries, in particular, Georgia and Armenia, whose pension legislation is a clear reflection of this talking point.

Also, among the countries whose pension reforms are reflected in USAID analysis materials [12], there is experience (Chile and Kazakhstan), which clearly shows that a significant "new" financial resource to finance the accumulative system (10% rate of personal income) cannot guarantee high pension benefits. The second reform of the accumulative pension system in Chile has failed to address the following problems: inadequate pensions, low coverage, high administrative fees, gender inequality and growing public outrage over unjustified expectations. The reform of the accumulated pension system in Kazakhstan has also faced problems of low real return on investment, unsatisfactory replacement rates, especially for women, i.e. gender inequality. In both countries, these issues of accumulated pension systems have forced governments to consider additional compensation components due to extremely low pensions, and in Kazakhstan, some points of the new accumulated system have led to constant state budget expenditures to cover inflation losses for pension assets.

Given the experience of Chile and Kazakhstan, one should not expect significant payments from the future accumulated pension system in Ukraine, as our country still has characteristic and so far unresolved issues similar to the Chilean and Kazakh accumulative levels: unofficial employment, low official wages, instability of economy, inability to guarantee investment income of pension assets, gender inequality, etc.

We support the position of many experts that the reform can move in two key directions: preventing the fall of pensions in the short and medium term and determining the form of financing pensions in the long run [13]. Both guidelines are

interlinked, and their implementation should in any case begin with the transformation of the pay-as-you-go system. Regarding the stabilization of seniority indicators, the experience of many countries indicates the possibility of assigning conditional seniority for the period before the introduction of personalized accounting (the 1990s). It is worth considering the use of a similar mechanism to compensate for the "gap in experience" due to the pandemic of 2020–2021 and subsequent years as a systemic emergency factor [14].

According to World Bank experts, a basic pension in addition to insurance is an acceptable systemic solution. This is evidenced by the practice of pension regulation in post-Soviet countries. International experience shows that the design of the basic pension can be very diverse, for example, in relation to the length of service, age, marital status, the size of the insurance pension, the availability of employment income, and so on. As reflected in domestic research, the accumulated system is a potentially important additional element aimed at the long term. But such a system should not be introduced at any cost, especially if this cost will deepen the poverty of today's retirees [15]. All social, not just financial, aspects of this initiative should be worked out in detail and the link with the pay-as-you-go system at the payment stage should be clearly worked out. Certainly unconvincing are the arguments that the introduction of an accumulative system will avoid raising taxes to finance the pay-as-you-go system. Especially when you consider that such areas of reform are accompanied by risks of losing some resources.

Meanwhile, the Ministry of Social Policy has already proposed an option for the implementation of an accumulated pension system [16]. The main and most important issue that still remains in the field of discussion is contributions to the accumulative pension system.

However, the Ministry of Social Policy claims that with the introduction of the accumulative system there will be no additional financial burden on people and businesses. Instead, the state will redirect part of the paid taxes and fees to the person's personal account in the fund determined by the employee. Thus, from taxes paid by a person (which is not specified, most likely refers to personal income tax) it is proposed to direct to the accumulation a share of 1–2% of salary. Additionally, contributions in the amount of 1–2% of the salary will be redirected to the person from the amounts of the single social contribution paid for the person by the employer. In the future, contributions need to be increased so that pay-as-you-go and accumulative pensions together provide a decent standard of living. Such possible ways of financing the future accumulative system could lead to the government being forced to cut spending as a result of redirecting government revenues. A similar scenario applies to the SST, which finances the pay-as-you-go pension system.

The Ministry of Social Policy also outlined future options for possible investments. Yes, it is claimed that pension savings will not "lie in the account." They will be immediately invested in the country's economy, only in those instruments that are identified by law as the most reliable (government securities, including those targeted for long-term projects, municipal securities, shares and corporate bonds, deposits in reliable banks, bank metals, real estate, land, etc.).

Table 1. Analysis of draft Laws on pension reform of existing legislation and proposals for new laws registered at the sessions of the Verkhovna Rada of Ukraine during 2016–2021

	Draft law number	Features of the draft law	Status of the draft law
Amendments to existing laws			
1	2683-3 of May 7, 2021 Draft Law on Compulsory Accumulative Pension Provision	It is proposed to remove from the existing legislation everything related to the concept of "non-state pension fund – the subject of the second level of the pension system", as well as "accumulative fund", "accumulative pension account" and a number of interrelated terms. Withdrawal from the subjects of the Accumulative Pension Fund and its replacement by authorized subjects of the system of compulsory accumulative pension provision. The project includes changes to advertising in the system of compulsory accumulative pension provision	Submitted to the Committee on the rejection of June 3, 2021
2	2683-2 of May 6, 2021 Draft Law on Amendments to Certain Laws of Ukraine Concerning the Accumulative System of State Pension Insurance	Extension of the article on the Accumulative Fund in terms of the possibility (in 5 years from the date of introduction of the system) to replace it with an asset management company on the basis of a tender decided by the Cabinet of Ministers. There are also restrictions (for the same 5 years) on the placement of the Accumulative Fund only in assets in government bonds of Ukraine, treasury bonds of Ukraine and other securities issued by the state. The first 10 years of the contribution transfer system are voluntary. Persons who have become members of the accumulative system of state pension insurance do not have the right to switch to the payment of contributions to the pay-as-you-go system. The transfer of insurance contributions to the Accumulative Pension Fund is introduced only after the following conditions are met: 1) for 2 consecutive years the absence of deficit of the Pension Fund budget has been ensured; 2) economic growth has been achieved for 2 consecutive years (statistically recorded growth of real gross domestic product occurs for at least 2 years)	Submitted to the Committee on the rejection of June 3, 2021
3	2083-1 of February 14, 2020 Draft Law on Amendments to Certain Laws of Ukraine Concerning the Exercise of the Right to a Pension	An alternative to the previous bill is that in fact nothing has been changed in the bill, except for the list of initiators of the bill	Submitted to the Committee for review on February 18, 2020
4	3058 of February 11, 2020 Draft Law on Amendments to the Law of Ukraine "On Non-State Pension Provision" and other legislative acts on non-state pension provision	A number of existing terms have been added and clarified. The principles on which non-state pension provision should be based have been added: ensuring by the state the economic interest of the employer in making pension contributions for the benefit of its employees to the system of non-state pension provision; prudent investment of pension assets; taking into account environmental, social and managerial risks in the activities of the pension fund; proportionality of the Fund's management system to the size, nature, scale and complexity of its activities. The term "National Commission for State Regulation of Financial Services Markets" has been changed to "Authorized Body", the term "pension fund" to "Fund". A list of possible members of the Fund's board has been added. The total amount of expenses for organizational, technical and material support of the Fund's Board and the meeting of founders should not exceed 0.5% of the average net asset	Submitted to the Committee for review on February 18, 2020

	Draft law number	Features of the draft law	Status of the draft law
		value of the Fund per year, exceeding this amount is reimbursed by the Fund's founders. The fund must use the services of only one administrator. The list of responsibilities of the Administrator has been updated. The Fund Administrator must have and maintain on an ongoing basis an equity of at least 530 minimum monthly salaries, have employees of the appropriate qualification level, have appropriate technical support and information systems for personal accounting of the Fund's participants. The list of signs of lack of impeccable business reputation which are applied to executive and controlling bodies of the administrator is added. The bill proposes to supplement the article on the revocation of the license to conduct activities on the administration of pension funds by the "temporary suspension" of the license. The draft proposes to supplement the Law with an article on "Requirements for persons providing agency services". The responsibilities of a person who manages pension assets have been expanded, and a number of rules have been added for such persons. The license to manage the assets of private pension funds is issued to the person concerned, provided that he had paid the authorized capital and equity in the amount of not less than 1500 minimum monthly salaries on the day of submission to the National Securities and Stock Market Commission to obtain this license. The assets of the private pension fund are supplemented by bank metals and deposits. Pension assets are prohibited from investing in receivables. A list of information that must be published on the official website of the non-state pension fund has been added. Pension payments are made in non-cash form in the national currency of Ukraine (previously monetary form of payments was provided). Articles on prudential supervision have been added	
5	2763 of January 16, 2020 Draft Law on Amendments to the Tax Code of Ukraine on Compulsory Accumulative Pension Provision	The draft law introduces such terms as: a lifelong pension insurance contract and a system of compulsory accumulative pension provision, as well as clarifies some existing terms. Exemption from taxation is provided in the form of contributions to the system of compulsory accumulative pension provision, which comes to the Pension Treasury and authorized non-state pension funds, as well as income from operations with their assets	Submitted to the Committee for refinement on March 15, 2021
6	2617-1 of December 28, 2019 Draft Law on Amendments to Certain Laws of Ukraine on Pension Provision for Years of Service	The bill proposes changes to seniority and age for certain categories of employees (towards reducing the general or special length of service and/or retirement age) who are entitled to a retirement pension due to years of service, in particular, certain categories of aviation and flight test workers, workers locomotive crews, workers of expeditions, parties, workers of education, health care and social security, artists and athletes. In fact, this Bill should be considered in parallel with #2617 of December 18, 2019	Included in the agenda of May 20, 2020
7	2083-d of November 26, 2019 Draft Law on Amendments to Certain Laws of Ukraine Concerning the Exercise of the Right to a Pension	The draft law introduces proposals on the possibility of participation in the pension system of internally displaced persons or persons living in the temporarily occupied territories of Ukraine, as well as the possibility of receiving pensions for the past. The bill also provides	Submitted to the Committee for refinement on February 5, 2020

	Draft law number	Features of the draft law	Status of the draft law
		for the payment of pensions to persons living in the temporarily occupied territories of Ukraine	
8	1141 of August 29, 2019 Draft Law on Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" to reduce the retirement age and length of service as conditions for assigning an old-age pension	The draft law covers amendments to the Law of Ukraine "On Compulsory State Pension Insurance". In particular, it is proposed to return to the previous rule of law, according to which the retirement age for women is 55 years and to set the pension insurance record at 20 years	Returned to the subject of the initiative on October 11, 2019
9	10416 of July 3, 2019 Draft Law on Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" (on ensuring the right of citizens of Ukraine to decent pension benefits)	The draft law proposes to amend the Law of Ukraine "On Compulsory State Pension Insurance". The draft law proposed for consideration increases the coefficient of pension insurance record from 1.00 to 1.40 for each year of insurance record. According to the authors: the adoption of these changes will increase the amount of pension benefits by 40%. Another point is the reduction of the pension insurance record required to receive pension benefits from 35 to 25 years. Thus, according to the proposed changes, Individuals will be entitled to an old-age pension after reaching the age of 60 and having at least 15 years of pension insurance record until December 31, 2017. Starting from January 1, 2018, the right to receive an old-age pension after reaching the age of 60 will have persons with pension insurance record: from January 1, 2018 to December 31, 2018 – not less than 16 years; from January 1, 2019 to December 31, 2019 – not less than 17 years; from January 1, 2020 to December 31, 2020 – not less than 18 years; from January 1, 2021 to December 31, 2021 – not less than 19 years; from January 1, 2022 to December 31, 2022 – not less than 20 years; from January 1, 2023 to December 31, 2023 – not less than 21 years; from January 1, 2024 to December 31, 2024 – not less than 22 years; from January 1, 2025 to December 31, 2025 – not less than 23 years; from January 1, 2026 to December 31, 2026 – not less than 24 years; from January 1, 2027 to December 31, 2027 – not less than 25 years; starting from January 1, 2028 – not less than 25 years	The bill was withdrawn on August 29, 2019
10	10412 of July 2, 2019 Draft Law on Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" on the introduction of an additional "thirteenth" pension for all retirees	The bill proposes to supplement the Law of Ukraine "On Compulsory State Pension Insurance" with Article 50-1, according to which every December each pensioner will receive an additional pension equal to the amount of pension received by the pensioner in December of the same year	The bill was withdrawn on August 29, 2019
11	10272 of May 6, 2019 Draft Law on Amendments to Certain Legislative Acts of Ukraine on Overcoming and	The bill proposes to prohibit companies working in the field of international employment, to receive funds from potential job seekers for employment abroad, to introduce administrative liability for violations	The bill was withdrawn on August 29, 2019

