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The third 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.

CONTENTS

CHAPTER 1
CURRENT TRENDS IN ECONOMIC DEVELOPMENT

COMPETITIVENESS OF UKRAINE'S ECONOMY UNDER THE CONDITIONS OF GLOBAL INSTABILITY

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Abstract. *The academic paper is devoted to investigation of the competitiveness of Ukraine's economy under the conditions of global instability. The purpose of the research lies in identifying key factors contributing to the competitiveness of the economy and, conversely, inhibiting it. In order to achieve the purpose outlined, the following methods have been used in the research, namely: analysis and synthesis of information, comparison and generalization. Along with this, the V-U-L method has been used in order to predict the tendencies of economy revitalization after the pandemic. SWOT analysis has been carried out for generalizing the information received. The relevance of the research is underpinned by the realities of global instability due to COVID-19, which have wrecked the economies of almost all world countries. It becomes more and more difficult for countries to compete in such conditions; consequently, in order to at least maintain the positions in the market, it is necessary to apply modern production and management technologies. Herewith, in order to improve the competitive positions, advanced and innovative technologies should be applied, the potential of which in Ukraine is quite high, but the real state of affairs leaves much to be desired. At the same time, the investigation of the report of World Economic Forum was conducted for assessing the competitiveness of Ukraine's economy, according to which the rating place of Ukraine among other economies of the world was established. The crucial indicators influencing competitiveness are as follows: principal, reinforcing and innovative. SWOT-analysis of Ukraine's competitiveness was conducted in the research; strengths, weaknesses, prospects and threats were identified. In order to improve the level of competitiveness, it is necessary to develop innovative industries, to support them, which, as a result, will have a positive effect on the commodities markets. Based on the results of the research conducted, generalizations have been made that will make it possible to ensure the development of Ukraine under the conditions of global instability.*

Keywords*: globalization, instability, competitiveness of economy, competitiveness index, COVID-19 pandemic.*

JEL Classification: E01, F20, O10

Formulas: 0; fig.: 5; tabl.: 2; bibl.: 16

Introduction. The development of the world economy at the beginning of the XX-XXI century is characterized by globalization processes increasing competition between states. In order to maintain the positions in the market, states should carry out numerous measures aimed not only at increasing production volumes, but also at

ensuring that the state of the economy meets the expectations and needs of the population and the society, as well as global trends and integration aspirations. Such approaches to the development of the country always contribute to increasing the country's competitive position and at the same time ensuring the growth of the population's social standards, improvement of the business environment, etc.

However, it is quite difficult to maintain a competitive position (without mentioning strengthening) under the conditions of changing globalization environment, especially for developing countries, among which Ukraine is. In order to maintain a competitive position in the market, it is necessary to apply modern technologies that will make it possible to ensure the development and growth of the economy in accordance with the overall global development. In turn, ensuring the growth of competitive positions of the state requires the use of innovative, the latest technologies and fundamental realignment in the approach towards state governance.

Interstate competition is ensured by numerous factors, each of which can be regulated and changed in accordance with state policy. For this reason, state policy should be aimed at identifying weaknesses in state governance and determining directions and prospects, taking into account the global market's opportunities. Nowadays, under circumstances when all countries are suffering from the financial crisis caused by the COVID-19 pandemic, only those states that competently organize their activities will be able to quickly respond to challenges and gain competitive advantages.

Literature review. The issue of Ukraine's competitiveness has been studied by various domestic and foreign scientists, namely: Porter, M. (2001), Melnyk, A. (2011), Babich, L. (2010) Mocherny, S. (2001), Kvasnyuk B. et al. (2006), Bazilyuk, Ya. (2002), Kizim, M. (2010) Gubsky, B. (1998) et al.

The matter of discussion has been widely studied by international scholars, who have paid sufficient attention to strengthening the competitive position of national economies in accordance with global development processes. In the course of the research, statistical information from open sources, in particular, World Economic Forum and Ministry of Economy of Ukraine, has been analyzed, which make it possible to identify trends in the development of countries as well as to foresee prospects and threats in the coming years.

Despite the availability of scientific investigations on the formation of the economies' competitiveness, their functioning in the context of the global crisis connected with the COVID-19 pandemic remains insufficiently studied. The issues of the present time related to overcoming the crisis and ensuring the country's sustainable development, remain relevant and uncertain. This particular matter of discussion constitutes the novelty of the scientific research, which involves defining the determinants of competitiveness and searching for relevant opportunities that will make it possible to improve social development while ensuring an appropriate level of state governance.

Aims. The purpose of the research lies in defining the determinants of strengthening the competitiveness of the Ukrainian economy and factors, on the contrary, inhibiting it.

Methods. The methods of economic and statistical analysis, analysis and synthesis, formalization, axiomatic method, system analysis have been applied in the course of studying the matter of discussion. Graphic research methods have been used to obviously understand the problems and trends of economic development. The VUL method has been used (McKinsey, 2020) in order to determine the impact of global instability on economic development; it is based on the following tendencies of economy revitalization, namely:

V-shaped: this is a classic reflection of the shock that occurs due to halting of production for certain reasons. Revitalization is fast, rapid and it can often override the negative results of work that have arisen at the time of "shock". This is the scenario of China's development, which in 2020 remained with a positive GDP growth.

U-shaped: the shock persists, and although the original path of growth is restored, there is some permanent loss of production; there will be rapid economy revitalization after some time. Currently, it is an option for the development of the economies of Europe and the United States.

L-shaped: this scenario is very bad compared to V and U. In order for this scenario to be implemented, COVID-19 must inflict significant structural damage, that is, cause irreparable damage to the economy, which will be very difficult to restore. However, experts and specialists do not consider such an option for economic development in the post-pandemic period.

In order to display predictions and prospects of economic development, the results of a survey conducted by Ernst & Young Global Limited are used; the company has organized a business survey on how their employees predict the scenario of economic development.

Results. Globalization processes are connected with the intensification of relations between the national economies of different countries, covering all aspects of the economic life of different world countries. Interstate financial and credit as well as trade transactions contribute to the expansion of international capital movements, intensification of labor migration processes, and growth of international scientific and technical relations. This process began in the second half of the twentieth century; currently, it is especially active, due to revolutionary inventions in the social, scientific and technical, transport, communication and information spheres. Nowadays, globalization covers various areas of the world economy; it is based on economic and financial processes, constituting the foundation for developing processes in other areas (Melnyk, 2011). The current globalization degree, at which the speed and influence power of each component of the economic and social system is gaining insane proportions, has become a stage of planetary instability. The instability of any system provokes turbulence, which always means increasing risks and uncertainty for economic subjects of any planetary level. The world economy as a whole pass through a period of permanent turbulence, which involves leaving the rates of the economic cyclicality or patterns of economic development from the classical definition and traditional parameters.

The scale and geographic scope of the current global crisis is unprecedented and unequaled. The percentage of countries experiencing a recession is higher than ever in human history – 92, 3%. In the times of the Great Depression, this percentage reached 83, 8%, and during the global financial crisis of 2007-2009 - up to 61, 2%.

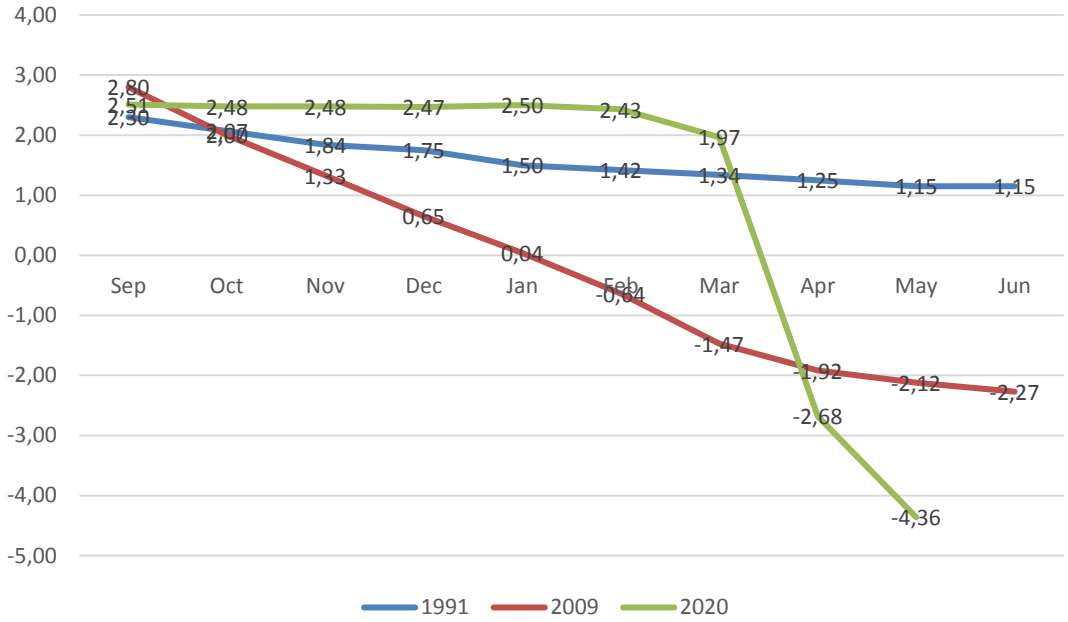

Figure 1. Global GDP growth (in%) during the last recessions of 1991, 2009 and 2020

Source: World Bank (2020)

The pandemic shock has put all countries of the world towards necessity to balance between measures to protect human health, overcome the recession and support financial stability under the conditions of global instability.

The conditions for the development of the world economy are progressing in such a way that only a relatively small group of countries will be able to overcome the crisis beyond the "V" - shaped scenario in case of attenuation of the coronavirus pandemic. For other states, "L" - shaped scenario is still the most probable – that is, a similar scenario with a vague prospect of reaching a stable GDP dynamics and high employment of the population (Figure 2).

At the same time, taking into account that previous pandemics and epidemics have a V-shaped revitalization, apart from that, labor migration will be especially active and economic development will be quite rapid after opening of borders. This is the viewpoint of 38% of managers of large companies (Figure 2); most entrepreneurs in the world still hope for a "U" - shaped way out of the economic crisis.

On the basis of the results of 2019, at the end of which the first signs of mass infection with Coronavirus infection appeared, the growth rate of the world economy was at the lowest level for the entire period after the end of the global financial crisis. The necessity for social distancing has led to the labor market deformation, especially in the sphere of small and medium-sized businesses.

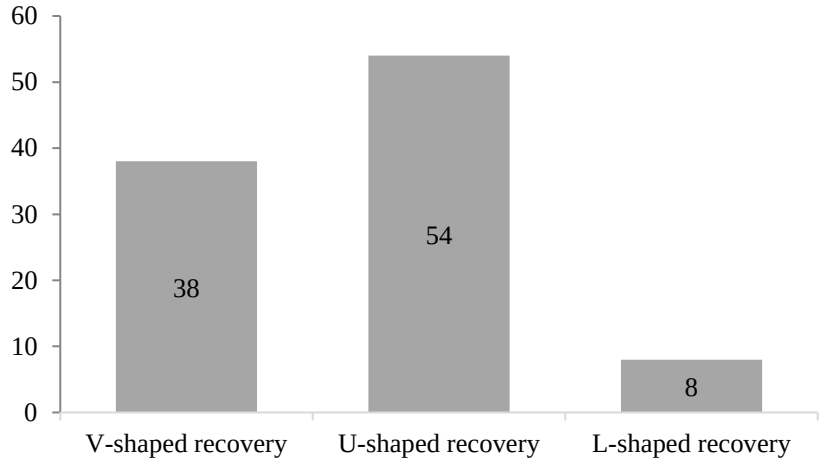

Figure 2. Business expectations for economic recovery in the post - COVID period

Source: Krouskos, S. (2020)

According to IMF estimates, as of early July 2020, global production losses due to the pandemic shock in two years (2020 - 2021) will amount to more than 12 trillion USD. In absolute terms, the bulk of these losses will be in the countries with the largest GDP. It was expected that by the end of 2020, among the leading countries of the world economy, only China would not only compensate for its losses, but it would also achieve an increase in GDP. Based on the results of 2020, China ensured GDP growth of 2, 27 percent (WEO, 2021).

Global instability is one of the negative features of globalization; however, it is followed by equally important problems, in particular: stratification of the society, rapid redistribution of resources; the growing influence of TNCs and other influential economic groups that can benefit from the crisis and change the permanent global competitive division. In order to avoid the influence of such factors on the national economy of the country, when entering the system of global economic relations, an objective necessity to increase its competitiveness is generated.

The concept of competitiveness can be perceived differently by various scientists and institutions. It is important to consider approaches to defining the competitiveness of the country's economy. Let's consider the basic ones in Table 1.

Therefore, it is possible to identify key indicators of the country's competitiveness, namely: this is an indicator of gross output per capita, a stable production level of competitive products, that is, a steady GDP growth, the income level (and, accordingly, consumption) of the population, an increase in labor productivity, etc.

Thus, national competitiveness can be defined as the country's ability to provide such conditions in which enterprises can form stable economic growth, long-term profitability and providing employment.

In modern scientific literature, there are several approaches to defining competitiveness, which are based on qualitative and quantitative methods of analysis. The application of quantitative indicators is based on using mathematical and

statistical methods of analysis, which are further supplemented by qualitative indicators, ensuring the strengthening of competitiveness (Babich, 2010).

Table 1. The principal approaches to defining the competitiveness of the national economy

Author	Definition
World Economic Forum (2020)	The ability to achieve high growth rates of GDP per capita
Institute of Management and Development (2021)	Potential and real opportunity to design, manufacture and sell goods that are more attractive to consumers in terms of price and non-price characteristics
Economic encyclopedia (Shtalman, Dryakhlov, Hartman, 2021)	The ability of one country's economy to ensure sufficient use of national resources, increase economic productivity and a high living standard compared to other countries
Kvasnyuk B. (2006)	The set of factors inherent to a particular country that are capable of providing the supply of goods and services, their manufacture and sale in the context of applying innovative technologies, a free market and growing incomes of the population
Bazyliuk, Ya. (2002)	The ability of the economic system to ensure social-economic optimality, taking into account the influence of factors of the external and internal environment
Porter M. (2001)	The ability of the country to maintain high growth and employment rates over a long period
Shvydanenko O. (2007)	The ability of the country's environment to provide the population with a sufficient level of consumption in order to meet global supply, and, at the same time, the ability of economic entities to maintain a stable position in meeting global demand
Kizim M. (2010)	A feature of the economic system based on the global division of labor and international exchange
Gubsky B. (1998)	The ability to optimally implement competitive advantages, focusing on increasing labor productivity

Source: compiled by the authors

In order to assess the competitiveness level of a country, methods developed by the International Institute for Management Development, World Economic Forum and the Institute for Strategy and Competitiveness at Harvard University are increasingly being applied. Each of the institutional organizations uses its own research methods and evaluation criteria. Each organization creates a rating of countries in the world in terms of competitiveness. However, the methodology of World Economic Forum is most often used as a generalized methodology, according to which it is determined as follows:

1) the index of global competitiveness (alternative name: competitiveness growth index, country innovation susceptibility index);

2) Business Competitiveness Index - BCI, the main purpose of which lies in determining the productivity and efficiency of industries and enterprises.

The reports of World Economic Forum are published annually in "The Global Competitiveness Report. World Economic Forum" (2019). The assessment according to the rating is carried out on the basis of monitoring the business climate, public

administration research, the degree of the economy globalization, and the level of economic freedom, human potential and the level of corruption in the society. In general, this index is formed by a set of principal indicators, enhancing indicators and indicators of the level of the innovative economy, which is reflected in Figure 3.

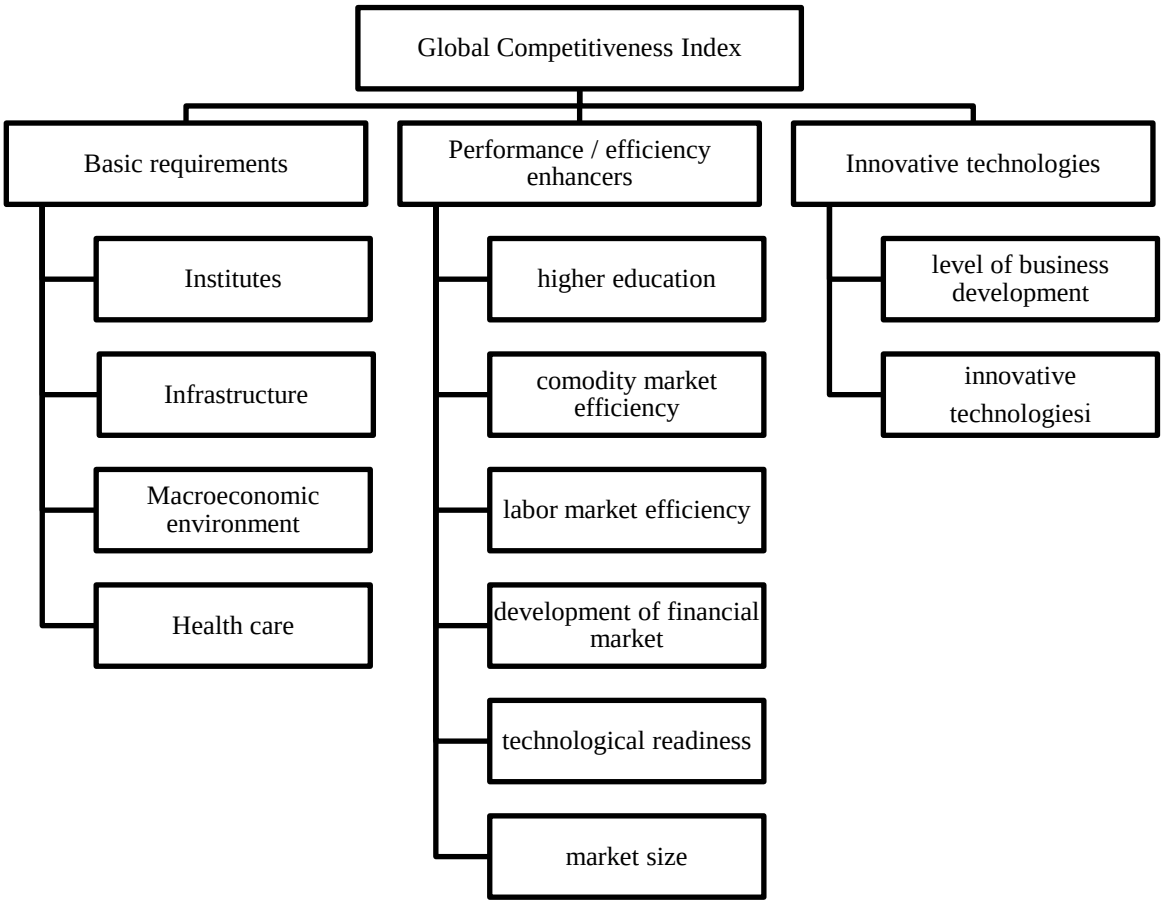

Figure 3. Components of the global competitiveness index

Source: developed by the authors based on "The Global Competitiveness Report" (2019)

In the international competitiveness rankings, Ukraine is traditionally ranked among the developing countries. It should be mentioned, that such countries are characterized by increased political and economic instability, unfavorable investment climate and high economic risks.

In particular, according to the data of the latest report "The Global Competitiveness Report" published in 2019, Ukraine ranked the 85th place among 141 countries, moving down 2 positions in the ranking compared to the previous year. Due to the fact that the rating for 2020 has not been made yet, it is rather difficult to predict the prospects for competitiveness under conditions of the pandemic; however it is possible to state for sure that further deterioration of indicators is possible next year. As of 2019, Ukraine's closest neighbors in the ranking were Sri Lanka (the 84th place) Moldova and Tunisia (the 86th and 87th place, accordingly). The ranking of the most influential countries is reflected in Figure 4.

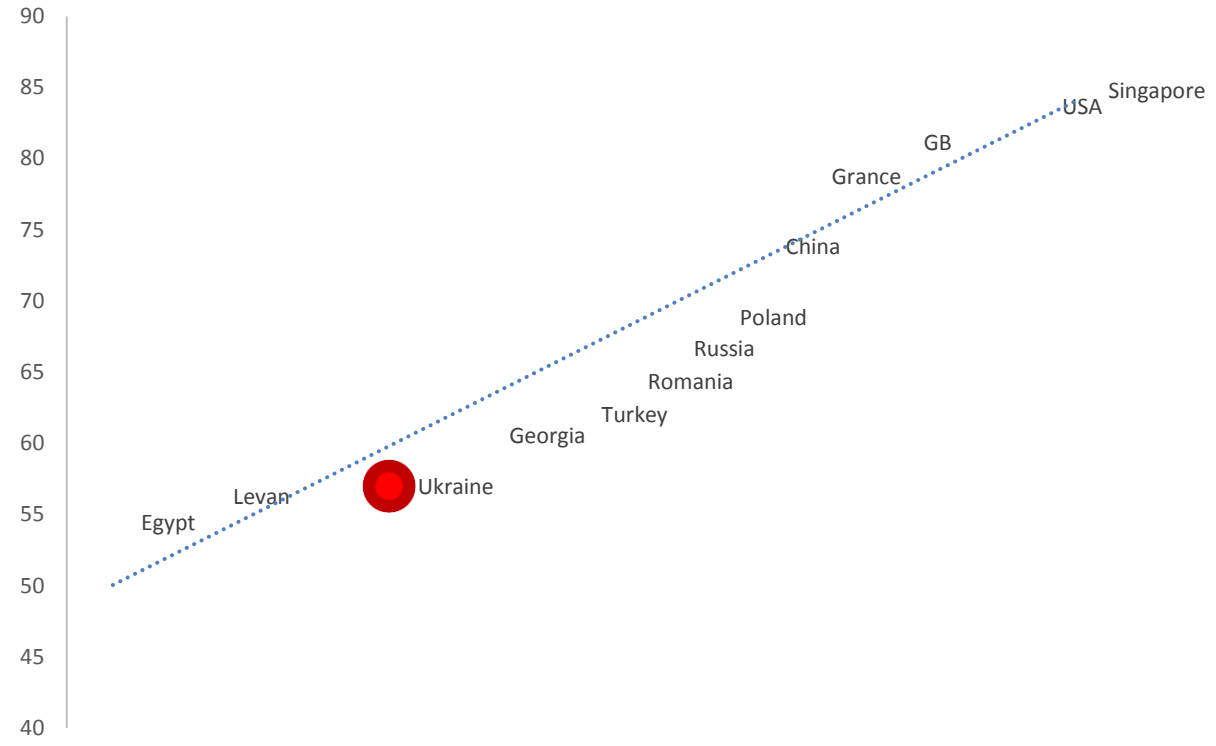

Figure 4. Ukraine in the competitive ranking of countries as of 2019

Source: WEF, 2019

In order to determine the components of the construction of the competitiveness index, its components have been investigated – that is, these are 12 indicators, which are reflected in Figure 3. According to the research, the most problematic factors currently hindering the development of the competitiveness of the economy have been identified. These are as follows:

1) the level of development of innovative technologies; although it has increased during 2019, however, it remains as the lowest indicator among all those taken into account in the rating;

2) the perfection of the financial market, the indicator of which decreased compared to 2018 and began to occupy an even lower position in comparison with the financial markets of other countries;

3) the level of institutional development, which has increased slightly compared to 2018, but it remains quite low;

4) the level of technological readiness, which is at the same level, however, it does not correspond to the competitiveness level in the IT sphere among other countries.

Having sorted the data of indicators by 12 categories, the strengths and weaknesses of Ukrainian competitiveness were identified.

A noteworthy detail is that according to the results of the last year of comparison, Ukraine has taken a step forward in terms of some components of the competitiveness index. It is especially worth highlighting the infrastructure development, which has taken the 57th position in the ranking over the past year. It is also worth pointing out that the development of the education level has taken the 44th place in the ranking.

