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ECONOMICS

INFORMATION SUPPORT FOR THE REGULATION OF THE LABOR MARKET OF UKRAINE: FUNCTIONS AND TASKS

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Annotation. The article analyzes the peculiarities of the functioning of information support for the modern labor market of Ukraine, provides an assessment of its current state. The tasks and functions of information support were defined from the point of view of the settlement of labor market imbalances. The classification was offered and the value of general, special and auxiliary functions of information support for labor market regulation, which are provided in close interaction of subjects, was substantiated.

Key words: tasks of the information support, state employment service, information support, classification of the functions of the information support for labor market regulation, private intermediaries of the labor market, labor market, functions of information support.

Formulation of the problem. In the social sphere, the quality information component is a prerequisite for the efficient regulatory policy at the labor market. In recent years, the imbalance between the demand and supply at the labor market reached the warning level, and the state of its information environment only aggravates the asymmetry on it. Due to this fact, the labor market does not receive the skilled workforce and the employers do not timely satisfy their needs for the quality staff.

In order to achieve the balanced labor market, it is necessary to modernize its information support, which will improve the quality of information and create appropriate conditions for informed decision-making by its subjects, as well as promote effective government policy to regulate the labor market, positively affect the population employment.

Analysis of recent research and publications. The problems related to the functioning and regulation of the labor market, in particular in the context of the research of its information function were studied by Ukrainian scientists such as S. Bandur, D. Bohynia, O. Voklova, B. Danylyshyn, T. Zayats, Yu. Krasnov, E. Libanova, I. Marchenko, Yu. Marshavin, T. Petrova, V. Petiukh, M. Rudyi, M. Ruzhenskyi etc.

Information and analytical support for the activities of public authorities was studied by Ukrainian scientists A. Diehtiar, N. Didenko, R. Koval, V. Moroz, N. Nyzhnyk etc.

However, until now, the information support for the labor market has not been researched from the point of view of its regulatory functions being able to carry out the complex regulation of the labor market from the point of view of partnership of state institutions and the private sector. Under current conditions, the problem of the improvement of information support by renovation and modernization is particularly

acute for Ukraine. The prerequisite for this is carrying out the analysis of its current state, defining the tasks and functions attached to it.

It is the purpose of this article to research the state of the information support for the regulation of the labor market, defining the tasks and functions peculiar to it.

Statement of the basic materials of the research. Modern challenges and threats encountered by the labor market of Ukraine and the market relations on it, set new tasks with regard to the state regulation of the Ukrainian labor market based on the use of the substantial information scope. Labor market as one of the elements of market system belongs to its most complicated and dynamic components. The need for the quality information exists at all stages of the regulatory process of the labor market: when defining and setting the goals, assessing the problem situations, making managerial decisions for the organization of the activity of the system controlling it.

Back in the late 80's of the last century, prominent American scientists, Nobel laureate in economics George Akerlof, Michael Spence and Joseph Stiglitz in the theory of information asymmetry proved that information in any market is incomplete and asymmetric, creates uncertainties and risks, and the lack of this information leads to the inefficient functioning of the market and the inability to its self-regulation. Authors of this theory revealed the relationship between the arising of economic crises with asymmetric information flows, insufficient transparency of information environment and the absence or inefficiency of institutes aimed at the solving of the regulation of this market, since it is impossible to freely move market resources without ensuring the free moving of information [1, p. 488].

Until recent times, some scientists believed that the Ukrainian labor market was completely provided by quality and objective information, its subjects operate with the data on all market parameters and information is disseminated instantly [2, p.149]. However, the information symmetry is a distinctive feature of the labor market of Ukraine for a long time and its consequences are manifested in the imbalance between demand and supply, restriction of competition in the labor market, losses of social work, inefficient use of physical resources, conservation of the level of development of productive forces, low manpower mobility, its outflow abroad etc. Imbalances in the labor market of Ukraine are largely caused by incomplete information on wages when concluding employment agreements, lack of information of the parties on the content of the law rules governing the relations between them, and so on. Neither of the market participants has the complete information on setting the salary level and the level of social transfers in the conditions of negotiations [3, p.60].

Development of the modern and quality information support for labor market provides for the large-scale processes of information processing in various fields of work making up its information environment by means of telecommunication systems and information exchange in order to ensure its relevance; prevention and in case of arising, elimination of various information barriers in the form of obstacles interfering with the perception, transmission of information and significantly affecting the completeness of the transmitted data. On the other hand, the main means of this process are information,

telecommunication technologies, communication technologies, systems and means for their support, where the information support is a system-forming factor of the information environment providing for the sufficient level of the information use as a resource in the labor market. Currently, basic technical and technological preconditions in the domestic labor market are created and used by the public sector.

In the organizational and technical sense, information support should perform the following tasks:

- definition of the information structure, periodicity of its renewal, forms of provision;
- definition of consumers and sources of information, methods of access to them;
- unification and organization of processes and means of collection, registration, processing, storage, renewal, transfer and use of information, allotments of these tasks among the entities participating in the process of information support;
- organization of information flows, formation of a set of technical means for their transmission, development and implementation of new information and telecommunication technologies, formation of a single information environment;
- organization of storage of information arrays (development of a system of classifiers and directories, storage and processing of data in unified formats);
- formation and application of the procedure for the interaction between information system and entities managing it, organization of the use of information for the assessment of trends, identification of risks, determination of alternative decisions and actions, development of forecasts, making local and general strategies;
- organization of the feedback between subjects, objects and consumers.

In our opinion, information support belongs to the integrated multifaceted and multidimensional processes, the course of which is based on the use of information as an organizational resource that differs from other types. Its most distinctive features are as follows:

- when used, the information does not disappear, but only changes its usefulness;
- information circulating in institutions and organizations involved in the regulation of the labor market includes elements of subjectivity (assessments, opinions, attitudes);
- the functioning information on labor market may include inadequate, corrupt data on the reality which may become stereotypes, superstitions and spread within it, distorting the perception of its condition;
- information awareness is a prerequisite for the participation of institution and organization employees in the resolving the current and strategical problems of labor market.

Use of information as an organizational resource of labor market is carried out by the staff of organizations and institutions of the state employment service involved in the regulation of labor market. In this regard, when circulating information between them, there is always a psychological component, which is that this process is provided with the participation of a person (the subject of the information support for management) and is intended for the person (the object of information support for management) [4, p. 61]. The existence and negative effects of this component should always be taken into

account by the employees of the state employment service in their daily activities.

According to the constitutional rules of law of a person and a citizen, information used in the information support of labor market is accessible for its consumers. It is permanently studied by the citizens and employers as well as the public and private organizations as to its relevance. The latter is caused by the fact that the circulating information in the field of labor market regulation has certain contradictions.

Currently, the legally defined disclosure of data on the state and trends of the domestic labor market is largely provided by the information of the state employment service on the fixed (registered) labor market. But this information does not reflect its real condition. The database of the state employment service is formed using the information and analytical system based on the reporting of employers and the information from the personal cards of unemployed persons using the state classifiers and universal handbooks according to the applicable laws.

At the same time, along with the state employment service, there are private intermediaries in the domestic labor market, the number of which has been growing in recent years. Unemployed people have the opportunity to apply for employment assistance to any private intermediary, including job search and staffing websites and social networks. According to the State Employment Service, 742 entities carried out the employment agency services in 2017, 984 entities in 2018, 1153 entities in 2019.

Due to the existence of state and private intermediaries in the domestic labor market, its information environment is formed by various sources and currently it is differentiated and asymmetric. As opposed to the state resources, information on the working places on the private job seeking and staffing websites is not always reliable because it is not subject to verification, such websites provide only information-resource web-platform, where the responsibility for the correctness of the published information lies with the entity that registered it. The latter affects the increase of the shady employment and illegal social and labor relations.

This state of information support for labor market regulation is a result of the fact that for a long time the current laws did not provide for the submission by private intermediaries to the state employment service of the information about vacancies received from employers. Due to this fact, the single information environment on labor market is not formed. Currently, the applicable laws provide for the quarterly submission of the form 1-IIA "On the number of the citizens employed by provision of the employment agency services" as a report on the work of a private intermediary. Under such circumstance, the regulators of labor market are not provided by the relevant information on the need for the employees and the labor supply, there is also no coordination between the public and private sectors in the labor agency. The above indicates that the information support of the domestic labor market has long been non-systemic, and its current state does not fully perform its inherent functions.

The notion of a "function" is widely used in scientific publications. For the purposes of our research, it is understood as a way of the manifestation of vital activity of the system of information support for the regulation of the domestic labor market and its components.

Functioning of labor market is subject to the effect of the commodity production laws such as the law of supply and demand, the law of value, the law of competition being manifesting in the performance of the series of functions by it. Among them, the information function, according to which, as some authors believe, the participants of the purchase and sale of such commodity as a manpower receive the information on the employment conditions, the level of salary, quality of manpower [5, p. 38]. V.H. Bylkov interprets the information function of labor market in a similar manner [6, p. 83]. However, this understanding of its content is too narrow, as it is constantly used in the development of a set of measures aimed at promoting employment, and is based on constant monitoring of the labor market. It is a scientifically based system of periodic collection, analysis and generalization of information with its further use for strategic and tactical decisions in the field of labor market regulation at the state, regional and local levels. The objects of monitoring this important component and information base of labor market regulation are socio-economic and managerial processes and phenomena that significantly affect the supply and demand of labor, labor mobility of the population, the activities of institutions involved in its training and employment.

Since by its content features, the information function of labor market is multifaceted and multidimensional, we distinguish classification groups consider their functional features (see Fig. 1.).

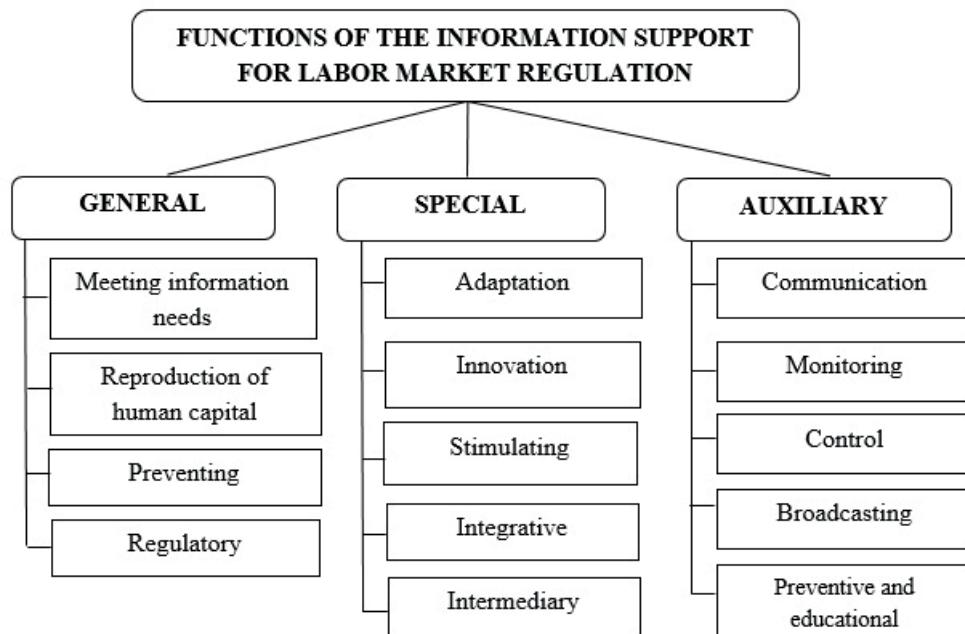


Fig. 1. Classification of functions of the information support for labor market regulation.

In the conceptual and methodological sense, when analyzing the functional features of the information support for labor market regulation, it should be taken into account that it is aimed at ensuring full, freely chosen employment and social protection in case of unemployment. [7]. In view of the latter, it is legitimate to distinguish between their general functions, which combine the focus on ensuring a balance between the supply and demand of labor and, consequently, reducing the negative socio-economic consequences of cyclical fluctuations in the economy. They include meeting the needs for the specially processed information constantly operated by the institutions involved in the labor market regulation. Compliance of its content with quality criteria creates the preconditions for making the most rational management decisions in the field of employment.

The reproduction of human capital in this classification group is logically related to the previous function, as in the process of labor the carrier of human capital acquires new knowledge, skills, improves his/her skills, etc., which generally contributes to its reproduction at a higher level. In this direction the assistance of the state employment service to employment, development and realization of programs of employment, professional training, development of business operates. The preventive function involves the constant exchange of information between the subjects of regulatory activities to analyze the processes and phenomena in the labor market in order to prevent socio-economic distortions and imbalances. Based on the processing of the significant amounts of various information, active employment policy measures are formed and implemented, which are aimed at reducing unemployment, achieving a balance between the demand and supply of labor on it.

The activating of the regulatory function is preceded by the analysis of the appropriate information in order to identify the needs for the manpower in certain regions, fields and enterprises in the context of professions, qualification level of employees etc. To this should be added the information mediation by advising the clients of the employment service on the supply and demand of labor, available vacancies, vocational training opportunities, which generally contributes to the movement of labor between enterprises, industries and regions.

Special functions of the information support as relatively separate areas of action, reflect the qualitative features of this institution and aimed at the development of its individual components. They are related by the focus on the objects and subjects of the regulatory process. In this sense, performance of the adaptation function of the information support lies in the fact that state regulatory authorities, based on the processing the appropriate information on the changes in the external and internal environment of labor market, make decisions aimed at its adaptation to the new conditions of functioning and development. The most difficult task of institutions involved in the regulation of labor market is to promote the adaptation of citizens to market conditions and their return to work, the development of self-employment and entrepreneurship among unemployed citizens.

The innovation function of the information support for the labor market regulation

in the conditions of the high dynamism of all components of its system encourages its structures to introduce more progressive forms of their existence and interaction. Their implementation paves the way for the digital transformation of society, the implementation of which involves creating conditions under which citizens will experience the benefits of new technologies in the field of employment.

The stimulating function of the information support for labor market regulation is manifested in the analysis of the content of information about processes and phenomena, trends in it. They can have both positive and negative nature encouraging the subjects of the regulatory activity to make appropriate managerial decisions in order to change the situation in labor market.

The integrative function of the information support for labor market regulation is that the implementation of the latter is based on the receipt of information from many sources, different in nature and content, which undergoes primary processing, transformation, storage and transmission to meet specific consumer needs. In such a manner, the information process combines the component systems of the information support by support for and carrying out the linking processes such as communications and managerial decisions.

The third classification group consists of auxiliary functions of the information support for labor market regulation, which contribute to the better implementation of general and special functions. While the latter have the quality features differentiating one from another, the auxiliary functional feature consists in the fact that they are common for all components of the information support for labor market regulation.

Among the auxiliary functions of the information support for labor market regulation, the leading role belongs to the communicative one, the importance of which is constantly growing in the conditions of the establishment of the information society. Its scope extends to certain components of management relations regarding the regulation of the labor market, as well as their subjects and objects. In general, it is aimed at the overcoming the asymmetry of information at all levels of the management vertical of labor market regulation, and the horizontal interaction of the latter, and ultimately to promote the quality of general and special functions through the use of information resources in employment.

The function of monitoring the state of the labor market, processes, phenomena that unfold on it is based on the use of significant legal, economic, political, social and scientific information, processing and use of which allows not only to identify positive and negative trends in it, but also to predict changes in its functioning and development in the near future. Implementation of the control function is achieved through the processing and use of significant amounts of relevant information by authorized structures of the state employment service and special state control bodies. The latter is aimed at the analysis of actions and behavior of certain structures involved in the regulation of labor market with regard to their use of financial resources and provision of social services. This allows the rational use of material and financial resources of society, to establish legal norms and increase the culture of legal relations of the subjects of labor market

regulation and ultimately contributes to the formation of public morality, without which normal society and its socio-economic progress is impossible.

The regulation of labor market is substantially affected by the experience of its carrying out in other countries of the world community. In view of the latter, the auxiliary functions of the information support for labor market regulation should include broadcasting. It should be divided into firstly, the analysis with the further use, in the process of transfer of the economic, social, political and legal experience of labor market regulation, of the appropriate information from one country to another. Secondly, the transfer of diverse information to individuals who appear in the labor market. It helps them adapt to the requirements of the applicable laws in the sphere of employments, social roles of participants in the regulation of the labor market and ultimately get a job. The preventive and educational function of the information support for labor market regulation is related to the control and broadcasting functions. Its activation provides for the use of the rules of law and application of the sanctions and means of social influence in order to prevent the violations of the laws in the sphere of employment and regulation of labor market.

Conclusions and recommendations. Regulation of the labor market is a strategic priority of public administration and is seen in achieving its balance by harmonizing quantitative and qualitative parameters to provide favorable conditions for the movement, development and reproduction of labor, the fullest satisfaction of demand from employers and employment.

The information support for labor market regulation currently requires revision and modernization, since at the present time, the tasks vested in it and its inherent functions are not performed and their implementation is possible in complex relationship of the labor market subjects such as the state, private labor market intermediaries, legal entities and individuals, public organizations, educational institutions and citizens. One of the ways to improve the information support for the state regulation of labor market is to create a quality information and communication environment by creating a single information system on the domestic labor market based on cooperation and partnership between public and private sectors, which in macroeconomic regulation will affect labor quality and population employment growth, will promote the optimal placement and rational use of labor resources, reduce the imbalance between the supply and demand of labor, reduce labor migration abroad.

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FACTORS AND PREREQUISITES FOR THE USE OF PUBLIC-PRIVATE PARTNERSHIP IN THE EDUCATIONAL INDUSTRY OF UKRAINE

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Annotation. *The article analyses the essence of public-private partnership and its key characteristics for the main research of the positions of leading scientists. Peculiarities of manifestation of signs of public-private partnerships in the field of education are investigated. The analysis of the current state of financing of the educational sector in Ukraine is carried out. The key preconditions for the use of public-private partnerships in Ukraine have been determined. An assessment of the likely impact of public-private partnership projects on the development of domestic education.*

Key words: *public-private partnership, education, educational institutions, knowledge economy, public educational strategy, education financing, a public-private partnership in education.*

The modern paradigm of economic development involves the dominant factors of information and knowledge. The experience of economically developed countries convincingly shows that it is the active “inclusion” of knowledge in economic processes that allows us to count on active economic growth. At the same time, the lag of countries with “transition” economies is not least determined by ignoring the role of knowledge in economic processes. This conclusion fully applies to Ukraine. Increasing the role of knowledge in the economy determines the need for special attention at the level of public policy in the education sector. Only an economically sound, balanced approach to the development of education should become the basis for the economic and social progress of the state. Such goals and objectives force us to pay special attention to the issue of financing education. Different countries have different strategies for financing the education sector. The emphasis is on multiple funding structures, usually with a predominance of centralized sources. Trends in recent years show that the model of public-private partnerships can be a significant stimulus for the development of the education sector. Combining the capabilities of the state and private capital allows you to solve complex problems that the state alone cannot solve. Accordingly, it is time to assess the preconditions and prospects for the use of the public-private partnership in Ukraine.

Analysis of recent research and publications. Problems of public-private partnership, among others - in the field of higher education were studied in the works of V. Baidenko, O. Boyko, I. Gavrilenco, O. Vinnyk, I. Kalenyuk, O. Levkovets, V. Malyshko, K. Pavlyuk, O. Simson and many other authors. At the same time, in Ukraine, the interaction of state-owned higher education institutions and the private sector faces

numerous obstacles, which determines the need for further research.

Research Results. The involvement of private partners in the implementation of projects in the public sector (roads, transport, energy) in its modern sense originated in the UK. In the early '90s, John Major's government launched the Private Finance Initiative (PFI), the first systemic program to stimulate private investment that emerged as a result of concerns about public debt participation in the government's public procurement model. years. For the PFI initiative, the state commissioned a private investor to build large capital-intensive facilities at their own expense. Upon completion of the construction of the object took a hand in the long-term lease, so the private investment was repaid by paying rent, and after the lease term, the object was transferred for a nominal fee or free of charge.

Let's define that in scientific circles at first sight the analysis of essence of concept "public-private" partnership and its key characteristics is sufficiently presented. However, today there is still a scientific discussion on this issue, due to the range of use of the PPP mechanism is constantly expanding. We emphasize the most relevant and detailed scientific approaches to this issue, fixing the levels of legal documents and regulations of international organizations and institutions.

Concentrated, the documents of the International Finance Corporation define that this is a relationship through which the private sector provides society with infrastructure assets and services that are traditionally provided to the state [1]. In our view, such a position considers the essence of public-private partnership to a limited extent, as it does not focus only on the use of possible PPPs for infrastructure development, as well as on the external "private" private sectors of these functions, which are inherent in states. Note that this position is reflected in the documents of other international organizations [2]. Note that in this approach, the determined wants and important, but not the only feature of PPP, which determines the need for analysis and other positions.

Analysis of the definitions of PPP allows us to identify three essential features that reveal the main approaches to its understanding. The first feature is the reflection with other processes, such as privatization, rent, municipal procurement of others. Thus, some authors, for example, consider PPPs as privatization or private privatization. Another feature is the key participants of PPP and their interaction. Thus, many international public-private partnerships emphasize the transfer of certain public goods functions to the private partner state. The third feature that reveals the scientific approaches to PPP is the purpose of implementing PPP projects. Some scholars focus on PPP participation in socially significant projects, increasing the competitiveness of public services and infrastructure, and meeting public needs. For example, O. Vinnyk believes that PPP is not any cooperation between the state and private business, namely, that it is due to public needs due to the inability of the state (territorial community) to implement independently, which means that without the involvement of private partners, and long-term projects due to lack of necessary data and other resources (experience, qualified personnel, new technologies, etc.) [3].

In summary, we can distinguish two approaches to the definition of public-private

partnership: conservative narrow and broader.

Conservative understands PPP as a form of long-term cooperation between the state and the private sector on attracting private sector funding for the rehabilitation, development and use of state-owned infrastructure. Broad - considers DDP as a long-term and interoperable cooperation between the private and public sectors, aimed at improving strategically important industries, increasing their competitiveness by promoting the interests of society.

Based on this, we can offer a refined definition of PPP, which is a system of interaction of decent long-term relations between the state, business and society in the field of strategic development of all industries by increasing the competitiveness of public services and public interest. In response, PPP in the field of higher education is proposed to be considered as a long-term and interactive formalization of cooperation between the state, business and society to increase the competitiveness of higher education (Fig. 1).

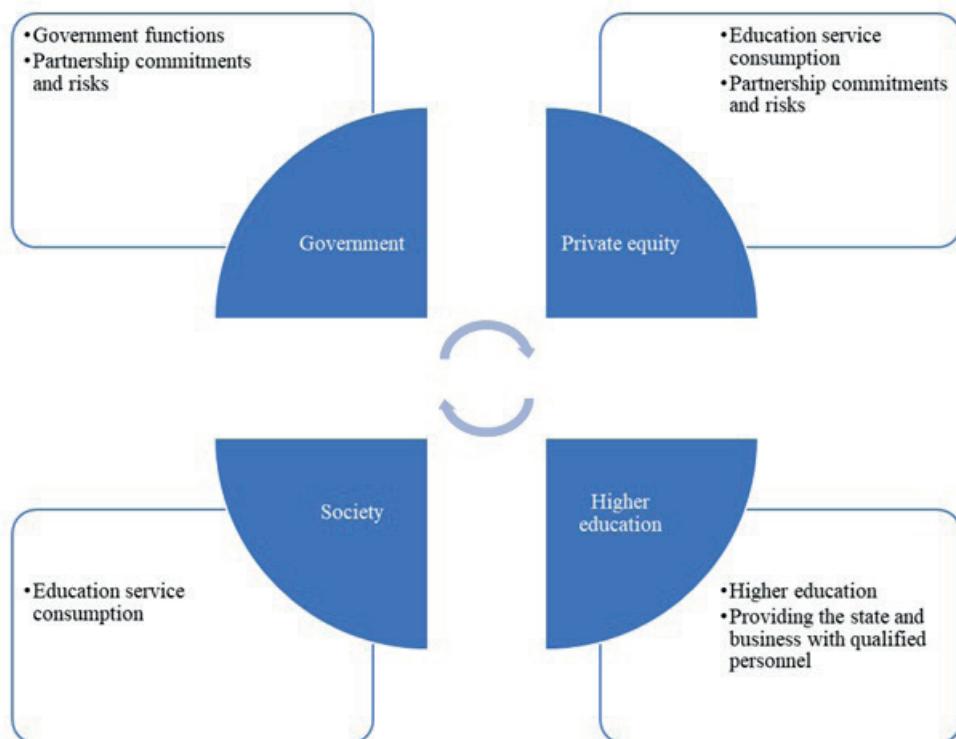


Fig. 1. Scheme of relationships of project participants within the PPP

Source: compiled by the author

This approach to understanding PPP allows you to schematically reflect the participants, their connections and the purpose of PPP projects, which, unlike most existing approaches, involve society and take into account their interests in the

implementation of PPP projects.