	Draft law number	Features of the draft law	Status of the draft law
	Preventing the Negative Consequences of Mass Labor Migration of Ukrainians Abroad	committed by companies working in the field of international employment, to prohibit the collection of any fees, commissions and other rewards for mediation in employment in Ukraine or abroad, to determine equal and competitive conditions for the employer to choose an employee through the simplification of procedures and rules of employment in Ukraine of foreign citizens and stateless persons	
12	9511 of January 30, 2019 Draft Law on Verification and Monitoring of State Payments	Interesting is the initiative, which according to the drafters of the bill is aimed at improving the targeting of state benefits, promoting the development of social security. Thus, on January 30, 2019, the Verkhovna Rada of Ukraine registered a draft Law of Ukraine "On Verification and Monitoring of State Payments" #9511, which defines the main tasks, rights and responsibilities of the central executive body that ensures the formation and implementation of state financial and budgetary policy on the verification of state payments, defines the powers of bodies making state payments, regulates the main issues of collection, processing and analysis of information received from the subjects of information, defines the main stages of verification and the list of information used for verification and monitoring government payments. According to Article 1 of the Draft Law, state payments should be understood as pensions, benefits, privileges, subsidies, scholarships, other payments made at the expense of the state, local budgets, the Pension Fund of Ukraine, funds of compulsory state social insurance	The bill was withdrawn on August 29, 2019
13	9422 of December 19, 2018 Draft Law on Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" (on old-age pensions for women who have given birth to and raised two or more children)	The main purpose of the bill is to improve the demographic situation in Ukraine by providing additional social guarantees to women who have given birth to and raised two or more children. The draft proposes to amend Article 26-1 of the Law of Ukraine "On Compulsory State Social Insurance" to change the requirements for pension insurance record and age for this category of persons. In particular, women who have given birth to and raised two or more children to the age of eighteen are entitled to an old-age pension if they have a shorter pension insurance record than the one established by this law, depending on the number of such children: in the presence of two children – one year less; in the presence of three children – two years less; in the presence of four children – three years less; in the presence of five children – four years less; in the presence of six children – five years less; in the presence of seven children – six years less; in the presence of eight children – seven years less; in the presence of nine children – eight years less; in the presence of ten children – nine years less; in the presence of eleven or more children – ten years less. Until the age of 60, the women referred to in part one of this article, if they have the corresponding pension insurance record, are entitled to an old-age pension depending on the number of children they gave birth to and raised to the age of eighteen: in the presence of two children – at the age of 59; in the presence of three children – at the age of 58;	The bill was withdrawn on August 29, 2019

	Draft law number	Features of the draft law	Status of the draft law
		in the presence of four children – at the age of 57; in the presence of five children – at the age of 56; in the presence of six children – at the age of 55; in the presence of seven children – at the age of 54; in the presence of eight children – at the age of 53; in the presence of nine children – at the age of 52; in the presence of ten children – at the age of 51; in the presence of eleven or more children – at the age of 50	
14	9184 of October 9, 2018 Draft Law on Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" to Establish an Appropriate Level of Pension Provision for Citizens Affected by the Chornobyl Accident	It is proposed to establish the minimum amount of disability pension for persons covered by the Law of Ukraine "On the Status and Social Protection of Citizens Affected by the Chornobyl Accident". In particular, for participants in the liquidation of the consequences of the Chernobyl accident, evacuated from the exclusion zone, resettled from the zones of unconditional (compulsory) resettlement, disabled children from childhood who have reached the age of majority: for the first group of disability – 10 subsistence levels for persons who have lost their ability to work; for the second group of disability – 8 subsistence levels for persons who have lost their ability to work; for the third group of disability – 6 subsistence levels for persons who have lost their ability to work; for other disabled people for whom the causal link of disability with the Chornobyl disaster has been established: for the first group of disability – 4 subsistence levels for the persons who have lost working capacity; for the second group of disability – 3 subsistence levels for persons who have lost their ability to work; for the third group of disability, for children with disabilities – 2 subsistence levels for persons who have lost their ability to work	The bill was withdrawn on August 29, 2019
15	9175 of October 5, 2018 Draft Law on Amendments to Certain Legislative Acts of Ukraine (on Increasing the Prestige of the Work of Teachers)	It is proposed to amend some legislative acts in order to increase the salaries of educators and, accordingly, the prestige of the profession. The draft law envisages the wording of the fifth part of Article 61 of the Law of Ukraine "On Education" as follows: "To increase the prestige of labor, the state provides an allowance of 20 percent of the salary (salary rate) to teachers.The allowance is set for the entire amount of training load performed by the employee"	The bill was withdrawn on August 29, 2019
16	9154 of October 3, 2018 Draft Law on Amendments to Certain Legislative Acts of Ukraine on Improving the Pension Conditions of Participants in the Anti-Terrorist Operation and Members of the Families of the Heavenly Hundred	The draft law proposes to amend the second part of Article 32 of the Law of Ukraine "On Compulsory State Pension Insurance" of July 9, 2003 #1058-IV and to grant the right to award disability pensions to servicemen of the Armed Forces of Ukraine, National Guard of Ukraine, Security Service of Ukraine, and other law enforcement agencies that defended the independence, sovereignty and territorial integrity of Ukraine, and also provides that the allowance for special services to Ukraine in accordance with the Law of Ukraine "On Pensions for Special Services to Ukraine" is granted to family members of persons for civic courage, patriotism, selfless service to the Ukrainian people, revealed during the Revolution of Dignity, posthumously awarded the title of Hero of Ukraine, to all types of pensions, regardless of age, established by Article 26 of the Law of Ukraine "On Compulsory State Pension Insurance"	The bill was withdrawn on August 29, 2019

	Draft law number	Features of the draft law	Status of the draft law
17	8360 of May 16, 2018 Draft Law on Amendments to the Law of Ukraine "On Pension Provision for Persons Discharged from Military Service and Certain Other Persons" to establish a surcharge for work after the appointment of a pension and calculate it according to a two-part formula	The bill proposes to establish a surcharge for post-employment pensions for those law enforcement officers who, after dismissal, officially worked and paid insurance contributions to the Pension Fund of Ukraine from their salary or income. The amount of this surcharge is determined by the following formula: S = S1 + S2, where: S – surcharge to the pension in UAH; S1 – surcharge to the pension in UAH, calculated from the pension insurance record for the period after dismissal until June 30, 2000, and S2 – surcharge to the pension in UAH, calculated from the pension insurance record for the period after July 1, 2000. S1 and S2 are also calculated by certain formulas	The bill was withdrawn on August 29, 2019
18	6509 of May 25, 2017 Draft Resolution on the Concept of Modernization of the Pension System of Ukraine	This Project proposes to approve the Concept of modernization of the pension system of Ukraine, which will identify key components and directions of modernization of the pension system, including elimination of deteriorating retirement conditions admitted in 2014–2016, introduction of new approaches to determining pension benefits, introduction of professional (corporate) components of the accumulative pension system, equalization of the basis for accrual of pensions granted in different years ("modernization" of pensions) by conducting regular valorization (i.e. "modernization", monetary revaluation of pension rights) of pensions based on the average wage determined on the basis of statistical reporting. It should be noted that the initiators of the corresponding Project were the People's Deputies of Ukraine – Korolevska N.Yu. and Solod Yu.V. It is expected that the adoption of the Draft Resolution will identify specific ways to further changes in pension legislation that would contribute to building a fair and balanced pension system in Ukraine	Withdrawn from consideration on March 20, 2018
19	6469 of May 18, 2017 Draft Law on Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" to protect the right of citizens of Ukraine to a fair pension	The bill proposes to supplement the paragraph of the first part of Article 26 of the Law of Ukraine "On Amendments to the Law of Ukraine "On Compulsory State Pension Insurance" with the provision that women are entitled to an old-age pension with at least 30 years of service regardless of age". In addition, Article 42 of the Law of Ukraine is proposed to be supplemented by a provision that will provide for the recalculation of previously assigned pensions annually from March 1 due to an increase in the average wage (income) in Ukraine, from which insurance premiums are paid, at a rate corresponding to 100 percent growth average salary (income) in Ukraine, from which insurance premiums were paid, compared to the previous year. The procedure for such a pension increase is determined by the Cabinet of Ministers of Ukraine. It is expected that the adoption of this bill will help fulfill the Article 46 of the Constitution of Ukraine obligation of the Ukrainian state to guarantee citizens the right to social protection, including the right to provide them in case of complete, partial or temporary disability, loss of breadwinner, unemployment due to the circumstances beyond person's control, as well as in old age and in other cases provided by law	The bill was withdrawn on August 29, 2019

	Draft law number	Features of the draft law	Status of the draft law
20	6432 of May 11, 2017 Draft Law on Amendments to Article 27 of the Law of Ukraine "On Compulsory State Pension Insurance" to limit the amount of pensions to five minimum old-age pensions for some persons who performed state functions	People's Deputy V. Rabinovych proposed to introduce relevant changes to Article 27 of the Law of Ukraine "On Compulsory State Pension Insurance". It should be noted that at the moment the Law provides for a general limitation of the maximum pension to 10 subsistence minimums established for persons who have lost their ability to work. As of December 31, 2017, the maximum amount of pension may not exceed 10,740 UAH. Parliament is proposed to limit on a permanent basis the maximum pension of the former rulers to 5 minimum old-age pensions	The bill was withdrawn on August 29, 2019
21	6063-d of April 14, 2017 Draft Law on Amendments to Certain Laws of Ukraine on Ensuring the Appropriate Level of Social Protection of Families with Children and Establishing Fair Social Guarantees for Children	This bill provides for amendments to a number of regulations, including the Family Code of Ukraine, the Labor Code of Ukraine, the Laws of Ukraine "On State Assistance to Families with Children", "On State Social Assistance to Low-Income Families", "On Holidays", "On Preschool Education", "On the Protection of Childhood". Among the changes proposed by the bill are the following: – Introduce childbirth allowance, which will be paid in two installments instead of one-time childbirth allowance. The first part of childbirth allowance should be calculated based on the subsistence level for children under six years of age, set on the child's birthday, and provided in the amount of 15 times the subsistence level – for the first child; in the amount of 20 times the subsistence level – for the second child; in the amount of 25 times the subsistence level – for the third and each subsequent child. The second part of the childbirth allowance is calculated based on the subsistence level for children under six years of age, established for the calendar month for which the payment is actually made, and is paid monthly with the birth of the child for 36 months following the child's birth; – establish a minimum (guaranteed) amount of temporary state assistance to children whose parents evade the obligation to maintain a child at least 30% of the subsistence level for children of the appropriate age, provided that the average monthly total family income per person the previous six months did not exceed two subsistence minimums for a child of the appropriate age or if the family supports a child with a disability; – increase to 30 months the deadline for applying for assistance in connection with the birth of a child in cases of its birth in the temporarily occupied or uncontrolled territory, serious illness of the child or his parents; – to fix the amount of state social assistance for each child under the age of 13 at the level of 25% of the subsistence level for a child of the appropriate age. It is proposed to fix the benefit for each child aged 13 to 18 at the level of 40% of the subsistence level for a child of the appropriate age. It is expected that the adoption of this bill will help increase the level of state social support for families with children and improve the demographic situation in Ukraine	The bill was withdrawn on August 29, 2019
22	6326 of April 10, 2017 Draft Law on Amendments to the Tax Code of Ukraine to establish the principle of	The relevant bill is aimed at establishing the principle of constitutionality of taxes and fees, bringing tax legislation in line with this principle by abolishing pension taxation and reimbursing pensioners for the	Withdrawn from consideration on September 17, 2018

	Draft law number	Features of the draft law	Status of the draft law
	constitutionality of taxes and fees, bring tax legislation in line with this principle by abolishing the taxation of pensions and reimbursement to pensioners of the amount of tax already paid	amount of pension tax already paid (including the amount of their indexation accrued in accordance with law) or monthly lifetime allowance. Legislators have proposed the following changes: – establish a ban on the inclusion in the total monthly (annual) taxable income of the taxpayer of the amount of pensions (including the amount of their indexation, accrued in accordance with the law) or monthly lifetime allowance; – to exclude from the Tax Code of Ukraine the norm by which the taxation of the amount of pensions or monthly cash withholding was introduced; – to establish the possibility of reimbursing pensioners for the amount of already paid personal income tax from the reserve fund of the state budget of Ukraine within one year from the date of entry into force of the relevant bill	
23	6274 of March 31, 2017 Draft Resolution on some issues of modernization (valorization) of pensions in Ukraine	The relevant Resolution was initiated by the Verkhovna Rada Committee on Social Policy, Employment and Pensions. It is believed that the adoption of the proposed draft Resolution will allow in 2017 to begin the process of revision of pension benefits granted in different years, taking into account the proportional growth of average wages in Ukraine since the appointment of individual pensions, and at the legislative level to develop a mechanism for modernization of pensions for future on a regular basis. The explanatory note states that the implementation of the measures identified in the draft resolution will increase pension benefits for citizens who have long been retired, but the calculation of their pension benefits was carried out using the average salary in Ukraine, which is 3 times lower than today it is used for pensions	Withdrawn from consideration on September 18, 2018
24	5671 of January 19, 2017 Draft Law on Amendments to Certain Legislative Acts of Ukraine on Restoration of the Rights of Working Pensioners to Receive a Pension	It is proposed to abolish the rules on limiting the payment and amount of pensions for working pensioners in a number of legal acts, including the Law of Ukraine "On Pension Provision", "On Compulsory State Pension Insurance", "On the Status and Social Protection of Chernobyl Victims", "On Pensions of Persons Discharged from Military Service and some other persons", "On Civil Service", etc. This bill is aimed at restoring the proper level of social protection of working pensioners by eliminating the rules on limiting the payment and amount of their pensions	Withdrawn from consideration on March 20, 2018
25	5564 of December 21, 2016 Draft Law on Amendments to Article 42 of the Labor Code of Ukraine on the protection of labor rights of workers of pre-retirement age	In accordance with the provisions of this law, employees who have less than three years before retirement age, at which a person is entitled to receive pension benefits, received a preemptive right to remain in employment upon dismissal of employees due to changes in the organization of production and labor at equal conditions of labor productivity and qualification. In general, the adoption of this law is aimed at providing additional protection of labor rights of citizens of pre-retirement age	The law was passed. Returned with the signature of the President on April 28, 2017
New legislative projects			
26	2617 of December 18, 2019 Draft Law on the introduction of retirement benefits	This Law does not apply to pensions for years of service that are or have been awarded under the Law of Ukraine "On Pension Provision." Categories of persons covered by the Law: a) workers of locomotive crews; b) truck drivers; mechanics (dockers-mechanics); the fleet of the	Included in the agenda of May 20, 2020