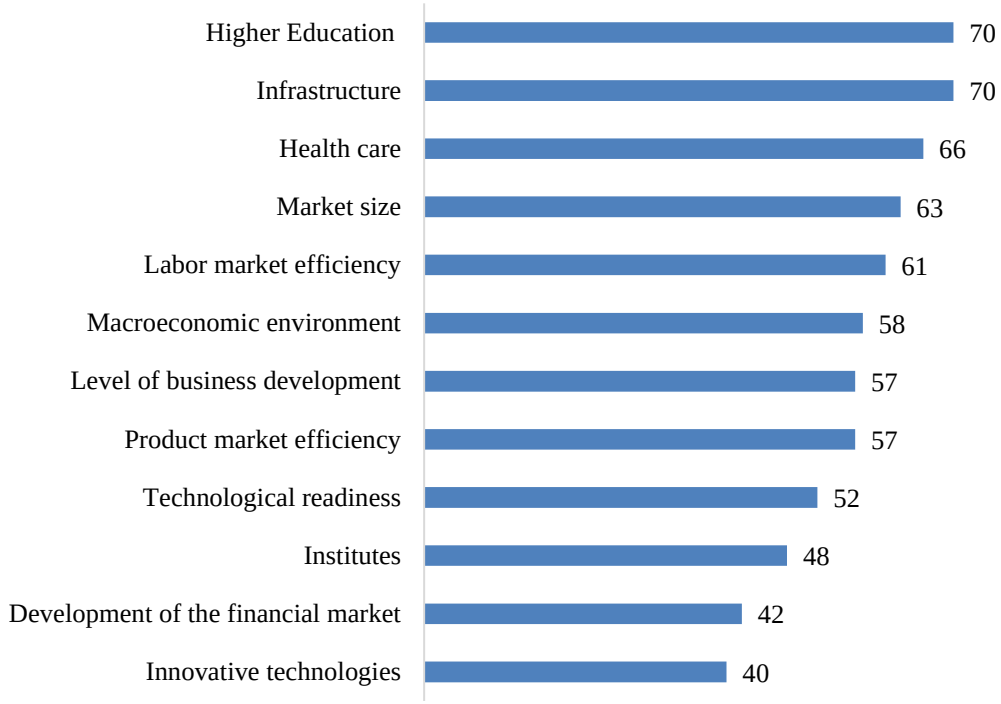

Figure 5. The principal indicators of Ukraine's competitiveness as of 2019
Source: WEF, 2019

Improving the values of sub-indexes, especially such as "efficiency enhancers", having a weight of 50% in the overall index, are of fundamental importance for Ukraine's competitiveness. According to the current methodology for assessing competitiveness, Ukraine belongs to the group of countries focused on efficiency; consequently, the indicators forming the group of "performance enhancers" are significant, remaining the principal ones. Ukraine has a fairly high indicator in terms of market size, which allows it to take the 47th place in the ranking. Having studied the components of competitiveness, one may distinguish strengths and weaknesses, prospects and threats for the subsequent periods.

Table 2. SWOT-analysis of Ukraine's competitiveness

SWOT	Strengths	Weaknesses
Prospects	Higher education Infrastructure Health care Market size	Innovative technologies Technological readiness Commodity market
Threats	Macroeconomic environment Labor market Level of business development	Institutes Financial market

Source: developed by the authors

Therefore, the basic strengths that can increase and improve the overall level of competitiveness in the future are as follows: the state of education of the population, the rapid development of infrastructure, improving the health care structure as a result of reorganization and introduction of advanced technologies in the treatment of a large amount of people. The market size, which is quite large, remains a strong key

aspect. At the same time, there are a number of factors that do not pose a significant threat to the state through good indicators (above 50%) of the macro environment, the labor market, and the level of business development. Currently, innovative technologies and technological readiness remain rather weak; however, in terms of the education development, these indicators have prospects for advancing. Institutions and the financial market as the basic source of financial support for business development remain restraining forces of competitiveness development.

The growth of the pandemic in the world has caused significant changes in the functioning of numerous states. In particular, the role of state governance in emergency conditions has been strengthened in most countries; sanitary and epidemiological measures have been introduced as well as distance forms of education and working have been implemented. Herewith, decrease in business activity and reductions in production in all countries have led to a global decline in demand and, consequently, drop of prices in world commodity markets. In particular, the metallurgical industry of Ukraine, the market of oil products as well as some branches of agro-industry were especially affected. However, in 2020, the demand for sunflower oil and seeds, electric water heaters, electrical equipment, etc. increased. The significant commodity orientation of domestic exports and intrinsic dependence on the external market has also created currency dependence (Ministry of Economy of Ukraine).

Discussion. State strategizing of development of Ukraine's economy competitiveness under the conditions of modern global instability provides as follows:

– development of innovative activities through the introduction of new technologies into business processes, which will help reduce energy intensity, resource intensity and labor costs; as a result, this will have a positive effect on price proposals and the development of commodity markets;

– searching and allocation of internal intellectual resources and the creation of competitive products;

– developing effective financial programs and assistance on the part of the state in the creation of such programs, aimed at developing innovative entrepreneurial activity;

– building up the infrastructure of an innovative economy by creating business incubators, IT parks and other intellectual projects that will significantly increase the inflow of foreign investment and the speed of development of related industries;

– introduction of effective mechanisms in order to support innovative projects implemented by entrepreneurs and small businesses;

– ensuring the development of the internal market by providing healthy competition and reducing the monopolists' influence;

– accumulation of investment in the development of intellectual capital.

Conclusion. Taking into account the investigations on the strengths and weaknesses of the current Ukraine's competitiveness, it has been revealed that it is possible to improve the national economy of Ukraine under the conditions of global instability by methods which are characterized with high potential and enough space

for development. Such factors include innovative technologies and the development of IT-technologies that have sufficient skilled labor, but lack of funding. The development of such technologies will significantly alter the commodities market, which will allow in the short term accelerating the competitiveness growth of the national economy. In general, competitive advantages can be obtained by improving the functioning of state institutions and infrastructure, which will influence positively on business and the effectiveness of financing and supporting advanced sectors of the economy. Nowadays, Ukraine is one of the few countries having all the chances, after a while, to become a state with high indicators of economic competitiveness under the conditions of global instability.

Author contributions. The authors contributed equally.

Disclosure statement. The authors do not have any conflict of interest.

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FORMATION OF BUSINESS STRUCTURE IN THE CONTEXT OF THE INFLUENCE OF INTEGRATING FACTORS OF THE INTERNAL ENVIRONMENT

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Abstract. *The article is devoted to the study of the influence of environmental factors on the formation and development of business structures as integrated entities. It is proved that to ensure the efficiency of the integration process, the partner companies combine separate internal and external environments, while the integrated external and internal environment of the business structure expands. The creation of the business structure is encouraged by the integration factors of the internal environment, which are proposed to be divided into three groups: system-forming, structure-forming, process-forming. System-forming factors integration factors of the external and internal environment are such integration factors that influencing enterprises contribute to the implementation of the process of their integration and the formation of the business structure. These include: the level of synergy between enterprises that are integrated into the business structure; growth of value added of the business structure and other factors. Structural integration factors of the external and internal environment contribute to the formation of the structure of the business structure as a static integrated system. Structural integration factors are as follows: the level of readiness of enterprises for integration; the effectiveness of the transformation of units of integrated enterprises and other factors. Process-forming integration factors of the external and internal environment ensure the implementation of integrated business processes at all levels of management of enterprises seeking integration. Process-forming integration factors are as follows: creating the effect of production scale; the level of technology exchange of integrated enterprises and other factors.*

Keywords: *business structure, globalized space, integration, external environment, external factors, internal factors, integration factors.*

JEL Classification: F01, F02, F15, F63

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Introduction. The evolutionary development of human society, due to the influence of scientific and technological progress and the constant desire of mankind to achieve a new higher level of prosperity, causes changes and complicates the functioning of markets, both national and regional and macro, which in modern conditions accelerates internationalization and globalization. This, in turn, necessitates the transformation of enterprises to new complex and difficult to predict business conditions, necessitates their integration into more complex integrated structures - business structures. Business structures operate in a dynamic external environment, the impact of which is difficult to predict. Timely monitoring of the external environment, taking into account the impact of its factors will ensure further sustainable development of business structures in a globalized space.

Literature review. In the scientific works of domestic researchers the problem of the influence of environmental factors on the formation and development of the business structure as an integrated business structure, not enough attention is paid. Most scientific papers study the influence of external and internal factors on the

activities of a non-integrated enterprise with their traditional division into factors of mega-, macro-, micro- and internal environment. As integration factors that cause influence on business structures, most researchers consider the factors of European integration as the most significant modern world process. The work of such scientists as: Anufrieva D. [1], Grebelnyk O.P. [2], Zalutska H.Ya. [3], Konstantinova A.A. [8], Kochergina N.V. [4], Kotsko T.A. [5], Lipov V.V. [6], Tkachenko O.O. [7], Fedirko N.V. [8], Chumachenko Yu.S. [9] and others. The study and consideration of the impact of European integration factors on the formation and development of business structures is important and necessary, but this group of factors does not directly affect the activities of business structures, but has an indirect impact. Thus, European integration factors are factors of indirect action in the activities of business structures located in the mega- and macro-environment. To date, the impact of integration factors of direct action on the functioning of business structures, which are insufficiently studied, needs in-depth research.

Aims. The aim of the article is to generalize the integration factors of the internal environment of enterprises, which determine the formation of business structures as new integrated subjects of the globalized space.

Methods. The main task of the research methodology is the process of cognition and improvement of the system of principles, methods, rules and norms, which are already formed in both foreign and domestic scientific works on the problems of enterprise integration. Based on methodological principles (unity, theory and practice, historical approach to studying the problem, objectivity, comprehensive and systemic approaches), methodological requirements for research, analysis and systematization of factors of enterprise integration, which leads to the formation of business structure. The monographic method was used in the study of published scientific works of foreign and domestic scientists on the factors of enterprise integration and formation of the business structure.

Results. The formation of a business structure is a complex process of integration of several enterprises, which takes place in a certain environment. At the same time, each enterprise that seeks to integrate has its own internal environment and operates in the external environment. To ensure the effectiveness of the integration process, partner companies must integrate separate internal and external environments. If the integration process is successful, the business structure gets an integrated internal and integrated external environment, which is more than the separate environments of partner companies. The process of integration of external and internal environments of partner companies is carried out under the influence of various factors of external and internal environment, the influence of which is not suspended if the company merges into a business structure [10, 11]. On the contrary, new, unique integration factors are added to the existing factors of the external and internal environment that influenced the enterprise, the action of which occurs only in the process of enterprise integration and formation of the business structure. Such factors can both stimulate the process of enterprise integration and hinder it. Consider the integration factors of the internal environment in more detail.

Stimulate the process of integration of enterprises and encourage the creation of an entrepreneurial structure integration factors of the internal environment, which we propose to divide into three groups: system-forming, structure-forming, process-forming (Fig. 1).

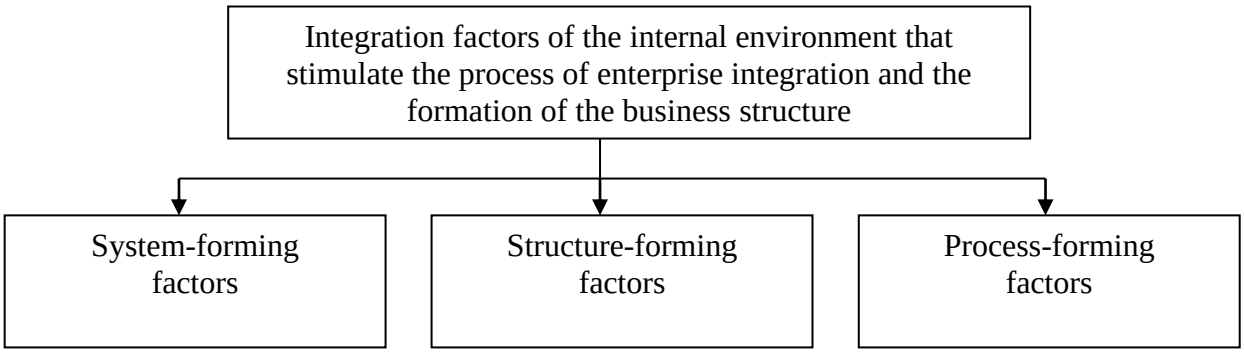

Figure 1. Classification of integration factors of the internal environment that stimulate the process of integration of enterprises and the formation of business structure

Source: compiled by the authors

The system-forming factors include the integration factors of the external and internal environment, which, influencing enterprises, contribute to the process of their integration and the formation of the business structure. The influence of these factors involves the separation of those properties of enterprises that are a necessary prerequisite for their integration and the formation of the business structure as a new complex integrated system. Structural integration factors of the external and internal environment contribute to the formation of the structure (organizational structure) of the business structure as a static integrated system. Their influence leads to the need to transform the existing organizational structure of enterprises seeking to integrate, the separation of units to be merged, the elimination of units not involved in the integration process. Process-forming integration factors of the external and internal environment ensure the implementation of integrated business processes at all levels of management of enterprises seeking integration as a dynamic system. Their impact accelerates the integration of production, supply, sales, marketing, financial and organizational business processes between companies seeking to integrate. Internal integration factors that stimulate the process of integration of enterprises and encourage the creation of business structures are systematized in table 1.

The internal integration factors that contribute to the process of enterprise integration and the formation of the business structure include the following:

1. System-forming factors:

– the level of synergy between enterprises that are integrated into the business structure. This factor affects the level of interaction between enterprises in the integration process;

– growth of value added of the business structure. The influence of this factor provides an increase in the value of the business structure compared to the value of enterprises before integration;
– the degree of integration of methods of enterprise management and their relationship to the overall purpose of managing the business structure. Under the influence of this factor, the coordination and interaction of enterprise management systems is ensured.

Table 1. Internal integration factors that stimulate the process of enterprise integration and encourage the creation of a business structure

System-forming factors	Structure-forming factors	Process-forming factors
the level of synergy between enterprises that are integrated into the business structure	the level of readiness of enterprises for integration	creating the effect of scale of production
growth of value added of the business structure	efficiency of transformation of divisions of the integrated enterprises	level of technology exchange of integrated enterprises
the degree of integration of enterprise management methods and their relationship to the overall purpose of business structure management	the level of consistency of the mission and goals of the integrated enterprises	opportunities to increase the cost of R&D of integrated enterprises
	availability of an integration plan	expansion of sales channels of integrated enterprises
	availability of integration budget	expansion of production and technological ties of integrated enterprises
	duration of the integration project	
	the level of administrative support for the integration process by the management of the enterprises being integrated	

Source: compiled by the author

2. Structure-forming factors:
– the level of readiness of enterprises for integration. The high level of readiness of enterprises for integration ensures the timely formation of the business structure;
– efficiency of transformation of subdivisions of integrated enterprises. The influence of this factor contributes to the formation of the organizational structure of the business structure, the unification of divisions of enterprises, the avoidance of duplication of divisions, the elimination of redundant divisions;
– the level of consistency of the mission and goals of the integrated enterprises. The effect of this factor provides a combination of mission and goals of enterprises seeking to integrate with the mission and objectives of the business structure;

– availability of an integration plan. The development of a plan for the integration of enterprises provides a clear sequence of actions for the formation of the business structure;
– availability of integration budget. The presence of the budget of integration and budgeting of this process provides the business structure with the financial resources necessary for its creation;
– duration of the integration project. Delaying the process of enterprise integration leads to overspending in creating a business structure and, conversely, accelerating the integration process may lead to incomplete integration of enterprises, which will partially remain operating as independent entities;
– the level of administrative support for the integration process by the management of the enterprises being integrated. The influence of this factor ensures the clarity and continuity of management processes for the formation of the business structure by its management.

3. Process-forming factors:
– creating the effect of scale of production. The result of the influence of this factor is an increase in production by the business structure and reduce its cost;
– level of technology exchange of integrated enterprises. The exchange of technologies between the integrating enterprises provides an increase in the level of innovative development of the business structure;
– opportunities to increase the cost of R&D of integrated enterprises. Increasing the cost of R&D of integrated enterprises increases the level of innovation activity of the business structure;
– expansion of sales channels of integrated enterprises. The result of the influence of this factor is the expansion of sales opportunities and increase the market share of the business structure;
– expansion of production and technological ties of integrated enterprises. The result of the influence of this factor is the expansion of opportunities for cooperation with suppliers of various resources, increasing the supply area, which ensures uninterrupted supply for the business structure.

Discussion. The results of the analysis of the influence of external and internal factors confirmed the conclusion that they have an impact on both the independent enterprise and business structures, the association of enterprises through a special group of factors - integration factors.

Conclusion. In the process of integration, the separate internal and external environments of enterprises are merged into one whole, while the integrated external and internal environment of the business structure expands. The creation of the business structure is encouraged by the integration factors of the internal environment, which are proposed to be divided into three groups: system-forming, structure-forming, process-forming.

The scientific novelty of the obtained results is the formation of a system of integration factors of the internal environment of enterprises, which, unlike existing ones, allows in the process of integration of enterprises and formation of business

structure to monitor them in the context of system-forming, structure-forming and process-forming factors.

The practical significance of the obtained results can be used in the process of integration of domestic enterprises to increase the efficiency of the formation of the business structure and as one of the possible strategic directions for further development.

Author contributions. The authors contributed equally.

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THE TRENDS OF UKRAINE ENERGY STRATEGY DEVELOPMENT IN THE CONTEXT OF ENERGY SECURITY

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Abstract. *Developing an energy policy is a long term challenge. This needs a clear but flexible framework: clear in that it represents an approach endorsed at the highest level, flexible in that it needs periodic updating. This allows stocktaking, monitoring progress and identifying new challenges and responses on all aspects of energy policy. The purpose of the research is to investigate the current trends of Ukraine energy strategy development in the context of energy security and identify promising development directions. This paper is based on the traditional methods of scientific knowledge: analysis and synthesis – in identifying energy strategy development in the context of energy security; comparison and compilation – to analyze the experience of Ukraine energy strategy development; statistical method – trends of Ukraine energy strategy development; scientific support methods – to summarize and to formulate conclusions on priority of the Ukrainian state energy policy for providing energy security. These approaches allow to allocate the challenges and opportunities for Ukraine to develop energy sector, to achieve the goals of Energy Strategy of Ukraine until 2035. The article provides the current development trends of the energy strategy of Ukraine in the situation of integration into the European energy environment. Based on the study, measures are proposed in Ukraine's energy policy to ensure energy security, which implies diversification of routes and sources of energy resources and technology, a sharp improvement in the effective use of resources, development of renewable energy, a new model for the functioning of the coal industry, integration of energy markets of Ukraine and the European Union, sustainable development of the energy sector.*

Keywords: *energy strategy, energy security, energy resources.*
JEL Classification: Q4, Q47
Formulas: 0; fig.:2; tabl.:0; bibl.:25

Introduction. Ukrainian energy sector is the base of the national economy. In terms of taxes paid, this industry is a real locomotive. In 2019, the state budget received from the energy sector about UAH191.6 billion in tax payments, which is 21.7% of the total volume [1]. The national joint-stock company "Naftogaz of Ukraine" alone has a share of 8% in Ukrainian GDP, while the electricity market takes up about 6%. Ukraine's United Energy Grid is Europe's sixth largest following Germany, France, Italy, Spain and the UK. Near 450,000 specialists work in Ukraine's energy sector, accounting 3% of the employed population, and that's excluding related industries. Today this foundation needs a very serious modernization. And, of course, Ukrainian energy sector is a driver for the development of different branches of industries, just like the development of different branches of industries is something that affects the energy sector. Modern and competitive energy sector is an integral part of the developed national economy of Ukraine.

The energy intensity of the Ukrainian economy is one of the highest among the European countries. If this is not changed, Ukraine's economy will not be able to become effective in the modern world. Therefore, it is extremely important that country works towards reducing energy consumption. In addition to the global impact

on the economy, energy efficiency has a significant multiplier effect: the development of various sectors of national economy and science, spread of new technologies, and creation of new jobs and specialties. According to preliminary calculations, each hryvnia invested in energy efficiency creates another four in the economy.

It is extremely important for Ukraine to finally get rid of the status of natural gas importer. Ukraine has colossal potential in this regard. Ukraine has a strong agrarian sector, so biomass that is amassing can be used as a source of energy. In this case, economy will use Ukrainian resource without needing to spend foreign currency on imported natural gas. The search and development of the use of new energy sources alternative to natural gas are among the key tasks for achieving energy independence. It is worth mentioning that Ukraine was one of the pioneers and world leaders in hydrocarbon production: in the 1970s, the record natural gas output in Ukraine was at 68.7 billion cubic meters (bcm). Since then, gas and oil production has been constantly decreasing, until 2016, when the trend finally reversed. In order to promote self-sufficiency in natural gas production in Ukraine, it is necessary to approve the bill amending certain legislative acts of Ukraine on the facilitation of some aspects of the oil and gas industry, which should reduce a number of duplicated bureaucratic procedures, accelerate the acquisition of land for oil and gas extraction, will reduce rental rates for new wells down to 12%. A revolutionary boost in the production of Ukrainian hydrocarbons is a key issue not only for Ukraine's energy independence, but also for the country's national security and strategic development.

The current reform of the Ukrainian energy sector allows to talk about following European trends. If we talk about specific things, then these are reforms in the field of electric power industry and primary energy resources – natural gas and thermal coal. Reform of the gas sector began in early 2015. A fundamental reform was the introduction of secondary legislation on the natural gas market, which is recognized throughout the world. Also a regulatory framework was created that allows to attract investment and improve the quality of service for consumers. At the same time, in 2018, reforms in the gas sector have slowed. It has not yet been decided to conduct an anbanding of National joint-stock company “Naftogaz of Ukraine”. The government-approved search plan for the partner company to manage the gas transportation system is not being implemented. The deadline for starting the daily balancing was postponed due to disagreements between the the National Commission, which performs state regulation in the energy sector and utilities (regulator) and Public Joint Stock Company “Ukrtransgaz”.

Talking about the production of electricity – it is a systematically prepared base of by-laws under the new law “On the Electricity Market of Ukraine”. At the same time, the market reform of the European model was carried out in 2019. The problem of debt restructuring and the problem of cross subsidizing have not yet been resolved at the legislative level. Without this, the full functioning of the electricity market is impossible.

In the direction of electrical networks, a regulatory framework was developed for the introduction of incentive tariff formation (RAB, Regulatory Asset Base),

purchase and sale agreements (PPA, Power Purchase Agreement) were approved, which meet international standards and significantly increase the interest in the alternative energy sector, investment in renewable energy. Introduction of guaranteed power quality standards is also noteworthy. These standards today give consumers the right to material compensation in case of poor quality services.

Literature review. Energy security is one of the most important components of the economic security of any country and affects the phenomena and processes of not only the energy system, but also the economy. It is defined as the protection of citizens and the state as a whole from the threats of the deficit of all types of energy and energy arising from the influence of negative natural and man-made, managerial, socio-economic, internal and foreign factors.

In accordance with the Yergin [2], the current model of energy security, which was born out of the 1973 crisis, focused primarily on how to handle any disruption of oil supply from producing countries. Today, the concept of energy security is expanded to include the protection of the entire energy supply chain and infrastructure.

Kalicki and Goldwyn [3] define energy security as "ensuring access to energy resources necessary for the progressive development of national power".

Energy security as one of the most important components of economic security manifests itself, firstly, as a state of ensuring the state of fuel and energy resources that guarantee its full functioning and, secondly, as the state of security of the energy complex, first of all – nuclear energy, and the ability energy to ensure the normal functioning of the economy, energy independence of the country. Political and energy independence are interdependent [4].

Different approaches characterize attempts to develop analytical tools for assessing the level of threats and the state of energy security, which prevents the precise definition of the subject field and the scope of the use of the concept of energy security.

The European Commission gives a definition to energy security as security of energy supply, an integral part of the Energy Union strategy. Energy supplies are exposed to risks that include disruption from countries from which the EU import fuel but also extreme weather events, industrial hazards and terrorism and hybrid threats. By working together to prevent and to manage potential crises, the EU and its member countries can make the European energy system more resilient. Solidarity and regional cooperation, as well as speaking with one voice internationally when dealing with supplier countries, are key to this [5-9].

According to Khatib et al. [10], energy security is the continuous availability of energy in varied forms, in sufficient quantities, and at reasonable prices.

International Energy Agency's website [11] defined energy security as the uninterrupted availability of energy sources at an affordable price. Energy security has many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. On the other hand, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance.

Unfortunately, in these definitions one can notice a certain narrowing and blurring of the concept of "energy security", because, firstly, in this formulation does not specify the object and subject of energy security, that does not allow to determine the objectives of the strategy of ensuring energy security and to work out concrete means to achieve these goals. Secondly, there is no indication of the cause of threats to energy security, which can have economic and political, social, natural, technological, technological character. Thirdly, such interpretations do not include additional inclusion in the concept of energy security factors that take into account the role of fuel and energy complex in the country's economy.