In the higher education system, the state plays the role of a regulator that determines the priorities of educational policy, its standards and requirements, lays the foundations for the development of science and education at the state level, provides funding to higher education institutions, and is one of the consumers of services. The tool for the implementation of state functions and policies in the field of higher education are public universities, mainly in the field of research and development and provision of educational services. The main consumer of educational services is society, mainly in the face of citizens, individuals, as at their own or budget funds will receive education in accordance with the programs of their chosen free economic zones. Thus, the society provides the demand for free economic services, certain financial resources for their receipt, as well as human resources, which after training will be transferred to the private or public sector in the form of qualified personnel. The needs of the private sector are quite similar and provide a certain share of the demand for educational services, they can also pay for them for their employees and get qualified staff. In addition, the private sector, like the state, can receive research in certain fields, research, consulting services, and so on.

According to the Law of Ukraine «On Higher Education», higher education is a set of systematized knowledge, skills and practical skills, ways of thinking, professional, ideological and civic qualities, moral and ethical values, other competencies acquired in higher education (scientific institution) in the relevant field of knowledge for a certain qualification at the level of higher education, which is higher in complexity than the level of complete secondary education. ” Therefore, the legislation considers higher education as a set of knowledge, skills and qualifications, and does not point of view. It should be noted that this approach is the most common in the scientific literature. According to the Law of Ukraine “On Higher Education”, a higher education institution (HEI) is “a separate type of institution that is a legal entity of private or public law, operates under a license to conduct educational activities at certain levels of higher education, conducts scientific, scientific and technical, innovative and / or methodical activity, ensures the organization of the educational process and the acquisition of higher education, postgraduate education, taking into account their vocations, interests and abilities "[4]. Higher education institutions may be established in the form of a state, municipal or private institution, i.e. owned by the state, local authorities or individuals and legal entities.

According to the Statistical Bulletin of the State Statistics Committee of Ukraine "Main performance indicators of higher education institutions of Ukraine at the beginning of the 2019-2020 academic year" in Ukraine there were 619 free economic zones, including 504 state and 115 private and corporate, of which 281 HEI III-IV levels of accreditation and 338 institutions I - II levels of accreditation [5].

Table 1

Number of higher education institutions and individuals in education, 2010-2020

Form of ownership	2010/11	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Change, % 2010/20
State	637	520	525	527	533	529	504	-20.9
Private	176	144	134	130	128	123	115	-34.7
Total	813	664	659	657	661	652	619	-23.9

Source. Calculated by the author on the basis of [5].

The number of higher education institutions of both forms of ownership has significantly decreased compared to 2010. Among the reasons for this reduction are the following.

First, the lack of professional level of teaching staff, curricula and learning processes. The Ministry of Education of Ukraine in case of insufficient compliance with the adopted standards may suspend the decision to reduce the level of accreditation of the institution or its closure.

Secondly, there is a very significant decrease in the demand for educational services from the population, which may occur both due to the general mood and the insufficient quality of domestic education and its low competitiveness compared to Western educational institutions. Thus, according to the State Statistics Service of Ukraine, since 2010 the number of students in Ukrainian HEI has decreased by 1160 thousand people or 95%. At the same time, the number of students decreased in institutions of all levels of accreditation: in institutions of I and II level accreditation decreased more than twice compared to 2010, in institutions of III and IV level - by 44%.

And the third reason for the decline in the number of HEI, apparently related to the first and second, is the lack of funding in both the public and private sectors. Financing of higher education in Ukraine is carried out on the following principles:

- purposefulness, which provides funding for higher education on the basis of a specific goal and objectives achieved over a period of time;
- independence means that higher education institutions and institutions are academically and financially autonomous;
- targeted use means that funds are used only for certain purposes defined by plans and programs;
- balance, provides for the compliance of the costs of higher education institutions to its income;
- efficiency and effectiveness mean getting maximum results with minimal use of resources;
- validity is that the financing of higher education institutions is carried out on the basis of certain indicators: the number of students, teachers, etc.
- Diversification and unity of funding is due to the inability of the state to ensure equal access to higher education for all comers, so along with public funding there is

non-governmental funding, including corporate sector funding, charitable contributions and gifts and tuition fees.

Thus, the sources of financial support for the development of higher education include: state and local budgets, income of educational institutions from educational, commercial, industrial activities, property rent, income from the sale of property, preferential government loans for higher education, student tuition fees at the expense of firms and enterprises, tuition fees at the expense of individuals and legal entities, charitable contributions, grants and gifts, funds received for the implementation of specific assignments from legal entities and individuals, fees for research and development, scientific examination, design and manufacture of prototypes, funds of foreign customers, innovative companies [6].

In this case, the financing of higher education institutions can be implemented by two methods: non-refundable or direct (financing) and repayable (lending). Using this method, budget allocations, own revenues of higher education institutions (tuition and other services), grants are implemented [7]. The methods of state funding of higher education include: regulatory funding (based on established standards); situational financing (at the level of last year); by results of activity (taking into account the obtained results).

Private financing of higher education is provided by enterprises and households that go to higher education through the payment of educational services, charitable and sponsorship contributions. If the state does not strictly regulate the expenditures on household education, only in the part of tax benefits when paying for education, then there are certain schemes for enterprises:

1) lack of state regulation of enterprises' expenditures on education. Such schemes are typical of highly developed countries, where companies voluntarily take part of the financing of employee training. However, there are no legal obligations to implement it;

2) state incentives for the organization of training in the form of reimbursement of training costs and grants. Legislation is also established to protect the investment of enterprises in human capital subject to the dismissal of an employee before the established time of work after training;

3) collective agreements between the enterprise and trade unions, which regulate the forms of financing education and the minimum levels of resource allocation. In general, mutual funds are created to finance training by enterprises and trade unions, often regulated by a collective agreement. In this case, the state may intervene in the implementation of these obligations and provide assistance in the form of co-financing;

4) joint financing by the state and enterprises of study leave. The company's contributions to these schemes are determined on the basis of employees' salaries, and the state performs the functions of organization, co-financing and control [8].

Recently, in many countries there is a tendency to reduce the amount of funding for higher education from public funds, which leads to the search for higher education institutions for new sources of funding. Promising of which is corporate financing based on the interaction of higher education and business in the form of social partnership.

Joint scientific and educational activities are beneficial to both parties. After all, each of them receives a specific and quite tangible benefit: first, the university receives a guaranteed paid study order; secondly, there is an exchange of knowledge and skills between specialists of enterprises and university teachers; third, graduates are guaranteed employment with the possibility of career growth; fourth, the customer company has the opportunity to train highly qualified staff on the basis of the university, which best meets its needs.

It should be noted that in practice there are certain problems that hinder the development of interaction "Institutions of higher education - enterprise" [9]:

- lack of tax benefits and other incentives for enterprises and organizations that invest material, technical and financial resources in the development of higher education. The company, as a commercial institution, wants to directly benefit from its costs, and providing them with tax benefits would increase their participation in the financing of higher education;

- weak legal and regulatory support for the interaction of universities with employers. The legislation of Ukraine does not provide for or regulate forms of interaction between higher education institutions and enterprises, which creates certain difficulties in its implementation;

- non-compliance of educational programs with the requirements of the enterprise. Due to the insufficient level of funding for higher education institutions, unfortunately, training is often carried out on outdated equipment and using outdated programs that do not meet the requirements of the time, which leads to poor training, and as a result to additional costs for employers.

Conclusions. According to the experience of foreign countries with developed economies, the introduction of PPPs in higher education is an effective mechanism for development. In Ukraine, the use and further development of this mechanism will accelerate the reform of the educational sphere and increase scientific and technical potential. At the same time, the implementation of PPP projects in the higher education system provides each of the participants in such interaction with its own benefit. As the state declares that it is trying to carry out a radical modernization of domestic production in the coming years, it is important to create incentives for domestic business that will encourage it to participate in the development and implementation of innovations in technologies and technical systems. Thus, graduates of higher education institutions become the social capital that makes them in demand in today's labour market. The implementation of these proposals to increase the effectiveness of cooperation between higher education institutions and the labour market will help increase the effectiveness of partnerships between the higher education system and business structures.

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ANALYSIS OF THE CURRENT STATE AND ASSESSMENT OF THE PARAMETERS OF DEVELOPMENT OF AGRO-FOOD HOLDINGS OF UKRAINE

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Annotation. This article deals with the reasons and preconditions of the creation of powerful agro-industrial holdings of Ukraine, specifies the essence of the notion of the agro-food holding. It offers the classification of agro-food holdings by the degree of their vertical integration and structure. The characteristics of leading agroholdings were provided, the reasons for the regional disproportion in the activities of agroholdings of Ukraine were stated. It was established that the share of agro-food holdings in the structure of agricultural lands and the infrastructure of agro-food market increased. The financial performance of public agroholdings whose shares were placed on stock exchanges for 2016 - 2019 was analyzed. It was stated that there were restrictions on further growth of financial performance of agro-food holdings. The development and scaling of the activities of agro-food holdings are possible based on the implementation of the new principles of interaction with the other participants of agro-food sector based on the implementation of the principles of sustainable and inclusive development.

Key words: agro-food holding, agroholding, inclusive development, vertical integration.

Formulation of the problem. The role of the agro-food sector in the economy of Ukraine is growing: in 2019, the share of agro-food in total exports of the country amounted to 44.6%. Products in the amount of a record \$ 22.4 billion were exported from Ukraine. [1]. According to the analytical information of Institute of Agrarian Economy National Research Center, in 2019, the largest in the history of the country exports of cereals (56.7 million tons) and sunflower oil (6.1 million tons) were achieved, as well as a number of other products [1].

The development of agro-food sphere is increasingly ensured by companies using the model of the vertical integration of business activities. Agro-food holdings are increasing their market power in various sectors, using various methods of expansion, introducing innovative technological solutions. The 117 largest agroholdings manage 6.45 million hectares of land, i.e. 15.6% of agricultural land or 19.7% of arable land [2].

Agro-food holdings are characterized by the higher efficiency of economic activity and the yield capacity as a result of the rise of innovative technologies and advanced organizational and economic mechanisms.

The topical scientific mission is the diagnostics of the contemporary state, directions and prospects of the development of agro-food holdings in the context of improving the model of increasing of the agro-food sector of Ukraine as well as a deeper study of the preconditions for their dominance in the agrosphere.

Analysis of recent research and publications. Theoretical and practical aspects

of agro-food holdings are revealed in the scientific works of U. Koester, K. Kataria, V. Andriichuk, R.I. Buriak, V. Boiko, V. Vasylenko, Yu.A. Karpyshyn, V.I. Kopytko and O.V. Kopytko, O. Krysalnyi, Yu.M. Lopatynskyi, A. Mazur, M.Y. Malik and M.A. Khvesyk, Yu. Nesterchuk, O.I. Pavlov, P. Sabluk, V.A. Samofatova, H. Cherevko, O.V. Shubravská, V. Yurchyshyn, Yu. O. Yarmolenko, V. Yatsenko and others. However, the current state of agro-food holdings of Ukraine, parameters and vector of their development in the conditions of transformation of the Ukrainian economy are insufficiently studied.

The purpose of this paper is the research of the current state and assessment of the parameters of the development of agro-food holdings of Ukraine in the context of the formation of an inclusive model.

Statement of the basic materials of the research. The development of large and integrated entrepreneurship resulted in the spread of holding companies around the world. Increasing concentration is an important trend of the development of world economy as an answer to the globalization processes and efforts to ensure business competitiveness.

In a general sense, a holding is a special type of company that is created to own controlling stakes in other companies in order to control and manage their activities [3, p. 76].

In accordance with the Law of Ukraine On Holding Companies in Ukraine, a holding company is a "joint stock company that owns, uses and disposes the holding corporate blocks of shares, interests, units of two or more corporate enterprises. At the same time, the holding corporate block of shares is understood as the block of shares of a company exceeding 50% of their total number or is sufficient for the decisive influence on its activity" [4].

Agroholding, agrarian holding company (from "agro" - agriculture and "holding" - to keep, own, hold) - is a separate type of associates, a specific form of equity ownership, in which the parent company, having corporate rights (controlling block of shares, interests (units) of other enterprises ("subsidiaries" - two or more), manages them and controls their activities in the field of production and processing of agricultural products [5, p. 97].

As defined by T.V. Mirzoieva, an agro-food holding or agroholding is a "vertically integrated structure carrying out agricultural activity; created as a rule by the amalgamation of agricultural enterprises with powerful industrial groups, financial and service structures" [6, p. 91].

As defined by I.H. Khramova and E.V. Serova, agro-food holdings or agroholdings are "non-agricultural enterprises engaged in agricultural production" [7, p.6].

In the opinion of V. Arystov, an agroholding is several enterprises owned by one person (several associated persons) and united by the common management system in order to increase the efficiency of the operating activity [8]. V.I. Piliavskyi states that an agroholding is understood as a totality of legal entities associated by contract relations or assets [9].

Yu.O. Nesterchuk states that "an agroholding is a qualitatively new organizational system of management, in which material (economic, technological, resource, etc.) factors are closely related to social factors, which contributes to the restoration of broken

inter-sectoral ties and the formation of mutually stimulating socio-economic processes” [10, p.179].

As defined by V.H. Andriichuk and I.S. Sas, “an agro-industrial holding is a processing corporate enterprise that owns, uses and disposes of holding corporate blocks of shares, interests or units of two or more agricultural enterprises; such a holding may also include subsidiaries of processing enterprises and subsidiaries of other profiles (sales, trade, etc.)” [11, p. 116].

Thus, “an agro-food holding is the organizational form of vertical integration within the agricultural industry, associations constituting the endless cycle: production of agricultural products, their processing and sale of the final product” [12, p. 32].

Evidence of the growing role of vertically integrated agricultural enterprises is that only eleven leading agri-food holdings in Ukraine cultivate 2.64 million hectares of land, i.e. 8.08% of the country's total arable land (Table 1).

Table 1
Characteristics of the leading agri-food holdings of Ukraine *

Name	Land area, thousand hectares.	Primary activities
Kernel	514	Production of sunflower oil, grain production, port terminals, elevator business, agriculture.
Ukrlandfarming	500	Production of grain crops and seeds, production of eggs, sugar, animal husbandry, trading and distribution of agricultural products
Agroprosperis (NCH)	300	Production and export of grain and oil crops, logistics and storage of grain crops; banking services.
Mironivsky Hliboprodukt	290	Poultry, meat processing, crop production, oil production.
Astarta-Kyiv	230	Agriculture; sugar production; animal husbandry (milk production); soybean processing; bioenergy.
Continental Farmers Group	195	Production and export of grain, oil and technical crops; seed production; grain storage.
Epitsentr Agro	160	Production and export of grain and oil crops; storage of grain crops; dairy farming.
HarvEast	127	Production of grains, legumes and sunflowers; storage of grain crops; dairy farming; production of compound animal feedstuff; seed production.
IMK	123.9	Production and export of grain and oil crops; storage; dairy farming.
Ukrprominvest-Agro	120	Production and export of sugar; production of sugar beets, grain and oil crops; storage of grain crops; production and export of flour; dairy farming; swine breeding.
Nibulon	82	Production and processing of agricultural products and animal husbandry, elevator business, logistics, shipbuilding,
Total	2641.9	

*Drawn up by the author based on [13] and the data of official websites

A key characteristic of Ukraine's agro-food holdings is vertical integration, based on the construction of efficient production chains based on the "from field to table" principle. Vertically integrated holdings build the manufacturing chain from production to processing, marketing, transportation for export or to retail networks, which reduces transaction costs and potential risks associated with partner behavior [14, p. 64].

At the same time, there are different options for vertical integration, but the most common are the following algorithms.

1. Vertical integration on the basis of processing enterprises, when the first stage is the acquisition or construction of facilities for processing agricultural products (for example, sugar factories such as Astarta, Ukrprominvest-Agro; bakery and poultry factories such as MHP; oil extraction plant - Kernel).

2. Vertical integration based on crop production when the core of the company is cultivation and storage of grain and oil crops with little representation of other activities (Agroprosperis, Continental Farmers Group).

3. Creation of an agro-food holding within the corporation as one of many businesses in the portfolio (Harveast within SCM, Epitsentr Agro within Epitsentr Co).

In our opinion, it is expedient to divide agro-food holdings according to the degree of their vertical integration, as they are not homogeneous in their structure. Agro-food holdings of the first type are concentrated in one or more industries of agrosphere. As a rule, the core of the vast majority of such holdings is crop production and storage facilities for grain and oil crops, as well as certain processing plants. This first type includes companies such as Agroprosperis (NCH), Continental Farmers Group, Epitsentr Agro.

On the other hand, agro-food holdings of the second type are more focused on the processing of agricultural products, actively develop food production, but do not go beyond the agro-food sector in general (Ukrprominvest-Agro, IMK).

But in modern conditions in Ukraine the third type of holdings is formed and actively developed, unlike the previous ones, these companies go beyond the agro-food sphere. Thus, Astarta, Kernel and MHP are actively investing in bioenergy, Nibulon increases production volumes in shipbuilding and river transportation, MHP develops its own trade network and sets the task of actively expanding the culinary direction. Influence of this third type of agro-food holdings to the economy of Ukraine materially increases.

The second feature of Ukrainian agro-food holdings is the scale of their activity within Ukraine. As shown in Table 2, the largest agroholdings of Ukraine go beyond the boundaries of one region, they carry out their activities in several regions simultaneously.

The leaders in this issue are Ukrlandfarming represented in 22 regions of the country, Kernel and Agroprosperis represented in 14 regions. The least represented in the regional context of the ten leading agricultural holdings is Harveast - only three areas.

At the same time, the regional distribution of agricultural holdings in Ukraine is uneven. Thus, 8 out of 10 leading agroholdings operate in Vinnytsia and Khmelnytsky Regions, 6 each in Cherkasy and Poltava Regions. On the other hand, none of the ten leading agroholdings is represented in Transcarpathian Region, only 1 in Kherson Region (Ukrlandfarming), and 2 each in Luhansk, Odesa and Chernivtsi Regions. At the

same time, Odesa Region is used by agro-food holdings (Ukrlandfarming and Kernel) primarily as a base for exporting agricultural products.

Table 2

Activities of leading agro-industrial holdings in the regions of Ukraine

	Ukrland-farming	Kernel	Agroprosperis	NHP	Nibulon	Astarta	Ukrprominvest-Agro	Continental Farmers Group	Epitsentr Agro	Harveast	Number of leading agroholdings in the region
Number of activities of the agroholding	22	14	14	13	12	8	6	5	5	3	
Vinnysia Region	+	+	+	+	+	+	+		+		8
Volyn Region	+		+								2
Dnipropetrovsk Region	+	+		+	+		+				5
Donetsk Region	+			+						+	3
Zhytomyr Region	+		+	+	+	+	+			+	7
Transcarpathian Region											0
Zaporizhzhia Region	+	+			+						3
Ivano-Frankivsk Region	+			+				+	+		4
Kyiv Region	+	+	+	+	+					+	6
Kirovohrad Region	+	+	+				+				4
Luhansk Region	+				+						2
Lviv Region	+		+	+				+			4
Mykolaiv Region	+	+		+	+						4
Odesa Region	+	+									2
Poltava Region	+	+	+		+	+	+				6
Rivne Region	+		+								2
Sumy Region	+	+	+	+	+						5
Ternopil Region	+	+	+	+		+		+	+		7
Kharkiv Region	+	+	+		+	+					5
Kherson Region	+										1
Khmelnitskyi Region	+	+	+	+	+	+		+	+		8
Cherkasy Region	+	+	+	+	+	+	+		+		8
Chernivtsi Region						+		+			2
Chernihiv Region	+	+	+	+	+						4

*Drawn up by the author based on [13] and the data of official websites

The reason for the regional disproportion determined by us is geographical features, climatic conditions and land quality. Agro-food holdings are trying to concentrate their capacities in the central part of Ukraine, which increases the efficiency of logistics flows. Also these regions have a higher quality of lands and favorable climatic conditions. At the same time, border areas and zones with unfavorable arid climatic conditions (Kherson, Odesa Regions) are less attractive for agro-food holdings.

Another feature of Ukrainian agro-food holdings is their focus on expansion, as their strategy is aimed at steadily increasing the scale of their activities. This consists, first of all, in the expansion of the land bank, the conquest of an increasing share of its market. As shown in Table 1, 11 leading agro-food holdings (including 10 companies with the largest land bank and Nibulon) concentrated 8.3% of the country's land, but 25.15% of grain and oil storage facilities.

**Table 3
Land area and elevator capacity of the leading
agro-food holdings of Ukraine ***

Agro-food holding	Land area		Storage capacities	
	thousand hectares	Share	million tones	Share
Kernel	514.0	1.57%	2.4	5.71%
UkrLandFarming	500.0	1.53%	1.862	4.43%
MHP	362.82	1.11%	1.02	2.43%
Astarta	300	0.92%	0.333	0.79%
Agroprosperis	230	0.70%	0.504	1.20%
Continental Farmers Group	195	0.60%	0.387	0.92%
Epitsentr Agro	160	0.49%	1.000	2.38%
HarvEast	127	0.39%	0.134	0.32%
IMK	123.9	0.38%	0.554	1.32%
Ukrprominvest-Agro	120	0.37%	0.12	0.29%
Nibulon	82	0.25%	2.25	5.36%
A total of 11 leading agro-food holdings	2714.72	8.30%	10.56	25.15%
Total Ukraine	32700	100.00%	42.0	100.00%

* Drawn up by the author on the basis of [13, 15], data from official company reports and open sources

In addition, in 2019/2020, Kernel ensured 14.7% of grain and oils crop exports from Ukraine, and Nibulon ensured 9.7%. I.e. the share of holdings in the infrastructure of agro-food sphere increases increasing their market power and can affect the positions of small agricultural enterprises and farmers.

Another area of expansion is to enter global markets by expanding export capacity,

acquiring assets abroad, establishing branches and, as a result, building an international, transnational company with foreign capital.

The important aspect of the activity of agro-food holdings at the present stage is their transformation into transnational corporations, which takes place in several vectors. Agro-food holdings carry out active foreign economic activity in several areas: export of products, import of equipment and technologies, attraction of financial resources, foreign registration of companies, sale of securities on foreign exchanges, establishment of enterprises outside Ukraine, participation in international organizations and associations [16].

The development of Ukrainian agri-food holdings is uneven. The growth rate of gross income of companies whose securities are listed on European stock exchanges is in the range of 5.8-26.4% (Table 4).

Table 4
**Financial performance of agricultural holdings, the shares
of which are listed on stock exchanges ***

Performance	2016	2017	2018	2019	Average growth rate
Kernel Holding					
Total income	2168.93	2403	3960.23	4106.78	26.4%
Net profit	176.24	52.14	189.46	117.86	51.7%
MHP					
Total income	1135	1,288	1,552	2,056	22.2%
Net profit	69	230	128	215	85.7%
KSG Agro					
Total income	20.92	23.19	28.33	23.89	5.8%
Net profit	1.83	0.36	0.31	4.47	415.9%
Astarta Holding					
Total income	368.89	458.6	372.22	448.01	8.6%
Net profit	82.65	61.84	-18.26	1.69	-15.2%
Agrotron Public Limited					
Total income	44.23	51.78	57.19	54.38	7.5%
Net profit	21.75	8.3	13.52	5.18	-20.2%
Industrial Milk Company SA					
Total income	124.74	126.76	131.61	169.6	11.4%
Net profit	21.89	17.53	27.7	7.48	-11.6%
Ovostar Union					
Total income	77.74	98.69	124.97	104.65	12.4%
Net profit	22.15	22.46	17.44	-20.01	-78.6%

* Drawn up by the author based on [17, 18]

We estimate that the highest average annual growth rates of gross income during

2016-2019 are demonstrated by Kernel (26.4%) and MHP (22.2%). For other agro-food holdings, the growth of gross income in dollar terms is quite moderate and is in the range of 5.8-12.4%. It should also be noted that the average annual growth rate of net profit for four of the seven holdings is negative. As shown in Table 4, all food holdings (except from MHP) are characterized by the decrease in the amounts of net profit in 2019 in comparison with 2016. However, MHP is also characterized by deteriorating operating results. Thus, the operating margin reduced to 11% in 2019 compared to 28% in 2017, and the EBITDA margin is reduced to 21% [18].