	Draft law number	Features of the draft law	Status of the draft law
		sea, river fleet and fishing fleet; workers of certain types of vessels, etc. Pension programs are implemented in the system of private pension provision by non-state pension funds	
27	2683 of December 27, 2019 Draft Law on Compulsory Accumulative Pension Provision	The Draft Law provides for a number of amendments to the main legislative acts of Ukraine on regulatory activities, securities, etc. It is proposed that the subjects of the system of accumulative pension provision (instead of the Accumulative Fund) will be: Pension Treasury; authorized subjects of the system of obligatory accumulative pension provision. Changes are also proposed for advertising in the system of compulsory accumulative pension provision. The project introduces the concept of "accumulative contribution" and the range of its payers, offering a rate of 1% to 5% depending on the category of payers. On November 23, 2021, the project was finalized and an article was added to the project with a list of payers of the single contribution and the accumulative contribution, the definition of "accumulative contribution" was added. Changed the rate to 1 percent in 2023, 1.5 percent in 2024, 2 percent in 2025 and subsequent years and the corresponding government funding, which may not exceed 3%	The opinion of the Committee on consideration of November 25, 2021 is given

Sourse: develop by authors

Thus, pension savings will be domestic investments that will help the economy grow, and each member of the pension accumulative system will be an investor in his country and will receive income from their investments. Accumulated pension funds will distribute all earned investment income among future retirees, and the directions and amounts of expenditures that can be made from pension assets will be strictly limited by law, so that pension savings are not a source of current expenses.

The Ministry of Social Policy proposes certain changes for people who worked in difficult and harmful conditions and their early retirement, by gradually replacing the non-functioning mechanism of financing these pensions with accumulative ones. In their opinion, this will provide the following benefits: fair compensation to people for working in hazardous conditions, without any additional requirements; additional investments for the economy; improving working conditions by modernizing production; exemption of the state budget from the financing of employers' obligations for preferential pensions, which will take place gradually until 2046; preventing an increase in the burden on employers, as the funds they currently reimburse PFU for pensions granted on preferential terms will continue to be paid by employees through the introduction of a separate SST rate for them. But such approaches can be accepted by society only if there is a level of wages that will ensure a decent life.

The Ministry of Finance presented a project of the second level of the pension system [17], which provides for the deduction of contributions in the amount of 1% of salary to a personal savings account. The amount of contributions to the accumulative pension fund will gradually increase: in 2024 it will be 1.5%, and from 2025 – 2%. The amount of SST payments to social funds will be reduced to 20.5% and 20%, respectively. There will also be an opportunity to voluntarily transfer money to your

accumulative pension account. Such actions will also encourage: the state will double every voluntary contribution.

An expanded analysis of the bills of Laws on pension reform of existing legislation and proposals for new Laws registered at the sessions of the Verkhovna Rada in the period from 2016 to 2021 is presented in the table. It is shown that changes are made to various existing laws, mainly affecting certain categories of citizens. Clarifications of existing terms are offered and explanations for new terms are provided, reflecting the relevant proposed changes to the legislation. However, in the last months of 2021, the largest number of discussions concerns the bill #2683 of December 27, 2019 of the Draft Law on Compulsory Accumulative Pension Provision, as it was finalized during November 2021.

Conclusions. Based on the results of an expanded analysis of 27 draft laws on the reform of current pension legislation and proposals for new laws on these issues in the period from 2016 to 2021, the following conclusions can be drawn.

Firstly, there is currently virtually no single concept for amending legislation, so most bills are either withdrawn or submitted for further revision. Currently, various aspects of Ukraine's pension system are regulated by a large number of legislative acts, so there are signs of dispersion in these projects. Most regulations are designed to improve the well-being of certain categories of citizens, in particular many of them are dedicated to servicemen, single mothers affected by the Chernobyl accident, war veterans and more.

Secondly, in addition, there are currently significant discussions on the financing of the accumulative contribution, various ministries offer significantly different funding schemes, while motivating the population is offered to be done by a bonus state contribution in addition to the contribution of the employee, which in turn does not solve the problem of significant workload on public finances.

Thirdly, the well-known world experience of pension system reforms shows that the real effect on payments from accumulated sources will have to wait at least 15–20 years, or even all 25. That is, it is rather a long-term preventive measure, and for current retirees it is if will affect, not for the better.

Fourthly, institutional rules of trust in state regulators should be implemented, along with the principle of voluntariness with mandatory preventive controls. It is necessary to maintain a balance between the amount of income to ensure a decent life and the corresponding contributions to special accumulative funds. It is about maintaining a decent standard of living and reducing income inequality. The likelihood of pessimistic expectations of people due to the unpredictability of reforms that could lead to social protests and opportunistic behavior of the business community should be carefully analyzed.

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THE DETERMINANTS OF EARNING QUALITY OF LISTED FIRMS IN VIETNAM

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Abstract. *This paper examines the determinants of earnings quality of Vietnamese listed firms. The aim of the article is to study the quality of profits of Vietnamese companies listed on the stock exchange. Our results support to the literature and provide important implication for shareholder, investor… Shareholder can adjust firm characteristic to enhance earning quality. Investor can evaluate the quality of earning before investing by looking at firm characteristics. Future studies may use more other measures for the earing quality to see the similarities and differences in the research results. By using data of 528 non-financial listed firms from 2011 to 2020 and applying the Fixed-effect and System GMM method, we find that financial performance, firm age, and audit committee independence have positive effects on earnings quality. In contrast, firm leverage is negatively related to earnings quality. These results provide some important implications for firms to enhance earnings quality.*

Key words*: earning quality, financial leverage, external audit, firm size, firm age.*

JEL Classification: C51, L25, M41

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Introduction. Generally, profit disclosed on financial statements is always the most concerned indicator. However, this indicator may be distorted and not reflect the true business results of the company. To know the reliability of returns, users need to evaluate the quality of this indicator. The quality of a company's profitability can be assessed through the analysis of many factors such as its business operations, accounting systems, quantity and quality of information disclosed, efficiency and reputation. Management reputation as well as opportunities and incentives to interfere with profitability.

Literature review. The literature agree that corporate governance play an important role in oversight management activities (Nguyen, 2021a, 2021b; Pham et al., 2021). When there is management intervention in the financial reporting process, profits will be of low quality. The previous studies find a lot of factors affect financial reporting process and earning quality, such as Al-Rassas and Kamardin (2015); Baxter and Cotter (2009); Kouaib and Jarboui (2014). However, most of studies focus on internal or external governance. In this study, we investigate both internal and external governance affect earning quality.

Because cash flow is a measure of the quality of earing, this study applies the accrual quality model proposed by Dechow and Dichev (2002) to measure the quality of the firm's earnings. This model links short-term accruals with cash flows from operating activities of the previous period, the current period, and the next period. Because the analysis period is not long, the study uses the accrual quality measure at the firm level - year as proposed by Dechow and Dichev (2002) to measure the earing quality.

In addition, find that performance, growth, size, maturity, financial leverage, board characteristics, audit committee structure, external audit …have an impact on

the quality of firm's earning quality, such as Al-Rassas and Kamardin (2015); Katmon and Al Farooque (2017); Lin and Hwang (2010); Srinidhi et al. (2011). Therefore, this study uses the earning quality measure estimated from the Dechow and Dichev (2002) model as the dependent variable and the regression with the above factors as the independent variable.

The next parts of the research paper include the following sections: Section 2 presents the theoretical basis of earning quality and factors affecting earning quality; research methods are described in section 3; section 4 discusses research results; and section 5 presents the conclusion.

Theoretical basis. Earnings quality refers to the relevance of profitability in measuring a company's performance. The quality of return depends on business risk as well as the company's choice and application of accounting regimes (Francis et al., 2004). In which, business risk includes the impact of cyclical and other factors on the level of profitability, stability, origin and variation of profits. By skillful management strategies, the company can reduce business risk. The lower the business risk, the higher the quality of the company's profits. In addition, management's choice of accounting principles also significantly affects the quality of a company's profits. This choice can be optimistic or conservative. Conservatively determined returns are considered to be of higher quality because the likelihood of being inflated in the present and future is lower than those that are optimistically determined (Watts & Zimmerman, 1990). However, being overly cautious can reduce the reliability and relevance of returns over the long term. Besides, managers can also adjust profits by applying accounting principles when determining revenue and expenses. For example, expenses such as advertising, marketing, repairs, maintenance, research, and development may be adjusted to change the level of reported profit.

According to Schipper and Vincent (2003), profitability is of high quality when it accurately reflects the company's long-term performance; conversely, returns are of lower quality when manipulated. Profits are manipulated as a result of management's deliberate intervention in the financial reporting process through selections in the recognition of accounting entries for the purpose of obtaining benefits for the public, themselves or for the company (Schipper, 1989). According to Healy and Wahlen (1999), managers can interfere with profit targets to make some stakeholders misunderstand the basic economic performance of the company. Therefore, a company with high earnings quality is expected to have a higher price-to-earnings (P/E) ratio than a company with low earnings quality.

Also according to Healy and Wahlen (1999), there are three groups of motivations leading to the behavior of interfering with profit targets, including: Capital market motives: Firms or managers tend to incur higher costs when reporting reduced profits or losses; Motives in entering into contracts: Due to the existence of provisions imposed in the contract if the company fails to achieve the set accounting figures; and antitrust or government regulatory incentives, such as that of banks to avoid exceeding liquidity ratios that have been imposed by the regulator, or of companies are to be higher level of protection from imports.

Aims. The aim of the article is to study the quality of profits of Vietnamese companies listed on the stock exchange.

Methods. In this study, data of 528 non-financial firms listed in Ho Chi Minh City stock exchange and Ha Noi stock exchange are collected from their financial reports and annual report for 2011-2020 period. After excluding all missing data, our database comprises 2615 observations.

Variable measures, empirical models and estimation method.

Dependent variable: earning quality. Earning quality is a multidimensional concept, so the choice of a yield quality metric will depend on the research question, data availability, and estimation models. Some research questions require a measure of return quality that is related to investors' perceptions of returns, for example, the study of Francis and Schipper (1999) have tested the relevance of the value of returns, arguing that returns are useful to investors because they judge and make decisions based on prices and rates of return of stocks. In contrast, other research questions focus on direct measures of earnings quality constructed using only accounting data (Eliwa et al., 2016; Skinner & Soltes, 2011). In addition, there is another important aspect of earnings quality that has received much attention, which is the distinction between the total, modifiable and non-modifiable components of earnings quality.

In Vietnam, in recent years, the earning quality is an issue that has attracted the attention of academia. Many models have been used to study the earning quality of companies listed on the stock market, in particular, the adjusted Jones model has been used quite commonly. Fernández and Gonzalez (2005) argue that the uncertainty in accruals is best captured by Dechow and Dichev (2002) accrual quality measure. Therefore, this study will use Dechow and Dichev (2002) model to measure earning quality. The accrual quality measure is based on the notion that returns that are more closely related to cash flow will be of better quality. This measure represents the conversion of the accrual in working capital into cash flows from operating activities of the previous period, the current period and the next period. Specifically, the cumulative quality is estimated through the following model:

$$\Delta WC_t = \gamma_0 + \gamma_1 CFOt{-}1 + \gamma_2 CFOt + \gamma_3 CFOt{+}1 + \eta_t \quad (1)$$

where ΔWC is the change in the company's working capital from year t–1 to year t; CFO is cash flow of operating activities, γ_0, γ_1, γ_2 and γ_3 are estimated coefficient; and η_t is error term.

The residuals from the regression reflect accruals that have no relation to cash flow and the standard deviation of the residuals is a measure of company-specific accrual quality with the higher the standard deviation, the lower the accrual quality. Another measure of accrual quality at the firm-year level is the absolute value of the residuals for that year. The larger the absolute value of the residual, the lower the accrual quality. This measure is also used in the study of Zgarni et al. (2016), Katmon and Al Farooque (2017). Since the sample period is not long, the first measure from the regression model (1) is the standard deviation of the residuals will not be appropriate, instead, the study uses the absolute value of the residuals as a reference for measure of profit quality. At the same time, model (1) is estimated using cross-

sectional data to increase the number of observations without using the time series approach.