Denchev [12] notes that there is a difference in the priorities of different groups of countries in the field of energy security. For importing countries, this is first of all ensuring the reliability of their energy supply, diversifying sources of energy supply, ensuring the security of energy infrastructure, introducing new technologies for reducing dependence on energy imports. For exporting countries, this is to consolidate strategic markets at economically advantageous prices, secure capital and finance investment in infrastructure and resource development.

In summary, the author point out that all these approaches complement each other and are based on several approaches in which energy security is seen as:

- state of protection of citizens, society, economy from the threats of unsatisfactory energy supply;
- the state of protection of interests (national, state, public) in the energy sector;
- state of power supply systems (in particular, fuel and energy) in different conditions.

There are various approaches to the definition of interconnection, interdependence of basic and specific concepts of safety, and energy security, in particular in the scientific literature. In our opinion, it is necessary to investigate the problem of developing its own Ukrainian model of an active strategy for ensuring energy security that actualizes the problem of comprehension of its systemic, structural, functional properties and hierarchical characteristics.

It is necessary to recognize the lack of a common understanding of the concept of "energy security" in Ukraine and abroad. Only in our country today there are a number of fundamentally different interpretations of the concept of "energy security". This circumstance greatly complicates the unification of efforts of national science, higher education, business entities and state administration bodies to form an effective strategy for ensuring Ukraine's energy security. The most possible reason for such diverse voices is the insufficient development of the theory of energy security, the methodology of its study and provision. The explanation of the intrinsic properties and specific characteristics of energy security is greatly complicated by pluralism in understanding and understanding the scientific apparatus through which they express themselves.

Aspects of energy strategy development in the context of energy security were thoroughly researched by numerous scientists who comprehensively covered the trends in energy strategy. So, Gonzalez and Bobrov [13] compared EU and Ukraine Security of Energy Supply. Lyubashenko [14] identified integration problems of

energy markets of Ukraine and the European Union. Sukhodolia and Bobro [15, 16] investigated the part of Ukrainian energy security police, in particular, system of physical protection of critical infrastructure. Sendich [17], Zachmann [18], Jason and Cantos [19] explored the various issues of energy security. Pirani [20] noted issues of gas market reforms. Logatskiy [21] noted the new challenges, market conditions of Ukrainian energy sector. Radeke and Naumenko [22] noted the regulation and ways promoting energy efficiency improvements. Lakyda and Geletukha [23] identified the energy potential of biomass in Ukraine.

Aims. The purpose of the research is to investigate the current trends of Ukraine energy strategy development in the context of energy security and identify promising development directions.

Methods. This paper is based on the traditional methods of scientific knowledge: analysis and synthesis – in identifying energy strategy development in the context of energy security; comparison and compilation – to analyze the experience of Ukraine energy strategy development; statistical method – trends of Ukraine energy strategy development; scientific support methods – to summarize and to formulate conclusions on priority of the Ukrainian state energy policy for providing energy security. These approaches allow to allocate the challenges and opportunities for Ukraine to develop energy sector, to achieve the goals of Energy Strategy of Ukraine until 2035.

Results. The strategic importance of the Ukrainian energy sector is due to the volume of attracted resources and their decisive influence on the country's economic and political system. Over the past 29 years, several attempts have been made to reform the Ukrainian energy sector in accordance with the requirements of the times and political priorities. But, despite the length of the processes, they have not yet the expected results.

The weaknesses of Ukraine's energy sector since independence in 1991 shine a spotlight on the foundational link between energy security and national security. Talking about energy efficiency, Ukraine has one of the last place in Europe.

By that time, Ukraine rejected all logically consistent options for reforming the energy sector, which are market liberalization with the transition to market pricing for all categories of consumers; opening markets and attracting investors' financial resources while maintaining strong state-owned energy companies; maintaining a centralized management system and energy assets under state control.

In this case, a model of partial privatization was chosen, while preserving the possibilities of state regulation. The solution was based on the following:

- the state establishes subsidized prices for the population and compensates for the difference in prices, offsetting the losses of energy suppliers;
- the state controls the expenditure of energy companies by limiting their ability to invest in the development of new energy infrastructure and to modernize the existing one;
- the state introduces a "cost-based" methodology (actual costs plus an allowable level of profitability) in tariff and pricing.

Such a model, firstly, stimulated energy suppliers to overstate costs, expenditures and losses as it increased the amount of compensation received from the state, secondly, leveled the interest of companies in implementing energy saving measures and improving the energy efficiency of technological processes as it guaranteed the receipt of resources depending on actual costs.

The situation was complicated by continuous state interference in the functioning of markets and multilevel tariffs established for various categories of consumers and energy producers, which provided unfair suppliers with an additional opportunity to manipulate, especially given the lack of accounting.

The long time absence of positive shifts in the development of competitive markets, the increase in the energy efficiency of the economy, the use of its own energy potential, and diversification of sources and routes of energy supplies predetermined the critical vulnerability of the Ukrainian energy sector in the face of external and internal risks. Political changes in 2014 turned these risks into threats to the stable functioning of the national economy and the existence of Ukraine as a state. A direct consequence of this was the need to create a new vision of the energy security policy.

The transforming Ukraine's energy sector from being a drag on its economy and national security into a positive enabling force will require both well-designed plans and sound implementation pathways that can be sustained. Proceeding without due planning and preparation poses risks of creating ill-conceived market structures or regulations and negative unintended consequences. Proceeding after excessive deliberation, however, allows opponents of reform to marshal their political forces and obstruct needed change. The challenge for Ukraine is to navigate between these counterposed hazards.

In 2017 the Cabinet of Ministers of Ukraine adopted Energy Strategy of Ukraine for the period until 2035 [24]. This updated document was much needed. The document defining the state's main strategic goals in the energy sector is one of the cornerstones of the clear setting of state priorities in energy policy in general. Intensive reform of the energy sector is long overdue and, if compared with previous energy strategies of Ukraine, is rather progressive and outlines a number of positive changes.

The main goals declared in the Energy Strategy were: liberalization of markets, establishing effective regulation and, as a result, attracting investors to the economy's energy sector.

Figures that's situated below, present the current structure of the primary energy supply according to the energy balances of Ukraine from 2007 to 2019 and the forecast till 2035. Figure 1 shows the general structure of primary energy supply in actual terms, in million tons of oil equivalent. Figure 2 shows the percentage of each source of primary energy supply in percent.

Sustainable development of the national economy requires reliable and stable energy supplies at affordable prices. The fulfillment of this task requires responding to challenges that threaten of current energy security.

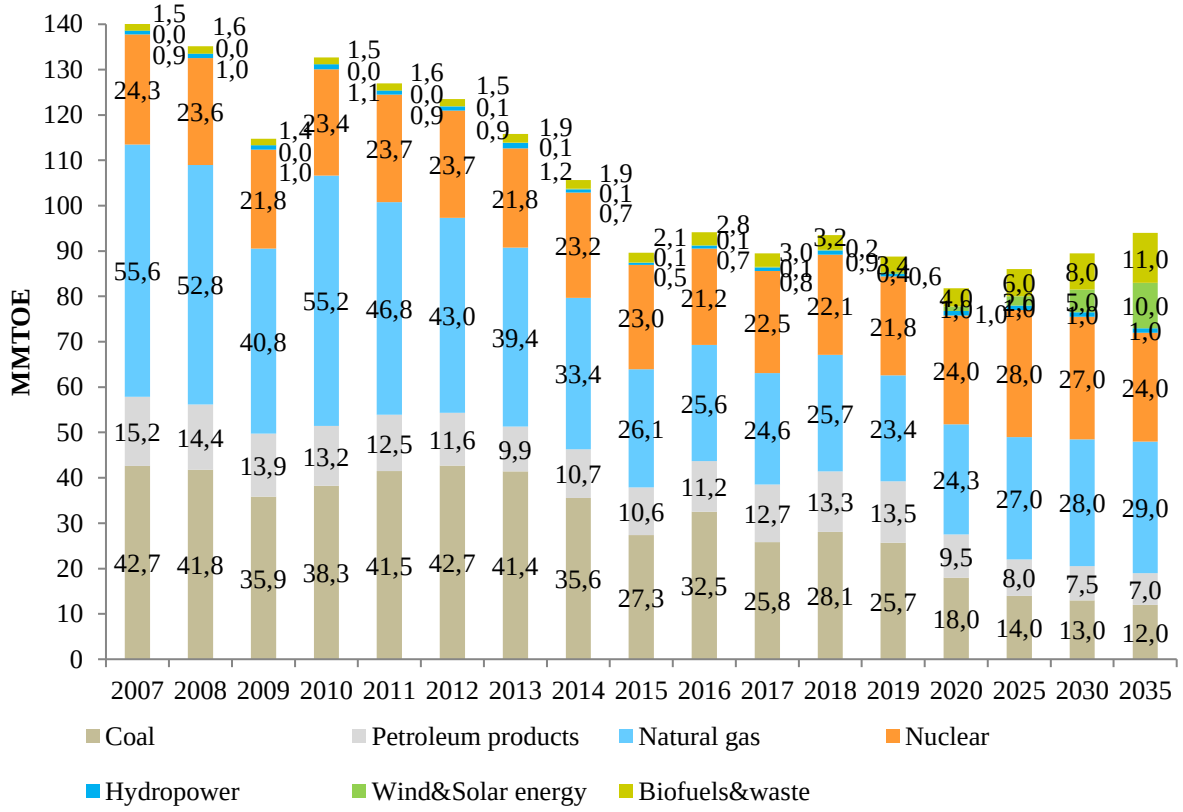

Fig. 1. General structure of primary energy supply in actual terms (2020-2035 - forecast)

Source: compiled by author based on information from State Statistics Service of Ukraine

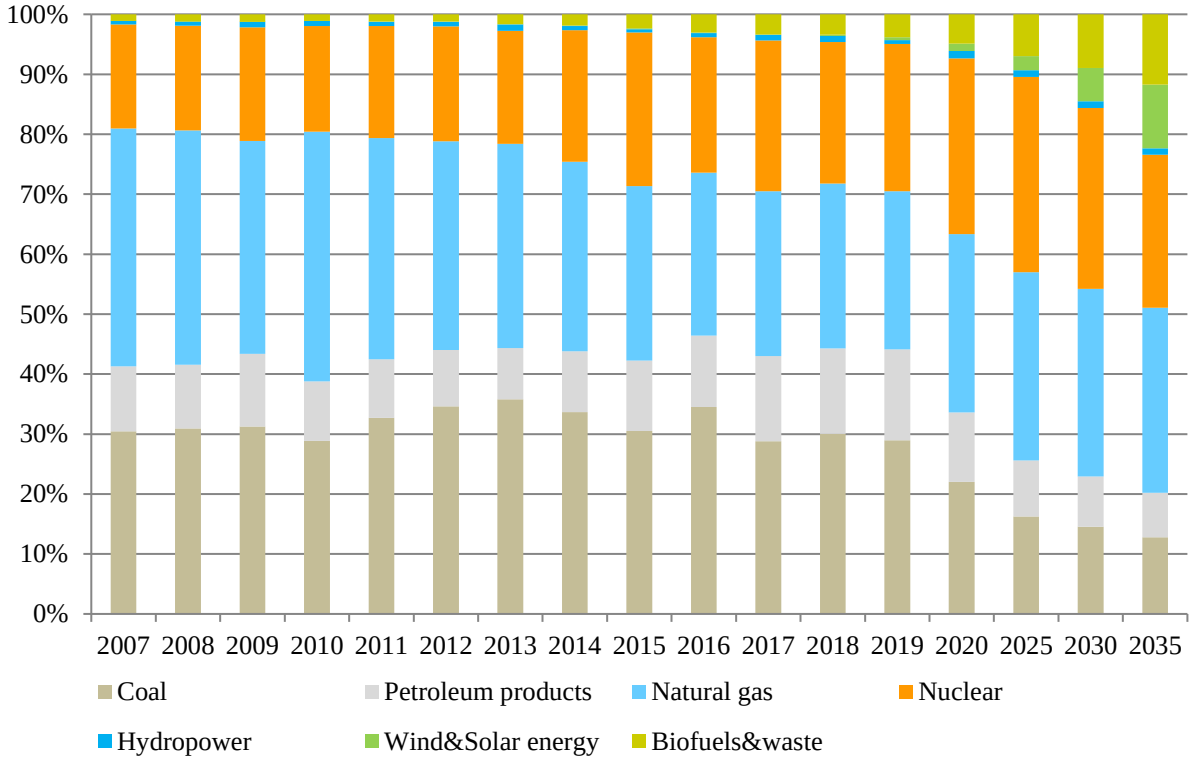

Fig. 2. Percentage of each source of primary energy supply

Source: Compiled by author based on information from State Statistics Service of Ukraine

The key is the unsatisfactory state of Ukraine's energy sector, which is constantly deteriorating due to the moral and physical aging of fixed assets. Most of the power generation assets and networks are worn out and ineffective. The overwhelming majority of thermal power plants' units require modernization or replacement, a significant part of the trunk and distribution networks have worn out their resources. Emissions of dust, sulfur oxides and nitrogen by thermal power stations exceed the corresponding norms of developed countries.

Current models of energy markets do not allow to solve even the modern problems. Despite the adoption of the laws of Ukraine "On the Electricity Market of Ukraine" and "On the Natural Gas Market" both markets remain disorganized.

None of the remaining oil and gas refineries in Ukraine is able to compete with enterprises in the neighboring countries and has the resources for large-scale reconstruction. The share of imported oil products is close to 80%, while the share of motor fuel produced in Russia and from Russian raw materials in the Republic of Belarus, Lithuania, and Poland exceeds 80% ($4,5billions in money terms) in the import structure.

The problem of a single nuclear fuel supplier for nuclear power plants is particularly solved. The current model of tariff formation does not allow to form a sufficient investment resource. The extension of the life of nuclear power plants, the management of spent fuel and radioactive waste also require the significant financial injections.

The occupation of part of Ukrainian territory led to the dependence of coal imports. The deficit of coal had a negative impact on the economy, proving the imperfection of the national energy security system. Given the excess of the installed capacity in Ukraine, the deficit of the maneuvering capacity continues to grow. The lack of energy during the peak periods of consumption reaches 3 GW. The gap between consumption and production of electricity increases, in this way dependence in the balancing increases too.

Despite significant problems with energy security, the tasks of increasing energy efficiency have not become sufficiently important. There are stereotypes in society about the presence of an excess of cheap energy. The population expects that the state will subsidize all energy costs in the future. At the same time, business entities do not see the need to introduce high energy conversion technology, since they use the "cost-based" methodology of pricing and tariffs. This violates the market balance between different types of energy resources and sources of energy supplies, weakening the competitiveness of national producers in the world market.

These challenges require the state to ensure sustainability of energy supplies without switching to manual regulation in the event of the slightest problems. Situations where the normal functioning of markets is interrupted for a long time after the announcement of the next emergency measures in the energy sector should not become common practice.

Proceeding from the foregoing, Ukraine requires the transition to a new model for ensuring energy security and developing the energy sector.

Ukraine continues to demonstrate the movement towards integration into the European energy environment. Thus, most of the systemic issues were subject to legislative approval – laws were adopted on the electricity market, on environmental impact assessments, and on a package of energy-efficiency measures. The issue of the minimum reserves of oil and oil products, the issue of transparency in extractive industries, a strategic environmental assessment, as well as the new wording of the Subsoil Code were unchanged with regards to legislation.

The international structures, primarily the European Commission, the IMF, the EBRD and the World Bank, as well as the Energy Community Secretariat, act in a coordinated manner and retain their influence. Despite talk of "Ukraine fatigue" key partners have maintained a high level of attention and interest in the transformation of energy markets in Ukraine.

The trend of the last years was the disclosure of more information and data – both proactively disclosed by certain state bodies (the Ministry of Energy, the NEURC), and in such fundamental issues as budget transactions, public procurement, and the management of state-owned enterprises. New rules harmonized with European accounting and financial reporting rules, implemented.

There is an attempt to systemize and improve the process of European integration. Thus, the Government Office for the Coordination of European and Euro-Atlantic Integration has actually been re-established, a new plan for the implementation of the Association Agreement has been adopted, and a new procedure for its monitoring by means of so-called "scorecards" has been developed.

In the understanding of the author, during the process of implementing the Association Agreement in the areas of energy and environment, the old challenges became apparent and a number of new ones appeared.

Manipulations within the already-adopted framework laws became a serious problem, when the principles and norms introduced by them were distorted at the regulatory level. In 2018 for more than a year the President, the Verkhovna Rada and the Cabinet of Ministers had been unable to create a committee for the selection of new NEURC members, as a result the work of the Regulator has been paralyzed for 1.5 months. Several "attacks" were made on the ProZorro system involving the parliament under cover of the fight against cyber-threats or in the interests of the "national producer". Also, a package of energy-efficiency laws, the legislation in heat metering, lacks high-quality by-laws.

Obstacles in the discovery of information and the lack of transparency in the early stages of documents' development became another challenge.

On the other hand, the sophisticated navigation on official government web resources may also conceal important details about energy markets for engaged domestic consumers. For an example, updates on the site of the Cabinet of Ministers led to the disappearance of information about certain implementation plans.

There are significant delays with the publication of adopted documents. Acting of individual regulatory legal acts sometimes continues even after their formal adoption. This is what happened with the Plan for the implementation of the Association Agreement, the National Plan for Reducing Emissions from Large

Combustion Plants, and the Action Plan for the Implementation of Energy Management Systems at Budgetary Institutions.

Similar violations of procedures for the adoption of Government documents, or a failure to comply in practice with the provisions of the law, are the consequences of "frozen conflicts" inside the executive branch. Such conflicts occur because of the various interests of the agencies or individuals involved, conflicts which may be personal in nature, or through the lack of communication between the apparatus and advisory groups that are empowered to develop draft decisions.

The system of coordination of European reforms, despite attempts to change it, has made little progress. The presence of parallel structures for preparing decisions has been preserved, while resources are not invested in raising the level of professionalism, deepening knowledge and, in general, creating a substantially higher capacity for ministries and the Regulator.

Discussion. On the basis of the conducted research, author identified that priority of the Ukrainian state energy policy for providing energy security should be the diversification of routes and sources of energy resources and technology, a sharp improvement in the effective use of resources, development of renewable energy, a new model for the functioning of the coal industry, integration of energy markets of Ukraine and the European Union, sustainable development of the energy sector.

Conclusion. It is necessary to promote the following directions:

1. Diversification of supplies of resources and technology. Domestic energy was an element of fuel and energy complex of the Soviet Union. Therefore, even having obtained sovereignty, Ukraine is still struggling for its resource, technological and managerial independence.

2. Improving energy efficiency. Although the need for the efficient use of fuel and energy resources is recognized as a priority for sustainable development, there has not been a breakthrough in this direction (in 1990 the level of energy efficiency of the national economy was about 61 % lower than the global one, in 2019 the gap narrowed to about 56%). Thus, no conditions for the formation of conscious energy-efficient society have been created in Ukraine. Since the increase in the efficiency of fuel and energy use is extremely fragmented and almost not stimulated, it does not reflect in the costs of households. As a consequence, the population does not see any sense in changing the habitual way of life. And since consumers are not ready to pay much today for the sake of receiving an uncertain benefit tomorrow, the producers are also not interested in developing, promoting and implementing energy efficient technology and devices.

3. Development of renewable energy. As of January 1, 2020, the total installed capacity of facilities operating under the feed-in tariff was 6.8 GW (excluding those in the temporarily occupied territories). In 2019, they produced 5.5 billion kWh of electricity. Despite this, the share of renewable energy sources in the production structure did not exceed 3.6%.

4. The current political situation stressed the need to rethink the place and role of the coal industry in the national economy. The practice of understating the cost of coal through budgetary subsidies to keep the industry afloat has reached a dead end.

State policy should focus on restructuring the industry, creating viable economic entities and their privatization in the short term. Ukraine has no alternative of the formation of a new model for the functioning of the coal industry based on market conditions of the economy, and the introduction of a competitive market for coal products.

5. Integration of energy markets of Ukraine and the European Union. Having concluded the Association Agreement with the EU, Ukraine has made a decision on the priorities of its development. The principle choice of Ukraine in terms of its full integration into the group of the European nations predetermines the need to form an energy policy that must comply with the EU principles and practices, Ukrainian energy industry should become an integral part of the European energy markets and the system of ensuring the EU's energy security. Systemic work and coordination of efforts of the whole system of public authorities are necessary.

6. Ensuring the sustainable functioning of the energy sector. Taking into account modern challenges, more and more countries call their political priority the ensuring of energy sustainability, which is guaranteed by the systems of strategic reserves, primarily oil reserves; crisis prevention; and critical infrastructure protection. Having concluded the Association Agreement with the EU, Ukraine has undertaken to provide itself with this toolkit.

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CREATIVE INDUSTRIES AND THEIR ROLE IN UKRAINE'S ECONOMIC SYSTEM

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Abstract. *In 2019, the United Nations General Assembly declared 2021 the International Year of the Creative Economy for Sustainable Development, recognizing the growing role of the creative industry in the economic development of both developed and developing countries. The importance of CI, which lies at the crossroads of art, business and technology, is constantly growing, they have become a strategic direction for increasing competitiveness, productivity, employment and sustainable economic growth (UNCTAD 2019). Creative industries are types of economic activities aimed at cr eating added value and jobs through cultural (artistic) and / or creative expression, respectively, their products and services are the result of individual or joint creativity, skills and talen. These economic activities include activities that are directly related to the creation of a creative product. At the same time, a significant contribution to the creative economy is made by related areas that provide support, facilitate, service and/or enable the creation, production and distribution of a product generated by the creative industries. UNESCO has defined the creative industries as industries whose purpose is to "create, produce and commercialize creative content that are intangible and cultural in nature". The main directions of creative goods export are Germany, the Russian Federation, Poland, Denmark, Belarus and Latvia. The largest suppliers of creative goods to Ukraine are China, Turkey, Poland, Germany and Italy. Over the last two decades, there has been a growing understanding of the importance of creative industries for society and the economy through the dissemination of concepts, ideas, skills, knowledge, which contribute to the development of innovation, technological progress, quality of life, etc. In particular, creative industries are important drivers of economic and social innovation in the economy. Creative industries contribute to the introduction of new ideas and technologies in other sectors, increase their productivity and competitiveness.*

Keywords: *creative economy, creative industries, economic and social innovations in economics.*

JEL Classification: O35, O57, O14

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Introduction. In 2019, the United Nations General Assembly declared 2021 the International Year of the Creative Economy for Sustainable Development, recognizing the growing role of the creative industry in the economic development of both developed and developing countries, in order to draw attention to problems that hinder the development of creative industries (CI) and the opportunities that create these areas. The importance of CI, which lies at the crossroads of art, business and technology, is constantly growing - both at the national level and in comparison of the competitiveness of countries at the international level. They have become a strategic direction for increasing competitiveness, productivity, employment and sustainable economic growth (UNCTAD 2019) [1]. Exceptional growth in turnover, job creation and resilience to the economic crisis make the creative industries an attractive area for investment at both the private and public levels (UNCTAD 2004) [2]. On the other hand, the scope of knowledge about the economic role of CI and

their impact on the development of other sectors of the economy is quite limited and needs research.

Literature review. Although the term "creative industries" is becoming more commonly used, an analysis of the literature has shown that there are different approaches to its definition, and a single standard has not yet been presented. Thus, the Law of Ukraine "On Culture" [3] gives the following definition of creative industries: "Creative industries are types of economic activities aimed at cr eating added value and jobs through cultural (artistic) and / or creative expression", respectively, their products and services are the result of individual or joint creativity, skills and talent.

Types of economic activities belonging to the creative industries are defined by the order of the Cabinet of Ministers of 24.04.2019 № 265-r "On approval of types of economic activities belonging to the creative industries" [4].

Aims. The purpose of the research lies in defining the determinants of strengthening the competitiveness of the Ukrainian economy and factors, on the contrary, inhibiting it.

Methods. The methods of economic and statistical analysis, analysis and synthesis, formalization, axiomatic method, system analysis have been applied in the course of studying the matter of discussion.