It is important to note that the development of agro-food holdings is taking place against the background of further degradation of rural areas. Thus, the rural population over the past ten years has decreased from 14,438.1 thousand people to 12,763.1 thousand people, i.e. by 11.6% only according to official data [19]. That is, the intensive growth of agricultural holdings and quantitative indicators of the agro-food sector is not transformed into an increase in the welfare of rural areas.

Realizing the negative dynamics of rural development and their social mission, a large part of powerful agroholdings introduces in one form or another the concept of sustainable development as shown in our previous works [20, 21].

In our opinion, in the conditions of gradual decrease in profitability of operating activity agro-food holdings should address to new sources of increase of own efficiency. That is why the process of globalization and active expansion outside Ukraine should be complemented by the implementation of internal efficiency reserves based on the implementation of the principles of sustainable and inclusive development.

In such conditions, an important condition for further growth of agricultural holdings, in our opinion, is a change in the paradigm of agro-food development with the creation of an inclusive development system with the leading role of vertically integrated companies.

Conclusions. The importance of agro-food holdings as powerful vertically integrated structures for the Ukrainian economy is growing. This consists not only in increasing the financial results and scale of companies, but also in their gradual concentration of a significant share in the infrastructure of the agro-food sector (elevators, export facilities, transport infrastructure, feed production, etc.).

The scientific novelty of the work is to determine the key types of agro-food holdings in Ukraine and their characteristics. It is shown that the characteristic features of modern agro-food holdings of Ukraine are scale, the desire for expansion in all areas of its activities, transformation into multinational companies, as well as the systematic implementation of sustainable development strategies. Our analysis of the financial performance of public agro-industrial holdings has shown that there is a gradual decline in their net profit and a slowdown in gross income growth in conditions of high competition. In our opinion, the process of globalization of agro-food holdings should be supplemented by their localization on the basis of further implementation of the strategy of sustainable development with increasing the inclusive component. This will allow to create a basis for the development of the agro-food sector and rural areas on new

principles, so it will ultimately have a positive impact on the formation of the domestic market of Ukraine, which is beneficial primarily to agro-food holdings.

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TRENDS OF THE DEVELOPMENT THE INNOVATIVELY ACTIVE ENTERPRISES OF UKRAINE

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Annotation. Based on the analysis of current situation of innovation activity of the Ukrainian enterprises was identified. There is a positive trend of increasing the number of enterprises that purchasing ready-made innovations. Ukraine's high-tech sector is smaller than in most countries. However, there is a positive trend that the Ukrainian enterprises of this sector are the most innovatively active in the creation, production and sale of innovative products with involving various partners including from different countries and thus take the path of creating and applying open innovation.

Key words: inovatively active enterprises, indicators, internal innovation, opean innivation.

Introduction. In conditions of rapid changes in the dynamic macroeconomic environment, innovation is one of the main means of achieving competitive advantage and development of innovative enterprises. The creation and implementation of innovations can use the concept of internal or open innovation.

However, in the conditions of fast technological changes and strengthening of negative influence of a number of external and internal factors, application of the concept of internal innovations suffers infringements and does not carry out all functions.

The experience of open innovation has shown that companies can accelerate their innovative development and increase profits from interaction with external sources of knowledge and by reducing the time to market of innovative products and technologies.

Research of existing solutions of the problem.

The concept of open innovation was initiate by Henry Chesborough [1], who determined the feasibility of using the inflow and outflow of knowledge to accelerate internal innovation of the enterprise and expand markets for external use of innovation by the enterprise [2].

After the enterprise implements the concept of open innovation, its borders become more transparent, which allows to combine the resources of the enterprise with the resources of external participants in the innovation process to jointly creating and implementation innovations to the market [3].

Today, markets are characterized by dynamics and a high degree of saturation. In the process of development of modern markets, the competitiveness of enterprises directly depends on the results of innovative activities and scientific and technological development.

The main factor in implementing the concept of open innovation is the cooperation of external and internal participants. About one in ten companies in Europe work with partners for creation and implementation innovations. Universities and public research institutes are considered the main source of knowledge transfer for innovative activities of enterprises [4].

The successful application of open innovations identified by a number of innovative enterprises: Samsung [5], General Electric, Coca-Cola, LEGO, NASA [6], Nokia, etc [4].

As the practical activity of enterprises shows, that using of open innovations opens the innovation process of the enterprise, which involves external partners such as customers, universities, research institutes, suppliers, etc. [7].

Examples of successful application of the concept of open innovation by European and international innovative enterprises help to achieve success in the market and increase their competitiveness.

The European policy to support and stimulate innovation has given significant positive results. About 50% of small and medium-sized enterprises in European countries are innovative. The growth of turnover, cost reduction, increase in profitability for innovative enterprises is 7-12% higher than for non-innovative enterprises of the EU [8].

The top five EU innovators, in terms of the number of innovative enterprises are Germany, Luxembourg, Ireland, Italy, and Sweden [9].

Creation and implementation of innovations in innovative enterprises of the EU is based on the principles of open innovation with the involvement of external information and resources from suppliers, consumers, consultants, competitors and other enterprises in the sector.

However, research on the application of open innovations by Ukrainian enterprises, in small numbers, is virtually absent.

Research results. There are 666,986 active enterprises in Ukraine, of which: 4.4% - medium-sized enterprises: 0.1% - large enterprises and most number are small enterprises, up to 250 people (as 1.11.2018) [10].

By types of economic activity, the distribution of Ukrainian enterprises is as follows: processing industry – 44.3%; wholesale trade (except for motor vehicles) – 26.5%; transport, warehousing, postal and courier activities – 6.9%; information and telecommunications – 7.5%; financial and insurance activities – 2.7%; research and development – 1.2%, etc [11].

In the period 2005-2018 the number of enterprises engaged in innovation activities in Ukraine remains insignificant, with a negative tendency to decrease the total number of enterprises in industry (from 18.9% to 11.2% of the total number of enterprises), and only 2.3% of industrial enterprises produce high-tech products Ukraine, (in developed countries, on average - 20%) [10,12].

Indicators of innovation activity of industrial enterprises of Ukraine are presented in table. 1, which shows that there is a positive trend of increasing the number of enterprises implementing innovations (from 2005 to 2018). Thus, in 13 years period, the number of innovative activity enterprises has doubled. The main areas of implementation of

innovative technological processes are low-waste and resource-saving technologies.

In 2018, 16.4% of enterprises engaged in innovative activities spent UAH 12,180.1 million on innovations, which amounted to 49.0% of the total volume of sold innovative products. Innovatively active enterprises introduced into production new technological processes (2002 pieces), of which significantly improved - 926 units, and mastered in the production of 3843 items of innovative products, including 920 new types of machines, equipment and devices, table 1.

Table 1

**Indicators of innovation activity
of industrial enterprises of Ukraine (2005-2018) ***

years	The share of enterprises that implemented innovations, %	New technological processes have been introduced, units	Including low-waste, resource-saving, units	Mastered the production of innovative products, hiring:	of them new types of equipment, hiring	The share of sold innovative products in the volume of industrial, %
2005	8.2	1808	690	3152	657	6.5
2006	10.0	1145	424	2408	786	6.7
2007	11.5	1419	634	2526	881	6.7
2008	10.8	1647	680	2446	758	5.9
2009	10.7	1893	753	2685	641	4.8
2010	11.5	2043	479	2408	663	3.8
2011	12.8	2510	517	3238	897	3.8
2012	13.6	2188	554	3403	942	3.3
2013	13.6	1576	502	3138	809	3.3
2014	12.1	1743	447	3661	1314	2.5
2015	15.2	1217	458	3136	966	1.4
2016	16.6	3489	748	4139	1305	2.4
2017	14.3	1831	611	2387	751	2.6
2018	15.6	2002	926	3843	920	0.8
2019	13.8	2318	857	2148	760	1.3

* Sources [10,13]

At the same time, the innovative activity of Ukrainian enterprises is mainly closed, as only 0.02% of costs are directed to the acquisition of external research for creation and implementation innovations.

The total amount of expenditures in the areas of innovation of industrial enterprises of Ukraine shows that the main part of the funds – 64.7% of funding is directed to the purchase of machinery, equipment and software, table. 2.

Table 2

**Total expenditures by areas of innovation activity
of industrial enterprises of Ukraine***

years	The share of the number of innovatively active enterprises in the total number of industries enterprises	the cost of innovation	research and development	including by areas				
				including		acquisition other external knowledge	purchase of machinery equipment and software	other expenses
				internal research work	external research work			
% UAH million								
2005	11.9	5751.6	612.3	-	-	243.4	3149.6	1746.3
2006	11.2	6160	992.9	-	-	159.5	3489.2	1518.4
2007	14.2	10821.0	986.4	793.5	192.9	328.4	7441.3	2064.9
2008	13.0	11994.2	1243.6	958.8	284.8	421.8	7664.8	2664.0
2009	12.8	7949.9	846.7	633.3	213.4	115.9	4974.7	2012.6
2010	13.8	8045.5	996.4	818.5	177.9	141.6	5051.7	1855.8
2011	16.2	14333.9	1079.9	833.3	246.6	324.7	10489.1	2440.2
2012	17.4	11480.6	1196.3	965.2	231.1	47.0	8051.8	2185.5
2013	16.8	9562.6	1638.5	1312.1	326.4	87.0	5546.3	2290.9
2014	16.1	7695.9	1754.6	1221.5	533.1	47.2	5115.3	778.8
2015	17.3	13813.7	2039.5	1834.1	205.4	84.9	11141.3	548.0
2016	18.9	23229.5	2457.8	2063.8	394.0	64.2	19829.0	878.4
2017	16.2	9117.5	2169.8	1941.3	228.5	21.8	5898.8	1027.1
2018	16.4	12180.1	3208.8	2706.2	502.6	46.1	8291.3	633.9

* Sources [10,14]

The analysis of the total costs for innovation activities of Ukrainian enterprises shows that state support is minimal. There is a slight attraction of funds from foreign investors, and the main source of funding for innovation activities of Ukrainian enterprises are the own funds of enterprises, table. 3 [1].

State support for innovation of Ukrainian enterprises is 0.34% of GDP [17].

Distribution of enterprises in 2018: innovation-active enterprises – 52.2% and non-innovative enterprises – 47.8%. The share of enterprises that have implemented various types of innovations: 9.4% product innovations; 12.7% process innovations; 13.8% product and process innovations; 64.1% marketing and/or organizational innovations (non-technological) [18].

It is established that there is a different dynamics of innovative activity of enterprises in the regions of Ukraine. Most funds for innovation were spent by enterprises of Kyiv, Zaporizhia, Dnipropetrovsk and Kharkiv regions; among the types of economic activity: enterprises for the production of machinery and equipment (13.5%); vehicles (13.3%); food products (12.6%). The distribution by articles of performance of different types of work was: basic research – 22.4%; applied research – 21.3%; scientific and technical (experimental) developments – 56.3% [11].

Table 3

Sources of financing of innovative activity of enterprises in Ukraine*

years	Total expenses, UAH million	Including at the expense of funds							
		own		state budget		foreign investors		other sources	
		million UAH	specific weight, %	million UAH	specific weight, %	million UAH	specific weight, %	million UAH	specific weight, %
2005	5751.6	5045.4	87.7	28.1	0.5	157.9	2.7	520.2	9.0
2010	8045.5	4775.2	59.4	87	1.1	2411.4	30.0	771.9	9.6
2011	14333.9	7585.6	52.9	149.2	1.0	56.9	0.4	6542.2	45.6
2012	11480.6	7335.9	63.9	224.3	2.0	994.8	8.7	2925.6	25.5
2013	9562.6	6973.4	72.9	24.7	0.3	1253.2	13.1	1311.3	13.7
2014	7695.9	6540.3	85.0	344.1	4.5	138.7	1.8	672.8	8.7
2015	13813.7	13427.0	97.2	55.1	0.4	58.6	0.4	273.0	2.0
2016	23229.5	22036.0	94.9	179.0	0.8	23.4	0.1	991.1	4.2
2017	9117.5	7704.1	84.4	227.3	2.5	107.8	1.2	1078.3	7.9
2018	12180.1	10742.0	88.2	639.1	5.0	107.0	0.8	692.0	6.0

* Sources [10,14,15,16]

Ukraine's high-tech sector is smaller than in most countries, producing 0.5% of GDP and employing 0.5% of the employed. Only 4.0% of industrial enterprises operate in this sector (189 enterprises in 2017). However, it is the most innovatively active in the creation, production and sale of innovative products [14].

The most innovatively active Ukrainian enterprises are expanding the range of national and international partnerships. The share of innovation-active enterprises of Ukraine involved in innovation cooperation, according to the location of partners by region, is as follows from: Ukraine – 57.3%; European countries – 10.7%; different countries of the world – 6.5%, which indicates the predominant focus of Ukrainian enterprises on the internal market. The most innovatively active Ukrainian enterprises created and implemented the technological and product innovations, including organizational and marketing innovations that improve information exchange and use of new knowledge and technologies, as well as affect enterprise productivity, development of new ways to promote products in new markets [11].

The most innovatively active Ukrainian enterprises involve various partners in the implementation of innovation activities and thus take the path of creating and applying open innovation. Thus, for 2016-2018, employees and top management (within the company) were involved at the level of 31.1%; suppliers - 52.0%; customers (consumers) - 16.4%; university institutions and research institutions - at the level of 5.8-9.6%, table. 4 [14].

Table 4
Share of the number of most innovatively active Ukrainian enterprises involved in innovation cooperation, by types of partners (% of the total number of enterprises) *

Total		Including									
		Within the enterprise		Suppliers of equipment, materials, components, software		Customers		Institutions of higher education		Scientific institutions	
2014-2016	2016-2018	2014-2016	2016-2018	2014-2016	2016-2018	2014-2016	2016-2018	2014-2016	2016-2018	2014-2016	2016-2018
33.4	58.3	14.3	31.1	26.1	52.0	13.7	16.4	5.9	5.8	8.4	9.6

* Sources [14-5]

Expanding the range of partners, opening the organizational boundaries of the enterprises, increasing the organizational capacity to create and implement open innovations allowed the most innovatively active Ukrainian enterprises to increase innovative cooperation with partners, especially suppliers of equipment, materials, components, software and others, table 4.

Conclusions. In the period 2005-2018 the number of enterprises engaged in activities in Ukraine remains insignificant, with a negative tendency to decrease the total number of enterprises in industry (from 18.9% to 11.2% of the total number of enterprises). However, there is a positive trend of increasing the number of enterprises implementing innovations. In 2018, the share of innovation-active enterprises was 16.4% of the total number of enterprises. The innovative activity of Ukrainian enterprises mainly closed, as only 0.02% of costs directed to the acquisition of external research for creation innovations. The main areas of implementation innovation: technological processes are low-waste and resource-saving technologies. The main parts of the costs are aimed at purchasing ready-made innovations of machines, equipment and software that need only implementation. The main source of funding for innovation activities of Ukrainian enterprises are the own funds of enterprises.

Ukraine's high-tech sector is smaller than in most countries. However, it is the most innovatively active in the creation, production and sale of innovative products. The most innovatively active Ukrainian enterprises are expanding the range of national and international partnerships, with priority at the internal market. The most innovatively

active Ukrainian enterprises involve various partners in the implementation of innovation activities and thus take the path of creating and applying open innovation. Expanding the range of partners, opening the organizational boundaries of the enterprises, increasing the organizational capacity to create and implement open innovations allowed the most innovatively active Ukrainian enterprises to increase innovative cooperation with partners, especially suppliers of equipment, materials, components, software and others.

The analysis shows that in accordance with the total costs for innovation activities of Ukrainian enterprises the participation of state support is minimal. Thus, Ukraine is only at the beginning of building a national innovation system that supports innovative enterprises and application of open innovation.

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HISTORICAL TRANSFORMATIONS OF CARGO TRANSPORTATION'S TRADITIONAL TYPES AS AN INTEGRAL INFRASTRUCTURE OF THE ECONOMY OF UKRAINIAN LANDS

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Annotation. The article analyzes the processes of origin and development of cargo transportation primitive types in Ukraine. The article considers the grounds that the halo of Trypillia culture is the territory of the invention of the wheel – the oldest mechanical device. The transformational factors of types and means of transportation processes in different historical times and the essential importance of transport routes for economic development are determined.

Key words: wheel, animal transport, water transport, waterways system, transport network, water infrastructure, Trans-European Transport Network (TEN-T), European integration.

Introduction and problem statement. At present, the efficiency of transport, transport network and level of logistics determine and will be the basis of economic development of Ukraine in the next 10 years. The National Transport Strategy of Ukraine envisages, first of all, the realization of domestic interests in the field of transport and logistics. At the same time, this document stipulates the connection of the Ukrainian modernized transport network to the single multimodal Trans-European Transport Network (TEN-T).

In this regard, the gradual implementation of EU directives and regulations in accordance with the Association Agreement will ensure infrastructural European integration. Ukraine's transport infrastructure will become one with the EU infrastructure and will develop in a harmonious combination. In the framework of European integration processes in December 2020, the Verkhovna Rada of Ukraine adopted the Law "On Inland Water Transport".

According to the trends of world trade, a significant increase in trade turnover in the direction "Europe – Asia-Pacific region countries" is expected in the nearest future. Trade in the direction of the European North–South axis is also expected to grow. A sustainable increase in cargo transportation is also expected for water transport. Ukraine, based on the centuries-old history of transport traditions, currently has additional potential for the resumption of domestic cargo transportation, attracting transit flows, especially by

the traditional water direction, provided the development and modernization of water transport infrastructure.

Given the renewed attention and importance of water transport potential in Ukraine, as well as the need to determine the status of Ukrainian lands in relation to the original modes of transport inherent in these territories, it is necessary to refer to the historical origins of the first transport networks of European importance.

Analysis of recent research and publications. Scientific research of the processes and terms of the first vehicles' production, the development of the original types of cargo transportation by animal and water transport, the creation of the first sustainable road systems was started in the early XX century and continues today. Scholars in various fields of study: linguistics, archeology, law and economics consider aspects related to the initial formation and development of the transport industry. Thus, the generalizing work of M. Golushko is devoted to the connection ways and vehicles of Ukrainians, the genesis of the animal team and traditional means of transportation by water [2]. B. Tomenchuk and B. Yavir Iskra analyze in their works the location of European tribes in ancient times and the routes of the first transport networks on the basis of information from the ancient chronicle "Bavarian Geographer" [14, 17]. The issues of the Central Europe tribes development in ancient times, as well as the development of the communication lines are revealed in the A.D. Udaltsova's scientific generalizations [15]. T. Ignatieva studied the economic significance of Ukrainian trade routes in the XVIII – XIX centuries [4]. Yu. Sokurov has devoted his work to the legal aspects of trade activity in the transport network at a given time by examining the phenomenon Chumatstvo [13].

In addition, the proposed article is written on the basis of studying the chronicles of Ukrainian lands in the XVIII century [6, 7] and a wide base of various materials discussing historical and contemporary transport issues reflected on the Internet. Despite a sufficiently deep and comprehensive consideration of the transport network's development in Ukrainian lands in different periods of history, it was worth to consider the process of historical transformation and clarify the significance and inseparability of the transport network of Ukrainian lands from Trans-European one from the view point of modern integration events.

The purpose of the article is to consider the processes of origin and development of cargo transportation primitive types in Ukraine, to determine the transformational factors of types and means of transportation, as well as to substantiate the decisive role of the transport network for economic development of state formations that have existed for centuries on Ukrainian lands.

The main results of the study. Cargo transportation, as one of the most important types of human labor, has deep historical roots. The world history of cargo transportation is inextricably linked with the development of the world economy and trade relations between different states and peoples. At all times of the world civilization development, the transportation of goods was of exceptional economic importance for the development and maintenance of trade, regional production, and international cooperation.

Cargo transportation has always had a general civilizational aspect. Therefore, based

on technical and technological discoveries, over the centuries there has been a process of continuous improvement of cargo delivery methods, creation of the new transport modes and the introduction of new transportation technologies. However, despite the constant process of improvement and development, cargo transportation is characterized by the invariability of the goal – to ensure fast and reliable delivery at the lowest cost of any resources during transportation.

Cargo transportation has become possible thanks to the greatest achievement in the mechanics in the centuries-old history of mankind – the invention of the wheel. The invention of the wheel about 6 thousand years ago was a significant step in the technical progress of mankind. Today, the wheel is used in almost all types of vehicles: any carts, cars, trains, as well as a chassis in airplanes, helicopters and more.

For a long time, there was a widespread version that the wheel was first invented by the Sumerians in Mezhyrich at the end of 4th millennia BC, whence it spread to Eurasia and North Africa. But archaeological finds, technological research of artifacts, linguistic research of the late XX century indicated that the wheel mechanism was most likely invented in Central Europe, and from there came to the Middle East.

The first images of the wheel mechanism and carts were found in modern Poland, Romania, Ukraine and the Eurasian steppes. According to the Finnish scientist Asko Parpola (b. 1941), an Indologist from the University of Helsinki, there are linguistic reasons to believe that the wheel was invented in the Trypillia culture in modern Ukraine [16]. A version of the European origin of the wheel was put forward in the 1990s by the modern German scientist A. Heusler. About the findings of wheel models in the excavations of Trypillia settlements of the last quarter of 5th millennia BC (millennia before the relevant finds in Mesopotamia) was reported in 1981 in scientific publications by the Romanian archaeologist Dean. From here, the innovation spread rapidly throughout Europe: evidence of the existence of the wheel is found in the settlements of Zuschen (Germany), Bronozice (Poland). The remains of carts was found in the late 1980s in the Krasnodar Territory of Russia dated back to the middle of 4th millennia BC [11].

The next mention of the wheel was found in Mesopotamia in the late 4th millennium BC [5]. That is, according to archaeological research, the first ancient wheels belonged to the period 5000–3500 BC and were found in places where there was a fairly high level of civilization, where people were familiar with the various industries, mastered the smelting of metal and so on. The process of moving large cargoes has become a practical necessity in this state of civilizational development. Central European territories were one of the centers of advanced civilization at that time.

After the invention of the wheel, animal transport played an important role in cargo transportation. The network of the first trade routes was rapidly created, which included separate routes and stops used for commercial transportation of goods. One long-distance trade route consisted of trunk arteries connected by a network of smaller commercial and non-commercial transport routes.

Trade caravans transported goods through the entire territory of the Ecumenical (part of the world mastered by mankind, introduced by the ancient Greek geographer

Hecate of Miletus (550 – 490 BC)), through Europe and all known states. Powerful ancient states, like Egypt, Persia and Rome carried out many nationwide measures to develop road systems for the delivery, primarily of state correspondence, mail, rapid advance of troops, as well as for the development of domestic and international trade.

Everyone knows the concept of "Great Silk Road" – the general name of the caravan trade routes, formed in the II century BC (up to 12 thousand km) and lasted until the VII century. These paths were fairly stable "corridors" through which there was an intensive exchange of goods, ideas and people between the civilizations of East and West [3, p. 26]. This system of roads began in the central regions of China, then the road diverged to the southern and northern directions, which stretched through the territories of modern countries, such as: Afghanistan, Turkmenistan, Uzbekistan, Iran, Iraq to the Mediterranean ports of Tire (now Sur, Lebanon) and Antioch (now Antakya, Turkey). Even then, goods from Mediterranean ports arrived in Europe, including via the Black Sea.