Specifically, the measure of profit quality, denoted as EARNQ, of company i is estimated for each year in each industry group through the following model:

$$EARNQ = \frac{\Delta WC_{it}}{TA} - \gamma_0 - \gamma_1 \frac{\Delta CFO_{it-1}}{TA} - \gamma_2 \frac{\Delta CFO_{it}}{TA} - \gamma_1 \frac{\Delta CFO_{it+1}}{TA} \quad (2)$$

where TA is average of total asset, all other variables are similar to equation 1.

Independent variable. Based on previous studies, this study investigate some factors can affect earning quality of Vietnamese listed firms.

First, firm performance, according Lang and Lundholm (1993), firm performance is a factor that significantly affects information disclosure and financial reporting behavior. Doyle et al. (2007) find that companies with poor performance have lower earning quality. However, DeAngelo et al. (1994) argue that poor performance can limit opportunities to intervene in profitability ratios. Meanwhile, Francis et al. (1996) found that there is no association between poor performance and the earning quality, and the recent study by Liu et al. (2017) also did not find the same evidence of this relationship. However, we expected that high performance positively relate to earing quality of Vietnamese listed firms. Based on some previous studies (Nguyen, 2020; Sun & Liu, 2014) we use ROA ratio to measure firm performance.

Second, firm leverage, previous studies have found a link between debt level and profitability of the company, typically the studies: Dechow et al. (2011), DeFond and Jiambalvo (1994), and Liu et al. (2017). Specifically, a more leveraged company means it is getting closer to its debt limit, so managers in more leveraged firms have an incentive to inflate efficiency. Financing activities can both satisfy financial covenants in existing debt contracts and may raise new debt on more favorable terms (Dechow et al., 2011). DeFond and Jiambalvo (1994) also suggest that in debt-intensive firms, managers may interfere in the financial reporting process to inflate profits in order to avoid breach of debt contracts. This action can reduce the quality of the company's profits. Liu et al. (2017) also found a negative relationship between financial leverage and earnings quality. However, Barton and Waymire (2004) provide evidence that the quality of corporate profits increases with debt levels while Parte-Esteban and García (2014) and Vasilescu and Millo (2016) find a relationship This relationship is not statistically significant. In Vietnam, the credit institution system is still playing an important role in the financial market. Debt is a component that accounts for a high proportion of the capital structure of most companies, so it has a significant influence on the company's policies. Thus, this factor also affects the earning quality.

Third, firm's scope of operation, due to the need to comply with the regulations of the authorities as well as the supervision of the market, large-scale companies often have a higher earing quality. The positive relationship between firm size and earning quality was also found in previous studies. Specifically, Ball and Foster (1982) show that firm size is positively related to the quality of profits because large companies often incur fixed costs to maintain internal control procedures in the long run financial

reporting program. In contrast, small firms often have weak internal control systems and are more likely to have to revise previously reported profit targets (Doyle et al., 2007). However, Watts and Zimmerman (1990) show that large firms may have a lower quality of profits than small firms. Liu et al (2017) again found a positive relationship between company size and profit quality. We, therefore, investigate the effect of firm size (FSIZE) on earning management. In addition, firm age is also important factor of firm scope of operation that may affect firm management (Nguyen, 2022) is also likely to be related to earning quality. Following Liu et al (2017), we use the age of the company (FAGE) to represent the maturity level, which is the number of years since the company was officially listed on the stock market.

Fourth, corporate governance structure: We investigate some corporate governance structure that may affect firm's earning management. The literature finds that corporate governance structure plays an important role in reduce agency problem and enhance management quality (Dang & Nguyen, 2021b; Nguyen & Dang, 2020; Nguyen, 2020). Firstly, we investigate the effect of foreign ownership (FOR) on earning quality. Nguyen (2020) find that foreign ownership can reduce agency problem and thus it may enhance earning quality. Secondly, we use big 4 audit companies (BIG), which is 1 if firm use service of big 4 audit companies including KPMG, PwC, Deloitte, Ernst & Young, to investigate the effect of external audit quality on earning quality (Nguyen & Dang, 2020). Finally, we apply audit committee size (ASIZE), and audit committee independent (AINDE) which is measured as number of audit committee members and the proportion of independent member of audit committee on total audit committee members, respectively, to investigate the effect of audit committee structure on earning quality. Many studies, such as Nguyen (2021b), Nguyen and Dang (2020) find that audit committee structure can increase internal control quality and thus affect firm's earning quality.

Empirical models and estimation method. To investigate the determinants of firm's earning quality, the absolute value of the residual Dechow and Dichev (2002) model is used as the dependent variable and regression according to the above factors through the following model:

$$EARNQit = \beta0 + \beta1ROAit + \beta2LEVit + \beta3FSIZEit + \beta4FAGEit + \beta5BIGit + \beta6ASIZEit + \beta6AINDEit + \mu it \quad (3)$$

To estimate this model, we apply fixed effect and system GMM method which is widen used in the literature (Dang & Nguyen, 2021a; Ullah et al., 2018; Wintoki et al., 2012).

Results. *Descriptive statistic and correlation matrix.* Table 1 presents descriptive statistics including mean, standard deviation as well as minimum and maximum values of the variables included in the model. Table 1 shows that on average, the firms in the sample have a return on total assets of nearly 5.6%, earning quality value is about 0.071 per year, leverage is about 46.5% and differs from firm to firm, the maximum and minimum value is 0.8% and 87.5%, respectively. In addition, most of other variables differ from firm to firm.

Table 2 presents the correlation coefficients of the variables included in the model. Table 2 shows that the correlation coefficient between earing quality and performance, financial leverage, firm size, firm age, external audit quality, audit committee size and audit committee independence are statistically significant at 10% or more. Furthermore,

Table 1. Descriptive statistic

Variable	Obs	Mean	Std. Dev.	Min	Max
EARNQ	2615	0.071	1.942	0.000	0.675
ROA	2615	0.056	4.952	-0.087	0.124
LEV	2615	0.465	0.551	0.008	0.875
FSIZE	2615	11.631	2.273	7.231	18.475
FAGE	2615	18.240	1.428	0.000	20.000
BIG	2615	0.415	0.179	0.000	1.000
ASIZE	2615	8.251	0.062	5.000	15.000
AINDE	2615	0.457	0.069	0.200	0.900

Table 2 also shows that the pairwise correlation between all explanatory variables in the model is relatively low, in which, the highest is between operating efficiency and financial leverage 0.362. Therefore, the author can come to the conclusion that multicollinearity does not occur in the model. The coefficients of variables may not provide true relationship between the variables because earning quality may be affected by many variables at the same time. We, therefore, investigate the effects of seven independent variables on earning quality by applying empirical model (E.q 3).

Table 2. Corerelation matrix

	EARNQ	ROA	LEV	FSIZE	FAGE	BIG	ASIZE	AINDE
EARNQ	1.000							
ROA	-0.362	1.000						
	0.000							
LEV	-0.161	-0.172	1.000					
	0.000	0.019						
FSIZE	-0.192	-0.124	-0.111	1.000				
	0.003	0.000	0.023					
FAGE	0.047	0.032	0.152	0.112	1.000			
	0.021	0.211	0.057	0.588				
BIG	0.122	0.072	-0.025	-0.319	0.146	1.000		
	0.000	0.611	0.386	0.001	0.000			
ASIZE	0.005	0.053	-0.183	0.015	0.134	0.152	1.000	
	0.031	0.164	0.001	0.074	0.000	0.000		
AINDE	0.142	-0.318	-0.002	-0.107	0.151	0.014	-0.181	1.000
	0.001	0.023	0.001	0.001	0.000	0.001	0.002	0.000

Discussion. In Table 3, column (1) presents the results of model (3) regression using the fixed-effect estimation method. Columns (2) present the results when using the system GMM estimation method. In this study, we use Hausman test to decide

fixed-effect or random-effect which is used for our model. The Hausman test result present a p-value = 0.000 indicate that the fixed effects model is more appropriate than the random effects model.

Table 3. Fixed effect and System GMM estimation results

Independent variable: EARNQ	Fixed-effect		System GMM	
	(1)		(2)	
	Co-eff	t-stats	Co-eff	t-stats
ROA	0.13***	2.26	0.12*	1.88
LEV	-0.01**	-1.95	-0.03**	-2.17
FSIZE	0.23	1.75	0.04	1.24
FAGE	0.11**	2.08	0.22**	1.92
BIG	0.32	1.06	0.28	0.84
ASIZE	-0.02	-1.47	0.51	1.61
AINDE	0.10***	2.22	0.21***	2.25
Const	-1.21	-1.05	3.21***	3.17
Year dummy	Yes		No	
Industry dummy	Yes		No	
Hansen J (p-value)			0.24	
AR(2) (p-value)			0.15	
No of instruments			112	
Obs	2615		2615	

In the column 1, the results show that coefficient on ROA is positive and significant with EARNQ indicating that firm performance positively relate to earning quality. This result is consistent with our expectation as well as the results of Doyle et al. (2007). The coefficient on LEV is negative and statistically significant with EARNQ indicating that firm leverage is negative associated with earning quality. This result supports our expectation and is consistent with DeFond and Jiambalvo (1994), and Liu et al. (2017). Relating to firm's scope of operation, the column 1 in Table 3 report the positive relationship between firm's scope of operation and earning quality. The coefficients on both firm size and firm age are positive associated with EARNQ but only coefficient of FAGE is significant. This finding is consistent with Liu et al. (2017) that found a positive relationship between firm age and earnings quality. However, this is evidence that firm's scope of operation increase earning quality. Furthermore, relating audit committee structure, we find that the coefficient on AINDE is positive and significant with EARNQ but the coefficient of ASIZE is insignificant indicating that the independence of audit committee increase earning quality.

The column 2 in Table 3 presents the System GMM estimation results for equation 3. The results in this column show that most of coefficients of independent variables are consistent with the fixed-effect results. In addition, the diagnostics tests in Table 3 show that—as indicated by the Arellano–Bond test, AR (2), and the Hansen J tests—all the regressions are valid. Finally, the number of instruments used in the model is less than that in the panel, which makes Hansen's J statistic more reliable.

Overall, the "system GMM" estimates in Table 3 support the notion that even after controlling for unobserved heterogeneity, simultaneity, and dynamic endogeneity, firm performance, firm leverage, firm age and audit committee independence are found to be related to earning quality in a way that is consistent with our expectations.

Conclusion. Earnings quality is an indicator of the quality of financial reporting and is also an indicator of a company's future performance as well as a useful tool for determining firm value. As a result, the earning quality has a significant impact on the decisions of stakeholders, such as shareholders, bondholders, banks, policy makers, suppliers, and other stakeholders. A company has a high earning quality if the information on its financial statements accurately describes the performance of its business.

The study has a contribution in proposing to use the Dechow and Dichev (2002) model to measure the earning quality in addition to the models mentioned in previous studies in Vietnam. Specifically, the absolute value of residuals estimated from the Dechow and Dichev (2002) model is used as a measure of the earning quality. By using data collected from 528 non-financial firm listed on the Ho Chi Minh and Ha Noi stock exchange from 2011 to 2020, the study shows the positive impact of firm performance, firm age and audit committee independence on earning quality. On the contrary, the impact of firm leverage is negative on earing quality. Our results support to the literature and provide important implication for shareholder, investor… Shareholder can adjust firm characteristic to enhance earning quality. Investor can evaluate the quality of earning before investing by looking at firm characteristics. Future studies may use more other measures for the earing quality to see the similarities and differences in the research results.

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THE NEED TO USE BLOCKCHAIN TECHNOLOGIES IN THE ACTIVITIES OF DEPOSITORY INSTITUTIONS TO REDUCE THE IMPACT OF THREATS TO THE ECONOMIC SECURITY OF JOINT STOCK COMPANIES AND ITS SHAREHOLDERS IN UKRAINE

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Abstract. *In today's financial relations in the securities market, more and more companies seek to use blockchain technology to reduce risks and threats to their activities. The purpose of the article is to study the peculiarities of the depository system of Ukraine and to establish the possibilities of using blockchain technologies to minimize threats to the economic security of joint stock companies and their shareholders. In the course of the research, methods of analysis and synthesis were used to study the legal provision of depository services in Ukraine. The historical method and the method of comparative analysis were used to analyze the activities of depository institutions. To determine the threats that directly or indirectly affect the economic security of joint stock companies and the welfare of their shareholders, in cooperation with depository institutions, the method of generalization was used. The main results of the study are: studying the impact of depository institutions on the economic security of joint stock companies and their shareholders; systematization of the main violations of the current legislation on the circulation of securities and maintenance of registers of their owners, as well as the establishment of negative consequences of violations of the law by registrars, which may affect the economic security of the company. The implementation of blockchain technologies in the activities of depository institutions will help reduce the impact of threats to the economic security of joint stock companies and their shareholders.*

Keywords: *joint stock company; shareholder; depository institution; technology blockchain.*

JEL Classification: G14, G20, G38, K42

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Introduction. In today's economic environment, blockchain technologies play an important role as tools for preventive measures in the fight against various types of fraud. The peculiarity of the activities of joint-stock companies is that during its activity the joint-stock company has to interact with different types of registrars [2] (Fig. 1).