Results. The authors grouped the types of economic activity in 12 key sectors of the creative industries (Table 1). It is necessary to note that the grouping of KVED into sectors is quite conditional, as the level of KVED detail does not always allow to cover and take into account the specifics of the sectors.

These economic activities include activities that are directly related to the creation of a creative product. At the same time, a significant contribution to the creative economy is made by related areas that provide support, facilitate, service and/or enable the creation, production and distribution of a product generated by the creative industries.

For the objectivity of the study, we will analyse the approaches to the definition of CI in other countries. Thus, UNESCO has defined the creative industries as industries whose purpose is to "create, produce and commercialize creative content that are intangible and cultural in nature".

As the research [8] shows, although the approaches are essentially similar, they still differ in the methodology for defining creative industries (Table 2).

Thus, the methodology of Poland, Turkey and Eurostat, in general, is based on the report [6] of the European Network of Statistical Systems on Culture (ESSnet-Culture) in 2012. The report identifies areas that belong entirely to the field of culture, mainly or partially. Usually countries refer to the sphere of culture those activities that entirely and chiefly belong to the categories. But still there are differences between the statistics of countries.

The Statistical Office of the United Kingdom identifies a separate group of economic activities - Creative Industries, Digital Sector, Cultural Sector, Telecommunications, Gambling, Sports and Tourism (CCMS) [7]. In part, these

sectors intersect: Creative sector includes the Cultural sector and intersects significantly with the Tourism and Digital sectors.

Table 1. Key sectors of creative industries by types of economic activity

CI sector	KVED	Economic activity
Architecture and urban planning	71.11	Activities in the field of architecture
Audio art	59.20	Publication of sound recordings
	60.10	Activities in radio broadcasting
Audio-visual art	59.11	Production of movies and videos, television programs
	59.12	Composition of movies and videos, television programs
	59.13	Distribution of movies and videos, television programs
	59.14	Demonstration of movies
	60.20	Activities in television broadcasting
Libraries and cultural monuments (archives, museums, etc.)	91.01	Functioning of libraries and archives
	91.02	Functioning of museums
Production of musical instruments	32.20	Production of musical instruments
Production of jewellery	32.12	Manufacture of jewellery and related articles
	32.13	Manufacture of bijouterie and related articles
Visual art	74.20	Activities in photography
	90.03	Individual artistic activities
Design	74.10	Specialized design activities
Literature, publishing, print media	58.11	Literature, publishing, print media
	58.13	Publishing of books
	58.14	Publishing of newspapers
	58.19	Publishing of magazines and periodicals
	74.30	Other publishing activities
New media and IT	58.21	Release of computer games
	58.29	Release of other software
	62.01	Computer programming
	62.02	Consulting on informatization
Advertising, marketing, PR	63.91	Activities of news agencies
	70.21	Public relations activities
	72.20	Research and experimental development on social sciences and humanities
	73.11	Advertising agencies
	73.12	Mediation in advertising in the media
Performing arts	85.51	Education in sports and recreation
	85.52	Education in the field of culture
	90.01	Theatrical and concert activities
	90.02	Activities to support theatrical and concert events
	90.04	Functioning of theatre and concert halls

Created according to data [5,8]

It should be noted that the formal comparison of economic activities does not always fully characterize the methodological differences in the definition of creative industries between countries. Canada, in particular, defines economic activities

related to culture more broadly and in detail (at the level of the 6-digit North American industry classification system), but within these codes limits activities only to creative goods and services. For example, creative industries include light industry, but only within crafts.

The United States distinguishes the arts and creative industries at the level of 8 classification marks of the standard industry classification, which gives a more accurate definition, but at the same time complicates comparisons between countries.

The contribution of creative industries to Ukraine's economy is growing rapidly. The number of economic entities (EEs) gradually increased in all sectors of the creative industries during 2019-2020; despite quarantine measures in 2020, the registration of new EEs and the opening of new businesses did not stop.

In 2019, the gross value added of creative industries amounted to 117.2 billion UAH (or 3.95% of total value added). In total, in 2019, CIs employed 352 thousand people, or 3.8% of employees, and compared to 2013, the growth was almost 40% [8, 9].

In absolute terms, the largest increase in the number of EEs showed the following TOP-5 sectors:

- new media and IT (+54 237 EEs, or + 40% as of the date 01.04.2021 compared to 01.04.2019);
- advertising, marketing, PR (+4 569 EEs, or + 24% as of the date 01.04.2021 compared to 01.04.2019);
- design (+2 734 EEs, or + 51% as of the date 01.04.2021 compared to 01.04.2019);
- audio-visual art (+1 244 EEs, or + 24% as of the date 01.04.2021 compared to 01.04.2019);
- visual art (+1 192 EEs, or + 22% as of the date 01.04.2021 compared to 01.04.2019) [9].

In absolute terms, in 2020 the largest increase in the declared income of EEs CI showed the following sectors:

- new media and IT (+46.6 billion UAH, or + 26.2%);
- advertising, marketing, PR (+2.9 billion UAH, or + 5.3%);
- design (UAH +1.1 billion, or + 31%) and visual arts (+0.3 billion UAH, or + 15.7%).

The largest decrease in the declared amount of income occurred in the following sectors:

- audio-visual art (-2.8 billion UAH, or -8.1%);
- performing arts (-0.9 billion UAH, or - 17.2%),
- literature, publishing, print media (-0.35 billion UAH, or -3%)
- production of jewellery (-0.12 billion UAH, or -12%).

It can be concluded that these sectors have suffered the greatest losses from the introduction of quarantine measures. In 2020, businesses in the creative industries paid taxes in the amount of 26 billion UAH - nominally 15.8% more than in 2019 [9].

Table 2. Differences in approaches to the CI definition

KVED	Economic activity	Ukraine	Great Britain		Germany	Poland	Canada	the USA
		Creative Industries	Creative Sector	Cultural Sector	Cultural and Creative Industries	Creative Industries	Culture	Art and Culture
32.12	Manufacture of jewellery and related articles							
32.13	Manufacture of bijouterie and related articles							
32.20	Production of musical instruments							
58.11	Publishing of books							
58.13	Publishing of newspapers							
58.14	Publishing of magazines and periodicals							
58.19	Other publishing activities							
58.21	Release of computer games							
58.29	Release of other software							
59.11	Production of movies and videos, television programs							
59.12	Composition of movies and videos, television programs							
59.13	Distribution of movies and videos, television programs							
59.14	Demonstration of movies							
59.20	Publication of sound recordings							
60.10	Activities in radio broadcasting							
60.20	Activities in television broadcasting							
62.01	Computer programming							
62.02	Consulting on informatization							
63.91	Activities of news agencies							
70.21	Public relations activities							
71.11	Activities in architecture							
72.20	Research and experimental development on social sciences and humanities							
73.11	Advertising agencies							
74.10	Specialized design activities							
74.20	Activities in photography							
74.30	Provision of translation services							
85.51	Education in sports and recreation							
85.52	Education in culture							
90.01	Theatrical and concert activities							
90.02	Activities to support theatrical and concert events							
90.03	Individual artistic activity							
90.04	Functioning of theatre and concert halls							
91.01	Functioning of libraries and archives							
91.02	Functioning of museums							

Discussion. The role of creative industries is growing in Ukraine's international trade, in particular in trade of services. Exports of creative services (30% of total exports of services) are growing rapidly. Compared to 2013, exports of creative services increased by 68% to 5.4 billion dollars. The United States prosper due to the rapid growth of computer services, while exports of other services are still 36.7% less than in 2013 [8].

The main directions of creative goods export are Germany, the Russian Federation, Poland, Denmark, Belarus, Latvia. The largest suppliers of creative goods to Ukraine are China, Turkey, Poland, Germany and Italy.

Conclusion. Over the last two decades, there has been a growing understanding of the importance of creative industries for society and the economy through the dissemination of concepts, ideas, skills, knowledge, which contribute to the development of innovation, technological progress, quality of life, etc. In particular, creative industries are important drivers of economic and social innovation in the economy. They support innovation in many other sectors by providing creative ideas for new products, creative goods and services used in production processes, and marketing support for innovative products. Accordingly, creative industries contribute to the introduction of new ideas and technologies in other sectors, increase their productivity and competitiveness.

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GAP ANALYSIS OF ROAD TRANSPORT STATISTICS OF UKRAINE

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Abstract. *Methodological approach to the implementation of statistical observations of the European Union regarding the activities of road transport are examined and a comparative analysis of the corresponding methodology of statistical observations in Ukraine is performed. Development of National Transport model needs big data. The purpose of the article is to bring the methodology of statistical observations of Ukraine to the Eurostat methodology and using database for development National transport model. The theoretical and methodological basis of the study are the basic provisions of the dialectical method of cognition, in particular induction and deduction. Various methods and techniques were used: statistical observation and grouping, analysis and synthesis, comparison, graphical. abstract-logical, systematic approach. Example is European transport policy information system development and implementation of data collection methodology for EU Transport Modelling. Sources of road transport statistics database in Ukraine are described in article.*

Keywords: *road transport, Eurostat, statistics, National transport model, statistical reporting, methodology, reporting forms, statistical observations, sample surveys.*

JEL Classification: C54, C82, K14

Formulas: 0; fig.: 2; tabl.: 1; bibl.: 14

Introduction. In accordance with the Association Agreement between Ukraine and the EU (Article 355 and Annex XXIX), it is envisaged to bring the methodology of statistical observations of Ukraine to the methodology of Eurostat and regular reporting of Ukraine on key indicators.

Currently, the system of statistical observations on road transport in Ukraine has significant gaps. Road transport database is incomplete, many indicators and datasets are disaggregated, missing or unreliable. Most of Eurostat data are not collected in Ukrainian road transport statistics.

There are different factors of gaps in different databases. Some statistics are not kept such as the type of cargo, origin-destination matrixes for domestic freight transportation, number of passengers transported by cars. Another gap is due to changes in statistical observations, when statistical reporting forms were reduced or lost (for example, the Ministry of Internal Affairs of Ukraine has not reported on the register of vehicles fleet data since 2013). There are no data on interregional transport and economic connections in Ukraine, traffic intensity on roads, etc. There is no reliable statistics of the freight volumes on the road network.

The purpose of the article is to identify gaps in road transport statistics, to carry out a comparative analysis of the methodology of road transport statistics of Eurostat and Ukraine and to conduct a GAP analysis.

Literature review. Eurostat methodology of road transport statistics is set up in [1-8]. European transport policy information system development and implementation of data collection methodology for EU transport modelling is described in [9]. Concept and development plan on National transport model is presented in [10]. Results of Pan-European transport (TRANS-TOOL) model [11] and Great Britain transport model are described in [11-12].

Aims. The purpose of the article is to bring the methodology of statistical observations of Ukraine to the Eurostat methodology and using database for development National transport model.

Methods. The theoretical and methodological basis of the study are the basic provisions of the dialectical method of cognition, in particular induction and deduction. Various methods and techniques were used: statistical observation and grouping, analysis and synthesis, comparison, graphical. abstract-logical, systematic approach.

Results. The growth of the economy of any country is largely associated with the expansion of access for people and goods (via transport) to the main elements of the economic system. Analysis of the level of economic development, forecasting of the transport and economic relations is possible with statistical tools and methods.

Analysis of statistical information and research of publications based on the results of statistical observations in the field of road transport is the basis for:

- information support of public authorities and management of their macro- and microeconomic decisions, in particular related to freight and passenger transportation;
- creating access to opportunities such as sustainable transport and the ability to forecast traffic flows based on statistical observations, help to improve access to economic and social facilities, including access to job places, schools, medical institutions, goods, etc. in urban and rural areas;
- analysis of accessibility, in particular, in rural areas: the relationship between transport and food security; transport infrastructure (roads rehabilitation and construction) and transport services (accessibility of public transport);
- statistical analysis of the transport services quality and transport costs is important in evaluation and analysis of the economic growth prospects and transport companies competitiveness.

The research of volumes and routes of transportation provides an opportunity to conduct feasibility studies for the development of road network and obtaining loans from international financial organizations for construction and rehabilitation of roads.

The broadening of national transport policy from strategic infrastructure investments to infrastructure management with regard to efficiency, environmental, safety and regional equity objectives has led to a need for advanced and more policy sensitive tools of analysis. The increase of interregional and international mobility requires forecasting tools that go beyond the urban or regional level.

A powerful tool for analysis, forecasting and planning of investment projects is transport modeling – from urban models to the national transport model (NTM). The purpose of the NTM is to establish a tool which can be used to test and simulate the future major traffic flows of passengers and freight by modes and routes/links based on sets of assumptions with regard to economic, infrastructure and charging regimes. Additional objectives of the NTM are the following:

- to establish a planning framework and a tool at strategic level to forecast the future transportation demand expected in Ukraine based on the land use and socio-economic structure patterns;
- to demonstrate the effect of the proposed transportation projects at strategic level and to forecast multi-modal transportation demand in future horizons;
- to evaluate various alternative scenarios by multi-criteria;
- to generate information that will form basis for the financial assessments that can be carried out for the projects;
- to analyze potential operational, economic, environmental impacts of different transportation policies by using the identified data.

Modeling requires a lot of information, because the more detailed information makes model more reliable.

The European transport network model TRANS-TOOL is an integrated policy support tool for transport at the EU level. To create it, the European Commission initially funded research to provide a comparable information base ETIS (European Transport Information System). Transport statistics of each country were compared. Eurostat maintains an extensive information database, which is provided annually by each EU country. Requirements to road transport statistics are defined in a number of the EU regulations that have the force of law and envisage liability for failure to provide statistics or refusal to participate in surveys. National transport models are now available for every EU country.

In the field of road transport, there are the most gaps in statistical information because car owners, both bus and trucks, do not report on the route, traffic volumes, type of cargo. In addition, licensing of domestic freight transportation has been abolished in Ukraine, which makes impossible to determine the number of carriers, fleet of vehicles and other indicators.

With the slogans of deregulation in recent years in Ukraine, statistical reporting on road transport has been abolished or simplified as much as possible. Forms of statistical reporting on road transport are presented in the table 1 below.

At the same time, there is no control of the reliability and obligatory submission of statistical reports in Ukraine. Since approximately 90% of trucking companies owe up to 10 cars, they are considered small businesses and pay a single tax. There are two systems of taxation in Ukraine: common taxation and single tax for small business, which is less then common taxation.

This does not stimulate submission of reliable statistical reports because actual revenues are often higher than those provided by the Tax Code for small businesses (for taxpayers under the simplified taxation system).

Table 1. Forms of state statistical reporting on road transport in Ukraine

№	Statistical reporting forms	№ and periodicity
1	Report on road transportation of goods by type of cargo, and passengers by type of service	№ 31- auto (quarterly)
2	Report on transportation of goods and passengers by road	№ 51 auto (monthly)
3	Report on vehicles operation	№ 2-tr (annual)
4	Survey for natural persons-entrepreneurs transporting freight on a commercial basis	№ 51-cargo (2 times a year)
5	Survey for natural persons-entrepreneurs transporting passengers on the route	№ 51 pass (2 times a year)

Source: systematized by the author on the basis of [13]

The State Statistics Service of Ukraine (Ukrstat) has not provided a database on the number of vehicles: it was received from the Ministry of Internal Affairs of Ukraine. But after cancellation of technical inspections of vehicles in 2013, the database was destroyed. Since 2018, the Ministry of Internal Affairs of Ukraine publishes information on vehicle registration on its website, which includes thousands of lines, but it is impossible to obtain information on vehicle fleet from it.

In 2017, the resolution of the Cabinet of Ministers of Ukraine on statistics of road accidents was amended. According to it, the Ministry of Internal Affairs stopped providing Ukrstat with a database on road accidents. Although on website of the Patrol Police of Ukraine information from 2017 on road accidents is presented quite fully.[IV]

While statistical reporting in Ukraine is collapsing, Eurostat presents complete information on road transport activities: on the vehicle fleet (its structure by car brands, age, engine type, fuel type), the number of trucking companies, their employees, investments. In Ukrainian statistics, the number of employees and capital investment are generally taken into account in the context of land transport operations. Financial results of enterprises' activities are aggregated by type of economic activity "Transport, warehousing, postal and courier activities".

In addition, major part of road transportation is performed by industrial transport. As a result, there are two sets of statistics: monthly statistics is collected from road enterprises for which transport is the main activity, and annual statistics cover all industrial, agrarian and individual entrepreneurs, which has their own fleet.

There is no statistical reporting on traffic intensity on roads of Ukraine. At the initiative of the Government, traffic counters and cameras are being installed on road network.

On the contrary, the completeness of Eurostat statistics on road freight transport is quite impressive: by type of cargo, loading and unloading areas, transit, by car weight, number of axles, empty mileage. Similar statistics in Ukraine is not available.

This situation is aggravated by the fact that not all national road transport operators report to state statistics bodies or do not report fully. At the same time, there is no liability in Ukraine for failure to submit statistical reports, in contrast to the EU, where penalties are provided for late submission or non-submission of statistical reports. Attempts by state institutions to introduce into the current

legislation of Ukraine norms on liability of carriers for failure to provide statistical reporting failed under the slogan of business deregulation.

Instead, the business environment itself should be interested in the use of statistical surveys and other similar information on the sector activities, in order to identify possible gaps in the route network of public transport, regular traffic flows, information on average market costs of services, number of employees, capital investments in comparison with other types of activity, etc. Such data can help potential investors to find their competitive place in the market of transport services by analyzing the real situation in the industry with the help of statistical observation tools.

In the EU, passenger transport determines the volume of passenger traffic, the purpose of travel, which is not the case in Ukraine.

Information on freight transport is collected at the level of economic regions or small countries (NUTS 2), on passenger transport - at the level of cities, agglomerations (NUTS 3) (Fig. 1).

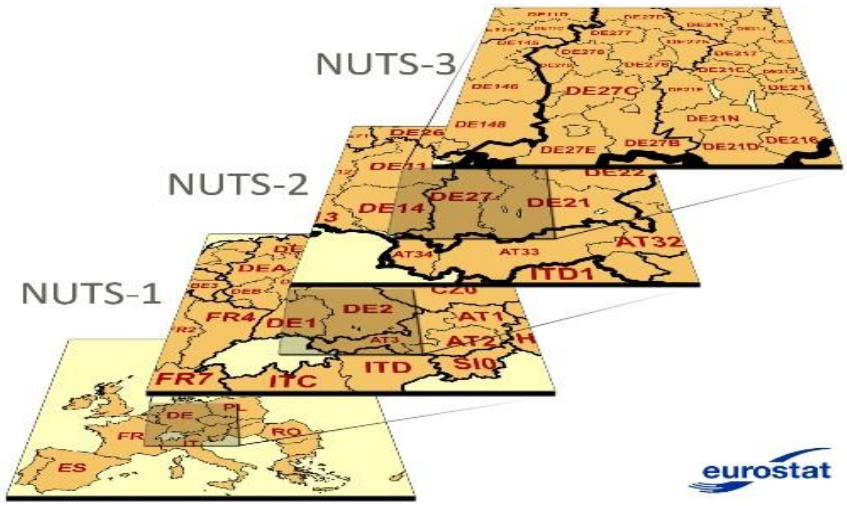

Figure 1. Territorial division of the EU according to the methodology of Eurostat

Sourse: develop by author

Except State Statistics Service data there are a lot of another sources of information. (Figure 2). Some data can be used from official sources and another data needs to be calculated thanks modeling.

Registers of bus routes are divided according the distance: Ministry of Infrastructure Ukraine (MIU) is responsible for Register of international and interregional bus routes; local authorities create cities and suburban bus routes registers.

Register of carriers is created by State Transport Inspection on the base of licenses. Database of international freight transportation provided by State Custom Service (including volume of export–import, its nomenclature, regions of destinations).

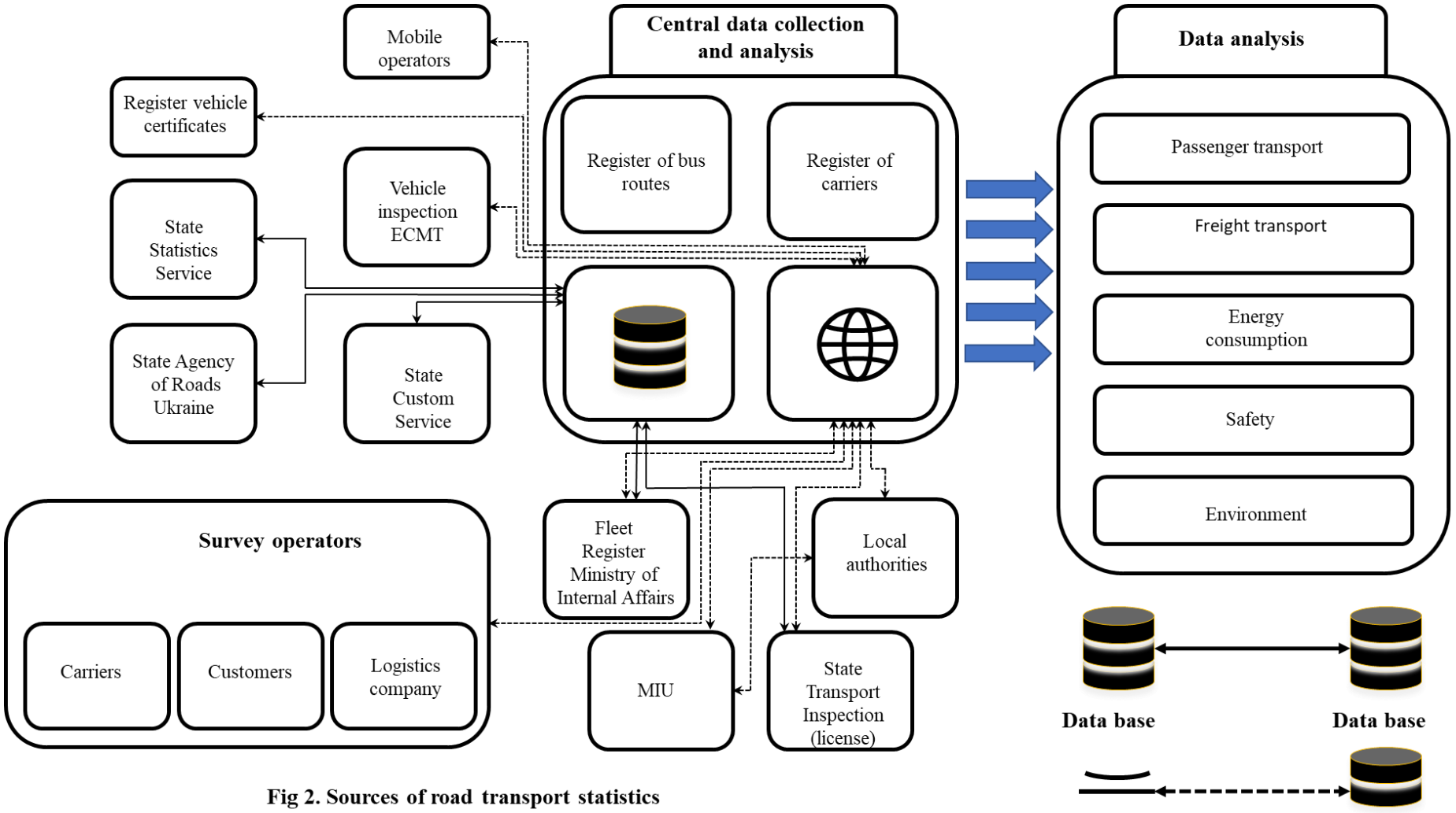

Fig 2. Sources of road transport statistics

Sourse: develop by author

Association of International Road Carriers own another database: international freight transportation: number of carriers, their freight vehicles fleet, routes, permits.

Ministry of Internal Affair is responsible for vehicles fleet register. Additionally vehicles certification bodies can be used for new fleet data. Database about technical inspection of heavy vehicles that are used according European Conference Ministries of Transport (ECMT) system of multilateral permits for international freight carriage.

State Agency of Roads conduct information about traffic on roads, type of vehicles and their weight.

Number of passenger trips can be presented by mobile operators but dividing between cars and buses needs special methodology and modelling.

Surveys are organized in order to receive database about aims of voyages, regions of destinations, loads and unloads cargo, type of goods and type of transport, distance class; type of movement (international, home, cabotage or transit) and so on.