However, in Europe itself, even in the Copper and Bronze Ages (3rd – 2nd millennia BC), there was a fairly stable network of trade routes that ensured the emergence and development of interregional trade. The main trans-European routes of the time were "salt", "amber", "copper", "tin", "silk" and so on. Already at the beginning of the 1st millennium AD, according to the famous Roman historian and geographer Tacitus (c. 56 – c. 117) and the ancient Greek scholar Ptolemy (c. 87 – 165), constant communications between individual tribes and nationalities were active in Central Europe: roads from the Baltics to the upper reaches of the Dniester and further south; the road along the Dnieper, which connected the Upper Dnieper tribes with the Middle Dnieper ones, and further south to the sea; the route from Dacia across the Black Sea coast to the Middle Volga and the Kama, and another route through the steppes of the northern Black Sea coast to the east, to Central Asia, along which a broad military alliance of "Alanian" tribes was formed; from the North Sea across the Rhine to the Danube and further south to Rome or Byzantium. The largest settlements of local tribes ("cities" in the words of Ptolemy) were along these roads. Together with the ancient cities, they promoted trade and cultural relations in the vast expanses of central Europe, which has traditionally been called European Sarmatia. Most of the trans-European roads were also Transcarpathian and merged into one Transcarpathian system, as the Carpathian region had some of the largest deposits of copper, silver and salt in Europe, and from the Odra went to the Carpathians tin needed for bronze [14, 15].

In the Middle Ages, some of the ancient ways declined, some had further development, new ways appeared. New cities were created on the roads, which became regional or even state capitals. Ways and trade determined policy no less than policy determined economic development. From ancient times, the Middle Ages inherited the trans-European continental "amber" and "tin" routes and their branches, as well as the sea routes by the Baltic, Mediterranean and Black Seas.

German researcher J. Herrmann identified several such paths in the Central European region between the Frankish Empire and the Khazars:

– Magdeburg – Rebus – Poznan – Kyiv;

- the mouth of the Danube – Dniester – Vistula – Baltic;
- Sarkel – Kyiv – Byzantium;
- Krakow – Bautzen – Erfurt – Prague – Krakow [17].

Thus, it should be noted that since ancient times, the territory of modern Ukraine has been naturally included in the European transport system using animal and water transport.

Land transport directly depended on various ways of using draft animals, which in Ukraine had always been oxen. In the Eneolithic – Bronze Age (5th – 4th millennia BC) they were harnessed only in pairs. A pair of draft animals dominated in subsequent historical periods. In particular, two or three pairs of oxen harnessed Scythians in carts, a pair of oxen dragged the wheeled vehicles of the Sarmatians. Even Ukrainian Chumaks often harnessed two pairs of oxen to carts in the XV – XIX centuries [2, p. 37].

Chumatstvo was the most common business activity in Ukraine, the essence of which was to transport various goods by artel method (using oxen or drawn vehicle), and to provide wholesale or retail trade of these goods for profit.

Chumatstvo originated from the caravan trade of the Kievan Rus times and exhausted itself with the introduction of railways in the XIX century. As an important component of economic life at all historical stages, Chumatstvo had a great commercial weight. It was a symbiosis of trade and transport, an integral infrastructure of the economy, a unique national Ukrainian phenomenon [13].

From the beginning of the XVI century, Ukrainians began to use one horse's harness for everyday life and transportation of goods over short distances.

The need for fast and systematic delivery of mail led to the emergence of stagecoach in the British Isles in the middle of the XVI century. It was a four-wheeled vehicle on a rigid suspension, which was pulled by four horses. Stagecoaches were used on regular lines and carried mail and passengers. The invention of stagecoaches, the definition and official consolidation of major transport routes, led to the emergence of a network of post offices. At such stations, tired horses were changed, which allowed them to ride almost without long stops. Royal postal stagecoaches accelerated the improvement of the road system in the British Isles by creating toll roads. Inns (prototypes of hotels) were opened all over Europe to serve stagecoach passengers.

A similar network of yam (post) stations was established in the Ukrainian territories that were part of the Moscow state. In 1669, the Hetman of the Left Bank of Ukraine Demyan Mnogohrishny signed an agreement with the Moscow government – "Glukhov contract articles", Article 10 of which provided for the arrangement of mail in the cities of Little Russia on the Moscow model [7, p. 195].

The final unification of the postal system of the Hetmanate (Ukrainian lands) and the Russian Empire took place in the period (1760 – 1789) during the time of Count P.O. Rumyantsev (1725 – 1796), who after the abolition of the hetmanate became the leader of the Left Bank of Ukraine – "commander in chief of the Little Russian regiments". In 1765 he developed an official document "Establishment of horse mail in Little Russia" ("Institution of horse mail in Little Russia") [6, p. 412–413], according to which the

requirements for postmasters were clearly defined, the terms and price list for sending mail were determined. The main routes ("paths") used to deliver mail were also identified. At that time the postal service consisted of 9 routes: Hlukhiv – Kyiv, Kyiv – Poltava, Kyiv – Starodub, Kyiv – Chernihiv, Kyiv – Kremenchuk, Kyiv – Potoky, Kyiv – Dobryanka, Poltava – Chernihiv, Romny – Lubny and seventy-two stations. Subsequently, these routes were established as a basis for the development of auto-roads.

At the beginning of the XVII century, a pair of Western European-style horses was used by various sections of the population in the Ukrainian ethnic lands. At the end of the XIX – in the XX century, the two-horse carriage replaced not only the oxen carriage, but also the traditional one-horse carriage almost everywhere in Ukraine.

The active spread of new types of land transport, especially automobile in the second half of the XX – early XXI century has led to the displacement of traditional vehicles, and at the same time oxen and horses as a traction force for transporting goods. However, even today in the countryside of Ukraine horses are used mainly to move small cargoes on farms.

Among the various types of traditional transport in the Ukrainian lands, one of the oldest in origin was water transport. In the territory of Polissya and the Middle Dnieper region it was used already in the Mesolithic era (12th – 7th millennia BC). Even before the XIX – early XX century, Ukrainians had different means of transportation on the water. The most primitive of them was the raft.

Rafts were used to alloy wood – the main building material – by rivers. On shallow rivers, mostly 2–3 small rafts were joined together. Instead, on high-water rivers (Pripyat, Desna, Dniester) rafting ranges were combined into a so-called "belt" 80–120 m long, and several "belts" – in a "caravan", the length of which sometimes reached more than a kilometer. The movement of forest rafting on the water was controlled by means of oars, and on the rivers of Polissya and Volyn – also long poles.

This method of transporting building materials existed for several millennia, until the second half of the XX century. The last "farewell" raft was fused on August 11, 1979 in Cheremosh. Since then, rafting on Ukrainian rivers has been banned – it has become a thing of history [13].

During the Neolithic era (4th – 5th millennia BC) boats began to be used in Ukraine. The design of the boat has undergone significant changes over the centuries. Later, various small and large vessels occupied an important place in trade and economic relations.

Significant development of shipping underwent during the Princely Era (IX – XIII centuries). In Eastern Europe the largest waterways at that time were:

- 1) the way through the Dnieper (started in Kiev or, perhaps, higher – in Gnezdovo, went to the mouth of the Dnieper and the Bug, from there to Constantinople), by which the Ruthenian went to Byzantium;
- 2) the way from the Baltic to the Don and the Volga (starting from Ladoga – Bulgar – Sarkel, went further to the southeast to the shores of the Caspian Sea, from where to the Caucasus or the Middle East), through which trade between Muslim countries, Finnish tribes and ethnic groups of the Baltic coast took place.

The second way was traditional, as well as better known and used [17].

In the XV – XVII centuries, shipping was developed through the Cossack campaigns. Cossack "Chaika" – a ship by which the Cossacks conquered not only the Dnieper, but also the Black and Azov Seas. Sheaves of reeds were firmly attached with a face of linden or wild cherry to its sides. They kept the ship afloat even when water came into it. In calm weather, the "Chaika" overcame the water lake also with the help of a sail. It transported 50 – 70 Cossacks, 4 – 6 guns, barrels of food, drinking water, gunpowder at the same time [2].

Navigation on the Dnieper had significantly revived since the beginning of the XVIII century. On the Desna in the Bryansk city, many wooden ships were built at the new shipyard, which were used for transported cargo in the upper reaches of the Dnieper and its tributaries [12].

The XVIII – first half of the XIX century was the period of intensive canal construction in Europe to create transport links between individual river systems. At that time, canals were being built within Ukraine to connect the basin of the Dnieper, Dniester, Bug and their tributaries with the basins of the Neman, Vistula and Western Dvina. In 1779–1804, the Ogino Canal was built, which connected the Shara River, the tributary of the Neman, with the Yaselda River, the tributary of the Pripyat. During 1797–1800, the Berezina Canal was also built, which connected the tributary of the Dnieper, the Berezina River, with the Western Dvina. In 1775 the construction of the Dnieper–Bug (Royal) Canal (rebuilt in 1837–1840) was completed, which connected the tributary of the Western Bug, the Mukhovets River (Baltic Sea basin) with the tributary of the Pripyat River, the Pina River (Black Sea basin). The first two channels did not last long. The long route of the Dnieper–Bug canal (approximately from Brest to Kobrin) was reconstructed at the beginning of the second half of the XIX century. This channel operates and is used (to a limited extent) for relations with Poland [4].

In the second half of the XVIII century the industrial revolution began in England. The creation and widespread use of the steam engine was its basic factor. In the XIX century steam engines became the main engines for industrial enterprises and transport (steamships and railways). While at the beginning of the XIX century there were several hundred steam engines in the world, at the end of the XIX century the number of steam engines increased to two million. Not surprisingly, this century was called the "age of the steam."

The Frenchman Dani Papen (1647 – 1714) was the first to invent a real steam pump. At the end of the XVII century, he designed a sealed container like an autoclave to sterilize medical instruments. In 1690, Papen connected the boiler he invented with the piston of a water pump. Thus the first steam machine was invented.

In 1804, the English engineer Arthur Wolf patented a double-expansion steam engine (Wolf's high-pressure compound steam engine). The advent of double-acting machines was the next important step in the development of high-pressure steam engines.

At the beginning of the XIX century, a new type of ship appeared – a steamship powered by a steam engine or a steam turbine. A successful attempt was the rowing

steamship "Clermont" by Robert Fulton (New York, 1807). In 1819, the American steamship "Savannah" with rowing wheels crossed the Atlantic Ocean for the first time. In April 1838, the English steamship "Sirius" reached New York [9].

In the first half of the XIX century steamships spread on the rivers of Ukraine. The first domestic steamship was built in 1823 in the Moshny village (now a village in the Cherkasy region). In the Kyiv region, the construction of steamships began on the estate of Prince M. Voronov. Subsequently, these steamships were transferred across the Dnieper rapids and flew between Kherson and Mykolaiv [1].

In 1835 the first steamship company was established, and in 1850 a regular passenger line was opened between Kremenchuk and Pinsk. In 1857, the Russian Society of Shipping and Trade was organized on the lower Dnieper, which included 10 passenger ships and several tugboats. At the same time, new entrepreneurs – the owners of steamships and barges began to appear in Kyiv, Kherson and other Dnieper cities.

In 1906, there were 382 self-propelled and 2,226 non-self-propelled vessels operating in the Dnieper Basin [12]. The development of steamshipping caused the decline and displacement of small and large river vessels of traditional design. At that time, the Dnieper was separated by rapids into two sections, which had a negative impact on the development of river traffic.

With the establishment of Soviet power in February 1918, the Decree on the nationalization of the fleet was adopted. In 1922, the Dnieper River Transport Department was established. In 1923, two river steamshipping companies were established: the Upper Dnieper Company with its center in Kyiv and the Lower Dnieper Company with its center in Kherson. In 1926, they were merged into one – the Dnieper Steamshipping Company.

Later on the Dnieper there were profound economic changes associated with the commissioning of the Dnieper hydroelectric power plant and 3-chamber lock (1932), which created the conditions for end-to-end navigation on the Dnieper [10, p. 13]. In this regard, the transport importance of the Dnieper for the economic development of the Ukrainian republic had increased, hundreds of new steam and non-self-propelled vessels, river ports and piers, shipyards and workshops have been built. During that period, the transportation of coal, mineral and construction and bulk cargo, metals, containers and piece goods increased significantly, the transportation of petroleum products began. Large ports were built on the banks of the Dnieper – Kyiv, Dnipropetrovsk, Kherson. The river port in Zaporizhia was built and equipped with the latest technology at that time.

Before the World War II, river shipping was carried out by two shipping companies: the Dnieper–Dvina Company worked on the upper section to the mouth of the Pripyat, the Dnieper Company – on the middle and lower section. The total length of navigable river routes was 7872 km [10, p. 14].

It should be noted that the entire infrastructure of water transport, which had gained significant economic importance by the middle of the XX century, was destroyed during the hostilities of 1941–1944, World War II, which swept through the territory of Ukraine

in two waves. Almost until the 70s of the XX century, the reconstruction of both inland river and sea transport lasted.

At the time of independence in the early 90's of the XX century Ukraine had a fairly high navigable potential of rivers, the length of waterways, suitable for operation, was about 6.2 thousand km. The main waterways were the Dnieper – 1,205 thousand km (its tributaries Desna – 520 km and Pripyat – 60 km), the Danube – 160 km (the length of the Ukrainian section of the Danube was 160 km) and part of the Southern Bug – 155 km [12].

At the beginning of the 2000s, Ukraine's river commercial fleet was capable for transporting 10 to 12 million tons of cargo annually. Water transport was not inferior to rail and road. However, in recent years, the inland waterways of Ukrainian rivers in terms of guaranteed depths do not fully meet the requirements for safety of navigation. Regular water connections with Belarus in the upper reaches of the Dnieper and Pripyat, traffic on the Desna have virtually stopped, due to the shallowing of these rivers in this region.

The existing infrastructure of river berths (stations) does not meet modern international technical characteristics and standards and is used only for 5–10% of its capacity [10, p. 16]. The vast majority of river ports were founded in Soviet times and are obsolete now. Thus, in Ukraine there is a reduction in the domestic river fleet, its technical aging, critically deteriorating condition of infrastructure, in particular, hydraulic structures.

In Europe, it is more profitable to transport goods by river than by trains or trucks. Thus, in the Netherlands, ships carry one third of all cargo, in Romania – 27%, in Belgium – 18%. In Ukraine it is only 3%. In 2018, the European Investment Bank estimated that Ukraine lost \$ 27 million a year, without using the potential of the Dnieper [8].

Modern Ukraine is a maritime state. But in the history of the domestic navy there is no fundamental continuous line. Over the centuries, political changes have led to the periodicity of the development of purely national sea shipping.

Navigation on the Black Sea was carried out in the IV–VI centuries. During the times of Kievan Rus, fairly stable sea connections were established with Byzantium.

The period of XV – XVII centuries is called the period of great geographical discoveries in world history. During that period, European peoples made geographical discoveries in almost all regions of the globe. New lands were discovered and sea routes to Africa, America, Asia and Oceania were laid. Due to the development of navigation, the Europeans radically changed the political, economic and socio-cultural map of the old world.

It should be noted that during that time the access to the Black Sea by the Slavic ethnic group of the steppe zone of Ukraine was limited. In the XIII – XVIII centuries the Crimean Khanate, the Golden Horde, existed on the lands of the northern Black Sea coast. It was a vassal of the Ottoman Empire. However, this did not prevent the Republic of Genoa from creating a whole system of its own cities and trading settlements in these lands. The European commercial presence significantly encouraged the active development of shipping and lively trade in this area in the period XV – XVII centuries.

The significant growth of maritime trade in the cities of the Northern Black Sea and Crimea had little effect on the development of the transport network of the main Ukrainian territory, which was entirely sub-Russian at that time, due to the confrontation between the Russian and Ottoman empires.

Only as a result of Russia's victory in the long confrontation (Russo-Turkish wars of 1768–1774 and 1787–1791), Tatar and Turkish authorities in steppe Ukraine were destroyed, which gave rise to the creation and development of the Black Sea Fleet and port network. Thus, in the 80s of the XVIII century the ports of Kherson (1778), Sevastopol (1788), Odessa (1794) appeared with the inclusion of the Northern Black Sea and the Azov Sea in the Russian Empire [8].

Despite the long history of sea voyages, extensive port infrastructure and the significant contribution of sea transport to the development of the economy of Soviet Ukraine in the early 1940s, seaports and the Black Sea Fleet were almost completely destroyed during World War II. Reconstruction of ports, port cities and the navy began immediately after the liberation of cities from German invaders. Therefore, in the 60s and 70s of the XX century, the fleet and port infrastructure were completely rebuilt and at that time met world standards.

Considering the advantages of maritime transport of modern Ukraine to ensure international trade, it is necessary to note the actual positive characteristics. The Black and Azov Seas hardly freeze and connect with the Mediterranean Sea through the Bosphorus, the Sea of Marmara and the Dardanelles. The total length of the sea coastline of Ukraine is about 2000 km.

Since 1978, one of the world's largest ferry crossings between Illichivsk and the Bulgarian port of Varna with a length of 435 km has been operating. In 1999, the ferry crossings Ilyichevsk (Ukraine, Odessa) – Poti (Georgia) and Varna (Bulgaria) – Poti (Georgia) were put into operation, and in 2004 Ilyichevsk (Ukraine, Odessa) – Derinzhе (Turkey) were introduced in action.

To improve Ukraine's relations with the North Caucasus, a railway ferry across the Kerch Strait was built in 1954 [8]. Prior to the events of 2014 – the annexation of Crimea by Russia – border control was carried out in both ports, there were checkpoints "Crimea" and "Port Caucasus". Due to the Russian occupation of Crimea, the crossing has been subject to US sanctions since August 10, 2015.

At present, maritime transport ranks third in the structure of total cargo turnover in Ukraine after pipeline and rail transport.

In Ukraine, three territorial bodies of maritime transport administration have been established – shipping companies: Azov, Black Sea and Ukrainian-Danube. There are 18 seaports in their system (of which 5 ports of the Crimean Peninsula are annexed by Russia). The largest are Odessa, Chornomorsk, Pivdennyy, Kherson, Mykolaiv, Izmail, Mariupol, Belgorod-Dniester. Odessa region accounts for almost 80% of the processing of all sea freight transport in Ukraine. The main cargoes of sea transport in transportation between ports of Ukraine are mineral and construction materials, coal, metals, machines, sugar, chemical products, etc. Ores, metals, equipment and facilities predominate in

foreign transportation. Seaports interact with land and river modes of transport.

Conclusions. Thus, considering the transformation processes of ancient transport routes and the oldest types of freight transportation in modern Ukraine, it is necessary to note the following.

According to scientists in various fields of knowledge, one of the most important inventions of the ancient world – the invention of the wheel – was made in the last quarter of 5th millennium BC among the peoples of the Trypillia community, whose monuments are located, including in the Ukrainian territories. Archaeological finds indicate a high level of socio-economic development of the tribes of the ancient world who lived in Central Europe between the Carpathians and the Dnieper.

The invention of the first simple mechanism – wheels – allowed to create the first simplest mechanical transmission devices, and hence the first simplest vehicles. In addition, the invention of the wheel contributed to the development of crafts. Later, the wheel was used in the first simple devices that were the predecessors of handicraft tools: a potter's wheel, various spinning wheels for various needs and other tools. The importance of the wheel in the economic sphere was later reflected in the beliefs and symbols of the first peoples, which were passed on to descendants and spread around the world.

But the most important was and remains the primary role of the wheel in the creation of vehicles, which later led to the creation of the first network of European roads. Archaeological sources suggest that as early as 3rd – 2nd millennia BC in Europe, there was a stable network of trade routes: "salt", "amber", "copper", "tin", "silk", etc. Naturally, these paths intersected in the Carpathians, because the Carpathian region at that time was one of the largest deposits of copper, silver and salt in Europe. On the expansion of ancient trans-European routes in the early 1st millennium AD ancient Greek and Roman written sources testify.

Recognized and stable transport routes have always contributed to the development of trade, and hence to the economic development of certain territories, which directly determined the political state of these territories. However, over the centuries, the political situation changed, the first state formations appeared and disintegrated, which, along with natural factors, influenced and solved the changes in the trans-European transport network. In the Middle Ages, the European transport network inherited the continental "amber" and "tin" routes, the sea routes of the Baltic, Mediterranean and Black Seas.

The invention of the wheel, the appearance of the first vehicles, respectively, the presence of suitable animals – oxen – led to the emergence of animal transport in Ukraine in 5th – 4th millennia BC. One of the oldest modes of transport – animal transport with the traditional pair of oxen – existed in Ukraine without radical changes until the XIX century, and in the XV – XVIII centuries, thanks to Chumatztvo, gained significant commercial importance in the region's economy. In Ukraine, horses have been used as a traction force only since the 16th century. This type of animal transport gained rapid development and significant importance in the XVII – XVIII centuries and, like the pair

of oxen, was replaced in the first half of the XIX century by the development of railways.

The history of cargo transportation development in the Ukrainian lands has been formed for several millennia. The oldest were water river and animal transport. Inland freight transport has historically been the basis of the economy and trade in Ukraine.

It should be noted that waterways by rivers, water transport (rafts and boats) began to be used by ancient man, including in Europe, earlier than land wheeled vehicles. Naturally, the territories, and, above all, the rivers of the modern Ukrainian lands have been part of the common European transport network since ancient times.

The simplest water vehicle – raft was used in Ukraine from 12th – 7th millennia BC. Transportation of wood by rafts ceased to be used only in the second half of the XX century.

BC Boats began to be used in Ukraine in the 7th–5th millennia. A fairly dense network of large waterways: the Dnieper and its tributaries Desna and Pripyat, the Danube, the Southern Bug and a network of small rivers have been an essential basis for the development of navigation in all historical periods in these areas.

It is worth identifying several periods when shipping became extremely important in the transport system not only of Ukrainian lands, but also trans-European system. During the Princely Era (IX – XIII centuries) the Dnieper played an important role both in the formation of Kievan Rus, and in its rise, gaining power and world recognition. The second significant period should be called the XVIII – first half of the XIX century – a period of intensive construction of canals, including in Ukraine, when separate river systems were combined into a single transport network in Europe. The third important period of river navigation in Ukraine, as well as in the world, can be considered the XIX century, when thanks to the invention of the steam engine steamships were created. The development of shipping in the first half of the XIX century became important and created significant competition for other modes of transport.

The rapid development of various modes of transport in the XX century, global trends in climate change (warming), the negative anthropogenic impact, the shortcomings of national governance led to the decline of inland water transport in Ukraine in the early XXI century. At present, the process of revival and development of Ukraine's maritime transport infrastructure is underway. The maritime and river transport sector is of strategic importance not only for the economic development of the country, but also for the development of international cooperation. Currently, Ukraine is in the process of developing water transport and integrating it into the priority European transport network. Prospects for further exploration include the study of the impact of transport on the development of Ukraine's economy and the realization of its transit potential.

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ISSUES OF STATE SUPPORT FOR GROWTH OF LABOUR PRODUCTIVITY IN THE SECTOR OF NON-MARKET SERVICES OF THE ECONOMY OF UKRAINE

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***Annotation.** The article shows the calculation of indicators which characterize the level of labor productivity of the non-market services sector of the economy of Ukraine including the level of productivity in Education and Health Care industries. There are identified main reasons of low level of productivity in relation to the average level of the state economy. Unified directions of labor productivity growth are offered. They include increasing the results of production of services and reducing costs of production, increasing the efficiency of capital and other resources. The main measures of state influence on the processes and conditions of growth of labor productivity are substantiated and they include privatization of management, improvement of the existing system of providing financial resources to the industry and the search for additional sources of fund, the introduction of a mechanism of public-private partnership, etc.*

Key words: non-market services sector, Education, Health care, mechanism of state influence, state regulation, labor productivity, directions of state support.

Formulation of the problem. In Ukraine, in current unstable market conditions, the efficiency and competitiveness of the non-market services sector is largely determined by the main directions of state regulation. This is especially true in Education and Health care areas, looking at the current transformations in these areas, necessity of highly educated workers, necessity to implement the Concept of development of Public health system, to update equipment and technology, etc. As part of the scientific support of the problem, there is an importance to formulate new approaches that would allow a more systematic and comprehensive consideration of the main directions of state influence on the processes and conditions of growth of labor productivity in the non-market services sector.

Analysis of recent research and publications. Among the important scientific studies of foreign and Ukrainian scientists in the development of state regulation, state influence, state participation in the processes of labor productivity management, we can call the works of Keynes J.M., Krugman P., Nordhaus W., Pareto A., Romer P., Sachs J., Samuelson P., Stiglitz J., Strelkova L., Bakumenko V., Babenko A., Evseeva O., Kalina A., Kozhemyakina S., Kravchenko O., Malinovsky V., Sakhno E., Tkacheva N. and others.