Thus, when carrying out state registration of a joint-stock company or when making any changes to the Unified State Register of Enterprises, Institutions and Organizations of Ukraine, its founders (representatives) apply to the state registrar, as well as state tax authorities and state social insurance funds, etc.

Registration of shares is carried out in accordance with the requirements of the legislation of the Central Depository or the National Bank of Ukraine, which are directly engaged in maintaining the register of shareholders and the transfer of ownership rights to securities. the fact that depository institutions have complete and reliable information about shareholders, and their shareholdings, the history of their acquisition, and other rather significant facts.

Literature review. The issue of interaction of joint-stock companies with financial intermediaries in the stock market was investigated in Korneev V. (2007),

which systematized financial intermediaries and defined their role in the Ukrainian stock market [3].

Figure 1. Types of registrars of certain activities of the joint-stock company
Compiled personally by the author [2]

In her dissertation, Brus S. (2007) researched the main economic services in the Ukrainian securities market and pointed out the subjects that provide them [4].

In the dissertation Kuznetsova E. (2021) investigated the financial andlegal regulation of the activities of professional securities market participants, including depository institutions [5].

In previous works, written with colleagues Khudolii L., Denysenko M., Mikhno S. (2012), I investigated the main threats that affect the economic security of both joint stock companies and financial intermediaries that provide services in the securities market of Ukraine [6-7].

Aims. The purpose of the article is to study the peculiarities of the depository system of Ukraine and to establish the possibilities of using blockchain technologies to minimize threats to the economic security of joint stock companies and their shareholders.

Research methods. In the course of the study, the methods of analysis and synthesis were used to study the legal support of depository services in Ukraine , a generalization method was used. These methods helped to achieve the goal.

Results. The main issues of interaction of the joint-stock company with depository institutions are regulated by the normative legal acts of Ukraine. Shareholder. The Registration Commission has the right to refuse to register the shareholder (its representative) only in the absence of the shareholder (his representative) documents identifying the identity of the shareholder (his representative), and in the case of the participation of the shareholder representative - also documents confirming the authority of the representative to participate in the general meeting of shareholders of the company. The list of shareholders who registered to participate in the general meeting is signed by the chairman of the

registration commission, who is elected by a simple majority of votes of its members before the registration. A shareholder who has not registered is not eligible to participate in the general meeting.

The powers of the registration commission under the contract can be transferred to the depository institution. In this case, the head of the registration commission is a representative of a depository institution that provides additional services to the joint-stock company, in particular regarding the performance of the functions of the registration commission.

Article 1 of the Law of Ukraine "On the National Depository System" [2] establishes that the register of owners of registered securities is "a list of owners of registered securities drawn up in accordance with the requirements of the legislation by the Central Depository or, in cases established by this Law, the National Bank of Ukraine for a certain date indicating the number of registered securities belonging to these owners on the right of ownership, nominal value and type of such securities and other information determined by the Commission".

Article 3 of the same Law indicates that the following types of depository activities may be carried out in Ukraine:

1) depository activity of the Central Depository;
2) depository activities of the National Bank of Ukraine;
3) depository activity of the depository institution;
4) activities for the storage of assets of collective investment institutions;
5) activities for the storage of assets of pension funds.

At the sametime, the economic activity of a depository institution can be combined with activities for storing assets of collective investment institutions and storing assets of pension funds.

Acquisition and termination of rights to securities and rights to securities are carried out by fixing the relevant fact in the depository accounting system, which is "a set of information, records on issue securities (type, nominal value and quantity, circulation restrictions, etc.) on securities accounts of holders of such accounts, on issuers, holders of securities entitled to securities and rights to securities restrictions on the rights to securities authorized by them persons, stewards, pledge holders, other persons empowered by the relevant rights to securities, which contains data that allows identifying issued securities and specified persons, a register of securities codes (international identification numbers of securities), as well as other information provided by law (hereinafter – the depository accounting system)" [2].

The system of the register of owners consists of:

- register of registered securities owners;
- personal accounts of the issuer and registered persons;
- logs of records in the registry;
- documents that are the basis for forming and amending the registry.

The registry system is conducted separately for each issuer. In the case of several issues of securities issuer, the register of securities owners is compiled and maintained for each of them [2].

The registrar opens two types of accounts to the issuer:

1. issue account for crediting the declared issue to it;

2. account for redemption of registered securities on which the type is displayed. quantity, nominal value of securities purchased by the issuer for the purpose of cancellation or subsequent sale.

Depository accounting of securities – accounting of securities, rights to securities and their restrictions on securities accounts (hereinafter – depository accounting).

Depository accounting in the system of depository accounting of securities is carried out in quantitative terms.

At the same time, the accounting of the rights to securities of a particular owner is carried out exclusively by depository institutions, the National Bank of Ukraine in cases specified by this Law and correspondent depositories or their clients, and the accounting of securities and securities rights is carried out exclusively by the Central Depository or the National Bank of Ukraine.

The Central Depository ensures the formation and functioning of the securities depository accounting system. The Central Depository keeps a depository record of all issued securities, except those that are registered by the National Bank of Ukraine in accordance with the competence specified by this Law.

The exclusive competence of the Central Depository includes:

1) crediting of securities (except for securities within the competence of the National Bank of Ukraine) to the depository accounting system, their accounting and storage, as well as write-off of securities in connection with their repayment and / or cancellation;

2) keeping records of the issuer's obligations on securities of their own issues (except for securities within the competence of the National Bank of Ukraine) in respect of each issue of securities on the basis of depositing a global certificate and /or a temporary global certificate;

3) storage of global certificates and temporary global certificates (except for global certificates and temporary global certificates of securities issued within the competence of the National Bank of Ukraine);

4) numbering (codification) of securities in accordance with international norms, maintaining a register of securities codes (international identification numbers of securities);

5) compilation of registers of owners of registered securities (except for securities within the competence of the National Bank of Ukraine);

6) storage of information about persons determined to provide the issuer with a register of registered securities owners;

7) receipt of income and other payments on the operations of issuers (including those located and rotating outside Ukraine) to the account of the Central Depository opened in the Settlement Center for their further transfer to recipients;

8) opening and maintaining securities accounts of issuers, the National Bank of Ukraine, depository institutions, correspondent depositories, clearing institutions and the Settlement Center;

9) keeping an account in securities of a depository institution that has ceased its depository activity or to which the relevant license for offenses on the securities market

or in another case determined by the Commission has been canceled, as well as responsible storage of documents, databases, copies of databases, archives of depository institution databases, information about its depositors that have not closed their securities accounts in accordance with the established procedure, and securities that were accounted for in their accounts and submission of information on the status of such accounts in accordance with the law;

10) establishment of unified rules (standards) for the display and transfer of information on accounting and circulation of securities, servicing corporate actions of issuers and other information that is entered into the depository accounting system;

11) implementation of international standards on depository activities;

12) control over customers in terms of their depositary activities in accordance with the procedure and limits established by this Law.

The exclusive competence of the National Bank of Ukraine includes the implementation of depository accounting of government securities and bonds of local loans. The peculiarities of the National Bank of Ukraine's conduct of depository and clearing activities with government securities and bonds of local loans are established by the Commission in agreement with the National Bank of Ukraine.

To ensure depository accounting of domestic government bonds of Ukraine, target bonds of domestic government loans of Ukraine, treasury obligations of Ukraine and domestic bonds, the National Bank of Ukraine exercises the following powers:

1) crediting of securities to the depository accounting system, their accounting and storage, as well as write-off of securities in connection with their repayment and/or cancellation;

2) keeping records of the issuer's obligations under the securities of their own issues in respect of each issue of securities on the basis of depositing a global certificate and/or a temporary global certificate;

3) storage of global certificates and temporary global certificates;

4) compilation of registers of registered securities owners;

5) storage of information about persons determined to provide the issuer with a register of registered securities owners;

6) receipt of income and other payments on the operations of issuers (including those located and rotating outside Ukraine) to the account of the National Bank of Ukraine for their further transfer to recipients;

7) opening and maintaining accounts in securities of issuers, depository institutions, correspondent depositories, clearing institutions and settlement center.

A depository institution is a legal entity that is formed and operates in the form of a joint stock company or limited liability company and which in the prescribed manner received a license to conduct depository activities of a depository institution.

Depository activity of a depository institution is an exclusive type of activity, except for its combination with other activities in the case stipulated by Article 3 of this Law.

Depository institution on the basis of an agreement on the provision of a register of registered securities owners has the right to provide services to the issuer of

securities in accordance with this Law and the Law of Ukraine "On Joint Stock Companies".

The depository institution has the right to provide the issuer with additional services during the general meeting (regular or extraordinary) of the joint stock company, in particular, to perform the functions of the registration commission or counting commission, to prepare and provide the issuer with reference and analytical materials that characterize the securities market, advising on accounting and / or circulation of securities, as well as services for managing its account in the Central Depository or other services, are not prohibited by law regarding securities issued by the issuer.

The depository institution has the right to provide additional services to the depositor, in particular for the exercise of securities rights.

To assess the capacity of depository services in the securities market, its analysis for 2016-2020 was carried out.

As of 31.12.2020, the Central Securities Depository served 10,209 securities issued on securities accounts opened by depository institutions (175 aggregated, 117 segregated and 175 segregated on which securities belonging to depository institutions are accounted for on the right of ownership). At the end of 2020, 10,389 accounts were opened for issuers (Table 1).

Table 1. Dynamics accounts opened by the Central Securities Depository upon end 2020 Year

	31.12.2016	31.12.2017	31.12.2018	31.12.2019	31.12.2020
Total number of securities issued by the Central Securities Depository	11376	11670	11452	11632	10209
Number of accounts opened to clients of the Central Depository – issuers of securities	10635	10504	10513	10295	10389
Number of accounts opened to clients of the Central Depository – depository institutions	437	434	433	418	467

Source: compiled by the author according to the annual reports of the NSSMC [9]

At the end of 2020, the number of accounts of securities owners, according to depository institutions, amounted to 4.06 million. pcs. , of which 197,171 depositors opened a securities account under an agreement with a depositor and 3,865,183 under contracts with issuers during dematerialization (Fig. 2).

The total face value of securities owned by securities owners, according to depository institutions as of 31.12.2020, amounted to 2438.35 billion. UAH 100,0.

At the end of 2020, the nominal value of securities accounted for by depository institutions on the accounts of depositors - legal entities - residents amounted to 80.37%, and individuals - residents only 2.40% of the total nominal value of securities.

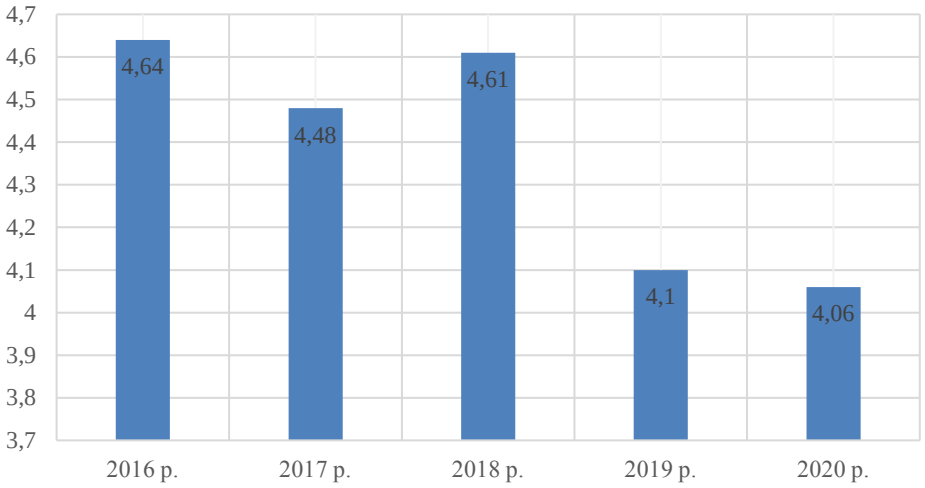

Figure 2. Number of securities owners' accounts, mln.
Source: compiled by the author according to the annual reports of the NSSMC [9]

As of 31.12.2020, according to depository institutions, 53.6% of the total nominal value of securities owned by securities owners is concentrated in shares.