In 2019, the first comprehensive survey campaign was carried out in Ukraine in the framework of the EU technical assistance project "Assistance to the Ukrainian authorities for establishment of national transport model and masterplan" led by Egis for the Ministry of Infrastructure of Ukraine. As part of the survey, interviews were conducted for all transport modes. Number of the country-wide interviews completed (including preference surveys): roadside interviews (cars, heavy vehicles) – about 46 thous., bus passenger interviews – 35 thous., boarding and alighting counts at bus stations – about 12 thous. at 46 locations, railway passenger interviews – 35.5 thous., air passenger interviews – about 5 thous., traffic counts at 70 points. The survey data were analyzed in the context of such characteristics as trip purposes, weekly dynamics, car availability – for public transport passengers, trip time and frequency, distribution among the places of interviewing. Interview campaign was also carried out with the actors involved in various domains in the transport sector, including public administrations, associations, private sector stakeholders, public companies. Road carriers, freight forwarders, stevedores in sea and river ports were interviewed on the volume and nomenclature of goods, transportation routes, etc.

Discussion. This practice is not developed in Ukraine yet, carriers refuse to answer questionnaires often, despite the guarantee of information confidentiality. Systematic roadside surveys should be conducted in cooperation with the Patrol Police, as employees of the Ministry of Internal Affairs of Ukraine and State Service for Transport Safety (Ukrtransbezpeka) have the authority to stop vehicles.

It is necessary to equip all roads with traffic counters, WIM and photo devices, and properly maintain their technical condition. In the EU countries, statistics on road traffic are collected several times a day.

Unfortunately there is no obligatory liability for failure or providing inaccurate statistical reporting of enterprises. Its necessary to improve the relevant control mechanism.

Conclusions. The main general conclusions are as follows:

1. Comparing the methodology of statistics of Eurostat and Ukraine in the field of road transport, in particular key indicators for statistical reporting, we can

conclude that national statistics represent key reporting indicators at 30% of the completeness and detail of similar Eurostat data.

2. In line with the implementation of the EU-Ukraine Association Agreement, it is important to align Ukrainian statistical methodology with the Eurostat one. It is necessary to legally approve obligations of Ukrstat, the Ministry of Infrastructure and the Ministry of Internal Affairs of Ukraine to organize statistical observations, including periodical surveys according to the Eurostat methodology.

3. The urgent issue is to establish the responsibility of carriers for failure to submit or submission of inaccurate statistical information or to introduct other effective levers (perhaps, conversely, stimulating and rewarding) in order to obtain more reliable statistical information which can be used for the road sector diagnosis, forecasting and planning.

4. It is necessary to change approaches to the implementation of certain statistical observations, in particular, regarding the allocation of financial indicators, labor movement indicators, investment performance indicators, etc. during the reporting on the type of economic activity "Land and pipeline transport", namely the implementation of statistical observations for "Road transport" section.

5. It is necessary to widely inform national operators about the legislative guarantee of information confidentiality, in accordance with the Law of Ukraine "On State Statistics", which will be provided by individual market operators in the framework of statistical surveys.

6. It is necessary to equip roads with traffic counters and camera devices, which are the elements of intelligent transport systems used for preventing traffic jams.

7. Ukrstat, the Ministry of Infrastructure, the Ministry of Internal Affairs of Ukraine, other executive bodies responsible for statistical and other reporting related to road transport of passengers and goods, should expand the list of statistical observations, as well as restore, update lost and missing forms of statistical reporting.

8. It is important to create a single electronic platform on the basis of Ukrstat facilities, accumulating all available road transport statistics from different authorities and covering information on carriers, routes, volumes and directions of transportation, operations, rolling stock, financial data, investment activity, border crossing, export-import operations, transit, foreign economic activity, road accidents, etc.

9. Legal regulation of the role, rights and responsibilities of government agencies related to statistics can significantly contribute to the establishment and maintenance of effective institutional mechanisms in these agencies, as well as mechanisms for their cooperation.

Author contributions. The authors contributed equally.

Disclosure statement. The authors do not have any conflict of interest.

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"CREATOR ECONOMY": THEORY AND ITS USE

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Abstract. *The article delves into a modern phenomenon known as "The Creator Economy." The authors attempted to examine the existing knowledge regarding the "creator economy" in terms of developing a "theory of the creator economy." The researchers concentrated on the effects of the new phenomenon, which are embodied in modern economies design modifications, rather than the technological foundations of the new phenomenon. The key aspect (core) of the creator economy is the IT companies' platforms activity, which is examined in this article. For the purpose of delineating the creator economy borders, the economic circular flow diagrams toolkit is used. There are four groups of creator economic entities: 1) actual creators of new information products, 2) platforms of IT companies, 3) consumers of information products who become co-creators of content, and 4) representatives of advertising and innovation businesses and non-profit organizations who are interested in the creator economy's existence. The "creator economy" as a segment of modern economies is described in terms of its products, resources, expenses, and revenues. Given the distinctiveness of the information product, it is proven that the "creator economy" could be identified as the "creator economy of new meanings." After all, a unique information product developed in this sector of the economy allows us to forecast the future and set the groundwork for it today. The concept of "endogeneity of the creator economy" is defined as a phenomenon unique to a certain economy. There are several connections between the "creator economy" and other areas of national economies. Theoretical assumptions concerning possible directions for further development of the "creator economy" idea are formulated.*

Keywords: *creator economy, economic circular flow diagram, platforms of IT companies, entities, products, resources, expenses and revenues of the "creator economy", benefits of society.*

JEL Classification: E62, G28, I22

Formulas: 0; fig.: 1; tabl.: 2; bibl.: 12

Introduction. In the 2010s, scholars began to use the Creator Economy concept. Its introduction into scientific discourse is analogous to what happened previously with the ideas of "innovative economy," "knowledge economy," and to what is happening now with "digital economy", among others. It's an issue of rethinking the economy in light of new situations, new trends, and repercussions that haven't been seen before. Numerous attempts to identify the phenomenon of the "creator economy" and fill it with the content of the relevant category are an undeniable achievement in this area. The acknowledgement of the crucial influence of information technology and information transformations of societies on the examined phenomenon was an important aspect of this identification. Despite their evident semantic resemblance, the terms "creator economy" and "digital economy" are not interchangeable in our perspective. Clarifying the relationship between the meanings of these ideas is an essential step in the development of the "creator economy" theory.

The scientific problem of the research presented in this article is to delineate the boundaries of the "creator economy" and its formalization as a segment of the

modern national economy. It is likely that this segment is in a special way "embedded" in the economy, becoming part of the overall economic cycle. The solution to this scientific problem will indirectly contribute to the reform of the Ukrainian economy. After all, the entities of the Ukrainian economy, despite the "under-reform" of the latter, show a significant tendency to creativity and a high ability to adapt to modern digital technologies.

Literature review. The analysis of the content of different interpretations of the phenomenon and the "creator economy" concept allows us to distinguish between the general (established, something about which there is no doubt) and specific (unique) in approaches.

Paul Saffo [1-3], one of the world's most well-known researchers on the "creator economy", interprets this phenomenon in terms of interconnected stages of social development. The shift from the "producer economy" ("industrial economy") of the first half of the twentieth century to the "consumer economy" of the second half of the twentieth century and to the "creator economy" of the early twenty-first century is being discussed. The presence of "information surplus" against the backdrop of "attention deficit" was observed at the end of the "consumer economy" period. The hunt for instruments for optimal allocation of a restricted resource - "attention" - has been updated by "information surplus". Digitalization tools and IT platforms, according to the inventor of the concept, have begun to be used as "attention dispersal" techniques. The groundwork for the shift to a "creator economy" was established here. The usage of these technologies - digitalization and IT platforms - represented a revolution in the economy and social interactions, given the depth (importance) of the changes. This revolution, according to P. Saffo, will have both positive and harmful implications. It is necessary not only to be aware of the latter, but also to be prepared to limit them.

The "creator economy," according to *Werner Geyser*, is the product of "media decentralization" in the sense of "blurring" its (information) affiliation. The latter means that the content of media companies - texts, videos, photos, etc. - ceases to be their property in the traditional sense. This creates new non-traditional forms of payment for the activities of persons involved in the production of this content [4].

There are both complicated and simple interpretations of the "creator economy". In particular, such a simple interpretation is offered by *Ollie Forsyth*. The "creator economy" is presented as a "digital version of the world". Moreover, in this version, according to the author of the idea, there is a direct (not mediated by complex actions) support and recognition of digital information professionals [5].

Some "creator economy" researchers, such as *Clara Lindh Bergendorff*, emphasize the benefits and opportunities it provides for creators. The "creator economy," according to the researcher, is a set of platforms, marketplaces, and tools that alter creative activity and business. This shift is owing to the fact that options for efficient employment are becoming more plentiful. It's all about being preoccupied with what a person *excels at* and *enjoys* the most. Furthermore, such an economy provides new options for producers to earn a sufficient income [6].

V.I. Liashenko and O.S. Vyshnevskyi [7], I.B. Kateryniak [8], O. Pryshchulina [9], K.V. Shymanska and V.V. Bondarchuk [10] form the environment of domestic analysts of the "creator economy" phenomenon. These scholars look at the new opportunities that digitalization has created for economic entities, such as the creators of new information products and those who consume them.

The acknowledgement of the "creator economy" relationship to the "digital economy" unites all of the above sources and approaches to defining the content of the "creator economy." They (approaches) differ in how they explain this connection. Furthermore, the uniqueness of the methods may be seen in the emphasis on distinct origins and implications of the "creator economy" emergence as a modern phenomenon.

Aims. Given the dilemma, the goal of this paper is to first define the bounds of the creator economy as a section of national economies. To achieve so, we used the theoretical tools of general economic circular flow diagrams. The study's operational (subordinate to the main goal) objectives are determined through the use of these tools:

- identification of the "creator economy" entities, in the relations between which the economic cycle occurs;
- determination of the special content of resources, products, revenues and expenditures, the movement of which forms the flows of the cycle within the segment of the "creator economy";
- outlining the main lines of communication between the "creator economy" and other segments of the national economy.

It is obvious that the stated objectives can only be met by the application of generalizations in the examination of facts that demonstrate the existence of the "creator economy." As a result, analyzing these facts is a crucial aspect of the research.

Methods. The methods of terminological analysis, comparative factual analysis, and classification according to a certain criterion were applied throughout the investigation. The research uses a methodical approach to analysis based on tools from general economic circular flow diagrams. The system's use of these methods allowed it to document the achievements of the "creator economy theory" and demonstrate the importance of putting the theory provisions into practice.

Results. The "creator economy theory" phrase used in the title of this article gives a sufficient level of excellence (perfection) of ideas concerning the topic under investigation. After all, it is well recognized that when a body of knowledge becomes a system of interconnected and consistent statements, it is referred to as a theory. Furthermore, the latter must be founded on appropriate assumptions (hypotheses). The "creator economy" as a theory is still in its infancy, which is understandable. After all, the phenomenon - the "creator economy" - is still relatively young.

We assume that the "creator economy" should be explained as a special segment, intrinsic (immanent) to modern economies. It is likely that this segment, under certain conditions, can change the nature of the whole economy. The idea of such an approach in the interpretation of the "creator economy" is a scientific

hypothesis that needs further understanding. In our opinion, finding an answer to such a question becomes an important point of such comprehension. Can using the capabilities of the platforms of a few IT companies established in other countries ensure the immanence (internal compliance) of the segment of the "creator economy" to the entire national economy? After all, as you know, it is the platforms of high-tech companies that become the core of the "creator economy". In another way, this question can be formulated as follows: can what is exogenous (external) for the national economy become an internal factor in its development? In fact, this question raises the issue of "endogenous changes" caused by the "creator economy".

The intention to use the theoretical tools of "the economic circular flow diagrams" proved in this article needs to be explained. The use of these tools in the analysis of economy has a long history. If we recognize that the circular flow diagram was the "Quesnay Table", then this toolkit is approximately 250 years old [11, p.337]. In the form familiar to modern economists, the circular flow diagram was presented in the “Economics” famous first textbook (1948) by P. Samuelson [12, p.622]. It has been reproduced and modified many times with the aim to "expand the content", i.e., to cover new entities and economic flows. Every modern basic textbook on economics contains a similar diagram. This fact can be interpreted as an argument in favor of the expediency of using such tools in explaining the economy in general and the "creator economy" in particular. The following ideas are the most important for us when using the tools of circular flow diagrams:

- the economy is interpreted as an interconnected movement (flow) of resources, products, revenues and expenditures;
- this movement (flow) is two-way (direct and reverse, at the same time) and occurs between groups of economic entities, separated by common essential features.

We believe that the findings of a research of entity features, as well as the unique content of resources, products, revenues, and expenditures, can be used to identify the "creator economy" phenomenon. As a result, it can be filled with a sufficient definition of the concept (category) of "creator economy."

Platforms built by IT corporations during the 2000s and 2020s enable the activities of "creator economy" entities. Actual data on platforms is supplied in two analytical tables below, organized by year of inception (from the oldest to the most recent). In a variety of fields, IT company platforms have evolved. As a consequence, we used the criterion of area division to split them and reported the findings in tables 1 and 2.

The first table (Table 1) provides information on platforms related mainly to the functioning of science, politics, journalism and education.

The second table (Table 2) provides information on those platforms that are more related to the field of entertainment and media. Since platforms often become "multi-sphere" (multifunctional), their division into spheres is quite conditional. However, it becomes necessary to streamline perceptions of the "creator economy" in general, and the platforms of IT companies in particular.

Table 1. Some characteristics of IT companies' platforms, which are mainly related to the functioning of science, politics, journalism, and education

Platform identifiers	Platform purpose	Areas of service	Special products	Sources of funding and income	Other
Seti@home, 1999, University of California, Berkeley San Francisco, United States, https://setiathome.berkeley.edu	Scientific non-profit project of calculations using BOINC resources and computers of volunteer researchers	Science	Increasing the resources of scientific research (calculations), participation of stakeholders in basic research	Funds of non-profit organizations, in particular, – Planetary Society	The purpose of the project is to search for radio signals of extraterrestrial civilizations.
Folding@home, 2000, Stanford University, https://foldingathome.org/?lng=uk-UA	Calculations for computer simulation of protein coagulation	Science, medicine.	Participation of interested scientists in research, - promoting the creation of new scientific papers, - development of new methods of treatment	Sponsorship funds of companies: AMD, Avast, Business and emotions, Cisco, Intel, Nvidia, ORACLE, PureStorage, Microsoft	The project promotes the treatment of the following diseases: Alzheimer's, Parkinson's, diabetes, multiple sclerosis, various forms of cancer
Facebook, 2004, Mark Zuckerberg, Menlo Park, California, United States, https://www.facebook.com	Network of communication and prompt placement of information by individuals (almost 3 billion participants)	Policy, science, media, entertainment	Selection of content based on preferences and inclinations, by personal profiles, - formation of communities of interest; - publicity of political and public figures	Revenue from advertising	The popularity and the greatest coverage is achieved due to the free use and promotion of the platform for participants
YouTube, 2005, Steve Chen, Jawed Karim, Chad Hurley, San Bruno, USA, https://www.youtube.com	Video hosting services	Politics, education, science, film art, journalism (video blogs)	Selection of content taking into account consumer preferences - participation in the creation of materials through comments.	- Revenues from advertising; - funds (donations) for live broadcasts and re-views (SuperChat function).	Popularity is achieved due to the ease of placing video files and ease of viewing.

Platform identifiers	Platform purpose	Areas of service	Special products	Sources of funding and income	Other
Twitch, 2011, Justin Kan and Emmett Shear San Francisco, USA https://www.twitch.tv	Providing online video broadcasts	Video games, cyber and other intellectual competitions, scientific discoveries, music	Communication with content creators, achievement of the "presence effect" and complicity of creation	Paid subscription, which becomes the income of the creators and the company itself	
Medium, 2012, Evan Williams, San Francisco, USA https://medium.com	Fast and technically perfect placement of electronic publications	Journalism, science	Publication of the latest publications that meet the interests of consumers.	- Paid access to the site for readers (by subscription), - fees to creators, taking into account the "uniqueness of the content" for readers	Free access to some texts is partially open on the platform
Patreon, 2013, Jack Conte and Sam Yam, San Francisco, California https://www.patreon.com/uk-UA	Symmetrical benefit and combination of interests of creators and users of the selected content.	Science, education, politics, art, literature, journalism, entertainment	Identification of intelligent products that consumer prefer	Constant and one-time receipts from users with further distribution between the creators and the company	Rapid growth of users during a pandemic
Substrack, 2017, Chris Best, Gajraj Hathi, Hamish Mckenzie, San Francisco, California https://substack.com	Comfortable conditions (technical support) for journalists, political analysts, writers, and other creators	Media, journalism, politics, science	High quality analytical materials in various fields	- Payment for one-time targeted mailings; - subscription to information - funds, for example, Andreessen Horowitz	The platform served as a lifeline for journalists who lost their jobs due to the Covid-19 pandemic

Source: suggested by the authors based on sources [1-11]

Table 2. Some characteristics of IT companies' platforms, which are mainly related to the entertainment industry and media resources

Platform identifiers	Platform purpose	Areas of service	Special products	Sources of funding and income	Other
Twitter, 2006, Jack Dorsey, San Francisco, United States, https://twitter.com	Social network of microbloggers	Developed literary and news segments, policy	Exchange of information within the target groups to determine the preferences of content consumers	Revenue from the sale of online advertising	The platform contributed to the emergence of a literary form - "Twitterature" - texts from 280 to 140 characters
Instagram, 2010, Kevin Sistrom and Mike Krieger, San Francisco, USA, https://www.instagram.com	Social network for sharing visualized materials (photos, videos)	Art, entertainment industry, organization of life, tourism	Determining the preferences and interests of participants using filters, - formation of target groups of participants, -connections to other networks.	Funds from private investors and funds, such as Benchmark Capital, LOWERCASE Capital, etc.	The most popular service in the art of iphonography;
Sapchat, 2011, Evan Spiegel, Bobby Murphy, Frank Brown, Stanford, California, USA. https://www.snapchat.com	Multimedia mobile application for sharing photos and video files	Media, entertainment content	Formation of target groups and guarantee of secure transfer of information.	Funds from advertising, company revenue (for example, from Time Warner) for hosting entertainment shows.	The market value of Snapchat is more than 16 billion dollars
TikTok, 2016, ByteDance, China, https://www.tiktok.com	Creating and distributing video files and online broadcasts.	Music, sports, art, and entertainment	Realization of creative needs of certain target groups, acquisition of communication skills, formation of communities	Subscriptions, money transfers (donations) for creators of popular video files	TikTok stars become millionaires, in particular, the highest income in 2020 reached 5 million dollars
OnlyFuns, 2016 Tim Stokely, London, https://onlyfans.com	Meeting the needs of consumers of the "entertainment industry"	Sports, music, art, and cooking	Fans' access to personal materials of creators: photos, videos, articles, respectively, finding out consumer preferences	- Monthly membership fees of fans, which are distributed between the creators and the company; - paid one-time views	The number of users during the pandemic increased by 75%
Clubhouse, 2020, Paul Davison, Rohan Seth, https://www.clubhouse.com	Social network using voice communication	Club activity, show business discussion platforms, policy.	Meeting the needs of target groups in the voice perception of information, -formation of communities and research of their preferences	A combination of different forms: ticket payment (via eBay) for participation in clubs, discussion platforms, Subscriptions, donations	Rapid growth in the value of the platform as an asset: from $ 100 million in 2020 to $ 1 billion in 2021

Source: suggested by the authors based on sources [1-11]

The study of the data in both tables allows for broad generalizations about the "creator economy" distinguishing characteristics, such as the entities of relations, the created product, and the expenditures and revenues of entities in this sector of the economy.

The "creator economy" entities, as evidenced by the facts, have unique ***resources.*** They (entities) are:

- *creators* as such, intellectual and other resources of which form the ability to create special information products;
- *consumers* of information products, which, based on the opportunities offered to them by IT platforms, become co-creators of these products. The latter is achieved through: selective attention, complicity, identified propensity to consume certain products and preferences for certain products, selective financial support for individual creators and / or individual projects, etc .;
- *IT companies* that own platforms, investing in hardware and software, as well as, in part, - in the creators of new information products;
- *advertisers, non-profit foundations, entrepreneurs* who are interested in creating special information, in particular in that related to the prediction of innovative trends.

The fact that "attention" is a special resource for this segment determines the peculiarity of the "creator economy". Studies that substantiate that the “Attention Economy” is growing into the “creator economy” have been added to the economics arsenal. This is a plausible statement. After all, the "creator economy" is defined by attention and its derivatives - the proclivity to consume certain products, loyalty to certain creators, recognition of preferences, and interest in clearly designated information resources. The same "attention accent" aids in explaining the product's fundamental features (differences).

The product of the "creator economy" most obviously distinguishes this segment from others. This product is not just new and interesting information for certain target groups, but information that:

- forms a vision of the future and reflects the beginning of defining processes for the future;
- relies on large databases on existing inclinations, preferences, special group interests of information consumers;
- unites consumers of information in the community, helping to increase trust and the emergence of complicity and cooperation, therefore, - the accumulation of social capital.

If the unique properties of the "creator economy" product that we have identified are justified, then another generalization may be made. The argument is that the content of the economy segment we're investigating conforms to the term **"economy of the creators of new meanings"** to a greater extent. After all, creation (creativity) can refer to tangible objects. Rather, we look at the part of the economy where unique information is generated. Furthermore, it is not about ordinary facts such as "what?" "where?" "when?" "at what price?" but rather about current trends, a new vision, and, most likely, new social and group values. We're discussing "new meanings".

Expenditures within the "creator economy" segment cover the following elements:

- expenditures of advertisers disseminating information about traditional and innovative products and services through IT platforms;
- expenditures of non-profit funds, entrepreneurs, individuals who support certain innovative projects on a charitable basis;
- expenditures of consumers who show their own preferences for information products - videos, scientific, journalistic, artistic texts, music, etc. - in the form of subscriptions, donations;
- expenditures of IT companies to support promising projects and individual creators.

In addition to monetary expenditures, the "creator economy" reveals the so-called "non-financial expenditures" - time, attention, intellectual capacity, and so on. These expenditures arise from voluntary activity in projects to create new socially significant information.

Revenues in the segment of the "creator economy" can take such forms:

- revenues of IT companies that own the platforms;
- income of creators of information products (fees), which are formed after the recognition of the importance and usefulness of these products by target groups of consumers and IT companies.

In the "creator economy", in addition to monetary revenue, distinctive ***benefits (externalities) of society*** are generated, in our opinion. They can be seen, for example, in appropriate responses (answers) to socially significant problems, in anticipating and preventing disputes and negative effects of emerging trends.

Our generalizations about the characteristics of entities, products, expenses, and incomes in the "creator economy" serve as the foundation for formalizing the economic circular diagram in this way (fig. 1).

The economic cycle between the four previously described entities of the "creator economy" segment is depicted in Fig. 1. To keep the diagram simple, only the flows of the product manufactured in this segment, as well as resources and costs, are shown. The income movement is not depicted in the figure because it is obvious that some companies' expenses are converted into income for others.

This diagram is not "closed" in the sense that it does not depict the flow of exchange between organizations in traditional economic sectors (segments). However, it is self-evident that other flows should be marked when expanding (detailing) the diagram. It's about the relationship between the "creator economy" and the "external environment" in the face of entities like:

- producers and consumers of traditional products, services, information about which is provided on IT platforms by advertising companies;
- producers of the "innovation sector" of the economy, who, gaining access to information of "new meanings", can use it, for example, when creating startups;
- financial intermediaries (banks, investment funds, etc.) that serve the movement of financial flows, offering their own financial products, in particular those that meet the requirements and capabilities of the digital economy.