The purpose of the article is to explore the main directions of the policy of state support for growth of labor productivity in the non-market services sector of Ukraine.

Presenting main material. Issues related to state influence, state participation in labor management processes are becoming increasingly important. Attention to this

problem is justified, because the level of labor productivity in Ukraine is 5-10 times lower than in developed countries. According to Kozhemyakina S. [1], labor productivity is a complex category and economic indicator, so the State is not able to directly manage the dynamics of labor productivity, but can use certain mechanisms to influence factors and conditions that will stimulate growth of labor productivity in the non-market sector services. Bakumenko V. [2], Babenko A. [3] noted that the low level of labor productivity in Ukraine is explained by the lack of an effective economic mechanism for productivity management in general. Kalyna A. [4] emphasizes that the high level of labor productivity in the United States of America is provided by an effective economic mechanism for productivity management. Yevseyeva O. [5] substantiates an importance for State intervention using methods of statistical analysis in the field of services and determining the directions of such intervention. Kravchenko O. [6], Malinovsky V. [7], Sakhno E. [7] emphasize the lack of an effective mechanism to stimulate growth of productivity.

In the modern post-industrial economy is important direction of growth of labor productivity not only in the industrial sector but also in the sector of non-market services (Education, Health care), which is also measured by results and costs that differ from the manufacturing sector.

Before assessing the level of labor productivity in the non-market services sector, it is necessary to determine the system of indexes used to calculate this important indicator. According to the study, in economic practice, the production of services is assessed by indicators of their gross output or value added, which have a different economic nature depending on whether they are related to market or non-market services, which affects the assessment of their productivity. The system of national accounts allows analyzing the dynamics and structure of the main types of economic activity of the market and non-market services sector of the Ukrainian economy, which has developed in the last decade. The value added is defined as the difference between gross output and intermediate consumption. Intermediate consumption is considered to be the amount of current material costs of the relevant type of economic activity of the services sector. These features of the methodology we use for analyzing the dynamics of productivity of the non-market services sector [1, p. 122].

According to the analysis, the level of labor productivity in the non-market services sector is lower compared to the sectors of production of goods and market services, and in Education and Health care in the end of 2018 it was 58.4% and 47.2% to average productivity in the economy of Ukraine (Table 1). It was also found that in 2010-2018 labor productivity in Education was lower (more than 1.5 times) than the average in the economy and the manufacturing sector. Capital in Education, which includes high-tech equipment of research laboratories in Educational Institutions of different levels, working capital, classrooms, software, modern means of communication, the library fund is not a critical factor that significantly affects the implementation of educational strategy.

Table 1
Indicators that characterize the level of labor productivity of the non-market services sector in the economy of Ukraine in 2010-2018, %

Types of economic activity / sector	2010	2011	2012	2013	2014	2015	2016	2017	2018
Labor productivity in the non-market services sector, UAH / person, in 2010 prices	30939	32218	34729	35565	38276	40061	39897	39890	40429
The correlation between labor productivity in the non-market services sector and labor productivity in the economy (in previous year's prices), %	65,6	65,4	68,8	73,4	76,9	72,1	59,1	58,6	66,5
The correlation between labor productivity in Education and labor productivity in the economy, %	66,7	64,7	66,0	72,1	71,9	64,1	51,4	49,4	58,4
The correlation between labor productivity in Health care and labor productivity in the economy, %	57,3	59,7	62,4	63,3	60,0	57,5	45,4	45,3	47,2
The specific weight of the non-market services sector in the volume of capital investments in the economy, %	7,3	7,6	6,9	5,2	3,9	7,0	8,5	10,1	10,6
The correlation between wages in the non-market services sector and wages in the economy, %	26,1	24,4	25,0	26,0	26,8	28,5	29,5	30,5	29,5
The specific weight of the non-market services sector in the value of fixed assets in the economy, %	0,94	0,85	0,43	0,29	0,55	0,60	0,60	0,30	0,94

At the same time, to strengthen the role of Education in the innovative development of the National economy, it is proposed to intensify the budget investment policy to influence the processes of reproduction of fixed capital in the industry. This is especially important because the unsatisfactory state of innovation and technological development of Ukraine's economy has led to breaking in the chain "education - production - innovation", which limits the potential for growth of labor productivity, including through the implementation of acquired knowledge in the real economy.

The calculations also showed that the level of wages in Education relative to the average in the economy and is significantly lower and in 2018 was 79.4% and 55.4%, respectively (Table 2). This factor is directly related to the decline in productivity in Education. The level of labor productivity in Health care area is almost 1.6 times lower than in the manufacturing sector, but the growth rate of labor productivity is higher than in Education, which was ensured by the outstripping growth of labor capital in the industry. The low level of investment in Health care hinders the disposal and replacement of worn-out fixed assets, which leads to the accumulation of obsolete medical equipment and, as a result, reduces the quality of services and productivity in the industry.

As labor productivity in health care depends on primarily budget for wages, which is lower than Education's, public administration and defense, and relative to the National level is only 66%, this indicates a disincentive effect of available budget funding on labor productivity, which ultimately leads to a significant reducing of numbers of employees in the sector.

Thus, the conditions for increasing of labor productivity are complex socio-economic relationships, so the State cannot directly regulate this process, but it can influence macro-environmental factors through support measures, which will promote and stimulate the growth of this indicator in economic sectors.

In order to increase labor productivity in the non-market services sector, unified directions of growth of labor productivity are proposed, which include growth of service production results and reduction of labor costs, increase of capital and other resources efficiency: 1) development of research and innovation infrastructure of higher education institutions, medical diagnostic centers and laboratories; 2) creation of a fund of capital expenditures for the purchase or creation of fixed assets, training, laboratory, production equipment, capital construction, repair, reconstruction and restoration of premises, buildings, structures (evidavment); 3) saving of intermediate costs, which includes: energy and material storage (reduction in relation to the unit of output); rational use of services and information resources in the process of providing educational and medical services, accounting for secondary material resources); 4) increase the efficiency of labor costs (increase the educational and professional level; rational use of working time); 5) improvement of the educational and qualification structure of employees; motivation and stimulation of work, licensing of employees); 6) increase the efficiency of capital resources (increase the level of capital; renewal of fixed assets, increase capital productivity and capital intensity); 7) increase the efficiency of natural resources (water, land) and environmental protection.

Table 2
**Indicators that characterize the level of labor productivity in education,
 health care and the economy of Ukraine in 2010-2018, %**

Types of economic activity	2010	2011	2012	2013	2014	2015	2016	2017	2018
Education									
Labor productivity, UAH / person, in 2010 prices	31666	31868	32932	33886	35026	35994	35595	36544	36318
The specific weight in the volume of capital investments in the economy, %	1,0	0,9	0,5	0,4	0,4	0,6	0,6	0,8	0,8
Wages relative to the average wage in the economy, %	83,7	78,4	83,3	82,1	78,9	74,7	72,7	82,4	79,4
The specific weight in the value of fixed assets in the economy, %	1,09	0,04	0,03	0,03	0,02	0,04	0,04	0,05	0,04
The degree of depreciation of fixed assets in Education, %	62,5	43,7	43,6	44,9	45,0	45,6	42,7	42,4	41,1
The level of state spending on Education, % in the consolidated budget	21,1	20,7	20,6	20,9	19,1	16,8	15,5	16,8	21,1
The level of gross expenditures on Education, % of GDP	8,13	7,23	7,62	7,62	6,90	6,39	5,87	5,96	8,13
Health care									
Labor productivity, UAH / person, in 2010 prices	28742	29409	32129	31311	32427	35606	34489	35375	35406
The specific weight in the volume of capital investments in the economy, %	1,1	0,9	1,0	0,7	0,6	0,9	1,2	1,5	1,4
Wages relative to the average wage in the economy, %	71,8	66,5	71,9	71,6	70,1	67,4	65,6	70,2	66,0
The specific weight in the value of fixed assets in the economy, %	0,9	0,2	0,1	0,1	0,1	0,2	0,3	0,2	0,9

The degree of depreciation of fixed assets in Health care, %	50,8	42,4	42,4	45,7	44,0	43,9	53,4	45,6	47,4
The level of state spending on E Health care, % in the consolidated budget	12,6	12,7	12,7	12,9	11,7	11,2	9,8	9,7	12,6
The level of gross expenditures on Health care, % of GDP	7,56	7,09	7,47	7,60	7,42	7,81	7,62	7,45	7,56

In order to implement the regulatory mechanism, in contrast to command management, it is necessary to liberalize education. This process should be carried out not through the process of privatization of educational institutions, but on the basis of privatization of management, getting rid of unnecessary, petty guardianship over them by the Ministry of Education and Science of Ukraine. In order for such changes to become real, it is necessary to change the status, functions and powers of the Educational state body - from a departmental ministry, it must become an interdepartmental coordinating committee. It should be noted that radical changes in the economic mechanism of the Education sector in the direction of its privatization are only declared, but there are no real changes. The reason for this situation is the lack of conceptual understanding of the substantive aspects of the mechanism of State regulation, its essence, principles, forms and methods. The meaning of the transformation of Education management should be the transition from issuing directives to Educational institutions to implement any decisions of the departmental body to creating economic conditions for the functioning of all subjects in the field of Education. They should contribute to the achievement of optimal results both from the standpoint of individuals and teams, and from government positions.

The Government's objectives in Education in the medium term are to improve the quality of secondary education, to overcome territorial differences in the quality of education and to transform the content of education on the basis of a competency-based approach, to modernize vocational education and training, labor market, and ensure equal access to vocational education; raising the level and optimizing the results of scientific and academic activities, supporting the process of asserting academic integrity in higher education and research institutions.

The main direction of State regulation of Health care should be to improve the existing system of providing financial resources to the industry and the search for additional sources of funding in the form of voluntary health insurance and health insurance funds. The development of the health insurance system will help attract additional sources of funding for the medical sector, which will increase its volume of services and added value per employee in the sector.

One of the measures that will allow the State to influence the processes of growth of productivity in the non-market services sector is the introduction of a public-private

partnership mechanism, which is considered as one of the alternative ways to reform both Education and Health care. Public-private partnership (PPP) in Ukraine should become a catalyst for activity, an attractor (in the terminology of the theory of synergy) of the formation of partnership structures that will promote investment in the social sector.

In 2017, the Ministry of Economic Development and Trade of Ukraine signed an Agreement (in the form of an exchange of letters) between the Government of Ukraine and the Organization for Economic Cooperation and Development on joining the Declaration on International Investment and Multinational Enterprises. Ukraine's accession to the OECD Declaration on International Investment and Multinational Enterprises and membership in the OECD Investment Committee provide the following significant benefits for the country and the public sector, including: Ukraine's introduction of international investment standards; promote foreign direct investment by removing restrictions on sectors where foreign investment is prohibited; will contribute to the improvement of the competitive environment and the impact on the introduction and dissemination of innovations; will promote the implementation of the principles and standards of corporate social responsibility in accordance with the OECD guidelines for conducting responsible business [9].

For the development of public-private partnership in Education, it is necessary to: regulate the application of legal norms governing the activities of public-private partnership (PPP); development and implementation of the concept of PPP projects implementation; identification of sectors of the education and science system that have the highest potential for the implementation of the PPP project, as well as the most in need of innovation and investment resources; determining the possibility of creating various forms of PPP - contractual, institutional and social interaction; introduction of standard PPP agreements; development of methodical recommendations on the choice and use of various financial models for the implementation of PPP projects acceptable for Education and Science; coordination of budget planning practice with the mechanism of providing state support under PPP agreements, with their further consideration in the process of medium-term budget planning and socio-economic forecasting; reflection of general directions and spheres of PPP, types and volumes of educational services that will be provided in the form of PPP, envisaged forms of partnerships; priority of state interests, effective distribution of risks between the parties, political support of the state, partnership, equal and transparent nature of relations; economic (social) efficiency of PPP projects [9, p. 87]. Taken together, these measures will help increase the efficiency of the non-market services sector and the economy in general and labor productivity in particular.

The Ukrainian Health care system, which has a low level of financial and material support, technically backward infrastructure, imperfect management, requires significant financial investments and the use of innovative management and medical technologies, which the State is unable to provide due to the crisis and state budget constraints. At the same time, the introduction of the mechanism of public-private partnership, which is considered as one of the alternative ways to reform the Domestic Health care system,

has the opportunity to become a powerful tool for modernizing medicine by combining government capabilities with private sector investment resources [10].

Organizational innovations can have a great impact on accelerating growth of productivity. As a rule, they include using of a separate management technology, the implementation of a set of disparate measures or a system of related management practices. In the practice of comparative empirical research conducted in the last decade abroad, the scale of organizational and managerial innovations and the degree of development of managers inherent in each tool are considered the most important indicators of management quality, significantly affects the performance of enterprises, organizations and institutions. This approach, developed by researchers from the London School of Economics in collaboration with McKinsey, has been successfully implemented in large-scale international comparative studies in countries with different levels of economic development [11, p. 147–150]. Its results showed that the quality of management has a significant positive relationship with various indicators that characterize the efficiency of enterprises and institutions - productivity.

Conclusions. Thus, in accordance with Ukraine's strategic intentions to increase the efficiency of the economy, the priority of national socio-economic policy should be State support for growth of labor productivity in the non-market services sector. From the point of view of the system approach, the best effect can be achieved only in a complex way to influence the socio-economic indicators at the macro level and at the level of organizations and institutions of the non-market services sector. All these measures together will help increase the productivity of workers and the implementation of which creates the preconditions for increasing the competitiveness of the workforce and economic growth in the country.

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FINANCIAL STRATEGIES FOR THE EXPLORATION INDUSTRY IN THE RUSSIAN FEDERATION

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Annotation. The article deals with financial strategies in general and on the example of the exploration industry in the Russian Federation. It is by means of the optimally chosen financial strategy a company or an industry gets an opportunity to function successfully in the market and adapt to the market conditions.

Key words. Financial Strategy, General Financial Strategy, Operational Financial Strategy, Strategy for Achieving Individual Strategic Objectives, Geological Exploration, Mineral Resources Base.

Now there is a problem of sustainable development of geological exploration and use of mineral resources. In order to achieve positive changes in the exploration industry, a sound financial strategy for the industry is required. Lack of attention to the problems of the exploration industry can lead to the deterioration of the situation in the mineral sector, damage the economic and energy security of Russia, its position on the world stage as a country with a strong mineral potential.

The purpose of this work is to study the financial strategies of the exploration industry in the Russian Federation, as the financial strategy is part of the economic development strategy of any company, any industry and must be aligned with its goals and directions. At the same time, the financial strategy has a significant impact on the formation of the overall strategy. Competently chosen strategy allows any company, industry, regardless of the work area, to successfully carry out its activities, to maximize profits, update fixed assets, providing qualified training of staff and much more.

The financial strategy of the company is an economic category, which characterises various kinds of relations between market participants in the financial sphere. This economic category determines the model of the company's behavior in the market, as well as the formation of its market position in connection with the current state and use of financial resources of the company [1].

The main goal of financial activity is to increase the assets of the company. In order to achieve this goal, the company needs to maintain profitability, solvency and optimal structure of assets and liabilities of the balance sheet. In order to maintain stability, a company needs to have a flexible capital structure and organize efficient movements

to maintain solvency. Thus, the quality of financial management can be judged by a company's level of financial stability.

There are many definitions of financial strategy in a company. Let us consider some of them.

I.P. Hominich believes that financial strategy is a generalizing model of the company actions that are necessary for it to achieve its strategic objectives within the general framework of the company mission based on the formation, distribution, use and coordination of company financial resources [7].

D.V. Korepanov believes that financial strategy is understood as a system of company actions in the field of finance related to the development and achievement of the goals set for the company [5].

Ward C. and Grandy T. represent it in the following way: financial strategy is a process that brings the external sources of financial resources in line with the strategy of corporate formation, expansion and development [2].

Based on these definitions, we can say that a company's financial strategy is built on the analysis of different sides of the company's activities, which are presented in Picture 1

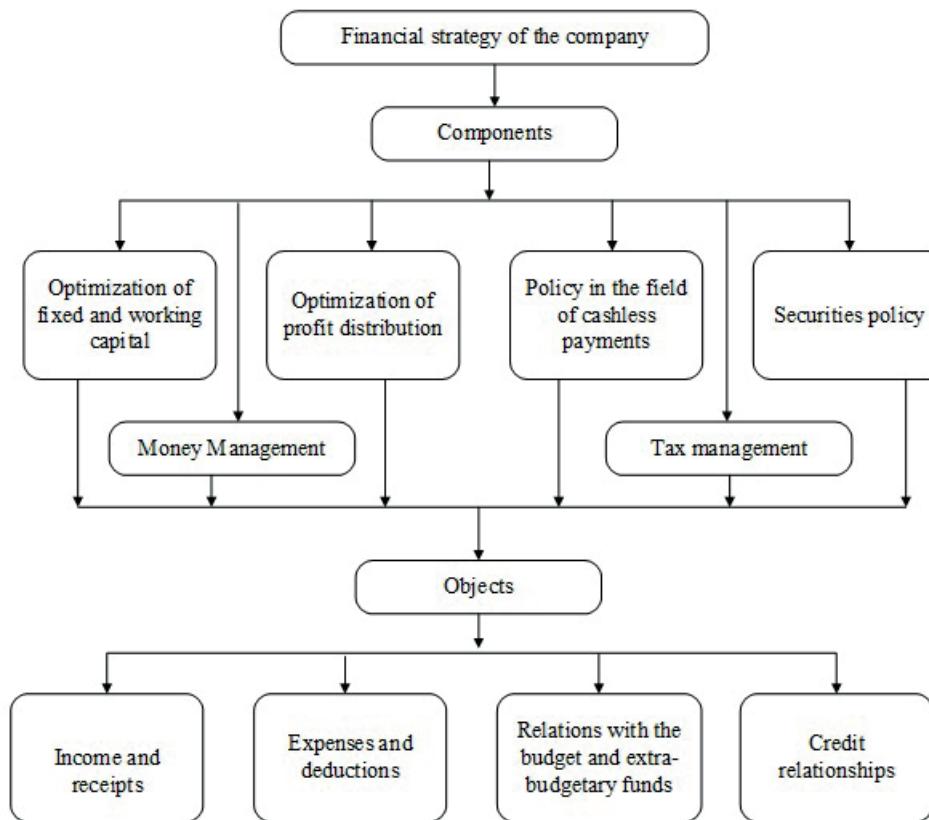


Fig. 1 Components and objects of the company's financial strategy

Having analyzed Figure 1, we can say that the financial strategy is a set of different actions of the company aimed at solving the tasks set for the company concerning various aspects of its activities. It covers all aspects of its activities, including optimization of fixed and working capital, profit distribution, non-cash payments, tax and price policy, and securities policy. These components determine the objects of the financial strategy—these are revenues and receipts of funds, expenses and deductions of funds, relationships with budget funds, credit relationships. In addition, the financial strategy provides the resolution of certain issues that are related to the self-determination of the organization as an independent entity, obtaining sufficient funds for the development and optimization of any business model of the company.

Comprehensively considering the financial capabilities of the company, objectively considering the nature of internal and external factors, the financial strategy ensures compliance with the financial and economic capabilities of the company, the conditions prevailing in the market of products or works. Otherwise, the company may go bankrupt.

There is a general financial strategy, an operational financial strategy and a strategy for the implementation of individual strategic tasks (achievement of specific strategic goals) [3].

The general financial strategy defines the company's activities (relations with budgets of all levels, the formation and use of the company's income, the need for financial resources and sources of their formation) for the year.

The operational financial strategy defines the strategy of the current maneuvering of financial resources (the strategy of controlling the expenditure of funds and the mobilization of internal reserves, which is especially important in modern conditions of economic instability), which is developed for a quarter, a month. It covers gross income and receipts of funds (settlements with customers for products sold, receipts from credit transactions, income from securities) and gross expenses (payments to suppliers, wages, repayment of obligations to budgets of all levels and banks), which allows you to foresee all upcoming turnover in the planned period for cash receipts and expenses.

The normal position is the equality of expenses and income or a small excess of income over expenses. The operational financial strategy is developed within the framework of the general financial strategy, detailing it in a specific period of time [4].

The strategy for achieving private goals consists in the competent execution of financial transactions aimed at ensuring the implementation of the main strategic goal.

The main strategic goal of finance is to provide the company with the necessary and sufficient financial resources [3].

The financial strategy of the enterprise in accordance with the main strategic goal provides:

- formation of financial resources and centralized strategic management of them;
- identification of critical areas and focus on their implementation of efforts, maneuverability in the use of reserves by the company's financial management;
- ranking and step-by-step problem solving;
- compliance of financial actions with the economic condition and material

capabilities of the company;

- objective accounting of the financial and economic situation and the real financial position of the company in the year, quarter, month;
- creation and preparation of strategic reserves;
- taking into account the economic and financial capabilities of the company and its competitors;
- identification of the main threat from competitors, mobilization of forces to eliminate it and skillful choice of financial action directions;
- maneuvering and the struggle for the initiative to achieve decisive superiority over the competition.

To achieve the main strategic goal, in accordance with the requirements of the market and the company's capabilities, the general financial strategy of the enterprise is developed, which defines the tasks of forming finances and distributes them by performers and areas of work.

At the same time, the objectives of the financial strategy are:

1. Study of the nature and regularities of the formation of the company's finances, taking into account the market conditions of management;
 2. Development of conditions for the preparation of possible options for the formation of the company's financial resources, as well as actions of the financial management in the event of an unstable or crisis financial condition of the company;
 3. Definition of financial relationships with suppliers and buyers, budgets of all levels, banks and other financial institutions;
 4. Identification of reserves and mobilization of the company's resources for the most efficient use of production capacities, fixed assets and working capital;
 5. Providing the company with financial resources necessary for its production and economic activities;
 6. Ensuring effective investment of temporarily available funds of the company in order to obtain maximum profit;
 7. Identification of ways to implement a successful financial strategy and strategic use of financial opportunities, new types of products and comprehensive training of the company's personnel for work, including in market conditions of management, their organizational structure and technical equipment;
 8. Study of financial strategies of potential competitors, their economic and financial capabilities, development and implementation of measures to ensure financial stability;
 9. Development of ways to prepare a way out of a crisis situation, as well as methods of managing the company's personnel in an unstable or crisis financial situation, and coordination of the efforts of the entire team to overcome it.
- Note that when developing a financial strategy special attention is paid to the completeness of identification of cash income, domestic resource mobilization, and the maximum reduction of the production cost, proper distribution and use of profit, determination of the needs for working capital, rational usage of the company capital. The financial strategy is developed taking into account the risk of non-payment, inflation

and other force majeure circumstances. It should correspond to production tasks and, if necessary, be adjusted and changed. Monitoring the implementation of the financial strategy involves checking the receipt of income, economical and rational use of them. With well-established financial control, internal reserves are quickly identified, the company's profitability increases, and cash savings increase.

In the financial strategy, the main characteristics of the company's financial condition are planned, such as solvency, creditworthiness, the degree of bankruptcy probability, as well as financial reporting indicators that determine the main characteristics of the company's financial condition, property, capital, and the resulting performance indicators – financial results. These characteristics are the objects of the company's financial planning. To achieve maximum effectiveness, a certain sequence of actions must be followed when developing a financial strategy.

The development of any company strategy, not only financial, begins with the preparatory period. The sequence of development of the enterprise financial strategy is shown in Figure 2.

One of the key points of which is the financial analysis of the company's activities for the previous planned period. It is performed according to the company's accounting statements for one period or several periods preceding the planned period. Based on the financial analysis results, a comprehensive assessment of the current financial condition of the company for the analyzed period is carried out.

Forecasting the external economic environment is an important stage in the development of a financial strategy. Probabilistic prediction of the behavior of the external economic environment is drawn up according to financial and marketing services and responsible for developing production plan of the enterprise and subject events, the occurrence of which is sufficiently large and, as a rule, does not depend on the company itself.

The company's long-term development program is used to develop the company's financial strategy in order to coordinate it with the company's overall development goals.

The expected income and expenditure of financial resources in the company is calculated based on the projected cash and non-cash flows of the company from ordinary, investment and financial activities.

The definition and formulation of financial planning goals is based on the main activity of the company and the tasks that the company's management sets for financial services, for example, it can be finding funds for expanding production or developing a new sales market.

The choice of the main criterion for improving the financial condition for the planned period is taken when establishing the main criterion for improving the financial condition of the company and determining the most significant indicators for it that characterize the main criterion for improving its financial condition.