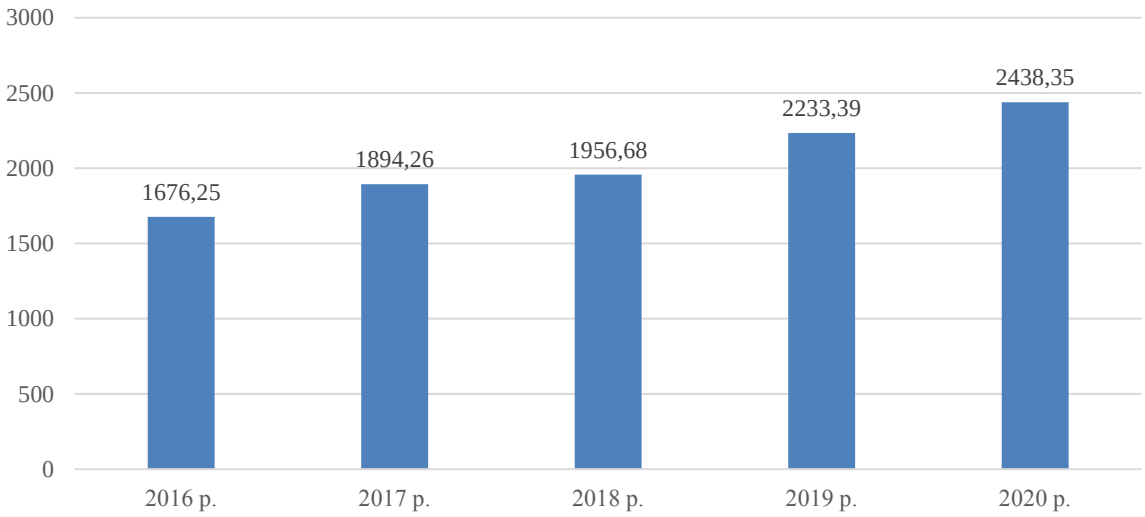

Figure 3. Nominal value of securities owned by holders of securities, UAH billion
Source: compiled by the author according to the annual reports of the NSSMC [9]

As of 31.12.2020, 178 legal entities had licenses on the stock market to conduct professional activities in the stock market. In 2020, 11 licenses were issued and 11 licenses for professional activities in the stock market – depository activities were canceled.

Table 2. The number of licenses for certain types of professional activities in the stock market - depository activities

	31.12.2016	31.12.2017	31.12.2018	31.12.2019	31.12.2020
Depository activity of depository institution	232	210	198	186	178
Joint investment assets storage activities	47	44	41	39	37
Activities for the storage of assets of pension funds	14	14	14	15	15

Source: compiled by the author according to the annual reports of the NSSMC [9]

During 2020, prudential supervision analyzed compliance with regulatory values of prudential norms by the Central Securities Depository and professional stock market participants, namely: securities traders, depository institutions, clearing institutions, asset management companies, stock exchanges

In carrying out prudential supervision of depository institutions conducting exclusively depository activities on the stock market, they analyzed their compliance with such prudential standards as the size of their own funds, the adequacy ratio of their own funds and the coefficient of covering operational risk.

During 2020, most depository institutions adhered to the established requirements. At the same time, the deviation of prudential norms from the established regulatory values of several companies took place only in July, August and December 2020.

The value of the adequacy ratio of own funds and the operational risk coverage ratio of the Central Securities Depository – PJSC "National Depository of Ukraine" (hereinafter – PJSC "NDU"), during the reporting year met the established requirements and significantly exceeded the relevant regulatory values.

It is positive to reduce the number of violations of the law by registrars of registered securities, but the violations themselves sufficiently affect the level of economic security of the joint-stock company and the well-being of its shareholders.

Discussion. The main threats that directly or indirectly affectthe economic security of joint stock companies and thewelfare of their shareholders, when interacting with depository institutions, are [6-7]:

- do not meet the established requirements of the premises for storing documents of the registry system;
- unreasonable refusals to make changes to the registry system;
- inconsistency of the information provided in the reports given by the registry system;
- untimely opening of personal accounts of holders of registered securities;
- non-issuance of temporary certificates of ownership of registered securities to owners of registered securities;
- untimely provision or non-provision of information to the SSMSC or the Antimonopoly Committee of Ukraine about persons who own more than 10% of the shares of the general statutory fund of the company;
- introduction into the register of changes in the transfer of property rights without the presence of sales contracts, power of attorney agreements or other civil law

agreements;

- access to the registry system of persons who did not have the authority or documents of which were not properly executed, etc.

The main negative consequences of the joint stock company's interaction with depositoryinstitutions that violate the law or potentially affect its economic security are [6-7]:

- the impossibility of obtaining a register of shareholders, which raises suspicion of deliberate changes in it on the part of the registrar;
- impossibility to hold a general meeting of shareholders without the appropriate register and change of the registrar;
- raider seizure of a joint-stock company by amending the register and obtaining a controlling stake and other actions by third parties.

Given the peculiarities of the use of blockchain technologies in financial transactions, we believe that its use in the depository system of Ukraine will help prevent:

- changes in information in the registers of owners of securities without the presence of contracts of sale, power of attorney or other civil law agreements;
- to the register of owners of securities of persons who have no grounds for it;
- fraud with the general meeting of shareholders due to changes in the register of holders of securities;
- raider seizure of a joint-stock company by making changes to the relevant registers.

We believe that the use of blockchain technologies in depository activities will help minimize threats to both joint stock companies and individual shareholders.

Conclusions. Thus, the author for the first time investigated the impact of depository institutions on the economic security of joint stock companies and their shareholders; the main violations of the current legislation on the circulation of securities and the maintenance of registers of their owners are systematized, as well as the negative consequences of violations of the law by registrars, which may affect the economic security of the company. The implementation of blockchain technologies in the activities of depository institutions will help reduce the impact of threats to the economic security of joint stock companies and their shareholders.

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CHAPTER 3
MODERN MANAGEMENT TECHNOLOGIES

MANAGEMENT ANALYSIS OF SUPPLY CHAIN PERFORMANCE AND EFFICIENCY

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Abstract. *The article presents the results of a study on the peculiarities of performance and efficiency analysis of supply chains. It demonstrates that the economic activities of enterprises in an increasingly dynamic external environment require prompt and comprehensive solutions, significant resource potential to respond to external and internal destabilizing factors. In turn, this promotes the integration of enterprises into various forms of organizational and economic interaction to address the tasks of ensuring their competitiveness. It has been found that channels, chains, and supply networks are the most common among such forms. It has been proved that today's scientific literature lacks methodological approaches to the management analysis of supply chains as modern integrative economic formations. The focus of modern research is identifying opportunities of management analysis to assess an individual enterprise in different areas of its activities. In this case, the basic objects of management analysis are the study of operational activities, enterprise expenses, their composition and structure, the use of production resources, and the assessment of performance results. It has been found that to date there have been only isolated publications on the use of management analysis for management assignments within channels and supply chains. To gain a deeper understanding of the issues, the paper analyses alternative views regarding the essence of the supply chain as an economic entity and elucidates the modern concept of supply chain management. The main dimensions of the supply chain have been identified: the substantive dimension, which is infrastructure and material and technical resources, and the subjective dimension, which covers businesses that interact with each other and represent its individual links. And defined the processes of planning, organization and control of the supply chain, which are subject to the modern concept of management "Supply Chain Management" (SCM). In the process of research of features of realization of toolkit of the administrative analysis for the decision of tasks of diagnostics of productivity and efficiency of supply chains the following results are received: the system of base postulates of the administrative analysis of these economic objects is formulated; levels of the administrative analysis of the supply chain are established; the basic criteria of measurement of productivity and efficiency of a chain are defined; assessment indicators of degree of achievement of its purposes are identified; the conceptual algorithm of realization is offered.*

Keywords: *supply chain, management analysis, business unit, supply chain, performance, efficiency, social responsibility.*

JEL Classification: G14, L23, M21

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Introduction. Amid the ever-growing dynamics of external factors, economic activity of enterprises calls for immediate and complex decisions and significant resource potential to respond to external and internal destabilizing factors. This in turn facilitates their integration into various forms of organizational and economic interaction. Among such forms, the most common are supply channels, chains, and networks. Strategic and tactical supply chain management against the background of

growing competition is impossible without the use of reliable tools for diagnosis and analysis of their condition. In today's economic environment, supply chain becomes a new and important object of management analysis. The main issue is the lack of approaches to management analysis of supply chains as modern economic structures. Management analysis of supply chains requires attention of researchers and practitioners from the theoretical and methodological, scientific, and practical points of view.

Literature review. Theoretical aspects of the issue related to management analysis were tackled in papers of domestic researchers, such as R. Brukhanskyi [1], O. Haidayenko [2], T. Mulyk [3], O. Mnykh [4], O. Tomchuk [5], I. Farion [6] and others. In their papers, the authors illustrated various aspects of modern understanding of the nature, significance, and role of management analysis in tackling challenges of day-to-day and strategic management of enterprises and organizations of various forms of ownership, organizational and legal forms of management. Some scholars focus on researching methodological approaches to management analysis in terms of integration processes. However, the research focus is identifying the potential of management analysis to assess a particular enterprise in various areas of its activities. The main objects of management analysis are the study of a company's operating activities, expenditures, their composition and structure, use of production resources, and evaluation of performance. Assessing scholastic developments regarding management analysis, only single publications have so far been devoted to the use of management analysis to solve management objectives from the supply chain perspective. For a deeper understanding of the issue, the supply chain as an economic object has been studied and the modern concept of its management has been clarified. The analysis of professional publications on supply chain management reveals the following [7-16].

Considerable attention is paid to the study of the supply chain by well-known foreign researchers such as D. Bowersox [7], M. Christopher [8], D. Waters [10], J. Stock [11] and D. Lambert [11], R. Handfield [14]. Among national scholars it is worth noting the research papers of Ye.Krykavskyi [9], L. Syhyda [13], O. Sumets [12], N. Chukhrai [15-16] and others. According to M. Christopher: "… nowadays an organization can no longer act as an isolated and independent entity in competition with other similarly ‘stand-alone’ organizations..." [8, p. 25].

The scholar points out a rapid movement of modern markets into the "era of supply chain competition". James R. Stock and Douglas M.Lambert define supply chain management as the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders [11, p. 52]. According to D. Waters "… the supply chain is composed of the series of activities and organizations that materials move to their journeys from initial suppliers to final customers…" [10, p. 69]. "… The motivation for forming logistics supplies is mainly driven by the expectation of "materialization" of the potential of external factors of general entrepreneurial nature, which includes the basic megatrends of modernity, including globalization, individualization, informatization and environmentalization…" according to Ye. Krykavskyi [9, p. 154]. Professor O.Sumets explores the supply chain organizational

and infrastructural elements [12, p.97]. He believes that the logistics infrastructure is the mechanism that provides the synthesis, interconnection, and interaction of economic processes through the efficient organization and timely use of logistics at different levels of goods movement [12, p.97]. In her works, Professor N. Chukhrai emphasizes that: "… the formation of the supply chain involves comprehensive support of this process, with the marketing, logistics, information, and communication dimensions to underpin it, while the establishment of modern supply chains is based on the identification and elimination of "bottlenecks" in the supply chain..." [16, p. 94]. Thus, the supply chain is an association of economic entities that interact with each other in the process of creating and promoting specific value for a consumer. In most cases, the value means a certain range of products that meet specific needs of a significant number of customers. Supply chain operations indicate that the form of interaction among participants can be different and even change under the influence of various factors. In the supply chain, it is important to have an established partnership environment between the participants, which implies their trust in each other and the presence of common values and standards of activity. The chain is often interpreted as an integrated process, which is characterized by a certain structure of partial processes. Such a chain can be identified as a network of interconnected entities involved in various processes and actions, which is aimed to deliver a full range of products and services to the end consumer. It is characterized by two main dimensions, i.e., the material-based dimension, composed of raw materials, auxiliary products and cooperative elements that are purchased in the supply market and allocated for the production process, as well as the finished products being transferred from the production field to points of sale; entity-based dimension, in which it covers enterprises that interact with each other and constitute its individual parts. The planning, organization and control of supply chains is subject to the modern concept of Supply Chain Management (SCM).

The objective of supply chain management is to maximize the overall value generated by the supply chain. According to this concept, supply chain management includes the following stages: planning, sourcing, manufacturing, delivery, and return [9]. Some aspects of management analysis of supply chains are studied in research papers of Ye. Krykavskyi [9], L. Syhyda [13], N. Chukhrai [16]. The most systematic analysis of modern approaches to the supply chain performance evaluation as an object of management analysis is in papers [13].

Aims. The article aims to study the implementation of management analysis tools to diagnose the performance and efficiency of supply chains.

Methods. For the research purposes general scientific and specific methods were used. Formalization method is for formulating basic starting points for the implementation of management analysis of supply chains. To assess the analytical input in the chain management process, the methods of analysis (comparative and system-oriented) and synthesis were used, as well as the methods of concretization of activities at each level and interpretation of the content of works. To create an algorithm for the implementation of supply chain management analysis, methods of induction, idealization and modelling were used. Expert evaluation and determination of the

evaluation components in logistics systems were used as specific methods in the research process.