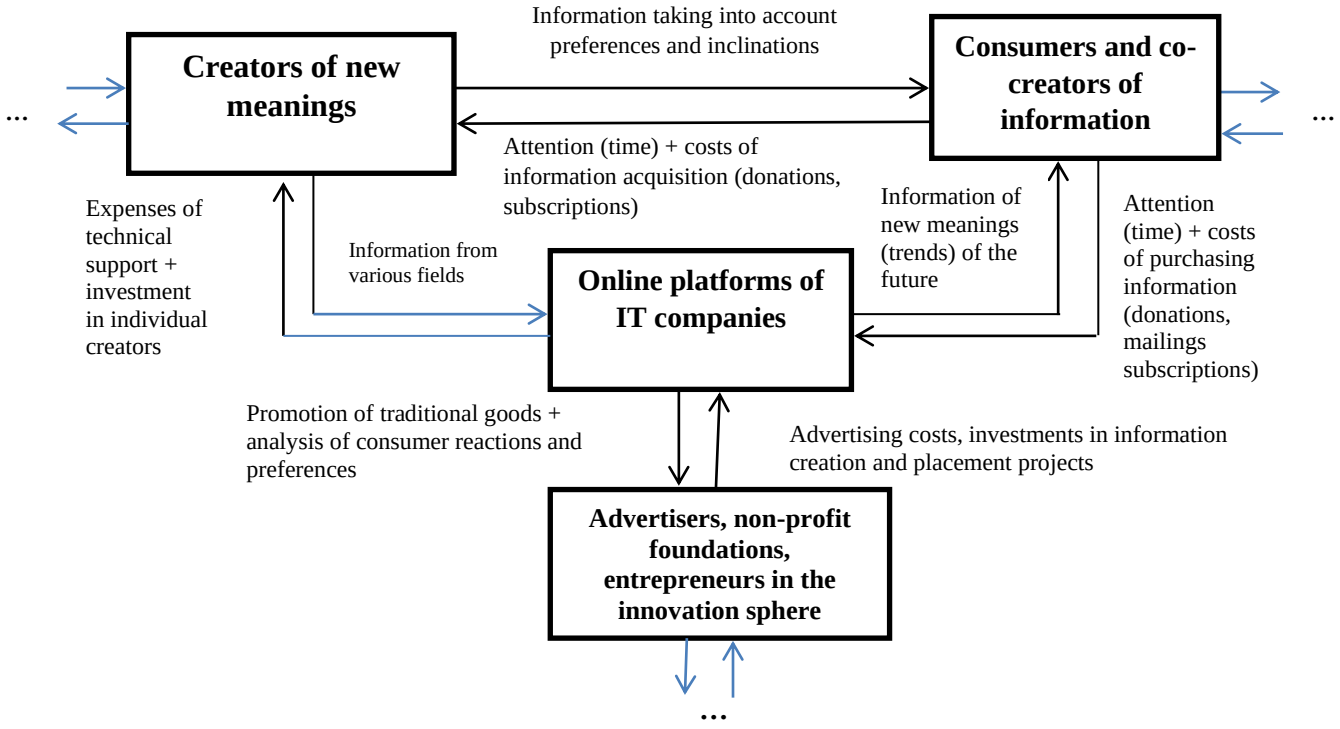

Figure 1. Economic cycle in the "creator economy" segment

Source: suggested by the authors

Discussion. We can make such an assumption on the fundamentally crucial and complex issue of the conditions under which the "creator economy" becomes an internal factor for all other sectors. In the absence of significant technical and organizational differences between sectors (segments) of the economy, the transformation of the "creator economy" into an endogenous factor of economic growth is possible. Regrettably, the Ukrainian economy is made up of segments with vastly varied technological systems, ranging from pre-industrial and industrial to modern digitalized. This becomes a key impediment to the "creator economy" becoming an intrinsic (immanent) segment of the Ukrainian economy.

New research is needed to better understand all of the different flows of the cycle through which the "creator economy" is linked to other segments. It is vital to grasp the constraints of the "creator economy" in a given national economy in order for them to be successful. There is also reason to believe that disclosing the substance of the cycle's flows, as well as the unique characteristics of the activities of entities in the "creator economy," is one of the most effective ways to reach this awareness.

Conclusion. We can provide the following generalization as a primary conclusion based on the results of the study of existing ideas and facts regarding the content of the "creator economy". The "creator economy" can be defined as a segment of the modern economy in which exceptional resources, products, expenditures, and revenues are circulated. This movement brings together four entities: 1) genuine creators of new information goods, ideas, and meanings, 2) IT platforms, 3) information product consumers, and 4) advertisers, non-profit foundations, and entrepreneurs interested in spreading new information.

It is likely that the further development of the theory of "creator economy" will take place in the direction of clarifying ideas about the boundaries of the creator economy and algorithms for transforming this segment into an endogenous factor of overall economic growth.

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CHAPTER 2
DEVELOPMENT OF FINANCE, ACCOUNTING AND AUDITING

EXAMINING FINANCIAL MANAGEMENT IN PROMOTING SUSTAINABLE BUSINESS PRACTICES & DEVELOPMENT

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Abstract. *This concentrate on a very basic level recommends how financial management is basic in the maintainability cycle. Objectives of the study: to notice the impact of current business rehearses over business execution; to comprehend the connection between each impacting element like quality, cost wastage, climate, and social over business execution. The exploration depends on the need of revelation of maintainability reports, putting together financial choices with respect to corporate supportability in capital planning and related angles and the estimation too relief of manageability chances. The associate between financial development and manageability is given just as case examination of the Asian and Western financial model frameworks separated for the investigation of the importance of the ideas in reality. At last, the examination explains a prescient model rule for trouble distinguishing proof and assessment in different firms for different interest parties as an element of nonfinancial and macroeconomic components.*

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JEL Classification: A22, G30, G32, G39
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Introduction. Money is the life-blood of any business. In the early occasions each business visionary's rationale was to acquire benefit and extend the business. However, in the current situation, the endurance of any business relies profoundly upon the development of the association's partner's. The fulfilment of every single part connected with the business causes it to make due over the long haul. Hence the significance of financial management is expanding in the new years. Money chiefs are profoundly prepared and furnished with the most recent strategies and techniques to be taken on in the financial exercises of the firm. The different financial management strategies/techniques utilized in this review empowers the financial supervisors to take right choice in appropriate usage of company's assets [1].

Literature review. *Existing corporate sustainable reporting disclosures and firms' value.* Habek and Wolniak (2015) express that corporate maintainability revealing and divulgence depends on the standards of assessing organization execution in right now and in the future There has been an expanded requirement for the arrangement of better more dexterous and ecologically accommodating strategies for assessing organizations' presentation. The ideal circumstance has been the making of a manner by which organization achievement not set in stone as an issue of financial execution and social or natural execution.

Corporate revelations that are fixed on manageability revealing are generally founded on the wilful methodology and authenticity approach[2]. Corporate firms in many wards around the world have no obligatory necessity to have a corporate sustainable divulgence settled on subsequently settling on the choice by explicit organizations to take on maintainability announcing will ful (Gnanaweea and Kunori, 2018). The authenticity hypothesis depends on the choice by firms to embrace corporate manageability revealing is moved by the goal of the organizations to seem genuine or sound to the partners and investors. There has been an expanding need for organizations to overhaul their announcing from a financial model to a coordinated financial and ecological detailing model. This methodology has been noticed and probed and found to emphatically affect the organization as an element of expanded investor and partner esteem. A portion of the qualities that have been connected to the authenticity hypothesis incorporate social qualities, local area administration, authoritative consistence, natural backing, ecological reviews, and related protection endeavors [3].

Corporate sustainable disclosures can be based on the following:

- Environmental protection endeavours and the connected regions dealt with.
- Efforts towards the decrease of the fossil fuel by-products.
- Adoption of sustainable wellsprings of energy.
- Investment in ecological examination programs.
- More congruity and reception of ecological bookkeeping or announcing.
- The representation of the intrinsic connections between ecological announcing or revelation and financial management.

Inspected the effect of manageability rehearses on corporate financial execution. The review directed by Graham et.al, 2005 recognizes that endeavours by corporate firms towards corporate financial announcing make individual firm worth as well as shared worth across businesses. More organizations become familiar with various natural viewpoints and join these angles into their announcing structures. The total of sustainable methodologies by various substances and organizations across different ventures in a nation for example results to a generally speaking decreased carbon impression [4]. The quintessence of a particularly corporate exertion is the production of more investor and partner esteem. All the more explicitly organizations' reception of sustainable methodologies guarantees that in spite of the customary financial exhibition focuses on by various organization partners; there is additionally more worth creation through the more secured climate. Actually more natural cognizance empowers the constant positive wellbeing of individuals and a helpful climate inside which to work along these lines the improvement of the term's maintainability (Pablo et al., 2019) [5]. Throughout the long term individuals have become more educated and familiar with sustainable ideas through distributed exploration.

Subsequently, there has been an expanding pattern or pace of connecting worth to sustainable measures by different partners and investors to different organizations.

The component of completion of sustainable methodologies being taken on by firms and the ensuing revelation of the sustainable endeavors and results to investors inspires endorsement which means esteem from investors and partners. As time

moves more organization financial execution announced will be relied upon to be supported by equivalent sustainable methodologies by firms detailed simultaneously (Graham et.al ,2015) [6].

Sustainability and related key financial decisions. Financial choices are urgent and are the primary consequences of financial management. Powerful and effective financial management is ordinarily showed by fruitful financial results. The fundamental determinants for sustainable results can be connected to financial mnagement choices. Financial management depends on ideas that try to improve the investor returns or amplify both investor and partner returns through essential choices made by supervisors. As far as capital planning maintainability contemplations can be joined in financial choices made through the determination and endorsement of tasks that have eclogical viewpoints or endeavors as a method for accomplishing supportability considering te manageability objectives set.[7] A genuine model can be the determination and endorsement of a venture that looks to change the primary wellsprings of energy of a firm from emissive conventional wellsprings of energy, for example, coal power plants to sustainable power sources. Sustainable power sources can allude to the utilization of sun based force energy being bridled, the utilization of wind power or even the utilization of hydropower (flowing or sea power). The capital planning measure includes the choice network interaction of determination of the best ventures with the most conceivable and suitable speculation returns.[8] The capital planning measure in financial management empowers the expense versus returns correlation which then, at that point, takes into account the determination of the venture with the most elevated positive returns.

Brewer, Garrison and Noreen (2005) further characterize the capital planning measure is made out of the prevalent financial records of the net present worth (NPV) and the inside pace of return (IRR) as certain models. The net present worth is a component of the absolute returns less the underlying expense of capital and the higher and positive the net present worth the more probable for project determination The net present worth returns are limited and summarized as elements of expected future returns limited to introduce esteem terms utilizing customary standard limiting variables to have a more sensible examination of projected results. The interior pace of return utilizing similar ideas as the net present worth strategy for estimation aside from the state of net incomes utilized. The inward pace of return utilizes undiscounted projected incomes less the underlying expenses of funding to get the last worth. The inside pace of return is characteristic of undertaking choice if the determined worth is higher than the venture pace of return. Notwithstanding, the net present worth model is more better than the inward pace of return in project assurance and task choice.

To interface the financial strategies for project determination with supportability perspectives, an extra undertaking assessment metric can be remembered for the financial assessment to address natural preservation simultaneously with the financial practicality of activities.

An elective methodology can likewise incorporate the allotment of part of the underlying expenses of money to financial plan for supportability drives in case of

one task, in this way, guaranteeing that the natural perspectives are considered in the undertaking.

The expense of capital is the return rate which will be acquired by a firm. In this manner, under capital planning financial choices, corporate organizations can choose a task which has imperative supportability approaches in accordance with the current requests from organization investors and partners. Accordingly, the choice of a planned undertaking can be founded on the activities that have one; natural supportability approaches in their execution model and two; the venture that has the best yield. Hence, the financial choice interaction is improved because of focusing on the maintainability angle or plans in organizations before the financial bring goals back.

Past research on acceptability itemizing has associated corporate social commitment with association financial execution. The rule point of the survey was to choose the association between's financial presentation as the dependent variable and corporate social commitment as one of the independent components Boston College Centre audit results showed that the combination of sensibility perspectives chipped away at the remaining of associations as the fundamental effect. The resulting effect or impact was extended delegate devotion which means firms would be insightful to higher freedoms for the upkeep of the labor force, an elevating point of view. Thirdly, there was extended client reliability which suggested that there was a higher chance for the appearance of clients which inferred that the firm had a prevalent circumstance in the market when viability approaches were taken on. The fifth insight was that there was an extension in waste abatement which can be associated with reusing tries; re-use steps and shockingly the development of more prominent business openings. On the opposite side, the focus similarly contained saw results on the lessening of accuracy of the viability reports for corporate associations as the need for legitimacy itemizing was not needed. This discernment looks good to the extent associations expecting to get customer assurance and obligation as affirmation of accomplice regard through imaginative environmental uncovering.

To the extent usefulness, prior investigation has shown that associations that have real viability approaches have higher benefit and have a greater firm size diverged from firms that have not accepted these techniques. The legitimacy moves close, for the present circumstance, is firms with all around made models for corporate social commitment. Firm size points of interest suggest the market capitalization or deal capital, the value of full scale assets or the value of complete yearly turnover. These results, consequently, add importance to the hypothesis that there are more feasible financial decisions that lead to higher compelling association brings about associations that are tricky to viability points in their yearly show itemizing.

Banking Finance: Sustainability. Banking has been examined in Malaysia and there has been a proposed technique through which maintainability can be coordinated according to a review was done on the financial model on supportability Ecological supportability is steady. The review dissected proposes the financial protection should be possible at the financial level through consistence with every

single natural guideline, mindfulness crusades and at the functional level. The second point where maintainability drives can be fashioned inside the financial framework is at the public level through proper rules and arrangements. The third point is at the global level through consistence with worldwide arrangements on manageability just as intentional methodologies took on towards sustainable development According to the data given by an examination led by Deloitte Inc on finance subsidizing for social viewpoints and administration which envelops supportability was an issue sooner or later because of the tight capital business sectors. Be that as it may, the case for South East Asia in Malaysia, for example, there has been a positive gathering of manageability under money as an element of the expanded interest from regular market financial backers and the interest for green resources too Additionally, studies directed by) results show that there is likewise irrelevant impact of the level of the by and large corporate danger revelation on execution of all banks, ordinary and commercial banks. Likewise generous inconsistencies in the absolute corporate danger divulgence, as fittingly as every one of the sub-hazards revelation among customary and specialized banks The relationship among's manageability and money, for example, has been shown through the issue of securities worth $282 Million out of 2015 for the targetted programs. Along these lines, there have been calls for more green and sustainable drives inside Islamic money as the worldwide money industry changes powerfully over the long run.

Financial distress prediction and sustainable growth. Corporate chapter 11 or financial misery of a firm can be anticipated through the examination of the financial factors, the non-financial factors, and the macroeconomic variables. A review done and distributed in the manageability diary gives data on the precision of financial trouble forecast dependent on firm-explicit factors study gives that the financial misery can be all the more precisely anticipated dependent on firm-explicit parts of financial, nonfinancial and macroeconomic factors. The concentrate likewise further proposes that consistency of liquidation in firms additionally more exact dependent on thought of the macroeconomic perspectives and the non-financial viewpoints contrasted with the financial factors as it were. The review is case explicit for the Hong Kong Growth Enterprise Market (GEM) and gives the above data as helpful to controllers inside the Hong Kong capital business sectors just as financial backers or examiners who are likely financial backers in the Hong Kong Capital business sectors. By extrapolation, the review results and discoveries can be applied in other capital business sectors with more accentuation or spotlight is set on each of the three factors of financial, non-financial and macroeconomic variables that decide more precise liquidation forecast (Opler and Titman, 1994) [9].

Conceptual Building of Sustainable Financial Management and Sustainable Financial Growth. To zero in on the ideas identified with sustainable financial management and sustainable financial development, one might say that sustainable advancement should be centered adequately so the requirements can be meet in the present. There is an emphasis on the requirements in the present so that there could be no trade offs later on ages. Sustainable advancement in finance is identified with different measurements, as there is the concentration to adjusting various approaches

in the measurements, then, at that point, the lengthy time span outlines, just as the intergenerational value, likewise should be overseen. In sustainable financial management, there are likewise ideas identified with the biological systems, there is an attention on equivalent freedoms for the office.

The administration for sustainable advancement in the financial business sectors is additionally concerned. Nonetheless, the sustainable improvement multidimensional and all encompassing point of view so the associations stay focused on natural execution and there could be proper techniques for the successful structure exercises The sustainable structure approach identified with finance centers around the important commitment so that there could be improvement of the personal satisfaction and there could be the emphasis on the sustainable and sound climate for individuals through relating the asset in a productive way. Another point is the decrease of CO2 and GHG outflows and the moderation of commotion.

The associations zeroed in on the sustainable financial management; likewise center around the unassuming support maintainability drives. There is the examination concerning the appraisal of the ecological difficulties. Sustainable financial management requires the applied system so that there could be adjusting if the natural insurance to advance the monetary improvement with the augmentation of the financial.

The one-dimensional objective of the financial area is additionally to consider the financial area reasoning with the standards identified with the SD viewpoint. For the management of the sustainable financial management, the business is centered on the disguise of externalities and there is the computation of a venture that how there could be thriving through appointing long haul maintainability proportions for the natural assurance. The business is keeping up with the possibility so that there could be viable skyline to ventures and there ought to protect for the financial just as the reformist replacement.

Sustainable financial management additionally centers around civil rights so that through the thought of monetary viewpoints just as the ecological, and social angles, the course of advancement could be engaged, sustainable financial management has its own terms and ideas for the perspectives identified with sustainable turn of events. The business likewise centered around the assets and dangers that could be there in the sustainable financial management and which the current age needs to confront, consequently, strategy making is engaged, to satisfy the part of sustainable financial management.

Sustainable development: a business. The idea of sustainable advancement has gotten developing acknowledgment, however it is a groundbreaking thought for some business leaders. For most, the idea stays conceptual and hypothetical. Securing an association's capital base is a very much acknowledged business rule. However associations don't for the most part perceive the chance of stretching out this idea to the world's regular and HR. On the off chance that sustainable advancement is to accomplish its latent capacity, it should be coordinated into the arranging and estimation frameworks of business ventures. Furthermore, for that to occur, the idea should be verbalized in wording that is recognizable to business pioneers.

The following definition is suggested:

- For the business venture, sustainable improvement implies embracing business methodologies and exercises that address the issues of the endeavor and today partners while ensuring, supporting, and upgrading the human and normal assets that will be required later on.
- This definition encapsulates the idea as initially proposed by the World Commission on Environment and Development and perceives that financial advancement should address the issues of a business venture and its partners. The last incorporate investors, banks, clients, workers, providers, and networks that are influenced by the association's exercises. It likewise features a business' reliance on human and regular assets, notwithstanding physical and financial capital. It underlines that financial action should not hopelessly corrupt or obliterate these normal and HR This definition is planned to help business chiefs apply the idea of sustainable advancement to their own associations. In any case, underscore that sustainable advancement can't be accomplished by a solitary undertaking (or, besides, by the whole business local area) in disengagement Sustainable improvement is an unavoidable way of thinking to which each member in the worldwide economy (counting customers and government) should buy in case we are to address the present issues without compromising the capacity of people in the future to meet their own.

Implications for business. It has turned into a banality that natural issues are considerable, and that monetary development adds to them. A typical reaction is stricter natural guideline, which frequently restrains development. The outcome can be a compromise between a solid climate from one perspective and sound development on the other. As an outcome, openings for business might be compelled.

Notwithstanding, there are a few types of advancement that are both ecologically and socially sustainable. They lead not to a compromise but rather to a further developed climate, along with the improvement that doesn't draw down our ecological capital. This is what's really going on with sustainable turn of events - a progressive change in the manner we approach these issues. Businesses and social orders can discover approaches that will move towards each of the three objectives - natural security, social prosperity, and monetary turn of events - simultaneously. Sustainable advancement is acceptable business in itself. It sets out open doors for providers of 'green customers', engineers of ecologically more secure materials and cycles, firms that put resources into eco-effectiveness, and those that draw in themselves in friendly prosperity. These undertakings will for the most part enjoy a cutthroat benefit. They will acquire their neighbourhood local area's altruism and see their endeavours reflected in the primary concern [10].

Aims. *Objectives of the study.*

1. To notice the impact of current business rehearses over business execution.
2. To comprehend the connection between each impacting element like quality, cost wastage, climate, and social over business execution.

Method. *Research Method.* Abutabenjeh and Jaradat (2018) confirmed that each research technique has its qualities and shortcomings, and a few methods permit

researchers to concentrate on specific ideas all the more properly. As tended to in the Nature of the Study segment, I thought about three kinds of research methods: qualitative, quantitative, and blended technique (Yin, 2018). Both qualitative and quantitative methods look for dependable and legitimate outcomes (Park and Park, 2016). I picked a qualitative research technique to investigate the financial management methodologies that little amusement business proprietors have used to further develop usefulness and productivity to support the business 5 years and then some. The qualitative research strategy permits researchers the capacity to examine and comprehend the qualities, suppositions, practices, and viewpoints of members (Earley, 2016). Levitt et al. (2018) declared that qualitative research permits researchers the capacity to dissect information by distinguishing designs attached to cases of wonders and afterward fostering a feeling of the entire occasion as educated by those examples. Qualitative research permits researchers to lead moral research while keeping up with proficient connections and secrecy (Heslop, Burns, and Lobo, 2018).

Data Collection Instruments. In this qualitative different contextual analysis, information as numbers were not gathered (Clark and Veale, 2018). As a researcher, we filled in as the essential information assortment instrument. Clark and Veale (2018) proposed that qualitative researchers ought to limit and unveil presumptions and predispositions while gathering and arranging information to secure an exact portrayal of the wonder or subject. Moser and Korstjens (2018a) integrated the not set in stone that member perception, face-toface, top to bottom meetings, and center gathering conversations were the most utilized information assortment methods in qualitative research. For this review, we gathered information from semistructured faceto-face interviews.

Semistructured interviews, as per Saunders et al. (2016), permits researchers to talk with members and get information. Yin (2018) noticed that qualitative researchers should diagram a meeting convention to keep up with the focal point of the inquiries questions and the research subject and research strategy.

Data Collection Technique. Data collection in qualitative research permits the researcher to acquire profound knowledge into the member's encounters about the research subject (Barrett and Twycross, 2018).

There are three methodologies that researchers could take in gathering data when leading a qualitative report:

a) center gatherings,

b) observations.

Data analysis. Financing and Financial Management Strategy. The principal topic arose out of the member's reactions to table 1. Every one of the 4 members utilized a financing strategy related to a financial management strategy to work and support their little diversion business 2 years and then some. The members all expressed that they contributed their reserve funds, likewise alluded to as bootstrapping (Rita, 2019), into beginning their little diversion businesses. After contributing their financial saving to beginning their amusement firms, all members expressed that they created interesting financial management systems that assisted

them with working and support their organizations successfully. Table 2 addresses the level of member reactions to the inquiries questions identified with financing and financial management techniques every member used to further develop usefulness 2 years and beyond [11].

Table 1. Participant Responses Related to Financing and Financial Management Strategy

Participants	Percentage of response related to financing and financial management strategy
SEBO 1	50%
SEBO 2	45%
SEBO 3	20%
SEBO 4	30%

Each of the 4 members affirmed that they initially began with a financing strategy related to a financial management strategy. The following are immediate member reactions got from individual semistructured interviews. SEBO 1 expressed that to at first beginning the business, the member contributed individual financial capital through bootstrapping. Rita (2019) stated that bootstrapping is a vital financial cycle utilized by business people to finance independent venture startup with individual money without the help of financial backers [12].

SEBO 1 shared his financing and financial management strategy as follows: SEBO 1 remarked on the benefit of bootstrapping and contributing individual accounting records as an indispensable financing strategy for beginning the business. SEBO 1 ascribed beginning a business account, saving all profit, and keeping a positive record month to month, assisted with building credit, and guaranteeing financial management. SEBO 1 expressed, From the stance of financial management, we kept an installment timetable to follow pay and costs. we pay all designers, makers, and staff individuals' week by week and get receipts every day. we pay staff day by day also, so I have predictable income and just should stress over active expenses [13].

Result. The goal of this qualitative multiple case study was to explore the financial management strategies that successful small entertainment business owners have utilized to improve productivity and profitability to sustain business in their first two years of business establishment and beyond. The knowledge from this research study may help small entertainment business owners [14].

Conclusion. All in all, the connection between financial development and supportability is given just as a case investigation of the Islamic and Western financial model frameworks separated for examination of the significance of the ideas in reality. At long last, the examination explains a prescient model rule for trouble recognizable proof and assessment in different firms for different interest parties as an element of non-financial and macroeconomic components. a legitimate understanding of the connection among maintainability and financial development has been very much addressed for the situation investigations of the Western financial frameworks and the Islamic financial models under the manageability

heading. As a component of manageability forecast has additionally been seen to be basic to financial backers, experts and the controllers in capital business sectors given the financial, on financial and macroeconomic factors that highlight the standards of financial management in supportability estimation. The three topics from the data were: a) financing and financial management strategy, b) execution of bookkeeping and business management programming, and (c) enhancing pay assets. Existing and hopeful little diversion business proprietors, basically those in the music area claiming and working little record names, may discover the methodologies revealed and talked about in this review helpful in executing into their association's financial management activities [15].