Development, qualitative and quantitative evaluation of proposals for the formation of a financial strategy is based on the development of proposals for the objects and components of the financial strategy in several versions with a mandatory quantitative

assessment of proposals and an assessment of their impact on the company's accounting financial statements. Multivariate financial strategy due to the unpredictability of the real economic environment during the planned period and the desire of businesses to be ready for any probabilistic scenario.

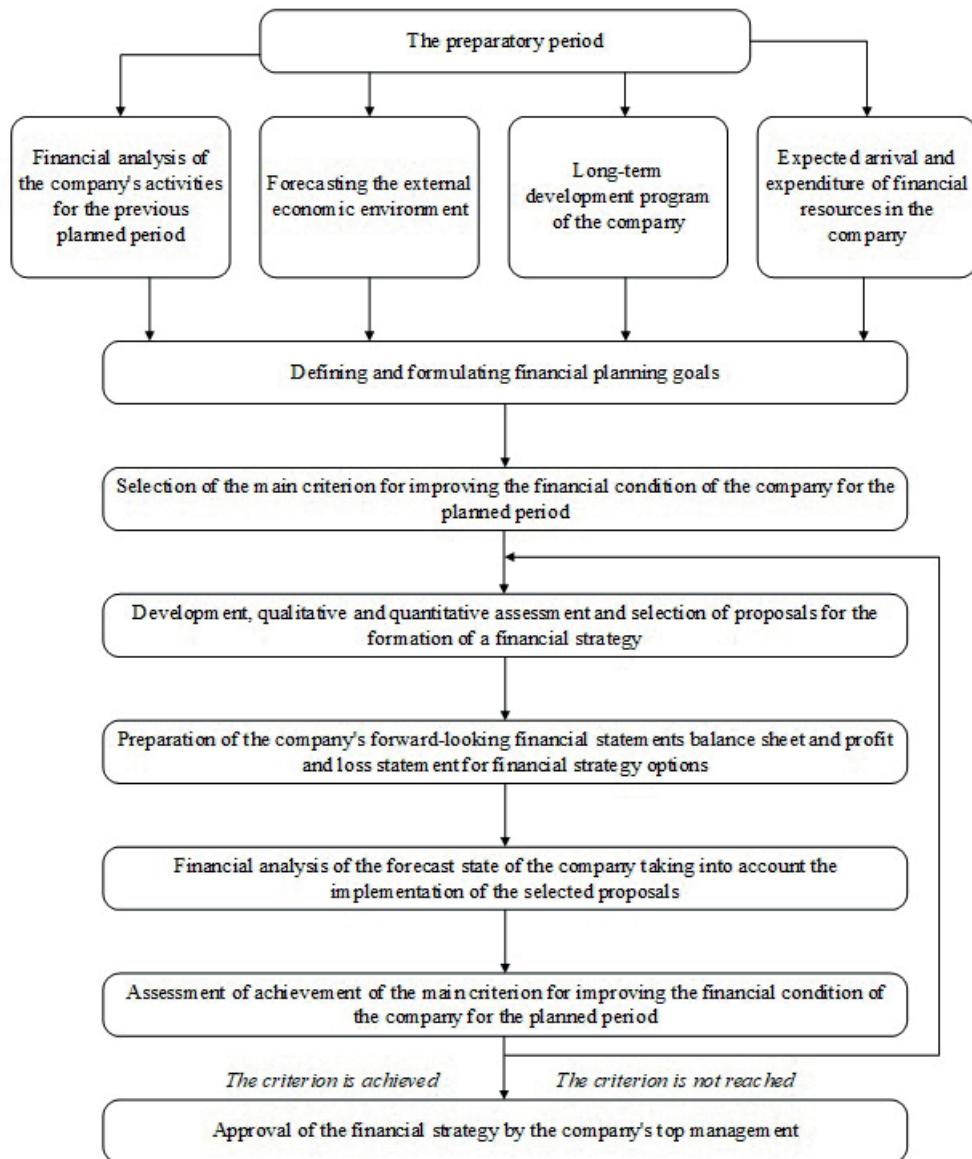


Fig. 2 The sequence of development of the financial strategy of the enterprise

The preparation of forward-looking financial statements for the company's financial strategy options is carried out on the basis of financial statements at the end of the study

period preceding the planned period. For each variant of the financial strategy, the forecast values of indicators are calculated on an article-by-article basis based on a quantitative assessment of the proposals and their impact on the structure of the company's balance sheet. As a result, there are as many variants of forecast accounting statements as there were developed variants of proposals.

Financial analysis of the forecast state of the company, taking into account the implementation of the selected proposals, is performed in order to verify the achievement of the criterion for improving the financial condition of the company. The analysis of the forecast financial condition of the company can be carried out in full or provide only calculation of indicators of the main criterion of improvement.

The assessment of the achievement of the main criterion for improving the financial condition of the company for the planned period is carried out based on the financial analysis results of the company forecast state, taking into account the implementation of the selected proposals for each option of the company's financial strategy. If the improvement criterion is not achieved for at least one of the financial strategy options, it is necessary to return to the stage of developing proposals for the formation of a financial strategy for this option and their qualitative and quantitative assessment. New proposals are developed, the forecast state is re-analyzed and the achievement of the main criterion for improving the financial condition of the enterprise for the planned period is evaluated, taking into account the implementation of new proposals.

Approval of the financial strategy by the company's top management takes place after the financial strategy options are developed, calculated and evaluated by the financial services, specific performers and deadlines for the implementation of proposals are specified.

Next, we will analyze the financial strategies of exploration companies in the Russian Federation.

Geology is a basic component of the economy, represents a collection of management structures, industrial and scientific organizations of all forms of ownership, ensuring the needs of the state and society in the sphere of geological studying of the Russian Federation, its continental shelf and the waters of inland seas, bottom of the World ocean, Arctic and Antarctic, reproduction of the mineral resource base of the country, monitoring and protection of mineral resources [8].

Approved by the decree of the Russian Federation Government of 21 June 2010 N 1039-p, the Strategy of geological industry development until 2030, takes into account the direction of change in the field of geological study, national and world mineral resource base, analysis of current state and defines the main directions of geological industry development in the conditions of globalization processes increase, increasing competition in international markets of mineral raw materials and services in the field of geological production.

If we talk about the current state of the geological industry, it should be noted that it ensures the mineral, energy and economic security of the Russian Federation, the implementation of its geopolitical interests, including in the world ocean, the arctic,

Antarctica and on the continental shelf of the Russian federation. At the same time, the geological industry is inextricably linked with the activities of industries engaged in the extraction, primary processing, transportation, and sale of mineral raw materials.

The mineral resource complex is the basis for the development of many branches of industrial production: metallurgy, chemical industry, mechanical engineering, energy, production of mineral fertilizers, construction industry and others.

Also, it is worth noting that the Russian Federation has a unique mineral resource potential, deposits and manifestations of almost all minerals have been discovered on its territory, being a world leader in natural gas reserves, it is among the top five countries in oil, coal, nickel, gold, and iron ore reserves.

The development of the mineral resource complex depends on many factors, such as the general state of the economy and changes in demand for mineral raw materials under the influence of scientific and technological progress, price conditions, political situation, tax conditions, and investment policy of the state. All this is no less significant for other spheres and sectors of the economy, but it is important to emphasize that the mineral resource complex cannot exist and develop successfully without a reliable mineral resource base [6].

The geological exploration industry is the most important component of the mineral resource complex, which ensures the creation and reproduction of the raw material base for the successful operation and long-term development of the extractive industries. An integral part of the management of subsurface use is the management of the geological study of subsurface resources. Based on this, the state policy in the field of mineral resources development should be aimed at increasing the investment attractiveness of this sector as a lack of attention to the problems of resource base reproduction can lead to deterioration of the situation in the industries of mineral complex, to damage the economic and energy security of Russia, its positions on the world stage as a country with strong mineral potential.

The development of the mineral resource base is possible if the growth rate of proven reserves exceeds the growth rate of production. In this regard, the reproduction of the mineral resource base is the main task of the exploration industry. The main method of strategic planning in the field of subsurface use is determined by program and target planning, which involves the development and implementation of strategies and target programs that provide for goals, tasks, organizational measures in the field of reproduction of the mineral resource base, deadlines for the implementation of measures, as well as the volume and sources of funding for geological exploration [6].

To increase the investment attractiveness of geological exploration and reproduction of the mineral resource base, it is necessary to improve the regulatory and legal support for subsurface use and introduce mechanisms for economic stimulation of geological exploration, reproduction of the mineral resource base and rational use of mineral resources.

It is necessary to specify the functions and responsibilities of the state sector of the geological industry, as well as to distinguish the contribution of the state and business

to the reproduction of the mineral resource base. Depending on the type of mineral resources, the area of exploration, and other factors, this boundary may shift in one direction or another [8].

At the same time, it is necessary to optimize the organizational structure of the geological industry. This is necessary to achieve the following goals:

- ensuring state control over the strategic sector of the economy;
- improving the efficiency of placement and execution of the state order in the field of geological exploration and reproduction of the mineral resource base;
- ensuring the optimal functioning of the state licensing system for the use of subsurface areas;
- ensuring better performance of work in the field of geological exploration and reproduction of the mineral resource base;
- improving the efficiency of management of the exploration companies property complex;
- creation of conditions for technical re-equipment of exploration companies in accordance with their specialization;
- formation of a single information space that consolidates information flows of various departmental affiliation related to the problems of public administration and investment in the field of geological exploration, reproduction and use of the mineral resource base;
- strengthening the personnel of companies specializing in types of work and minerals;
- creating conditions for the diversification of mineral resources for the country's economy by expanding the Russian presence in the international market of geological services.

In addition to optimizing the organizational structure of the geological industry, it is necessary to provide economic incentives for exploration. A number of measures are required for this purpose:

- the system of taxes and payments-justification of the introduction of differentiated tax rate on the extraction of minerals, development of mechanisms for the transition in the long term to the taxation of the natural resources extraction based on the results of the financial and economic activities of the organization (additional income tax), optimization of the mechanism for collecting export duties on mineral raw materials and;
- the mechanism for the provision of subsoil into use to stimulate mineral exploration companies and reduce their investment risks in the process of subsoil on sites of Federal importance in terms of improving the cost recovery principles of subsoil users, who discovered mineral deposits, further improving the procedure of calculating a single payment for subsoil use, improvement of calculation procedure and collection of other payments in the provision of subsoil use.
- optimization of subsurface users' costs – improvement of the mechanism of implementation of state order on the inclusion of provisions defining the features of the conditions formation trading in relation to order placement to conduct exploration,

development of enlarged norms of expenses for development of deposits in different regions of the Russian Federation, the adoption of provisions on the liquidation of the Fund, generated by oil production companies to Finance activities for conservation and liquidation of the enterprise, restore the natural environment and land reclamation and landscaping.

- promotion of rational use of mineral resources – development of measures aimed at stimulating the discoverers of mineral deposits, and further improvement of the institute of discovery in geological exploration.

Conclusions. The financial strategies of the exploration industry in the Russian Federation are closely linked to the ongoing state policy, with reforms in regulatory acts, tax breaks and in general world economic policy.

The development of the exploration industry not only in the Russian Federation, but also in any other country directly depends on the demand for mineral resources, on the support of the state, on the quality of geological exploration, and on the possibility of importing raw materials abroad.

It is worth noting that a very important condition for the reproduction of the country's mineral resource base is the financial support of geological exploration, namely, the search for sources of financing necessary for the work, the distribution of financial resources by region and types of mineral raw materials.

The state policy in the field of development of the geological exploration industry should be aimed at increasing the investment attractiveness of this area. As sources of attracting additional financial resources, it is advisable to consider venture financing, as well as the opportunities of the stock market.

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INNOVATIONS IN UKRAINE: PRIORITIES FOR FINANCIAL INSTRUMENTS' DEVELOPMENT

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Annotation. The article analyzes the problematic of innovative development. The essential characteristics of innovations, views of leading scientists on their role in ensuring positive economic dynamics are considered. Emphasis is made on the importance of financial innovations, their contradictory impact on financial relations at the modern stage. Classification approaches to financial innovations are considered. Possibilities of implementation of innovations at financial instruments' level in Ukraine are studied. In particular, the necessity to change approaches to legal regulation of domestic derivatives market in order to use its possibilities in innovation spread in Ukraine.

Key words: innovations, innovative economy, financial innovations, financial instruments, shares, bonds, derivatives.

Actual paradigm of economic development is based on the priority of innovative factors. Economically developed countries are actively increasing their leadership by innovation parameters, which strengthens their position in terms of global competitiveness. In Ukraine, there is a fundamentally different situation in which there is a long-term focus on "traditional" economy sectors. This fully applies to domestic financial household. In this context, it is not just a matter of various financial innovations, but rather a completely different approach, in which even the issue and circulation of shares and bonds is perceived by most potential issuers as something incomprehensible. All this significantly constrains the potential of domestic economy development, requires the unconditional implementation of innovative scenario for further development.

Analysis of recent research and publications. The issue of financial innovations, in particular, their characteristics, spread and impact on economy's functioning was considered in the works of G. Azarenkova, E. Volkovskiy, O. Koshcheev, I. Luty, V. Mishchenko, O. Mozgoviy, V. Oparin, E. Osadchy, O. Parandiy, O. Sokhatska, L. Fedulova and many other scientists. At the same time, financial innovations' development in Ukraine leaves too many doubts about innovation potential of domestic financial sector. Thus, it actualizes further researches in this direction.

Research Results. In general, problematic of innovations and financial innovations is widely represented in professional literature. We focus on the most common positions concerning innovations in financial relations. First of all, let's consider the position concerning the concept of "innovation" in economy.

In the most popular international document concerning interpretation of

innovations, they are defined as following: "...Establishment to usage of any new or significantly improved product (good or service) or process, new marketing method or new organizational method in business practice, organization of workplaces or in external relations" [1]. As we can see, in this approach, something fundamentally new is considered as an innovation - a product, a good, a service, a process, etc. At the same time, it is pointed out that another feature of innovation is the possibility of its usage in the production of goods and services. We should note that this position largely resonates with such feature of knowledge as an economic resource as initiative - that is, both knowledge and innovation depend on the will of the person who owns and can use them.

From the point of obtained results the domestic scientist P. Khariv considers the essence of innovations: "... innovation is the result of activity, reflected in the form of scientific, technical, organizational or socio-economic novelties which can be received at any stage of innovation process" [2].

The classic scientific approach to the characteristics of innovations is the position of J. Schumpeter, who attributed to key innovations: new products, new production methods, new markets, new sources of raw materials, new organizations [3]

Quite often in the professional literature the definition of innovation given by B. Santo is used: "...it is social technical and economic process, which through the practical use of ideas and inventions leads to the creation of the best, by their properties, products, technologies or to profit maximization" [4] . In this position, the author emphasizes that innovation: firstly, has a social character; secondly, it is a practical use of idea (direct connection with knowledge); thirdly, the material embodiment of innovation can be not only a product or manufacture, but also a specific monetary expression - profit.

Finally, we give a definition that is fixed in the Law of Ukraine "On Innovation Activity": "Activities aimed at using and commercializing of results of research and development and leads to the release of new competitive goods and services" [5].

Analysis of given and other scientific positions gives the chance to characterize innovations as: any new product, goods service, institution; process of implementation of new product, good or process; commercialization of ideas for new products and good, etc.; finally, the improvement of certain goods and products. The objective connection at the level of "idea - innovation" determines the role of knowledge in the innovation process at the level of particular organization and in the economy as a whole. As will be shown below, in general, the analysis of the concept "financial innovation" uses a largely similar approach, but quite often the definition "financial innovation" is considered more detailed.

In the work of D. Kokurin, the concept of financial innovation is considered as following: "realized in the form of new product or operation, final result of innovation in the financial sector [6]. From our point of view, such approach to the essence of financial innovation leaves more questions than answers. First of all, there is the problem of identifying of "product" in question - whether it is a financial instrument or financial service, or perhaps a fundamentally new financial institution (based on the fact that classical theory of innovation considers new organization as a possible type of

innovation).

Other experts, considering the essence of financial innovations, actually determine them in the context of innovation theory, without giving features of "financiality". Thus, in the work of R. Napoli concerning financial innovation, the following is noted:

- 1) innovation of a product or service and/or significant improvements of their characteristics;
- 2) new or significant improvements in methods, processes, equipment or skills;
- 3) significant improvement of product characteristics (or service), methods, equipment or skills that were used previously [7, p. 216].

In our opinion, the idea of analyzing financial innovations only in the context of innovations, without analyzing "financial" features is essential, because financial innovations are one of the innovations in general. However, as has been repeatedly noted, the financial sector is the most adapted to implementation and promotion of innovation. In addition, the results of financial innovations are used by extremely wide range of economic agents. In fact, it can be concluded that ability to innovate and inclusive character of financial innovations determine the necessity for their specificity in comparison to other innovations.

In the work of N. Panteleeva there is the following definition: "result of creative search for a new approach to solving the problem in financial sector, which is realized through creation and diffusion of new financial products, services, tools, technologies, processes and organizational forms, providing financial stability and competitiveness in conditions of variability, uncertainty and information asymmetry of economic environment" [8, p. 28].

What are the advantages of N. Panteleeva approach to the essence of financial innovations? Firstly, the author clearly outlines the results of innovation process in the financial sector - new products, services, financial instruments, processes, etc .. Secondly, the close connection between knowledge and innovation process is highlighted. Thirdly, the goals of the use of innovations are indicated – providing the effectiveness of management at business entity level, overcoming the uncertainty of environment and information asymmetry.

At the same time, N. Panteleeva connects implementation of innovations exclusively with the solution of certain problems in financial sector. It is this aspect, which causes the biggest controversy in the scientific community. Criticism of the modern stage of financial household development is largely based on justified thesis about the problems of widening the "gap" between financial institutions and other economic agents. As a result, some innovations are forming that are aimed at meeting interests of limited number of people and they in no way are related to society's necessity for innovation. Moreover, such innovations quite often even harm public interests, rather than solve them. In this regard, we present the position of the well-known domestic specialist O. Sokhatska, who in accordance with the client-oriented approach identified six types of innovations:

- firstly, by scope - regulatory, tax, accounting;

- secondly, she identified new - competitive, religious and innovations of ignorance [9].

Famous domestic specialist O. Mozgovyi attributes to financial innovations creation of new financial instruments and financial technologies with the aim of obtaining profit and reducing risk level [10]. Despite its brevity, this approach points to the key features of financial innovations - their instrumental and technological essence, target direction, obtaining profit and risk management.

It is because of its brevity the following position on financial innovations deserves attention: "Financial innovations are changes in financial institutions and instruments" [1]. That is, there are two types of financial innovation at the level of institutions (in the sense of institutions) and at the level of financial instruments.

Today in the professional literature there is a significant number of classification approaches to financial innovations, which is another evidence of the financial environment attractiveness for innovative development. Here is the following detailed division of financial innovations by their direction (Table 1).

Table 1

Taxonomy of financial innovations

Providing the development and implementation of assistance innovations	significant increase of investments volume and/or redistribution of risks, creation and provision of new infrastructure, promoting of investment (or trade) of new products and services
Providing of development and spread	growth of innovations, distribution of products, promotion of state funding in a certain environment or in certain emergency conditions, ability to actively sell products
Modernization of financial services	integration of existing technologies, development of new organizational forms and client-oriented services, implementation of new financial instruments and methods
Attracting of investment resources and redistribution of risks	attracting of small investors, facilitating redistribution and stimulating risk-taking
Refinancing of liabilities or mobilizing assets	liabilities restructuring, asset purchase, rent acquisition and mobilization
Doubtful innovations	use of legislation imperfections, use of information asymmetry, construction of various financial schemes

Source: adapted by author on the basis of [12].

In turn, the famous researcher R. Merton proposed other classification of innovations [13, p. 5]. In his position, he emphasized on the allocation of innovations in accordance with the purposes of their use: management of financial resources movement in 'time and space; providing a mechanism for consolidating financial resources; financial risk management; obtaining information necessary for decision-making and avoiding information asymmetry; minimization of moral hazard and dishonest behavior of individual entities; making payments through settlement and payment systems.

From our point of view, the role of knowledge in innovation component of the

modern economy as a whole and functioning of institutional financial infrastructure can be expressed in terms of the innovation process components. The analysis of special literature [14-16] showed that in the vast majority of cases, scientists emphasize that the starting point of innovation is the idea - both individual and collective. In this regard, there is a connection between the knowledge economy and the innovation process, between knowledge as an economic resource and innovation as a factor of economic development, and finally, between innovation and knowledge at the level of institutional financial infrastructure.

What is the aim of financial innovation? At first glance, this question is quite trivial. In particular, in some works on the purpose of financial innovation we can find: "the force that drives global financial system to its aim of increasing economic efficiency" [17, p. 463]. That is, the key aim of using financial innovations is to increase the efficiency of the global financial system. However, as was already noted, now among scientists, under the influence of processes, taking place in the global financial environment formed an ambiguous attitude to financial innovation. Along with significant advantages arising from their introduction, there are significant threats, primarily in terms of financial environment stability and economy stability as a whole. However, according to some reputable experts, almost all of economic growth that has occurred since 1980 is related to innovation [18].

The current state of affairs in the domestic securities market by many parameters does not suit either its participants or society. Numerous scientific papers [19-20] testify the existence of a number of complex problems related to a wide range of relations in securities market. Today, the key deformations are:

- absence of interest at the corporate sector level concerning the issuance and circulation of securities on the market. In fact, public equity issues practically are not used, and trends in the primary corporate bond market are extremely volatile;
- insufficient potential of financial intermediaries, who have practically lost their leading positions in terms of transformation of savings into investment resources;
- significant number of manipulative agreements, which in no way relate to the circulation of capital in the economy, but are aimed at providing various schemes for "minimizing" tax payments, etc .;
- weakness of infrastructure component of domestic securities market;
- incomplete instrumental structure of securities market, in which is dominated by domestic government bonds, and other financial instruments are significantly inferior to them in terms of quantitative parameters of issue and circulation.

Conclusion concerning the shortcomings of instrumental structure of securities market in Ukraine fully applies to such an important segment as derivatives market [21]. In fact, today we can be arguably affirm that Ukrainian derivatives market is in its infancy. Such situation not only has destructive effect on the securities market in general, it also significantly hinders the development of risk management systems used by domestic businesses (Fig. 1).

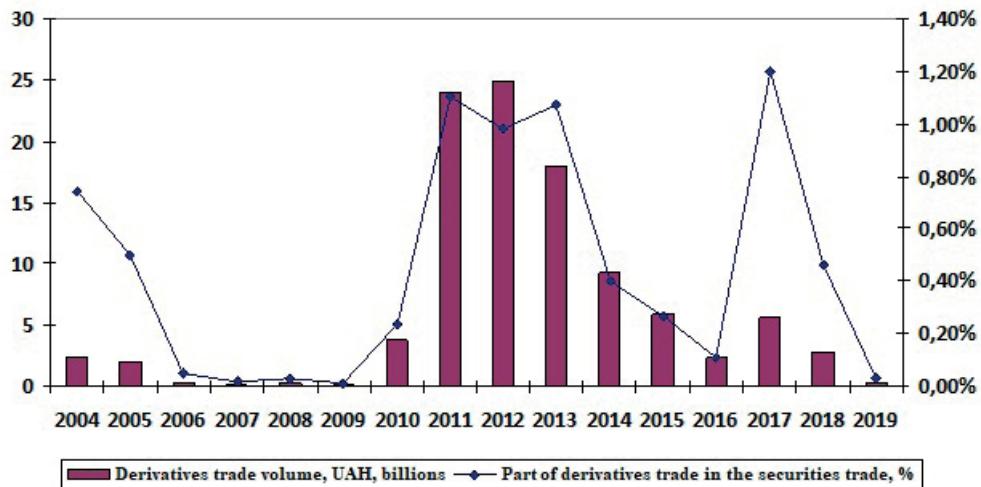


Fig. 1. Indicators of development of the derivatives market in Ukraine in 2004–2019

Source: complied by author by NSSMC data [22].