Results. For the correct implementation of the methodology and tools of the supply chain management analysis a range of basic principles were outlined in the paper, namely, analysis is always comprehensive and is carried out to assess the achievement of actual goals of individual business entities and other elements of the chain compared to projected goals; basic measurement criteria are the performance and efficiency of the supply chain as the main evaluative indicators to measure the achievement of goals as to actual realization of its competitive advantages compared with declared competitive advantages; the effectiveness of management analysis is determined by the availability of sufficient, relevant and complete marketing, operational and financial data about the activities of all entities and links in the supply chain. One of the features of the supply chain analysis as a complex economic object is its comprehensive nature, which provides for the mandatory analysis at all hierarchical levels shown in Figure 1. At the level of an individual business entity, management analysis is usually carried out using traditional tools. Depending on the tasks, it can be retrospective, operational, and prospective ones. The second level of management analysis is aimed at assessing the performance and efficiency of the supply chain. In addition to analysing individual participants (suppliers) of the chain, it involves analysing contract activities, rationality and efficiency of the channel, analysis of reliability and efficiency of supplies, compliance of actual deliveries with contracts, analysis of the channel performance and cooperation of its participants.

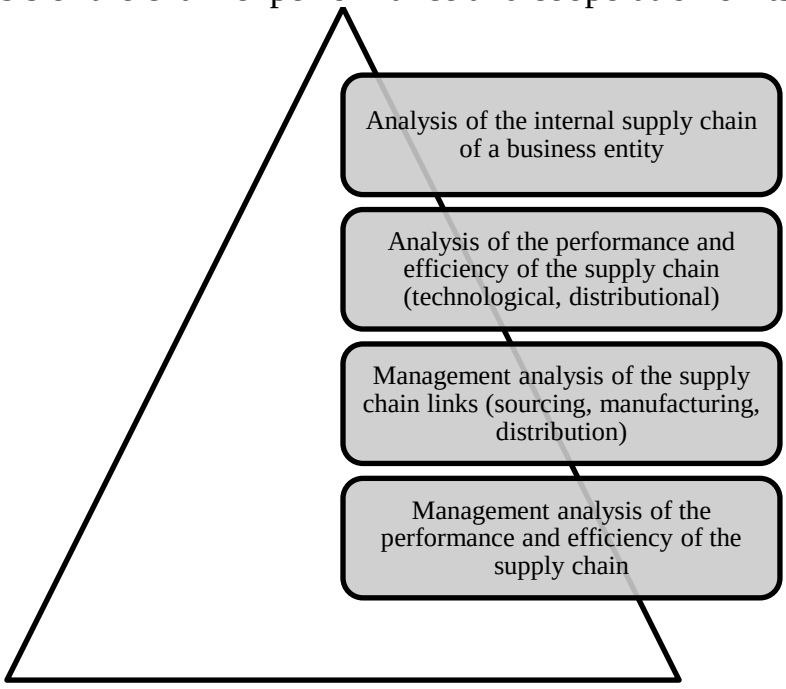

Figure 1. Levels of supply chain management analysis

Source: compiled by the author

The third and fourth hierarchical levels of management analysis differ only in scope of analytical input. Thus, the supply chain management analysis is carried out at the level of individual entities, the level of entity-based interaction (supply channels) and level of individual links in the supply chain and the supply chain as a whole. In

this study, the emphasis was on the study of methodological approaches to management analysis of supply chains and the identification of its features.

Discussion. The algorithm for implementing management analysis of the supply chain is given in Figure 2. The first stage of this algorithm is a choice of methods and techniques of management analysis of the performance and efficiency of supply chains and their components. Conceptually, one should choose management analysis methods aimed at tackling management tasks in the context of the modern SCM concept. Under this concept, the profitability of business units of the chain is analysed through diagnosing the increase in sales revenue by improving the quality of service, reliability of supply and accuracy of demand forecasting, analysing the dynamics of cost reduction as a result of minimizing inventories, measuring cost reduction in sourcing, warehousing and marketing, as well as assessing the growth of production and logistics capacities.

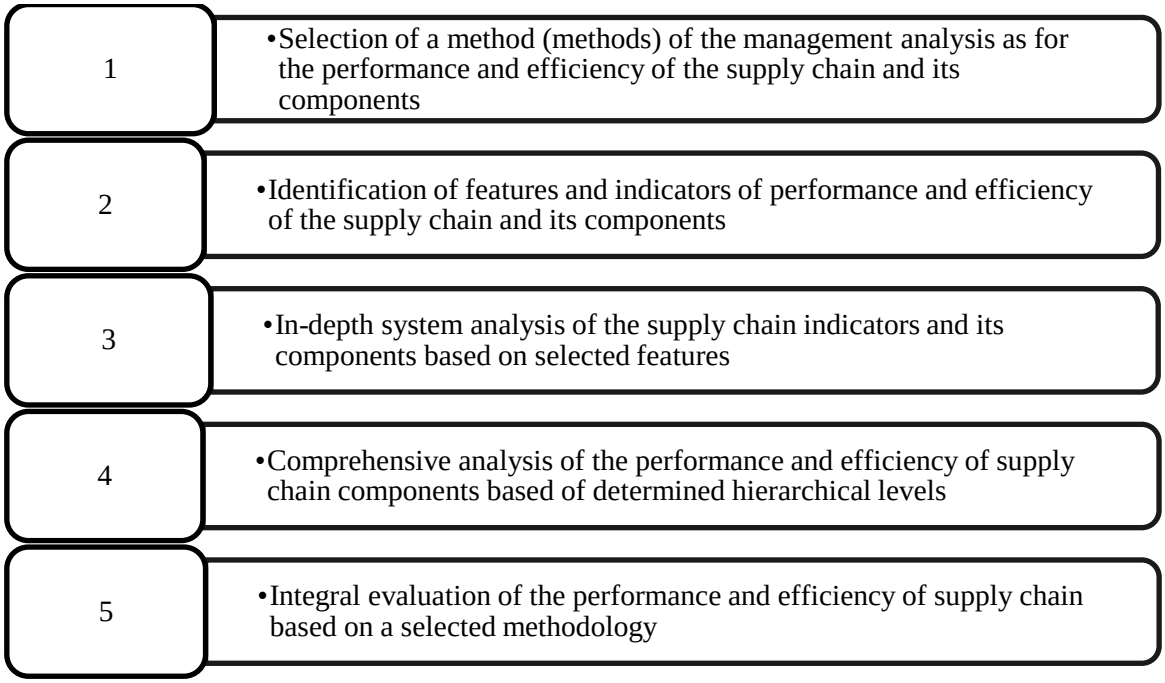

Figure 2 Algorithm for the implementation of supply chain management analysis

Source: compiled by the author

The second stage of the supply chain management analysis is to determine the components and indicators that objectively reflect the main economic effects of SCM and, above all, performance, and efficiency. Researchers' approach to the choice of such components differs. The composition of the indicators depends on the aspects of chain evaluation. As such, the aspect of supply chain compliance, marketing-based, logistics-based, as well as marketing and logistics aspects are chosen. The most comprehensive is the approach from the point of view of supply chain compliance [9, p. 137]. Within its framework the following components are identified, including internal efficiency; elasticity; customer service; environmental friendliness; product development and social responsibility. For each of the above components, a number of inherent indicators and diagnostic parameters are selected. For each of the parameters

it is necessary to determine sources of information, and to establish reference points for each of the specific indicators that are monitored.

For example, in the case of the sourcing function, such sources may be the services of economic entities of a separate technological or distribution supply channel that keep warehousing and financial records. After obtainment of an array of parameters following the diagnostics, it is necessary, at the third stage, to process them and conduct a system analysis of indicators for each component. The profitability analysis is the priority analysis area in the concept of SCM. To analyse the profitability of the chain it is necessary to diagnose the growth in product sales revenue through the improved quality of service, reliability of supply and accuracy of demand forecasting; assess the dynamics of cost reduction which takes place due to minimizing the level of inventories, reduction of sourcing costs, warehousing, and marketing expenses, as well as an increase in the utilization of production and logistics capacities.

The fourth stage envisages a comprehensive analysis of the performance and efficiency of the components of the supply chain at certain hierarchical levels. To solve analytical tasks regarding the performance and efficiency of the supply chain for individual business processes it is important to choose only quantitative and price, quality and time, and other parameters related to a particular business process, and within its parameters those related to individual product groups. In the field of production accounting, it is important to consider the cost of manufacturing resources and performance of manufacturing processes, product quality parameters, technological flexibility indicators, etc.

For example, the management analysis of chain operating cycles results in management decisions to ensure the rationality of production elements of the chain, reduce the risk of imbalance of production plans and supplies and improve the quality of operational production management through continuous monitoring of supply chain elements.

The management analysis of the supply chain at this stage also includes the analysis of implemented decisions on outsourcing. To conduct such an analysis, it is necessary to constantly monitor the cost of resources and assess their savings in comparison with autonomous operating activity decisions. In addition, important aspects of the analysis of outsourcing solutions are the quality of services and the flexibility of their provision scenarios.

The final stage of management analysis is an integrated assessment of the performance and efficiency of the supply chain, considering the analysis of synchronization of business processes in the chain, along with the dynamics of demand. The implementation of the proposed management analysis algorithm results in a chain of effective management decisions elaborated by the company management aimed to balance supply and demand and improve customer service in target and regional markets, reduce inventory in all its parts, shorten the duration of the production and commercial cycle and synchronize its components.

Conclusion. A system of basic principles has been determined in the paper for proper implementation of the methodology and tools of the supply chain management analysis. Main principles of supply chain management analysis include feasibility,

adequacy, complexity and sufficient information. It is established that the supply chain analysis as a complex economic object features comprehensive nature, which involves analysis at all its hierarchical levels and activities. An algorithm for implementing supply chain management analysis is proposed. Methodological approaches to the management analysis of the supply chain and identification of its features are formed.

The main features of applying management analysis in diagnosing the supply chain performance are: the use of indicators to assess performance based on the modern concept of SCM; management analysis of the supply chain is carried out at three levels: the level of individual entities, the level of entity-based interaction (supply channels) and the level of the chain as a whole; the priority area of the supply chain management analysis is the analysis of profitability; the analysis of the profitability of business units within the chain is performed by measuring the increase in sales revenue through improved service quality, reliability of supply and accuracy of demand forecasting, as well as assessing the dynamics of cost reduction by minimizing inventory, reducing costs in sourcing, warehousing and sales, and determining the utilization of production and logistics capacities. The supply chain management analysis also includes the analysis of decisions on outsourcing. To conduct such an analysis, it is necessary to constantly monitor the cost of resources, measure their savings compared to traditional solutions, as well as assess the quality of services and the flexibility of scenarios for their provision.

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OPPORTUNITIES TO USE INNOVATIONS TO ENSURE ECONOMIC SECURITY OF THE ENTERPRISE

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Abstract. *In modern conditions, ensuring economic security requires innovative approaches, one of which is the digitalization of all business processes of the enterprise. The purpose of the article is to study the essence of innovative development and determine its role in ensuring the economic security of enterprises. Methods of analysis and synthesis, induction and deduction, method of comparative analysis and method of systematization were used for the research. The main results of the study are the systematization of approaches to the interpretation of the concept of "economic security of enterprises". The main threats in the innovative activity of enterprises are systematized: the first group should include threats that arise in the process of ensuring innovation, and the second group - is the threats that may arise in the process of organizing innovation. The main factors that negatively affect the safety of Ukrainian enterprises are systematized. It is proposed to use innovative tools to ensure the economic security of enterprises.*

Keywords: *innovations, innovative development, economic security of the enterprise, e-economy.*

JEL Classification: D72, L21, L14

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Introduction. In market conditions, the enterprise as an open system operates in a complex, unstable and dynamic external environment, so in the process of enterprise management, the main thing is self-survival and development. Enterprises play a key role in implementing the program of scientific and technological development of the country and society. It is the enterprises that concentrate the material, financial and human resources necessary for the implementation of the innovation development strategy. The need for innovative development of enterprises determines the new requirements for management, namely the content and methods of management. The process of restoring all elements of production systems becomes a significant object of management. Today, the management of innovative development of the enterprise is no longer a single act of innovation, but a purposeful system of measures for the generation and development of ideas, implementation and development of innovation, commercialization of innovations.

In market conditions, the enterprise as an open system operates in a complex, unstable and dynamic external environment, which places new emphasis on the management of the enterprise, bringing to the fore its quantitative and qualitative properties of self-survival and development in conditions of destabilizing unpredictable and unpredictable external and internal factors. In this context, it is natural to abandon the extensive path of economic development and the transition to qualitative transformations of production potential by means of intensifying innovative development as the basis of economic security of the enterprise in particular and the state as a whole. Therefore, the problem of forming the state of economic security of the enterprise is in the plane of scientific research of modern

problems of innovative development and is in the space of increased attention of domestic and foreign scientists.