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CHAPTER 3
MODERN MANAGEMENT TECHNOLOGIES

MANAGEMENT OF THE SECTORAL COMPOSITION OF THE ECONOMY IN TRANSFORMATIONAL COUNTRIES

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Abstract. *The investigation of the management of the economy's sectoral composition in transformational countries requires substantiation for the development of priority sectors of economic growth. The industries with the largest share of value added are a top-priority in terms of the use of state management and regulatory tools; consequently, they require the introduction of an innovative model of development. The purpose of the academic paper lies in identifying the features of the management of the economy's sectoral composition in transformational countries, revealing the best practices and formulating proposals for their adaptation in Ukraine. The object of the research is the management of the sectoral composition of the Ukraine's economy in 2015-2019. The research methodology is based on quantitative design and statistical analysis of the sectoral composition with application of data from the State Statistics Service of Ukraine on costs and output of various economic sectors in 2015-2019. The results demonstrate the stability of output share by the secondary and tertiary sectors (total share 78%), a decrease in the output of the primary sector (share 16%); growth of gross value added share and the wages share formed in the tertiary sector (from 51% to 54% of GVA and 49% to 54% of wages). The academic paper has identified the transition of Ukraine from industrial to post-industrial direction of economic development and the consumer model due to a high share of consumer expenditures in the tertiary sector (44-43%), the raw material-based structure of the economy. It has been established that capital accumulation occurs only in the secondary sector, and the accumulation rate of 33% indicates the potential for composition modernization. The practical effect of the scientific work lies in the formation of proposals for the management of the sectoral composition of the Ukrainian economy with an emphasis on the introduction of tools for the technological development of the secondary sector and stimulation the tertiary sector's innovative services for their transfer to other sectors of the economy.*

Keywords: *sectoral composition, management of sectoral composition of economy, regulation of sectoral proportions, innovative model of development, smart specialization, transformational countries.*

JEL Classification: P34, P52, O11

Formulas: 0; fig.: 3; tabl.: 2; bibl.: 17

Introduction. The sectoral composition of the economy in transformational countries depends on institutional governance and the level of implementation of technological changes. They influence the share of industries, determining their efficiency and stability in times of crisis. Ukraine, as a transformational country, requires an investigation of the sectoral composition state in order to identify the potential for modernization in the industries with the largest share in the production output.

The approximation of Ukraine to the EU laws and regulations in 2014-2020 has led to an increase in the level of government accountability, the democracy development, institutional changes and the introduction of innovative methods and tools for managing economic development in various sectors of the economy. The recent tendencies are privatization, decentralization of management, implementation of regional sustainable development concepts based on the paradigm of smart specialization. The outlined tendencies call forth the need to identify how democratic processes affect the management of the sectoral composition of the economy.

Literature review. The sectoral composition of Ukraine characterizes the economic structure by activity spheres of economic entities. Sectoral composition and changes distinguish the evolution of the national economy (Bogdanov, Rodić & Vittuari, 2017). The industrial composition of the economy provides rapid economic growth due to the significant share of manufacturing industries in GDP (Zhao & Tang, 2018). The post-industrial composition of the economy is characterized by the predominance of the service sector over the manufacturing sector (Dauth & Suedekum, 2016), which ensures economic growth through the transfer of service sector innovations to other industries (Zhao & Tang, 2018). This is explained by the fact that the service sector ensures the development of technologies and innovations that are implemented in the manufacturing sector (Quatraro, 2016). Apart from technologies, economic growth is affected by institutional changes determining transaction expenditures (North, 2018). There is a shortage of institutional changes in countries with economies in transition as well as their replacement by institutional imitations that do not lead to democratic development, increase of freedoms and entrepreneurship, governance stability (Draskovic, Popov & Peleckis, 2017).

The economy structure determines the national system stability to the crisis and the ability to recover economically after recession (Martin, Sunley, Gardiner & Tyler, 2016). The basic proportions of the sectoral composition are the ratio of the number of interested parties involved in different sectors of the national economy (in the primary, secondary, tertiary, quaternary, fifth ones) (Dergaliuk, 2019). According to the viewpoint of Trubnik, the basic levels of the sectoral composition (2012) are as follows: the sectoral (primary, secondary, tertiary), reproductive, regional and institutional. The sectoral composition changes in the process of transformation: "Structural transformation is defined as the transition of an economy from low productivity and labour intensive economic activities to higher productivity and skill intensive activities" (United Nations, n. d.). Sectoral composition is managed through the mechanisms of industrial, agricultural, innovation, investment, institutional policy of the state.

The following indicators are used for statistical assessment of the disproportions in the national economy's sectoral composition, namely: volume indices and deflator indices; development rates of basic leading economic branches; the ratio between GVA indicators and intermediate consumption; structure of exports of goods and services; share of service sector industries; the share of output of the primary sector and industries for primary processing of raw materials; the ratio between the

indicators of final consumption and gross accumulation; accumulation rate; ratio between exports and imports (Trubnik, 2014).

Thus, the theoretical and methodical fundamentals of studying the economy's sectoral composition and influence of economy structure on growth of the country are defined in the scientific literature. Herewith, the investigation of the economies' sectoral composition of countries during the transition to developed market relations is limited.

Aims. The purpose of the academic paper lies in identifying the features of the management of the economy's sectoral composition in transformational countries, revealing the best practices and formulating proposals for their adaptation in Ukraine.

Methods. The method of statistical analysis of indicators of the Ukrainian economy's sectoral composition for 2015-2019 has been used in the research in the context of four sectors, namely: primary, secondary, tertiary, quaternary. In order to conduct the statistical analysis, the data of the State Statistics Service of Ukraine on "Expenditures - Output in basic prices" for 2015-2019 have been used. They make it possible to identify the features of the sectors' structures on the basis of the following indicators: output, intermediate consumption, gross value added, gross profit, wages, final consumption expenditures, gross capital formation. The dynamics of the deflator of Ukraine's gross domestic product in 2016-2020 has been used in order to assess the contribution of each economic sector.

Results. Table 1 reflects the deflator dynamics of Ukraine's gross domestic product in 2016-2020, which allow dividing the economy by stable or problematic issues. Consequently, the physical volumes of production of goods and services in the primary economy's sectors increased in 2016-2018. In 2019, agriculture, forestry and fisheries reduced production volumes; however, there was an increase in the index in 2020, while the production volumes of the extractive industry decreased. In the secondary sector, the release volume of the processing industry has been increasing steadily with a slowdown of productive capacity in 2019-2020. In the tertiary sector, the largest increase in volume of output is observed in the field of temporary accommodation and catering, wholesale and retail trade; repair of motor vehicles and motorcycles; transport, warehousing, postal and courier activities.

In the quaternary sector of the Ukrainian economy, the output volumes in the field of public administration and defense, health care and education are increasing most of all.

Analysis of the output structure, intermediate consumption, gross value added, gross profit, wages, final consumer expenditures, gross capital formation by Ukraine's economic sectors in 2015-2019 (in terms of types of economic activity of Ukraine in the tables "Expenditures - Output in basic prices") (State Statistical Service of Ukraine, 2021b) indicates the tendencies as follows (Figures 1-2):

1. Stability of output volumes by secondary and tertiary sectors of the economy (share in 2015 38% and 38% respectively, in 2019 - 38% and 40% respectively), decrease in primary sector output (the output share in 2015 was 18%, in 2019 - 16%). The share of the quaternary sector was only 6% of the output, which means the

absence of progressive changes that form the V and VI technological economic structures (creativity, education, science, professional services).

Table 1. Gross domestic product deflator of Ukraine in 2016-2020 by economic sectors

Economic sector	Gross domestic product deflator	2016	2017	2018	2019	2020
	Gross Domestic Product	17,1	22,1	15,4	8,2	9,8
	The composition of gross domestic product					
	1. According to the production method					
Primary	Agriculture, forestry and fisheries	9,7	11,3	10,0	-2,2	23,1
Primary	Mining and quarrying	39,0	43,4	18,0	5,7	-11,6
Secondary	Processing industry	18,8	17,8	13,1	3,6	5,1
Secondary	Supply of electricity, gas, steam and conditioned air	36,8	25,0	26,3	15,9	-0,9
Secondary	Water supply; sewerage, waste management	27,1	26,4	15,9	23,3	20,8
Secondary	Construction	5,9	8,1	16,3	6,7	6,4
Tertiary	Wholesale and retail trade; repair of motor vehicles and motorcycles	11,3	25,6	10,0	7,7	6,1
Tertiary	Transport, warehousing, postal and courier activities	12,6	17,0	17,6	12,2	18,4
Tertiary	Temporary accommodation and catering	23,3	15,5	25,1	28,2	6,6
Tertiary	Information and telecommunications	15,5	14,0	18,3	23,2	11,5
Tertiary	Financial and insurance activities	7,0	4,9	9,2	10,6	14,4
Tertiary	Real estate transactions	16,1	15,4	10,4	9,6	9,5
Quaternary	Professional, scientific and technical activities	16,9	19,6	23,7	20,6	9,9
Quaternary	Activities in the field of administrative and support services	25,9	19,1	31,2	20,1	8,8
Quaternary	Public administration and defense; compulsory social insurance	28,3	40,9	30,8	15,2	12,0
Quaternary	Education	12,6	48,0	19,2	7,4	10,1
Quaternary	Health care and provision of social assistance	18,0	29,5	5,6	18,3	16,2
Quaternary	Arts, sports, entertainment and recreation	11,5	27,3	15,0	12,9	8,6
Quaternary	Provision of other types of services	15,1	24,8	21,4	17,7	13,5

Source: compiled by the author on the basis of State Statistic service of Ukraine (2021).

2. Stability of the share of intermediate goods' consumption of other industries by the secondary sector and the tertiary sector (50% and 30-31%, respectively).

3. Increase of the gross value added share formed in the tertiary sector (from 51% to 54%), which indicates the transition of Ukraine to the post-industrial direction of economic development.

4. Growth of the gross profit share of the tertiary economic sector (from 52% to 54%), reduction of the gross profit share of the primary economic sector (from 30% to 26%).

5. Increase in the share of wages in the tertiary sector (from 49% to 53%), no growth in the share of wages in the primary sector, decrease in the share of wages in the secondary sector.

6. High share of consumer expenditures of the tertiary sector (44-43%), increase of final consumption of the secondary sector and decrease of final consumption of the primary sector.

7. Gross capital accumulation actually occurs only in the secondary sector (the share of capital accumulation in the sector was 82% in 2015 and 96% in 2019, respectively).

8. Dominance in the tertiary sector of sections of transactional industries, namely: trade, financial industry, real estate transactions.

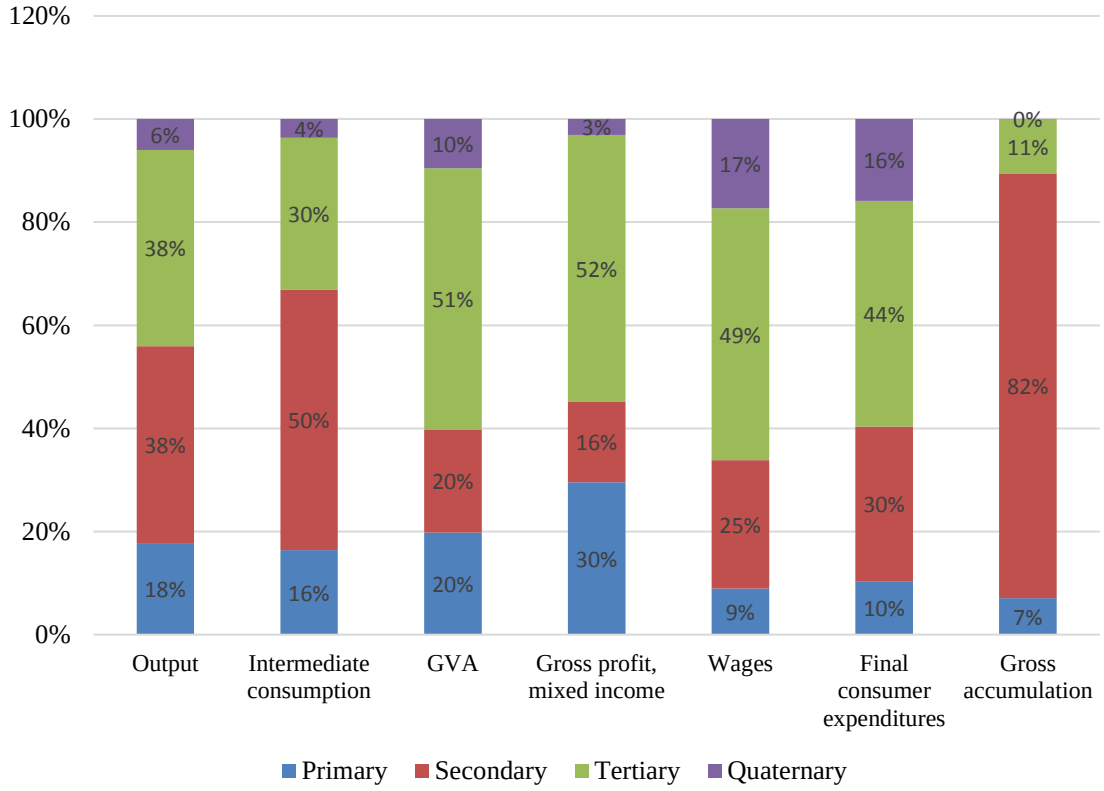

Figure 1. Sectoral distribution of macroeconomic indicators of Ukraine, 2015

Source: compiled by the author on the basis of State Statistic service of Ukraine (2021)

The primary sector is classified as a problematic one, forasmuch as the sectors have stable signs under crisis conditions. The secondary sector is relatively stable with signs of problems. The tertiary sector has a stable positive effect on the macroeconomics of Ukraine due to the service industries, which are ahead of other industries in terms of GVA share. The tertiary sector is considered to be a dominant one for Ukraine's economy and characterizes the post-industrial management type.

The accumulation rate (the ratio of gross accumulation towards gross profit) in 2015 and 2019 was 33%; this is typical for the industrial economy, which has been built on the basis of the third and fourth technological modes. This modifies the consumption possibilities, corresponds to the post-industrial type of economy and creates the preconditions for structural modernization.

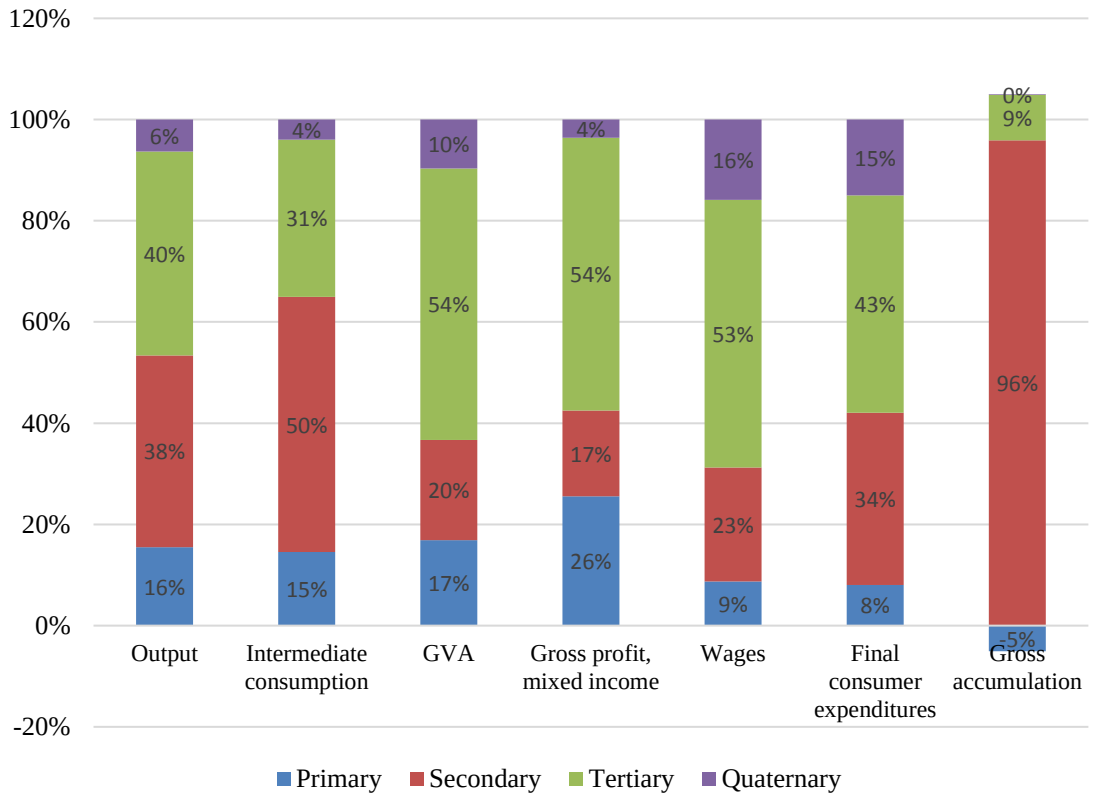

Figure 2. Sectoral distribution of macroeconomic indicators of Ukraine, 2019

Source: compiled by the author on the basis of State Statistic service of Ukraine (2021)

The exports share of the primary sector from the output volume of the primary sector was 32% in 2015 and 33% in 2019; the secondary sector - 35% and 25% respectively; the tertiary sector - 15% and 12% respectively; the quaternary sector - 2% in 2015 and 2019 respectively. Thus, the Ukrainian economic structure remains raw materials-based, given the significant volumes of exports of raw materials economic industries. The lack of shifts in the exports structure (reducing the exports share of raw materials and natural resources in favor of the export of processing industries) indicates regressive changes shaping the development of Ukraine as a raw material appendix of the economy.

The ratio between GVA and intermediate consumption (Figure 3) indicates the formation of the expenditure-based type of economy: in general, the indicator was 0,69 in 2015-2019, in particular, the secondary sector consumes most of all (27% is GVA of volume consumption), while the primary sector accounts for 80% of expenses (80% is GVA of volume consumption).

The ratio between final consumption and gross capital accumulation indicates the formation of a consumer-based model of Ukraine's economy.

During 2015-2019, final consumption exceeded gross savings. Consequently, this does not contribute to the renewal of the technological structure, and restrains investment activity.

The ratio between exports and imports points at the predominance of import dependence over the export-oriented orientation of Ukraine, especially in the secondary and quaternary sectors, where imports predominate significantly.

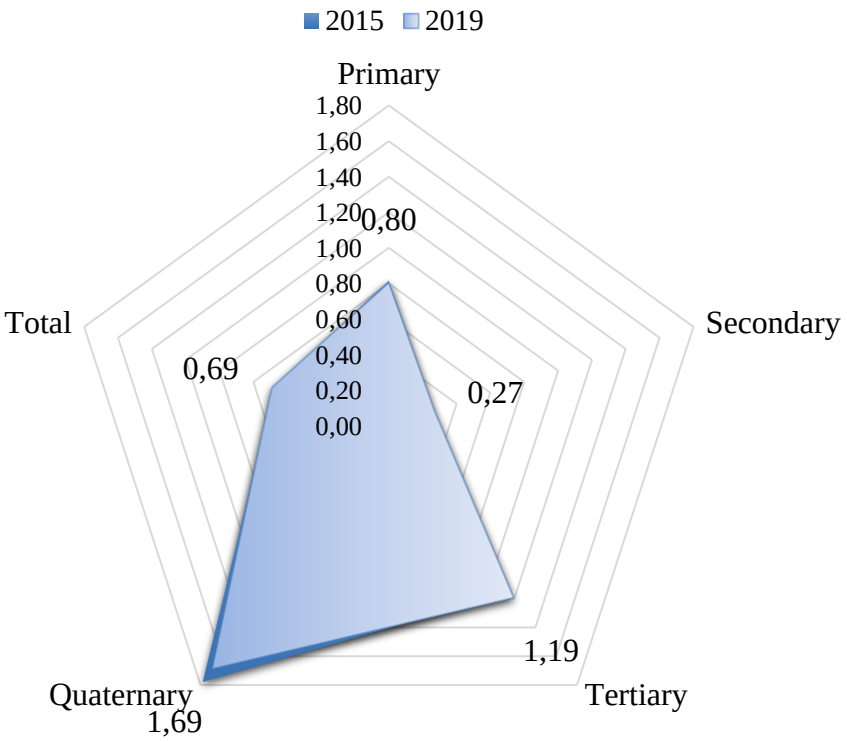

Figure 3. The ratio of GVA towards intermediate consumption of Ukraine's economic sectors, 2015, 2019

Source: compiled by the author on the basis of State Statistic service of Ukraine (2021)

Table 2. The ratio between final consumption and gross accumulation, between exports and imports by Ukraine's economic sectors, 2015-2019

Sector	The ratio between final consumption and gross accumulation		The ratio between exports and imports	
	2015	2019	2015	2019
Primary	7,47	-9,53	-1,15	-1,81
Secondary	1,85	2,11	-0,78	-0,56
Tertiary	21,05	28,58	-1,44	-1,45
Quaternary	1713,09	628,38	-0,51	-0,44
Total	5,09	5,97	-0,94	-0,83

Source: compiled by the author on the basis of State Statistic service of Ukraine (2021)

Features of the sectoral structure of highly developed countries are as follows: reduction of the gross value added share of the agricultural sector in GDP (for instance, the indicator was 1,71% in 2020 within the EU compared to 2,35% in 2000); decrease of gross value added of industry in GDP (for instance, within the EU, the indicator was 21,90% in 2020 compared to 25,439% in 2000); increase of gross value added in the service sector (for instance, the indicator was 66,132% in 2020 within the EU compared to 61,811% in 2000); reduction of employment in the agricultural sector (for instance, within the EU, the indicator was 8,973% in 2000 and 4,379% in 2019, respectively); decrease of employment rate in industry, including

construction (for instance, the indicator was 30,013% in 2000 within the EU and 24,997% in 2019); increase of employment rate in the service sectors (for instance, within the EU, the figure was 61,014% in 2000 and 70,63% in 2019, respectively). Transformation of the sectoral composition within the EU provides an increase in the life quality: GDP per capita was 16 661, 00 EUR in 2000 and 33 927, 00 EUR in 2020, while in Ukraine it was 635, 00 EUR in 2000 and 3 726, 00 EUR in 2020 (State Statistic service of Ukraine, 2021a).

Discussion. The sectoral composition of Ukraine's economy provides evidence of a post-industrial type of development, consumer model of the economy, absence of changes in technological structure and restraint of investment activity, import dependence, raw materials-based type of economy due to the high exports share. Apart from that, prerequisites for structural modernization are being formed in Ukraine due to an increase in the accumulation rate to 33% in 2015-2019, in particular, in the secondary sector of the economy. According to the investigation of Trubnik (2014), the accumulation rate was 22% and hindered the transition to a post-industrial type of management in 2004-2010. The change in the volume of gross capital accumulation in 2015-2019 introduces the potential for modernization, and a high output share, a high gross value added share; wages in the secondary and tertiary sectors form the production and service potential of the Ukrainian economy. Zhao, J., & Tang, J. (2018) have proven China's economic growth due to the high share of manufacturing industries.

Herewith, in Ukraine, these two sectors, together occupying 76% of output, 71% of GVA, 68% of gross profit, 74% of wages, providing an accumulation rate 33%, allow ensuring economic growth. Therefore, the sectoral composition management should include mechanisms for state regulation of these leading sectors.