Not least, the weak development of derivatives market is conditioned by numerous gaps in the regulatory framework of their issuance and circulation. For many years, there has been a debate about the necessity for specialized legislation in this area, which, since 2000, has even led to periodic emergence of project legislation. It is obvious that at the state level, in expert and scientific environment, there is an understanding of necessity to improve the regulatory framework, because today it is extremely fragmentary. However, every time another project of specialized law appears, obstacles arise in parallel, which finally nullify the efforts of the initiators of change. Thus, additional obstacles are created for the modernization of derivative securities domestic market, which determines its modern state.

Let's pay attention to the fact that long-term delays in the formation of regulatory framework for derivatives in Ukraine in general characterize the attitude of the state to financial market problems, but in no way justify it. Only a balanced approach of the regulatory state can be a real incentive for the rapid development of Ukrainian derivatives market.

Conclusions. Ukraine's further progress towards economic reforms should take into account global trends, a notable feature of which is inclusive innovation. Under the influence of a number of factors, the innovation model in its wide sense has not yet been implemented in Ukraine. Among other things, it is manifested at the level of financial sector and financial instruments. In particular, the rapid development of innovations in derivatives market will significantly increase the potential of domestic financial market, expand the tools of risk management for business.

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UKRAINIAN BANKING SYSTEM: FUNCTIONING FEATURES AND REALITY

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Annotation. The article deals with studying the models of forming the banking system in the transformation conditions. The authors compare the banking system of Ukraine to the banking system of Germany. The article elaborates on the urgent problems of factors restraining the development of the domestic banking sector. The authors of the article suggest a range of measures aimed at the general economic stabilization and returning the trust to the banking sector.

Key words: banking system, banking sector, models of banking system formation.

Nowadays, the world is on the stage of global transformations that include various areas of the social and economic life of inhabitant from different countries the results of which inevitably affect the financial system of various levels that is evident from the crisis phenomena and the enhancement of the level of the social tension in the society. All these destructive factors negatively influence the economic stability in the state and the level of the prosperity of its citizens.

The banking sector is the most prone to transformational changes and the impact of external and internal shocks. Therefore, at the present stage of development, the banking sector is undergoing significant structural changes and changes in approaches in the organization of their business processes. Customers' expectations, technological changes, tightening of regulatory requirements, crisis phenomena in the real economy sector together create the imperative of transformations in the banking system.

Thus, the banking system of Ukraine is a key part of the country's financial system, an important element of the economic mechanism.

The establishment of the banking system in Ukraine began with the declaration of independence in 1991. Legislative framework was born that made it possible to develop banking activities in Ukraine. The Law of Ukraine "On Banks and Banking" adopted in 1991 defined the legal bases of banks, the establishing procedure and the basic principles of their activity [15].

On September 18, 1991, the Cabinet of Ministers of Ukraine adopted the resolution "On creating facilities for the production of national currency and securities", according to which a directorate for the construction of necessary facilities was created [15].

All responsibility for organizing the work of making its own national money was entrusted with the National Bank of Ukraine.

The theoretical and methodological bases of the study are the fundamental principles of modern economic theory and scientific works of scientists. The following methods were used in the study. Methods of theoretical generalization, analysis and synthesis, induction and deduction are used to generalize theoretical and methodological approaches to the question concerning the study of the model of formation of the banking system in the conditions of transformation. Methods of logical-structural analysis, generalization, decomposition and formalization are used to study the state of the banking system in modern business conditions and develop practical recommendations for the application of these methods.

The model of forming the banking system in the transformation conditions. With the transition to market principles, Ukrainian banks have transformed from highly specialized to universal commercial financial institutions. It has led to the expansion of the range of services, the improvement of banking technologies and the customer service quality [8, 9].

By its structure, the banking system of Ukraine (Figure 1) is similar to the structure of the German banking sector, which is considered one of the strongest and most stable in the world, since the level of overdue loans in this country does not exceed the two percent threshold that is less only in the USA and Japan [11].

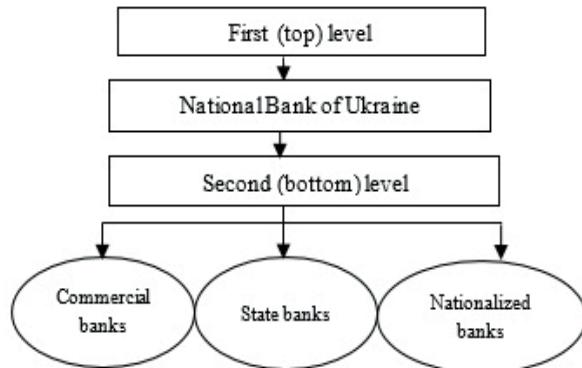


Fig. 1. Ukrainian bank system

Source: compiled by the authors according to [5, 10]

The German banking system, like in many other developed countries, is characterized by a two-level structure (Figure 2). The top level is occupied by the Bundesbank, the central bank of Germany, which main task is to implement the country's monetary policy, control over its financial system and the implementation of the monetary policy.

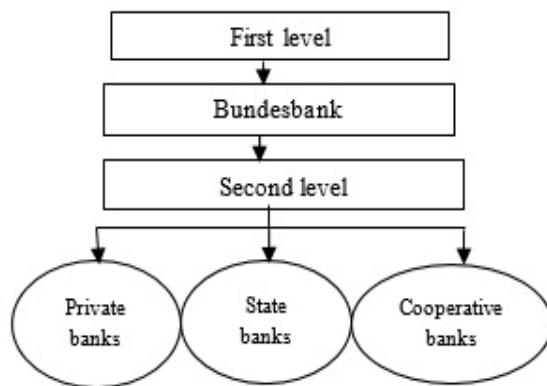


Fig. 2. German bank system
Source: compiled by the authors according to [2, 7]

According to [3], more than 36,000 banks (their branches and affiliates) were registered in Germany at the beginning of 2016.

The authors analyse the banking system of Germany and summarize the following features:

- the German bank sector is divided into two parts: private, state, cooperative;
- the main state bank, the role of which is played by the German Federal Bank, or the Bundesbank, as well as several state-owned banks with special functions, mainly savings and loan;
- state-owned banks play an important role in the country's banking sector;
- tight regulation of the activities of the credit and other financial institutions;
- the most stringent reporting requirements, restrictions on the rights of business owners;
- BaFin, a unified authority over all types of financial services;
- consolidation of the second-level banks into unions and associations (e.g. Deutscher Sparkassen-und Giroverband eV Savings Bank Union)

Despite the development and significant changes in the qualitative and quantitative context of the banking system, its functioning as a market-type system is in the development process. This fact alone indicates the need for further improvement. The substantiation and efficiency of the banking system depends on the mechanism of its functioning (Figure 3).

Maintaining the current conditions of the banking system development and pursuing constantly the improvement policy are possible only in the strategic management system.

The tendency to increase the role of strategy, strategic approaches and methods of strategic business management in the context of ensuring their competitive advantages has appeared in the activity of banks. The need for strategic management is becoming imminent, mainly when the new goals that cannot be achieved within the current strategy are emerging.

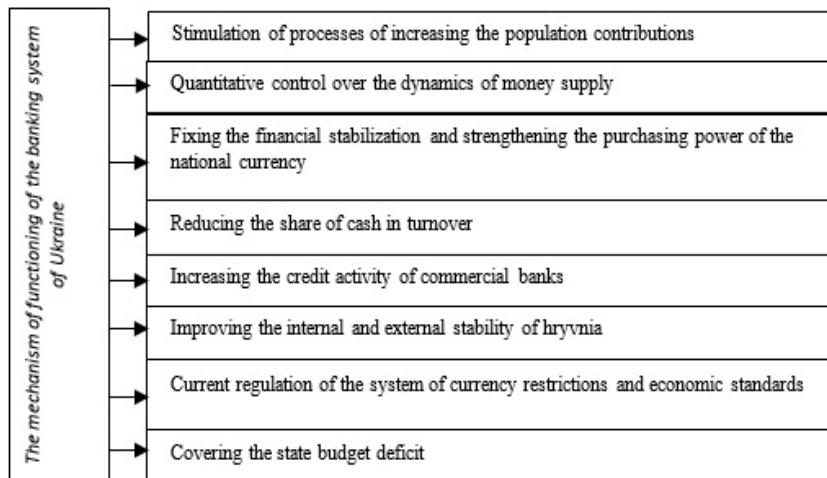


Fig. 3. Functioning of the banking system of Ukraine
Source: compiled by the authors according to [8, 10, 15]

The reasons for this are the fact that it is often difficult for banks, in the face of rapid changes that they have not encountered before, to determine which line of business needs improvement and reform, and what is the best way to do it. Therefore, each bank should make its own strategic choices, considering both its capabilities and risks, as well as ensuring its effective management and minimizing the costs associated with changing management strategies.

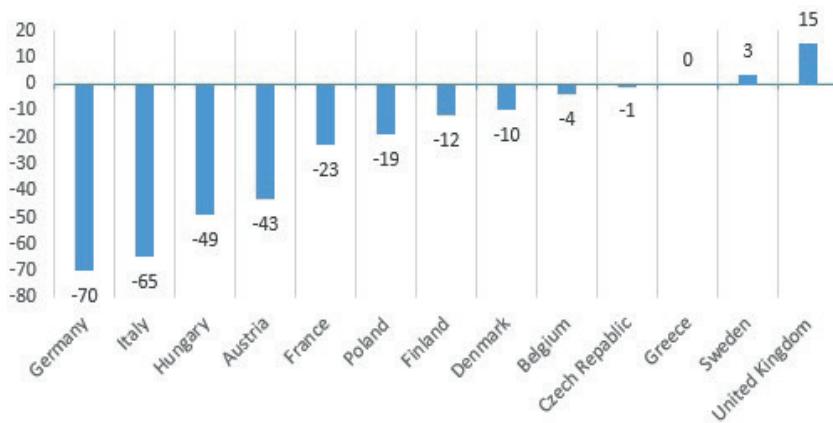
Thus, the authors consider the content of the basic theories of the banking structure, its management and functioning, which help economists, bankers and entrepreneurs to understand better the system of banking activities, as well as how to regulate, develop and control the purposeful actions of the bank management. These theories do not always correspond to reality, but it makes it possible to understand the realities facing global business. The combination of theories is used in the practice of banking to obtain the best result.

The state of the banking system in current economic conditions. Considering the current state of the Ukrainian banking system, it should be noted that political and military instability, significant inflation and general economic instability have negatively affected the banking sector and the performance of banks operating in Ukraine. Another important factor characterizing the current state of the banking system is the active involvement of the NBU in the functioning of the banking system.

According to the National Bank of Ukraine [12], 82 commercial banks operated in Ukraine as of August 1, 2018. Their number has not changed since the beginning of 2018. Two of them obtained the NBU's consent to abandon banking and transform into financial companies. Another two banks have agreed with NBU to join other banks. After realizing these intentions, the number of banks in Ukraine will be reduced to 78.

Although there were 180 commercial banks operating in Ukraine in 2014.

There is also a decline in the number of banking institutions in the European Union, and the number of credit institutions in the EFTA has decreased from 413 to 410 in 2017 [2]. Germany experienced the largest decline in the number of banks in 2017 among other EU countries (Graph 1). The number of banks in Germany has decreased by 52% compared to 1995. Bank consolidation in Germany [7].



Graph 1 – Changes in the number of banking institutions in the European Union in 2017

Source: compiled by the authors according to [1, 2]

On the one hand, there was a situation where the transparency of the banking system was positively affected by the liquidation of insolvent banks and banks that violated Ukrainian law. On the other hand, such a situation could adversely affect the terms of the banking products and lead to the deterioration of the competitive environment in the banking sector.

Dynamics of change in the number of banks for the period 2014-2018 is shown in Table 1 according to which it can be concluded that the number of banks has decreased significantly in recent years.

Table 1
**The number of existing banks and banks with foreign capital for the period
2014-2018**

Indicator	2014	2015	2016	2017	2018
Number of active banks	180	163	117	96	82
With foreign capital	49	51	41	38	38
With 100% of foreign capital	19	19	17	17	18

Source: compiled by the authors according to [13, 14]

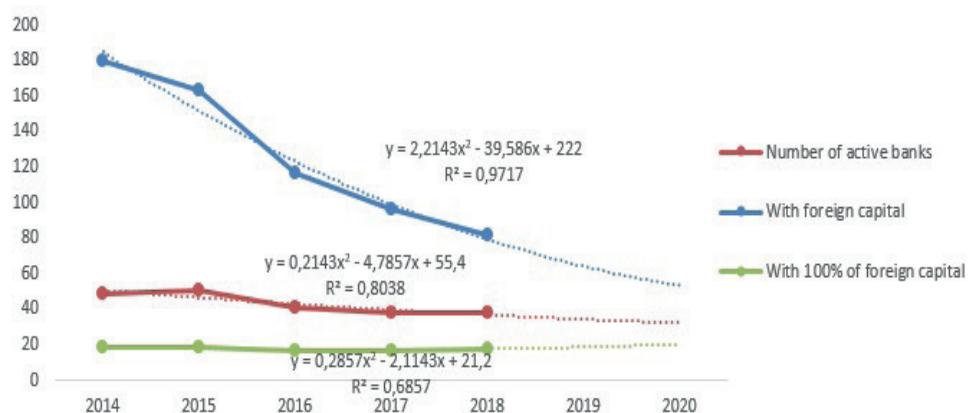
As we can see from Table 1, number of existing banks for the period 2014 - 2018 decreased from 180 units at the beginning of 2014 to 82 units at the beginning of 2018.

The banks with foreign capital also experienced reductions despite a slight increase at the beginning of 2015: the number of banks was 49 at the beginning of 2014, and it dropped to 38 at the beginning of 2018. However, it should be noted that their share in the structure of banks has almost doubled in the period of 2014-2018: 27.22% in 2014 to 46.34% in 2018.

Based on the existing statistics, it is advisable to make an estimate of the number of banks in Ukraine based on data for the period 2014-2018 (Graph 2).

Using the polynomial function with the value of approximation reliability $R^2 = 0.97$ (for the total number of banks), $R^2 = 0.80$ (for the banks with foreign capital participation), $R^2 = 0.68$ (for the banks with 100% of foreign capital) the following results are obtained.

As can be seen from Graph 2, there will be a significant decrease in the total number of banks against the backdrop of an almost constant number of banks with foreign capital in 2019 and 2020. This fact proves the significant changes in the domestic bank system. Similarly, the decrease of the number of banks occurs in European countries (Graph 1).



Graph 2 – Forecast of the number of banks in Ukraine for 2019-2020

Source: compiled by the authors according to [5, 13, 14]

It is worth emphasising that the assets of the system banks in Ukraine are increasing while the number of banks is decreasing that allows concluding there is the increase of their capacity and stability. When comparing the Ukrainian banking system with the German one, it should be noted that the German banking system consists of almost 1,800 banks, which include 200 private banks, 400 state-owned banks and 1100 corporate banks [4].

Table 2 shows competitive positions of the leading banks of Ukraine and Germany.

According to Table 2, it can be concluded that as of 2018, Privatbank took the top position in terms of assets and financial results, but Oschadbank was the leader in terms of loan portfolio. In particular, the German banking system is stable due to the stable economy, low unemployment, which enable banks to maintain stable financing, both

from the state and from the citizens.

Table 2
Competitive positions of the leading banks of Ukraine and Germany on key performance indicators

No.	Ukrainian bank assessment criteria				
	Assets	Million UAH	Loan portfolio	Million UAH	Financial result
1	Privatbank	475,977.78	Oshchadbank	71,958.72	Privatbank
2	Oshchadbank	297,746.56	Ukreksimbank	60,918.07	Raiffeisen Bank Aval
3	Ukreksimbank	229,926.84	Privatbank	41,566.65	OTP Bank
4	Ukrgasbank	85,078.13	Raiffeisen Bank Aval	38,577.23	UKRSIBBANK
5	Raiffeisen Bank Aval	77,303.17	Ukrgasbank	30,911.06	PUMB
6	Sberbank	64,961.25	Sberbank	29,906.48	Credit Agricole
7	PUMB	58,580.72	Alfa-Bank	27,345.24	Citybank Ukraine
8	Alfa-Bank	58,135.29	PUMB	24,516.37	Ukreksimbank
9	Ukrotsbank	54,630.71	UKRSIBBANK	20,178.10	Alfa-Bank
10	UKRSIBBANK	52,982.80	Credit Agricole	19,443.25	ProCredit bank
Bank assessment criteria					
	Assets	US doll.	Financial result	US doll.	
1	Deutsche Bank	1.88 trillion	Deutsche Bank	35.4 billiard	
2	UniCredit Bank AG	938 billiard	Commerzbank	1 5 . 9 4 billiard	
3	DZ Bank	600 billiard	DZ Bank	7.2 billiard	
4	KFW Bankgruppe	598 billiard	UniCredit Bank AG	6.3 billiard	
5	Commerzbank	513.07 billiard	Landesbank Baden-Württemberg	3.1 billiard	
6	Landesbank Baden-Württemberg	287 billiard	Norddeutsche Landesbank	2.3 billiard	
7	Bayerische Landesbank	250 billiard	KFW Bankgruppe	2.2 billiard	
8	Norddeutsche Landesbank	205 billiard	Bayerische Landesbank	1.6 billiard	
9	Landesbank Hessen-Thüringen (Helaba)	193 billiard	Landesbank Hessen-Thüringen (Helaba)	636 million	
10	NRW Bank	167 billiard	NRW Bank	263 million	

Source: compiled by the authors according to [4, 5, 13, 14]

The financial results of the bank activities of Ukraine for the period 2014-2018 are presented in Table 3.

Table 3
**Income and expenses of the banks of Ukraine for the period of
2014-2018, UAH million**

Indicator	2014	2015	2016	2017	2018	Deviation 2014- 2018, UAH	Deviation 2014-2018, %
Income:	210,201	199,193	190,691	178,054	180,433	-29,768	-14.16
Interest income	151,257	135,145	135,807	124,009	126,334	-24,923	-16.48
commission income	28,276	28,414	31,362	37,138	46,223	17,947	63.47
the result from revaluation and from sale and purchase operations	15,511	21,490	8,243	7,224	-1,524	-17,035	-109.83
other operational income	10,093	9,567	9,605	7,264	7,298	-2,795	-27.69
other income	2,165	2,729	3,946	1,349	1,582	-583	-26.93
return of the written off assets	2,899	1,848	1,728	1,070	520	-2,379	-82.06
Expenses:	263,167	265,793	350,078	204,545	160,441	-102,726	-39.03
percentage expenses	97,171	96,079	91,638	70,971	61,882	-35,289	-36.32
commission expenses	4,889	5,846	7,182	9,650	11,910	7,021	143.61
other operational expenses	15,579	12,991	10,920	11,719	12,031	-3,548	-22.77
total administrative expenses	44,614	36,742	39,356	44,202	47,058	2,444	5.48
other expenses			3,089	15,116	1,466	-1,623	-52.54
provisioning into reserves	103,297	114,541	198,310	49,206	21,705	-81,592	-78.99
income tax	-2,383	-406	-418	3,681	4,388	6,771	284.14
Net profit (loss)	-52,966	-66,600	-159,388	-26,491	19,992	72,958	-

Source: compiled by the authors according to [4, 5, 13, 14]

As we can see from Table 3, bank income decreased by UAH 29,768 million in the period of 2014-2018, which is -14.16% in relative terms. This decrease was the result of the fall in interest income by UAH 24,923 million (-16.48%), increase in commission income by UAH 17,947 million (53.81%), UAH 17,497 million (438.19%) and other operating income by UAH 3,841 million (63.47%).

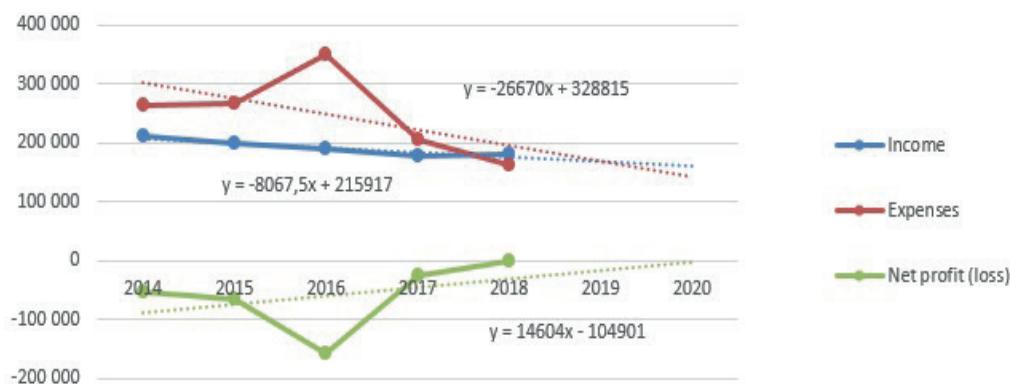
Bank expenditures for the period of 2014-2018 decreased by UAH 102,726 million (which was -39.03% in relative terms). This decrease in total expenses was due to the decrease in interest expenses of UAH 35,289 million (-36.32%), an increase in commission expenses is by UAH 7,021 million (143.61%), total administrative expenses – by UAH 2,444 million (5.48%), decrease of provisioning in reserves – by UAH 81,592 million (-78.99%).

There is also a decrease in other operating expenses by UAH 3,548 million (-22.77%), an increase in income tax by UAH 6,771 million.

As shown in the above analysis of indicators for the period under review, bank income exceeded their expenses only in 2018. In other years, the following losses were observed: UAH 52,966 million in 2014, UAH 66,600 million in 2015, UAH 159,387 million in 2016 and UAH 26,491 million in 2017. Thus, for the period under review, the amount of the net profit increased by 72,958 million.

Further, it is advisable to make a forecast of the income and expenses of Ukrainian banks for 2019-2020 based on the data for the previous four years (Graph 3).

Using the linear trend smoothing, the following results are obtained. As can be seen from Graph 3 in 2019 and 2020, there is a gradual increase in income due to the decrease in expenses against a background of declining income. Therefore, a more detailed analysis is required to find out due to what kind of indicators these changes have taken place.

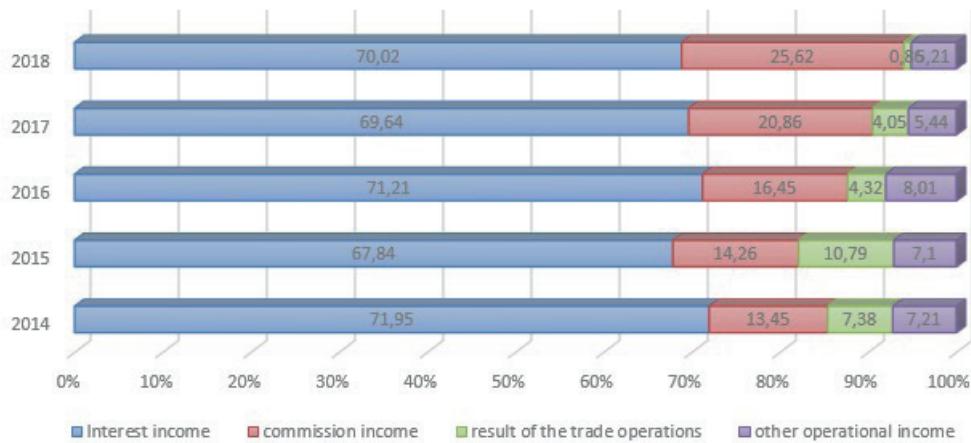


Graph 3 – Income and expenditure forecast for the banks of Ukraine for 2019-2020

Source: compiled by the authors according to [13, 14]

Unlike the banking system of Ukraine, EU banks hold strong positions in terms of income, as evidenced by the growth of banks' capital in 2017 by 13.8% compared to 2016 and doubled compared to 2011 [2].

Interest income has traditionally been dominated, in the structure of Ukrainian banks' income (Graph 4), but its share has declined substantially: from 76.9% in 2014 to 69.6% in 2018. Instead, commission income has become more significant: growth from 14.8% in 2014 to 20.9% in 2018 and trading income from 2.0% in 2014 to 4.1% in 2018.