Literature review. Many modern scientists study the trends and problems of innovative development of enterprises in transition economies. In particular, among scientists from far and near abroad, it should be noted the research of I. Ansoff, P. Drucker, V. Zinov, V. Medinsky, M. Porter, V. Santo, J. Schumpeter, Y. Yakovets and others.

Among Ukrainian scientists studying the issues of enterprise innovation management, it is necessary to note the significant achievements of O. Amosha, M. Voynarenko, A. Voronkova, S. Ilyashenko, V. Stadnyk, O. Orlov, L. Fedulova and others. Theoretical and practical issues concerning the organization of economic security of the enterprise are covered in the research of many Ukrainian scientists such as O. Arefeva, O. Zakharov, G. Kozachenko, O. Lyashenko, I. Mihus, V. Muntian, S. Shkarlet, O. Yastremska and others. Despite the importance of scientific research, certain aspects of economic security in the process of innovation of the enterprise require further study, in particular, in the context of measures to protect the enterprise from external and internal threats.

The following issues can be discussed: there is almost no single approach to understanding the category of "economic security of the enterprise"; only partially formulated principles of managing the state of economic security of enterprises; the functions of the economic security service of the enterprise have not been finalized.

Aims. The purpose of the article is to study the essence of innovative development and determine its role in ensuring the economic security of enterprises.

Methods. Methods of analysis and synthesis, induction and deduction, method of comparative analysis and method of systematization were used for the research.

Results. The concept of "innovation" is broad in nature, but in the formation of economic security of the enterprise are important inventions that bring new technical solutions; change the state of the art; significantly improve production processes and the quality of the original product in the context of the gradual replacement of old equipment (technology), principles, structure, etc. with new objects. Innovation is one of the main factors of economic security and competitiveness of the enterprise and potentially contains the principles of financial success.

In connection with the strengthening of the role of scientific and technological progress as a factor of economic development, one of the founders of innovation theory J. Schumpeter, defined innovation as a process of enterprise implementation of a new product, introduction of a new method of manufacturing, new market development. J. Schumpeter proved that the capitalist economy is constantly revolutionizing the internal through new entrepreneurship, ie through the introduction of new goods, new methods of production or new commercial opportunities, and concluded that the desire to renew is the main driving force of economic development as a means of combating a changing environment. , risky in relation to the business entity [1].

Scientists have long been inclined to believe that the system of innovation management is an integral part of the economic security of the enterprise. According

to S. Lobunska, the processes of introducing innovations into the economic activity of enterprises are directly related to additional economic risks, which lead to a decrease in the overall level of economic security of the enterprise (EBP). On the other hand, the lack of innovation in the enterprise itself is a factor of considerable risk and threat to the enterprise "[2, p. 55]. Noteworthy is the point of view of S. Scarlett on the formation of economic security of enterprises by means of intensifying their innovative development [3]. Therefore, the issue of forming an effective system of management of innovation activities of the enterprise in the general system of the NBP is very important in modern business conditions. The growing importance of innovation, increasing competitiveness and the formation of economic security of enterprises led to the choice of research topic.

There is no single definition of the term "economic security" among domestic and foreign economists. The analysis of the above definitions of economic security shows that neither in Ukraine nor abroad there is no unambiguous approach to the definition of the term "economic security of the enterprise". However, all concepts, for all their differences, have the same features.

Interpretation of the definition of "economic security of the enterprise" is given in Figure 1.

Therefore, most authors agree that the economic security of the enterprise is a certain state of the management system, which is also aimed at mobilizing all available corporate resources in the enterprise to protect it (the enterprise) from undesirable influences today and in the future. the most efficient use of these resources. That is, the system is able to self-organize and self-realize, maintaining balance and stability while minimizing threats. Economic security of the enterprise - as a state of protection of the enterprise from undesirable influences, both external and internal, with the most efficient use of available resources (potential of the enterprise).

Given the importance and need to study security, the Ministry of Economy of Ukraine in 2013 summarized methodological approaches to interpretation and proposed the following definition of economic security - a "state of the national economy that allows resilience to internal and external threats, ensure high competitiveness in the global economic environment and characterizes the ability of the national economy to sustainable and balanced growth "[10].

In the context of the above, the question arises of defining the essence of the concept of economic security of innovation of the enterprise. As O. Yastremska notes: “Economic security of enterprise innovation is a state of effective use of its resources and market opportunities to prevent threats to the external and internal environment that arise in the process of planning, providing and organizing activities related to the practical use of scientific ideas. research and development that contributes to improving the economic and social results of management on the basis of the formation of competitive advantages of the enterprise "[11].

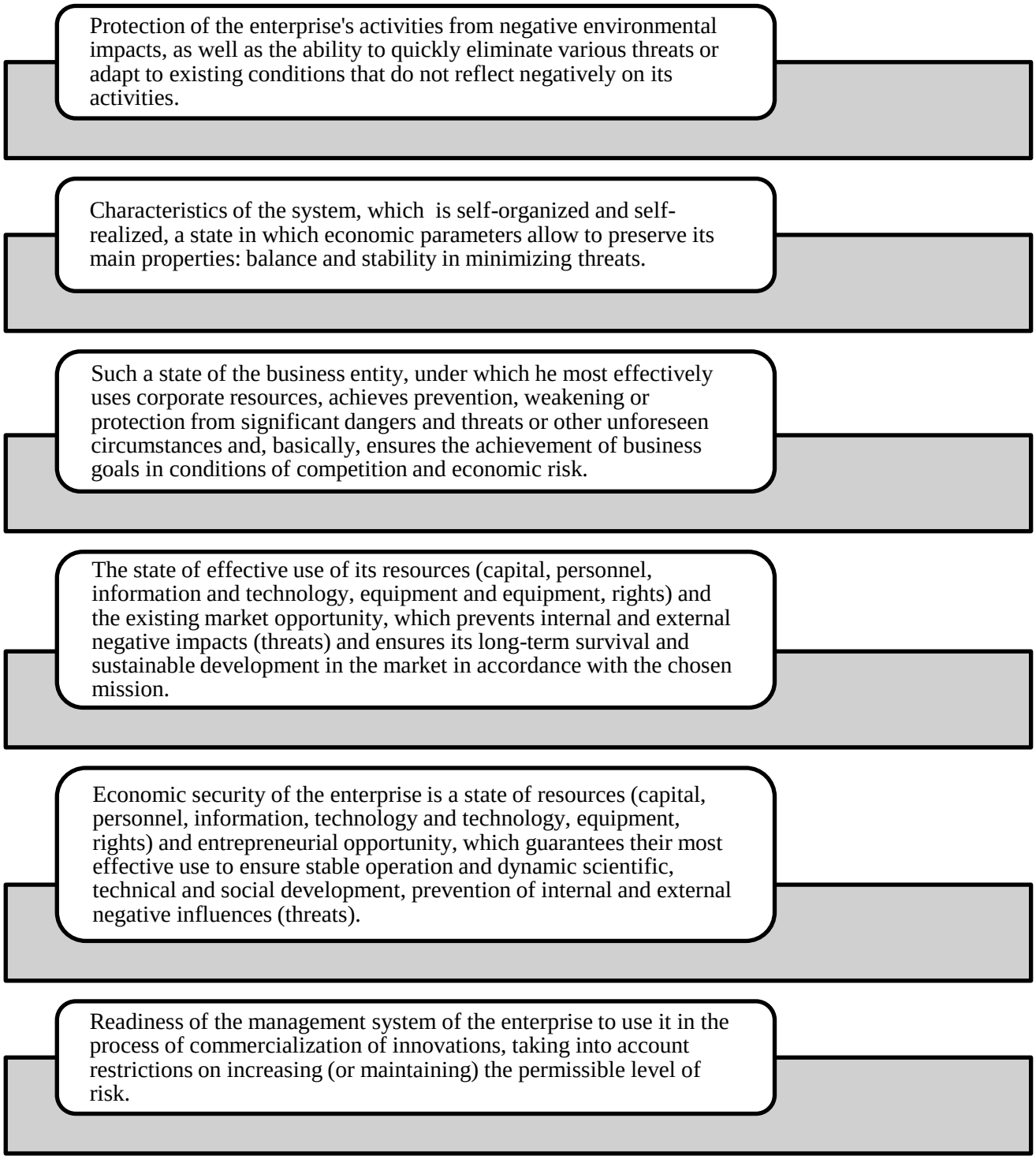

Figure 1. Evolution of the concept of "Economic security of the enterprise"
Source: compiled by the author based on [2-9]

The given definition of the concept of economic security of innovative activity of the enterprise is caused by dependence of success of realization of the given activity on efficiency of management of the basic resources of the enterprise (material, financial and labor). Thus, the technical and technological equipment of the production process affects the quality, speed and cost of production. The availability of free financial resources allows for research and development and the

use of the latest technologies in the production process and to produce products that have competitive innovative characteristics (advantages). Qualification of industrial and production personnel affects the quality of products, its material and intangible motivation determine the loyal attitude of workers to management and the company in general, which contributes to security in the information sphere. The effectiveness of innovation indicates the achievement of goals in this area, which, in turn, affects the level of economic security of the enterprise.

Threats in innovation activities of enterprises can be grouped into the following groups.

The first group should include threats that arise in the process of ensuring innovation, namely: threats of failure to provide an innovative project with a sufficient level of funding include:

• failure to obtain the funds needed to develop an innovative project;

• the project budget may be in deficit due to liquidation, bankruptcy or seizure of creditors' property;

• threats related to the insufficient level of personnel and technical and technological support of innovation processes.

The second group is the threats that may arise in the process of organizing innovation (threats of non-compliance with business agreements), as:

• refusal of the partner to conclude the contract after negotiations;

• concluding agreements with insolvent partners;

• non-fulfillment of contractual obligations by the partners in due time;

• environmental pollution and damage.

• outflow of confidential information either through the fault of employees or as a result of industrial espionage organized by competitors;

• incorrect choice of markets and incomplete information about competitors or lack of reliable information about competitors;

• the appearance on the market of producers from other industries that offer the same type, able to meet consumer demand.

It is impossible to completely avoid threats in innovation, because innovation and risk are two interrelated categories. The complex environment in which the company operates requires it to constantly work to improve management decisions to ensure its economic security. A necessary component of this process is the analysis and evaluation of the operation of the enterprise. The choice of methods of their implementation is determined by the purpose and direction of possible impact on the elements of the internal and external environment or a combination thereof.

Innovative development is an effective defense response of the enterprise to emerging threats of losing market space, constant pressure from competitors, the challenge of new technologies, reducing product life, legal restrictions and changing market conditions. In the offensive version, innovation is a means of using new opportunities to maintain or gain competitive advantage [12]. In the long run, the company has no choice but to innovate (innovative development), which is the only source of long-term success, and hence the economic security of the enterprise. Effective innovation determines the formation of competitive advantages of the

enterprise, which allows it to operate successfully in the market. Therefore, it is very important to ensure the stability of innovation processes in the enterprise, and this is the main task of forming the economic security of innovation.

The following are the main factors that negatively affect the security of Ukrainian enterprises:

• active participation of government officials in the management of commercial activities of the enterprise;

• use of criminal structures to influence competitors;

• lack of legal framework to fully combat unfair competition;

• lack of favorable conditions for scientific and technical research in the country;

• lack of detailed and objective information about business entities and their financial position;

• lack of business culture in the business environment;

• application of operational and technical methods in order to obtain the necessary information about competitors.

The system of economic security of the enterprise and the mechanism of its provision provide for the solution of economic security not only by a specially created unit - the Economic Security Service (SES), but with the active participation of all departments and services of the enterprise.

Along with such components of the ECS as financial, technical and technological, intellectual and personnel, political, legal, environmental, the innovative component of the EBU should be considered. The main content of the innovation component is that it has the ability to influence other components and increase their level of economic security through the introduction of innovations in production and management. The main work of the SEC should be based on a preventive (preventive) model, but if the impact of the threat cannot be prevented, then the damage should be minimized with the help of the active response model.

Conclusions. Security of economic activity is a vital condition and basic principle of functioning of all stages of the economy, which acquires the status of complex, social and social needs of owners and managers of enterprises, focusing on tasks to ensure them: first, a set of means of economic security at all stages of its life and operational cycles for the sake of stable and profitable production and economic activity; secondly, the mechanisms of anti-risk diagnostics, assessment and counteraction to internal and external, potential and real crisis manifestations and prevention of destruction of the socio-economic condition of the enterprise; third, the innovation factor determines the paradigm of economic development and the essence of the concept of economic security, so the economic security of the enterprise can not be defined only as a "state of security" without taking into account the possibilities of long-term development on an innovative basis. Prospects for further research in this area are the development of methodological support for assessing the contribution of innovative strategies of the enterprise to ensure its economic security and the implementation of the goals of innovative development of enterprises.

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