There are causal links between structural adjustments (changes in gross value added and employment) and economic growth. Olczyk & Kordalska (2018), using the example of eight countries with economies in transition for the period 1995-2011, have revealed the heterogeneity of these interrelationships in their scientific work. For instance, a strong two-way interrelationship between these indicators was revealed in Latvia, Lithuania and Estonia; no links were observed in Hungary, and a one-sided impact of GDP on employment was identified in Poland. This indicates the necessity to take into account the features of the sectoral composition of Ukraine's economy in the formation of state structural policy in order to ensure long-term economic growth. Taking into consideration the predominance of the secondary and tertiary sectors in Ukraine, it is advisable to stimulate the development of services, which will ensure the growth of the secondary sector through the development of innovations. For instance, it is important to provide public funding for research institutions and the implementation of their technological developments by the private sector (Veugelers & Schweiger, 2016). Ukraine is one of the countries where technologies are acquired and there is a small amount of companies purchasing technologies (Veugelers & Schweiger, 2016). Therefore, it is advisable to stimulate the production and acquisition of technologies, R&D and knowledge at the state level. Biscione, Caruso & de Felice (2021) have proven the influence of public

administration on the implementation of innovations in transition economies in the case of high turnover. The basic management tool is tax rates, the reduction of which occurs with the introduction of technology and leads to the firm's growth.

The sectoral composition management of Ukraine's economy on the basis of innovation policy should ensure the implementation of smart specialization strategies through the measures as follows (Kleibrink, Larédo & Philipp, 2017):

1) formation of a trusted center of competence for a comprehensive analysis of industries, their structure and coordination of the process of implementing smart specialization strategies;

2) implementing strategies in one of the most powerful industries in which interested parties are involved working with government agencies towards identifying common priorities and actions;

3) implementing strategies in one region and increasing others in order to identify the effectiveness of different approaches to be introduced based on territorial experiments;

4) sequential distribution of sectoral composition management processes in order to identify the effectiveness of each process and focus on the basic areas of industrial activities with high potential in the mid-term as well as the potential for R&D implementation.

Conclusion. The following features of the sectoral composition of Ukraine's economy have been revealed in the research, namely: stability of output volumes by the secondary and tertiary sectors of the economy, output reduction in primary sector, high share of the tertiary sector; growth of gross value added share and the wages share being formed in the tertiary sector (from 51% to 54%), which indicates the transition of Ukraine from the industrial to the post-industrial direction of economic development; high share of consumer expenditures in the tertiary sector (44-43%), which indicates the consumer-based economic model; growth of final consumption of the secondary sector; the raw material-based structure of the economy through the volume value of raw materials exports by the primary sector; capital accumulation only in the secondary sector; a problematic primary sector, a relatively stable secondary sector and a positive impact of the tertiary sector on economic growth due to service industries, which are ahead of other industries in terms of GVA share.

Further investigations should be directed on studying the most effective state instruments for regulation and management of the post-industrial economic type with a predominance of consumption in the tertiary sector, with an emphasis on technologies and innovations in the secondary and tertiary sectors.

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FORECAST ASSESSMENT OF THE DEVELOPMENT OF THE DOCTORAL EDUCATION SYSTEM

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Abstract. *The article presents an analysis of the main indicators of training of doctoral students, research institutions that train doctoral students, the dynamics of the total cost of scientific and scientific-technical work on the sources of funding. The subject of the research is doctoral higher education as an element of the system of highly qualified personnel in Ukraine. The author developed his own method of the dollar equivalent. The method involves the transfer of costs for scientific and scientific and technical work in a particular period in their dollar equivalent for the average annual exchange rate of hryvnia to the dollar according to the NBU. The purpose of the article is to develop theoretical and methodological foundations for the formation and development of the system of training highly qualified personnel, to determine the features of improving the quality of doctoral education. The dynamics of the total number of doctoral students (including their number by branches of science), as well as persons who completed doctoral studies in 2000-2019 are presented. The preparation structure of doctorates degrees by organizations in per cent ratio is constructed. The dynamics of total costs for scientific and technical work by sources of funding is presented comparison of financial indicators was carried out according to the method of calculating the index of scientific products and the method of dollar equivalent (it is own development). The proposed method of comparing the funding of science (finding the dollar equivalent) shows a reduction in funding for both scientific and scientific and technical work. Taking into account the deflator index of scientific products shows that the real costs of science in Ukraine have decreased. The dynamics of the state order for the training of doctors of sciences in 2014-2020 and the forecast estimate for the 2021-2022 academic year of the number of people are analyzed. In order to improve the training quality of qualified personnel, it is necessary to upgrade the legal framework, reduce bureaucracy, improve the requirements for the defense of dissertations and doctoral theses, increase funding for education and science and not the survival of scientists. To solve the problem of reducing the number of highly qualified personnel in Ukraine, it is necessary to take measures at the state level, raise the prestige of scientific activity, improve social protection.*

Keywords: *higher education, postgraduate studies, doctoral studies, law, scientific organization, system, scientific titles, scientific and scientific-technical activity, highly qualified personnel.*

JEL Classification: A23

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Introduction. Ukraine is traditionally considered a country with significant scientific potential, world-renowned scientific schools, a developed system of training highly qualified personnel. The development of science and the formation of the information society have come to the fore as components of an intensive factor in the development of the innovative economy, scientific, scientific and pedagogical workers, and highly qualified researchers. They generate innovations and create favorable conditions for the innovation process and increase the competitiveness of the economy.

Nowadays, the obvious fact is that the main condition for achieving long-term positive rates of socio-economic development, both the country's economy as a whole

and its individual industries, is an active innovation sphere. However, the problem is that the transition to market economic relations in Ukraine has not yet contributed to a significant impetus to the development of innovation processes in the technological renewal of traditional sectors of the economy and the creation of new modern industries and social development. This is especially true in the field of educational activities. Today, all developed countries are involved in a powerful movement for the democratization of educational opportunities and educational expansion to increase their competitiveness. Therefore, the active development of training systems for higher qualifications (at the 6th - the highest educational level according to the International Standard Classification of Education or at the 3rd highest cycle of higher education in the terminology of the Bologna process), which in the world educational and scientific space are called "doctoral education" , was seen as a guarantee of sustainable development of the national innovative economy and the competitiveness of the state in the new globalizing economic conditions.

Literature review. One of the most priority strategic ways to develop the domestic economy is the full-scale and uncompromising implementation of modern science, technology and innovation policy, the main factor in the implementation of which should be the system of doctoral education. The first to introduce the category of "innovation" was the Austrian economist J. Schumpeter. Subsequently, this category was developed to a special economic concept, the followers of J. Schumpeter developed his theoretical developments, namely S. Kuznets, P. Drucker, D. Bellemt and others. NM Kraus speaks about the systemic interdependence of the categories "innovative economy" and "intellectual potential", noting that the innovative economy is a set of interconnected and interacting structures that are engaged in the production and commercialization of scientific knowledge and technology. NM Kraus, emphasizes that the construction of an innovative economy is based on the realization of intellectual potential, namely doctoral education.

Aims. The subject of the research is doctoral higher education as an element of the system of highly qualified personnel in Ukraine. The purpose of the article is to develop theoretical and methodological foundations for the formation and development of the system of training highly qualified personnel, to determine the features of improving the quality of doctoral education.

Methods. The author developed his own method of the dollar equivalent. The method involves the transfer of costs for scientific and scientific and technical work in a particular period in their dollar equivalent for the average annual exchange rate of hryvnia to the dollar according to the NBU.

Results. In order to make a forecast assessment of the development of the doctoral education system in Ukraine, we analyze the data posted in the statistical yearbook of Ukraine for 2019 (unfortunately, the 2020 yearbook of has not yet been published) (Table 1).

Analysis of the main indicators of doctoral students' training in 2000-2019 allows us to identify two main periods, characterized by different dynamics. Thus, in the period from 2000 to 2015, the number of research institutions and institutions of higher education that had a doctorate increased from 209 to 283, and in the next 4

years decreased to 253. Thus, if we compare 2019 with 2000, we have an increase by 44 institutions (+ 21.1%), and if from 2015 - a decrease by 30 institutions (10.6%).

Table 1. Dynamics of the main indicators of doctoral students' training in 2000-2019

Indicator	Years							Deviation of 2019 from			
								2000		2015	
	2000	2010	2015	2016	2017	2018	2019	A	%	A	%
Number of graduate students at the end of the year	23295	34653	28487	25963	24786	22829	25245	1950	8,4	-3242	-11,4
Number of research institutions and higher education institutions with doctoral studies at the end of the year	209	263	283	282	277	270	253	44	21,1	-30	-10,6
Number of doctoral students at the end of the year	1131	1561	1821	1792	1646	1145	1113	-18	-1,6	-708	-38,9
Number of students enrolled in doctoral studies	376	603	650	584	493	544	511	135	35,9	-139	-21,4
Number of persons who completed doctoral studies	401	459	563	551	543	963	511	110	27,4	-52	-9,2

Source: built by the author on the basis of the Statistical Yearbook for 2019.

To clarify the identified trends, the dynamics of the total number of doctoral students, as well as persons who completed their doctoral studies in 2000-2019 were presented in the form of graphs (Fig. 2).

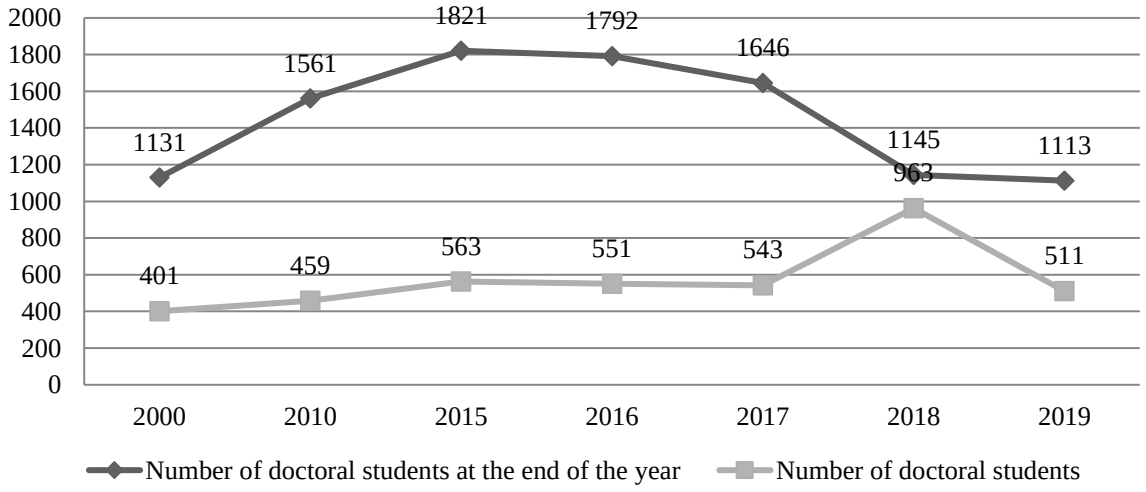

Figure 2. Number of doctoral students as well as persons who completed doctoral studies in 2000-2019, pers.

Source: made by the author on the basis of the Statistical Yearbook for 2019

A similar situation is observed with other quantitative indicators of the system of training of doctors of sciences, such as:

- the total number of doctoral students (peak value of 1821 people in 2015 and a gradual decrease to 1113 people in 2019). Compared to 2015, the number of doctoral students in the reporting period decreased by 708 people, or 38.9%;

- the total number of persons enrolled in doctoral studies (the peak value was 650 people was recorded in 2015. And according to the results of 2019, only 511 people have already been admitted to doctoral studies, which is 21.4% less than 4 years ago;

- the number of people who completed their doctoral studies in 2015 was 9.2% higher than in 2019.

Most experts tend to attribute such trends to the fact that, on the one hand, in 2016-2019 there was a sharp decrease in the number of government orders in this area (due to the reduction of the budget for science in the context of the complicated political and economic situation in the country and an increase in defense spending), and on the other hand, the training of doctors of science in Ukraine has no close connection with social production, which should ensure the demand for highly qualified scientific personnel.

With the strengthening of requirements for the defense of doctoral dissertations and more attention of the Ministry of Education and Science and the Financial Inspectorate to the responsibility of applicants and employers for the successful completion of doctoral studies, the number of doctoral students, in our opinion, will continue to decline.

Meanwhile, the statistical collection of the State Statistics Committee "Scientific and Innovative Activity in Ukraine" for 2019 (hereinafter - the statistical collection 2019) states that the vast majority of institutions training doctoral students are subordinated to six ministries and academies of science: Ministry of Education and Science - 40%, the National Academy of Sciences of Ukraine - 25%, the Ministry of Health and the Ministry of Agrarian Policy and Food - 5% each, the National Academy of Agrarian Sciences and the Academy of Pedagogical Sciences - 4% each (Fig. 3).

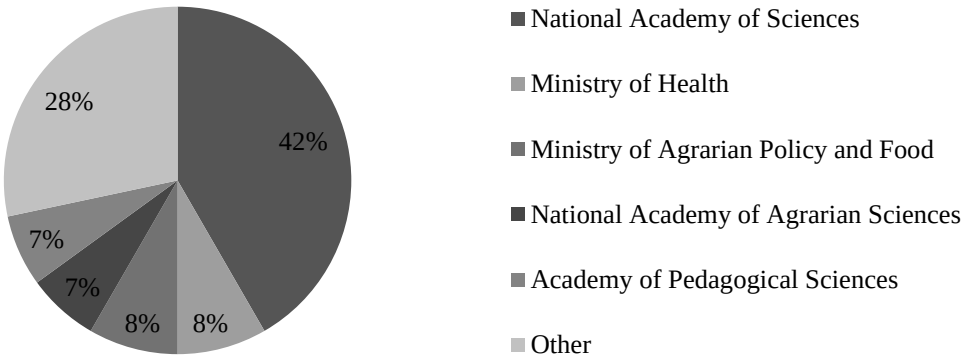

Figure 3. The structure of training of doctors of sciences by organizations, %

Source: made by the author on the basis of the Statistical Collection 2019

The data of fig. 3 show that the major part in the structure of subordination of doctoral students belongs to the Ministry of Education and Science and the National Academy of Sciences of Ukraine. Thus, their total share in the training of doctors of science is 65%.

We observe that 61% of doctoral students work at higher educational institutions, and 39% at scientific institutions. The largest number of graduate students study in the field of technical, economic, pedagogical and legal sciences.

The vast majority of doctoral students (93%) study at the expense of the state budget. In our opinion, this indicates a weak relationship between business and the training of highly qualified scientific personnel in Ukraine. In other words, large enterprises of Ukraine currently do not show interest in domestic doctors of sciences, as well as the low demand for such personnel in the Ukrainian labor market by private entities.

The expected outcome of doctoral studies is the defense of the thesis. In 2019, the share of people who defended their doctoral thesis was 27%, which is quite a high rate.

Ukraine should be noted as a country that adheres to gender democracy in the training of scientific personnel. Women, along with men, use the right to continue their education in doctoral studies. Thus, in 2019, women accounted for 52% (579) of doctoral students.

At the same time, the age structure of doctoral students in Ukraine is quite traditional. Thus, the majority of doctoral students (47%) have already reached 40 years of age.

Two thirds of the total number of new specialists of higher qualification are teachers of higher and other educational institutions, associate professors, professors of departments, assistants; 14.3% - researchers, scientific secretaries; 13.7% - heads of enterprises, institutions, organizations and heads of production (main, functional) units [statistical collection 2020].

On the other hand, if we analyze the dynamics of the number of doctoral students in the fields of science, we can see that in the last 5 years there is a steady trend to reduce the number of doctoral students in almost all fields, but the most rapid decline (about 50%) is observed in economics, physics and mathematics, historical, philosophical and biological spheres (table 4). All calculations were performed using an electronic spreadsheet Microsoft Excel 2019. The source of calculations were data from the State Statistics Committee of Ukraine.

The data in Table 4 show that in 2019, 511 people received doctor's diplomas, including the largest number of doctoral dissertations was defended in the field of technical sciences (20.15%, or 224 people), in economics (17.19%, or 191 people) and in pedagogy (10.42%, or 116 people).

In other words, the lion's share of doctors of science in Ukraine is trained in several fields, namely in technical and economic sciences. For example, every third doctoral student in 2019 studied in either technical or economic fields.

At the same time, it should be noted that the share of these sciences in the study period decreased slightly due to a decrease in the share of doctoral students in

economics, whose share in the overall structure of doctoral students compared to 2015 decreased by almost 4%.

Table 4. Dynamics of training of doctors of sciences in Ukraine for 2015-2019

Branch of knowledge	Years						Deviation	
	2015		2017		2019		-	
	persons	%	persons	%	persons	%	persons	%
DOCTORAL STUDENTS	**1821**	**100**	**1646**	**100**	**1113**	**100**	**-708**	**-38,88**
- economic	354	19,42	278	16,88	191	17,19	-162	**-45,90**
- technical	270	14,85	292	17,74	224	20,15	-46	**-17,07**
- pedagogical	213	11,72	204	12,29	149	13,37	-65	**-30,27**
- physical and mathematical	137	7,5	95	5,62	116	10,42	-21	**-15,08**
- philological	117	6,43	145	8,55	95	8,55	-22	**-18,73**
- juridical	95	5,23	76	4,63	69	6,2	-26	**-27,54**
- historical	77	4,23	64	3,9	39	3,52	-38	**-49,14**
- philosophical	68	3,72	74	4,52	35	3,18	-32	**-47,75**
- psychological	49	2,69	43	2,59	35	3,18	-14	**-27,75**
- medical	41	2,24	40	2,45	25	2,27	-16	**-38,06**
- biological	37	2,05	32	1,97	18	1,65	-19	**-50,81**
- others	363	19,92	302	18,36	115	10,3	-248	**-68,40**

Source: compiled by the author on the basis of data from State Statistic Service of Ukraine [7]

In order to better understand current trends in the development of the doctoral education system in Ukraine, we will analyze the dynamics and structure of funding in this area.

Table 5, in particular, analyzes the dynamics of total costs for scientific and scientific-technical work by sources of funding.

Table 5. Dynamics of total costs for the implementation of scientific and scientific and technical work by sources of funding in Ukraine in 2010-2019, million UAH

	2010	2017	2018	2019	Deviation 2019 from 2010	
					A	%
Total	8107,1	13379,3	16773,7	17254,6	9147,6	112,8
budget funds	3647,4	4896,4	6222,7	6724,7	3077,4	84,4
of them the state budget	3603,3	4740,1	6020,9	6603,9	3000,6	83,3
own funds	795,6	1340,8	1610,0	1725,1	929,5	116,8
funds of public sector organizations	264,9	718,7	1141,6	798,6	533,7	201,5
funds of business sector organizations	1237,7	3007,8	3947,4	4035,7	2798,0	226,1
funds of organizations in the higher education sector	4,8	8,9	6,8	3,7	-1,0	-22,0
funds of private non-profit organizations	9,7	2,8	21,3	14,7	4,9	50,7
funds from foreign sources	2092,3	3262,8	3642,6	3856,2	1763,9	84,3
funds from other sources	54,7	141,1	181,4	96,0	41,3	75,4

Source: compiled by the author on the basis of data [2]

We draw your attention to the fact that the comparison of financial indicators was carried out according to two methods:

- according to the method of calculating the index of scientific products, approved by the order of State Statistic Service of Ukraine. dated 22.12.2010 № 516. This method provides for the GDP index of scientific products, which is calculated on the basis of the index of real wages and capital investment index in Ukraine as a whole [7].

- by the method of dollar equivalent (author's development). This technique involves the transfer of costs for scientific and scientific and technical work in a particular period in their dollar equivalent at the average annual exchange rate of hryvnia to the dollar according to the NBU.

At the same time, we believe that converting the cost of funding research into the dollar equivalent is easier to use and gives a more accurate result than the method approved by the order of State Statistic Service of Ukraine from 22.12.2010 № 516, as it allows you to compare similar indicators with developed countries.

Thus, the data in Table 5 show that in nominal terms, funding for the costs of scientific and technical work in 2010-2019 has more than doubled, namely from 8107 million in 2010 to 17254.6 million in 2019, which, at first glance, may seem a pretty good rate.

Taking into account the GDP index of scientific products according to the methodology approved by the order of State Statistic Service of Ukrainedated 22.12.2010 № 516 shows that the real costs of science in Ukraine over the past 10 years have not increased, but even decreased (from 8,107 million in 2010 to 8050 million UAH in 2019), which is definitely a negative trend.

Our proposed method of comparing the financing of science (finding the dollar equivalent) shows an even more dramatic reduction in real costs of scientific and technical work, which was primarily due to the sharp devaluation of the national currency. It is not difficult to calculate that in 2010 at the NBU exchange rate of 7.99 UAH to USD. Almost 1.015 million dollars were spent on investigation, and in 2019, when the average annual exchange rate was 26 UAH to USD, the dollar equivalent of science funding was only $ 351.8 million, which is almost three times less than in 2010.

Simultaneously, with regard to direct financing of doctoral education, we observe a gradual decrease in the number of government orders for admission/graduation of doctoral studies (Table 6).

Places for training of applicants at the expense of the state budget are regulated by annual resolutions of the Cabinet of Ministers of Ukraine "About the state order for preparation of experts, scientific, scientific and pedagogical and working shots, on advanced training and retraining" (further - the Resolution). The main customer for the execution of the state order is the Ministry of Education and Science, which accounts for almost 70% of the volume.

Forecast estimate of the amount of the state order of doctoral students, specified by the Resolution for 2020. It is expected to accept 500 new doctoral students in 2021 and the same number in 2022.

Table 6. Dynamics of the state order for the training of doctors of sciences in 2014-2020 and the forecast estimate for 2021-2022, persons

Year	Graduation	Admission	Graduation of MES	Admission of MES
2014	526	554	356	342
2015	529	516	383	368
2016	524	493	373	353
2017	501	468	353	317
2018	824	478	568	320
2019	449	459	309	295
2020	442	431	309	295
2021	500	500	350	350
2022	490	500	343	350

Source: compiled by the author on the basis of data [3]

A comparative analysis of the number of graduates in 2019 in terms of regions showed that of the 511 people who completed their doctoral studies, the largest number came from Kyiv (37%), Kharkiv (13.2%), Lviv (8.9%) regions (Fig. 4).

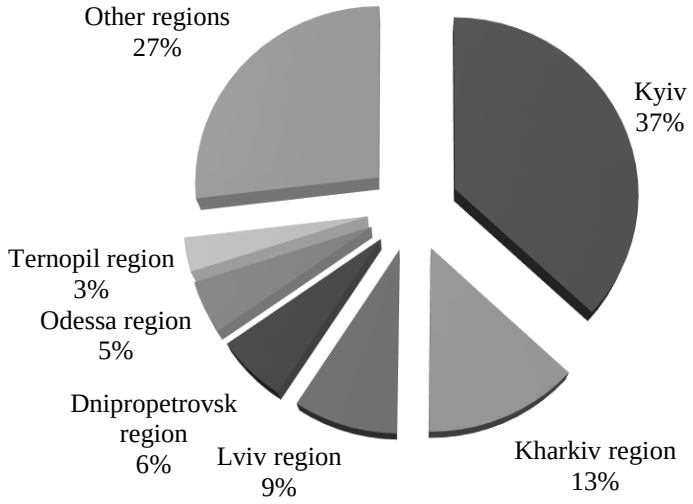

Figure 4. Geographical structure of doctoral students for 2019, %

Source: made by the author on the basis of [4]

However, Ternopil (58.8%), Kirovohrad (57.1%), Vinnytsia (38.5%), Khmelnytsky (38.5%), Kharkiv (34, 6%), Sumy (33.3%), Zhytomyr (33.3%), Lviv (30.2%) regions. The lowest rates are in Luhansk (6.3%) and Chernivtsi (7.2%) oblasts. In three oblasts, after finishing the doctoral program, no work was defended, namely in Zakarpattia Kherson Rivne.

Conclusion. It can be concluded that the formation and development of the system of training highly qualified scientific personnel in Ukraine during the years of independence has come a long way, the result of which is quite ambiguous. On the one hand, we managed to get rid of some attributes of the Soviet education system, in particular in the organizational and legal plane, where many positive steps were taken to bring the domestic education system and training system closer to the requirements

of the Bologna process. On the other hand, to some extent excessive bureaucratization, lack of close relationship between science and the private sector, as well as chronic lack of funding for education and science hinder the full realization of domestic intellectual potential and train really high-quality scientific personnel who could provide innovative way of development of the Ukrainian economy.

The formation and development of the system of training highly qualified scientific personnel in Ukraine during the years of independence has come a long way, the result of which is quite ambiguous. On the one hand, we managed to get rid of some attributes of the Soviet education system, in particular in the organizational and legal plane, where many positive steps were taken towards the approximation of the domestic education system, in particular in the organizational and legal plane. But excessive bureaucratization, the lack of a close link between science and the private sector, and the lack of funding for education and science hinder the full realization of domestic intellectual potential.

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