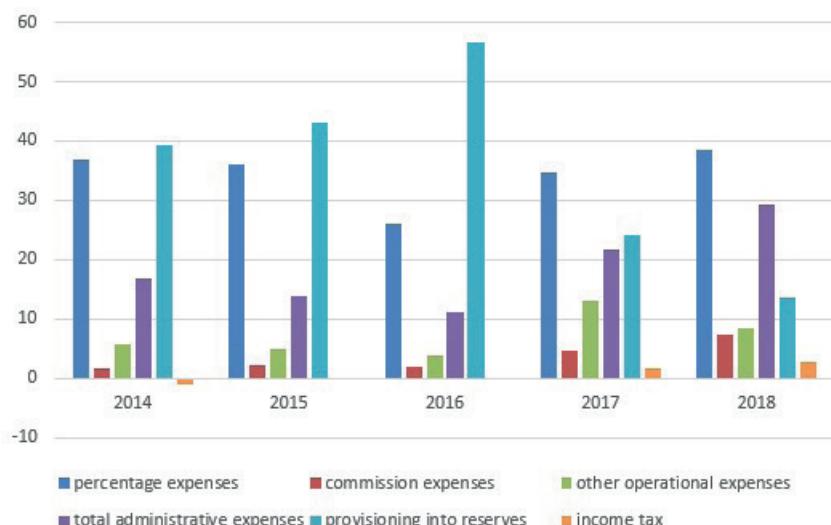
Graph 4 – The structure of income of Ukrainian banks in 2014-2018, %

Source: compiled by the authors according to [10, 13, 14]

As can also be seen from Graph 4, the share of other operating income also increased, although slightly from 3% to 4.1%.

The structure of expenses of the banks of Ukraine in the period of 2014-2018 was more diverse (Graph 5).

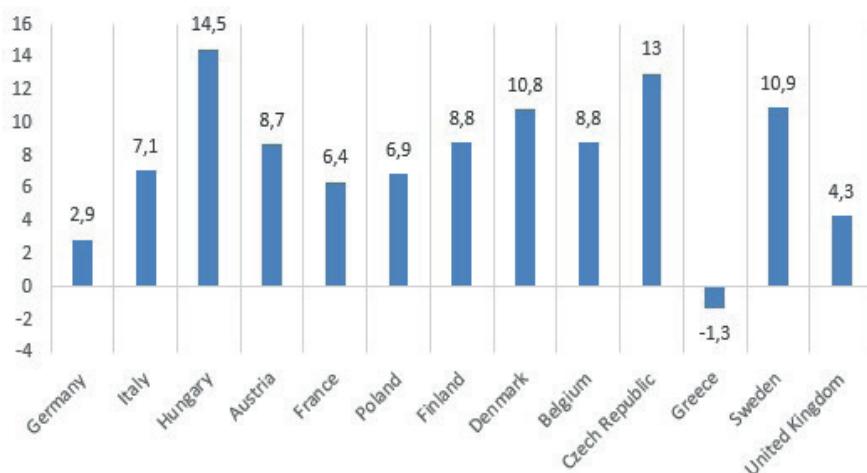
Interest expenses accounted for the largest share of costs, and their minimum value (36.1%) was observed in 2016 and the maximum (48.3 %) – in 2014. In general, banks spend their expenditures according to the situation and in accordance with the requirements of the time without thorough and long-term planning.



Graph 5 – The structure of expenses of Ukrainian banks in 2014-2018, %

Source: compiled by the authors according to [10, 13, 14]

The performance of the banking system in European countries is determined by the Return on Equity (ROE) and is the key indicator for slowly declining the attractiveness of the banking sector to investors. ROE of the European banks was 5.6% in 2017 and has been the highest since 2007 [2] (Graph 6).



Graph 6 – The Return on Equity (ROE) of the European banks in 2017

Source: compiled by the authors according to [1, 2]

As can be seen from Graph 6, in the largest EU countries in 2017 ROE was 8.8% in the Netherlands, 7.1% in Italy, 7.0% in Spain, 6.4% in France, 4.3% in the UK and 2.9% in Germany.

Despite the slight increase in return on equity, the German banking system remains stable. Low interest rates and overall favourable financing conditions for Germany helped boost lending to companies and individuals to EUR 886 billion in 2017, that is 3.7% more comparing to the previous year. In connection with the transition of Germany to the implementation of the new EU Sustainable Financing Plan, banks have recently launched a number of initiatives to promote sustainable financing [7].

The analysis of the current state of the banking system of Ukraine and its comparison with the banking system of the European Union raises an objective need to specify the urgent problems and factors that impede the development of the domestic banking sector. The biggest problems of the modern banking system include the following:

- distrust of banks is increasing;
- quality of the banks' credit portfolio deteriorates;
- the impact of political processes is negative;
- the national currency is being devalued;
- the refinancing mechanism of Ukrainian banks is controversial;
- credit resources in Ukraine are becoming more expensive.

According to the survey conducted by the NBU [12], Ukrainian banks mostly continue

to forecast corporate lending growth by mid-2019, as reported by 81% of respondents (the balance of positive and negative responses was 37%) and the increase in lending to households – 67% (51% response rate). Most respondents do not expect changes in the quality of loan portfolios, but some banks hope that the quality of household loans will moderately improve. Expectations of deposit inflow remain the following: 57% (balance of answers is 42%) of respondents predict the population growth; 68% (balance of answers is 34%) of respondents – the increase in business funds.

Conclusions. In order to address issues that have arisen in the banking sector and normalize its functioning, we further present the system of measures aimed at stabilizing the economy and restoring trust in the banking sector. These measures should enhance the efficiency of the banking system control and regulation.

The following are the key measures to improve the performance of Ukrainian banks.

First. General measures. Namely,

- Consolidated counteraction to unregulated financial intermediation, ensuring transparency of financial services;
- Increasing financial literacy of the population and microbusiness;
- Promoting fair competition in regional financial markets.

Second. Measures aimed at improving the quality of financial services. Namely,

- Development and promotion of new investment services to the population in the market;
- Minimization of investment and credit risks;
- Transparency of pricing and reduction of the cost of investment loans;
- Expansion of refinancing channels;
- Improvement of staff qualification and level of service, trainings for staff;
- Disclosure of information to the fullest extent possible.

Third. Measures to increase the availability of retail financial services. Namely,

- Improvement of the availability of bank loan and investment products in the territorial space;
- It is important to increase the availability of retail financial services in order to develop financial services in small cities;
- Development of the agency model for providing financial services, as well as the model of remote banking;
- Development of electronic cash technologies, including mobile payments.

Moreover, the last one. Measures to improve customer service. Namely,

- Improving the content of the site regarding the information about the bank;
- Adding additional features to the site such as: various credit and investment calculators, analytical tables, comparison by type of deposits and tariffs;
- Organizing newsletters to customers about new products, birthday greetings, etc;
- Interactive consultations;
- Conducting trainings for developing professional and communication skills of call centre employees;
- Improving the quality of consulting services;

- Reducing dialling time, contacting a consultant and waiting;
- Ongoing monitoring of customer service quality, including with the “mystery client” methodology.

Therefore, an effective development strategy is an important factor in the successful operation of both the banking system as a whole and of individual banks. That is why the above study identifies the strategic positions of banks and proposes measures to develop their activities. Issues related to improving the performance of both banks and the banking system, as a whole are important. They need further development considering the features of the national economy of Ukraine.

The implementation of the proposed measures will reduce the impact of negative factors in the short term and will create the conditions for accelerated development of the banking system of Ukraine in the future.

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PUBLIC ADMINISTRATION

DETERMINANTS OF DEVELOPMENT PROSPECTS AND STATE REGULATION OF THE COAL INDUSTRY OF UKRAINE

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Annotation. In modern conditions, the coal industry remains the basis of the state energy security. The system of public administration has no clear understanding of the role of the coal industry in the national economy in the long run. The main purpose of the study is to identify conditions and circumstances that contribute to or contradict the changes in the development of the domestic coal industry in the system of principles and components of sustainable development of the national economy, which is subject to public administration. The basis of a promising model for the development of the coal industry is the implementation of the functional load of the industry in the national economy, which is guaranteed by public administration measures. The primary function of the coal industry in the system of state tasks under current conditions is to ensure energy security. Summarizing these aggravating provisions, it should be noted that the state management of coal mining reform in order to achieve the planned effect should be carried out comprehensively with the involvement of environmental, social and infrastructure policy programs and have significant investment potential for energy reforms.

Key words: public administration, coal industry, determinants, socio-economic functionality, energy security, logistics.

Formulation of the problem. The situation regarding the prospects for the recovery and development of coal mining at all times is ambiguous, and currently there is no general doctrine of transformation processes in the coal industry - each state develops its own "coal policy" depending on many factors: geological reserves, conditions, profitability of coal mining. Deposits, places and role of coal in the fuel and energy balance, environmental constraints, the degree of integration of the country's economy into regional and global structures, etc.

In modern Ukraine, coal is the only representative national energy resource. Its reserves are sufficient for the long term; its production is a key factor of energy security and energy independence of the country. Global and national changes of economic and political nature have called into question the full existence of the coal industry in the national economy; destruction of the logistics ties of the industry took place. Using the terminology of systems theory, we note that the Ukrainian state in relation to its coal industry once again found itself at a bifurcation point, but under much more difficult circumstances. Public authorities are faced with the choice of a full-fledged existence of the coal industry.

Analysis of recent publications. Let's pay attention to the main state document

declaring the development of the fuel and energy complex of the state, an important element of which is the coal industry. These circumstances are reflected in the changes in the Energy Strategy, which was significantly reformatted in a relatively short period and declares the main principles and strategies for the development of the fuel and energy complex of the state.

The analysis of the Energy Strategy of Ukraine for the period up to 2030 and the project of its renewal [2] shows that of the two approaches of fuel and energy supply for the regions, the first of which was to reduce energy intensity and development of the renewable sources, and the second - in further centralization through the construction of a number of nuclear and coal-fired power plants, Ukraine has chosen the latter. The updated Energy Strategy of Ukraine for the period up to 2035 takes into account the situation in Donbass region as the main supplier of thermal coal, and adjusts plans for the development of nuclear energy and other alternative local energy sources. In the Energy Strategy 2018, much less attention is paid to the development of the coal industry, focusing the attention of public administration only on social support for the personnel of reorganized enterprises. It is obvious that the coal industry has become more detached from the country's fuel and energy sector. Paradoxical conclusions were made by NISS experts [3], who found that the national energy sector did not lose financially due to coal imports. And there are reasons to believe that the country's economy has somehow won, because the import of coal has saved the already limited energy resources of its own coal production, as the Ukrainian coal complex is very energy-intensive. Thus, the reduction of own coal production has become a significant energy saving measure.

But the state initiative to establish new logistics ties and reorganize the internal structure of the national economy cannot be effectively realized due to political contradictions between state authorities. The state policy of management of branches of national economy should be impartial and independent from political will, therefore detailed research is necessary of the prospects of development of coal industry and its place in modern system of national economy within the realization of the state purposes and functions.

The main purpose of the study is to identify conditions and circumstances that contribute to or contradict changes in the development of the domestic coal industry.

Main material. An important condition for the formation of an effective mechanism for regulating the development of the coal industry is defining of the priority measures for the industry, which determine the effectiveness of its socio-economic system and the principles that meet European values. The determinants of state regulation of the coal industry are the essential characteristics of the socio-economic state of the coal industry, which determine the prerequisites for synergy in the formation of the coal industry as a self-organized system. The central problem of synergetic is the relationship between order and chaos. Order in the physical, ecological, economic and any other system can be of two types: equilibrium and non-equilibrium. Equilibrium is an essential feature of self-regulating systems. Public policy in this case affects these systems indirectly, through their environment. This determines the relevance of the study of the determinants of state

regulation of the coal industry.

The modern development of the coal industry, or rather the state's interest in supporting and managing of the restructuring processes is determined by current global trends in the energy sector. In general, the modern mainstream of the world's energy can be characterized by the actualization of environmentally friendly sources and technologies of energy production. Thus, in the EU countries the main program is "20-20-20", so named because of the goals set: 20 percent increase in energy efficiency of the economy, the same increase in production of "green" energy, the same reduction in carbon dioxide emissions. There is no country in the European Union that is not involved in environmental energy transformations. In the United States, the American Clean Energy and Security Act is one of the most radical laws in the country's history. Compared to 2005, emissions should be reduced by 17% by 2020 and by 83% by 2050. Some US states intend to reduce this figure by 80% by 2050 compared to 1990 levels. Sweden, for example, plans to become by 2020 the first country that does not use coal and oil as energy sources[7].

These trends form the institutional features of business policy. For example, support at the national government level will be provided only to green technologies and alternative fuels. So far, this innovation does not apply to countries, including Ukraine. But this countries will be treated with the approach of standardsstrengthening. Foreign investment in coal companies in developing countries can be allowed only if a number of strict requirements are met, which will ultimately lead to higher prices for projects and make them unattractive [5]. It is obvious that in such conditions the development of the coal industry is an extremely difficult task: coal projects must withstand not only the pressure of market conditions, but also the institutional barriers of the world community. Without public administration and appropriate financial support, it is difficult for coal companies to perform the functions assigned by the national interests of the society. However, the question arises as to what extent the coal industry will be viable in case of a significant reduction or complete cessation of public financial assistance and how it will be possible to compensate of losses in the energy balance.

The full-fledgeddevelopment of the coal industry in the system of national economy, implemented by the state policy of the industry, is determined by its functional characteristics within the system of state tasks. Therefore, it is necessary to clearly represent the value of the coal industry among public policy functions. We consider it expedient to determine the provision of energy security as the primary function of the coal industry.

In recent years, the structure of energy consumption has begun to be influenced by a new political factor - ensuring energy security. Moreover, the problem of energy security is perceived by the world community not so much in the local context of an individual country, but in the global context of energy security of the Organization for Economic Cooperation and Development (OECD) and the European continent as a whole. Today, the first signs of European countries' dependence on energy imports have begun to appear, threatening political dependence on supplier countries. This is particularly dangerous, as

a number of producing and transit countries remain the breeding ground for social unrest and conflict. After the tragic events in the United States on September 11, 2001, the issue of ensuring the security of energy supply of countries began to come to the fore in energy policy. The fuel and energy complex of Ukraine has historically been formed as an integral part of the fuel and energy complex of the former USSR. Today it has retained its main features. In 2014, 46% of Ukraine's fuel and energy resources were replenished through imports. This level is common in European countries and does not pose a threat to energy security. The risk to Ukraine's energy security is that gas, oil and all nuclear fuel is supplied from a single source - Russia or through Russia (about 60% of all fuel and energy resources). International experience shows that the supply of one type of resources from one source in the amount of up to 40% between countries establish only trade and economic relations, up to 50% - trade and political, and more than 50% - they go completely into the political plane.

Ukraine has little potential for oil and natural gas production, that will last respectively, for 50 and 40 years. And for them the high level of working off of initial stocks (oil - about 70%, gas - to 65%) is noted. The reserve for increasing of the production of these fuels is small. Only coal can be considered as the basis of Ukraine's own fuel resources. There are two coal basins in the country - Donetsk and Lviv-Volyn and one brown coal basin - Dniprovsky. Coal reserves are estimated by various experts enough for 250-400 years.

Thus, the insufficient potential of the fuel and energy complex and the high share of resources imported from a single source are critical for the energy sector and for Ukraine's economy as a whole. Due to this, the core of the energy strategy for the future should be to ensure the country's energy security. Specifically for Ukraine, this means that the formation of the fuel and energy balance must comply with the following requirements:

- promote the diversification of energy supply sources. With equal positions, preference should be given to the supply of energy resources not from Russia.
- make maximum use of national resources, especially coal. This is in line with Ukraine's domestic interests in preserving the coal industry.

No less important is the social function of the coal industry. The economy is not closed in itself, it is immersed in society, its culture, system of personal relations, and others. [10].

The assessment of the activities of different subjects of development of mining communities should be carried out in the context of the historical socio-cultural environment of mining regions, formed during the merger of different cultural traditions inherent in diverse migrants from other territories (Western and Southern Ukraine, Russia, etc.). The historical socio-culture of the region is characterized, among other things, by such features as particularism, paternalism, orientation to external support, socio-political conformism. During the Soviet era, traditional features were strengthened by the monopoly role of the state in solving social problems of the population. Finally, over the last ten years, the general economic crisis, as well as the unfavorable social conditions caused by the restructuring of coal enterprises in the region, have contributed

to the social disintegration, social capital of small mining towns accumulated through close family relations, citizens and individual citizens with the authorities.

It is the severity of social issues and problems that determines the principles and priorities of public administration in those regions where historically the coal industry has performed a city-forming function.

The problem of freeing enterprises from social facilities affects almost all sectors of Ukraine's economy and has its roots in its socialist past. State-owned enterprises in post-socialist Ukraine automatically continued to serve as providers of socially important services. The majority of enterprises, along with production structures, have preserved an extensive social infrastructure: housing, utilities, preschools, health, cultural and sports facilities. Quite often, social infrastructure is used to serve the population of the territory in which it is located. The coal industry is no exception. It should be noted that in the run-up to the restructuring program, coal mining companies were overburdened with social infrastructure. At that time, the main share of their value was housing and boilers - 56.5% and children's preschools - 16.0%. Territorially, the main part of the social facilities of the industry was concentrated in the Donbass region, at the location of the main part of the coal mines.

The objects of social infrastructure were maintained mainly at the expense of the income of enterprises, as in the post-socialist period the system of preferential and free provision of socially important services to the population was in use. The commercialization of state-owned enterprises and the transition to their mass privatization have brought to the fore the problem of the future of their social infrastructure, which has been exacerbated since 1994, when the state budget was reduced and then completely cut off. Investors were not interested in spending their own funds on non-productive purposes.

Let's also add the problem of employment. The problem of employment of workers laid off as a result of the restructuring of the coal industry is not unique only to Ukraine. Similar processes have taken place and are taking place in many Western countries that have coal sectors. But unlike Ukraine, these countries have implemented restructuring processes in a stable economy, which has created an effective system of social protection for laid-off workers, as well as many other effective mechanisms to mitigate the situation in the regions of mine closures. In Ukraine, restructuring processes coincide with the general energy crisis. Under these conditions, the regions where the mines are being closed, are left virtually without support from the central government and have faced one-on-one problems.

If in the future the closure of mines will be carried out according to the existing scheme, then we can expect the replication and spread of depressed areas in the mining regions. Moreover, the employment situation in the coal industry itself will worsen. Limited investment in the development of the industry is likely to narrow employment opportunities for existing coal mines each year. At the same time, it makes sense to say that the mine closure process will no longer create such a catastrophic situation as it used to. In the first years of mine closure, workers and the public behaved passively, expecting

help from central and local authorities. But the experience of implementing the policy of previous restructuring of the coal industry has taught them to solve problems on their own, they have become more self-reliant and use their own social capital in search of work.

Data from monitoring studies conducted by the Kyiv International Institute of Sociology show that the most common mechanism of employment (throughout the period when the research was conducted) is independent job search using one's own social capital (through acquaintances, friends, relatives). Among the forms of employment are the following: 1) employment at coal enterprises; 2) informal employment; 3) official and unofficial migration outside the village, city, region, country; 4) running a subsidiary farm. A significant outflow of unemployed people for employment outside the region, abroad, is one of the factors that significantly alleviate the unemployment situation in the region. According to the results of assessments and research of domestic and foreign experts, in the process of external regional labor migration during the year involved at least 10% of the number of labor resources. Quite a large number of people migrate to areas bordering the regions of the Russian Federation.

Thus, it has historically been the case that the coal industry is the basis of the social stability of a large region, determining employment, culture and population expectations. Therefore, the processes of restructuring the industry should be carried out taking into account the pace of social adaptation of people to the new economic conditions, programmed by public policy. Moving from a purely state functional to the economic context, we note that a significant contribution to the development of the national economy is realized through the raw material function of the coal industry. The coal industry is associated with significant flows of energy resources with many types of industrial production for which there is no alternative to coal.

Most government "experts" are accustomed to assessing the prospects of projects by their attractiveness for the world market at world prices, ie the possibility of monetizing economic activity. However, according to the authors [1], the concept of world coal prices and trade is quite conditional, at least because world trade is not more than one-fifth of coal production. Its structure resembles an iceberg, which looks like 1/7 (14%), and the rest is hidden in the depths of the national economy. So are the coal markets. In 2011, out of 6,637 million tons of mined coal, only 17% (1,139 million tons) passed through international trading platforms. The rest - domestic consumption - is consumed, where extracted, within the relevant national economy. Some national economies, meeting their needs for metallurgical and energy coal resources, do not use foreign markets at all, others, such as Japan and South Korea, have no domestic markets at all - all coal is imported. But more often there is a combination with the purchase of the missing amount of fuel or raw materials for coking. Sometimes it is rational to sell some coal and buy other brands of coal. This duality gave rise to the notion of "net importer", "net exporter", when exports or imports prevail. China has gained a strong reputation as a "net importer", although until 2007 it was an exporter of world-class coal products.

Referring to Ukraine's own historical experience in the 1990s, it should be noted

that it was the problematic situation in the energy market that prompted the government to reconsider its policy regarding the coal industry. Then in the domestic energy market of Ukraine the demand for coal began to grow significantly. Under conditions of barter and total defaults, the energy sector refocused on the consumption of domestic thermal coal. However, the main impetus for the revival of the coal industry was given by the growing demand for coking coal from the metallurgical industry. Due to cheap coking coal and electricity, metallurgists were able to enter the international market and become competitive in terms of metal prices. As a result, the coal industry is in fact the first of the country's fuel and energy sectors to emerge from the crisis. During 1996–2001, coal production increased from 71.3 million tons to 83.4 million tons or 17%. New trends in the domestic energy market have helped to consolidate a positive attitude towards the role of coal in ensuring the sustainable development of national energy sector.

It is obvious that the loss of the coal industry as a supplier of quality energy resources can lead at least to a violation of energy and economic security of subsidiaries, at most to the loss of dependent industrial sectors. In the absence of expediency to turn the Ukrainian coal industry at any cost into the main supplier of energy to the country, it should be given the role of guarantor of energy security of the state to avoid, for example, situations that arose after the accident at Russia's Raspadskaya mine. It was enough in 2010 to have a catastrophe, as the Government of the Russian Federation limited the export of coking coal. Moreover, measures to stabilize the domestic Russian market were equally extended not only to traditional coal traders, such as Severstal, but also to Evraz Group, for which Ukrainian coke plants are their own [1].

The integration of the national economy into the world economy has significantly adjusted the strategies of public administration of the national economy in order to form appropriate market mechanisms for self-regulation of economic development. But, in addition to the formation, this process needs constant support, including with the use of state levers. Priority in this case is still given to economic means of influence without administrative intervention. Therefore, the economic function of the coal industry remains important in the context of the restructuring of the fuel and energy complex. The world energy market has relevant experience. Thus, in response to the oil embargo announced by the Arab oil-producing countries in 1973, institutions emerged that were perceived at the time by the heralds of the "second coal wave" as a coal renaissance. In France, the return to the use of coal was legally announced (but also the accelerated development of nuclear energy). In the United States, restrictions on emissions from coal combustion have been temporarily lifted. In Japan, the transfer of electricity and industrial production from liquid fuel to solid fuel was announced, increasing coal exports. Demand for coal has increased sharply [1].

Summarizing the presented provisions on the functional value of the coal industry for the implementation of state tasks, we note that the coal industry is a necessary element of the national economy to implement the tasks set for the public authorities to protect national interests in the world economy and socio-economic protection. However, these conditions for the implementation of the functions of the coal industry

require government regulation in order to create transparent conditions of competition in the energy sector. In addition, it is necessary to clearly subordinate the functioning of the fuel and energy complex to the state goals of forming a long-term strategy of socio-economic development of society, rather than individual economic requirements to meet current needs.

It should also be noted that the collapse of the coal industry will also have corresponding consequences, aggravating circumstances. The main problems that arise in the process of shrinking of the coal industry are related to the associated processes of liquidation of coal mining enterprises. The so-called liquidation problems. The chosen path of European integration presupposes the subordination of liquidation processes to European norms and standards. European standards of public administration are not limited to the closure of coal mining enterprises, but also imply a full cycle of transformation of the economy of the coal mining region.

The Association Agreement between Ukraine and the EU provides for the "implementation of European energy strategies and policies." And Article 339 stipulates that the parties agreed that the restructuring process should cover all stages of coal production - from coal mining and processing to processing and utilization of coal waste, including mine water and methane emissions.

The European standard for mine closure is "from black to green". The facility is usually closed completely, and the reclamation of land disturbed during the construction and operation of the mine becomes its decisive phase. Even the foundations of obsolete buildings and electrical wiring are subject to extraction. Correction of the situation with waste and other dumps is the responsibility of their owners (balance holders) or the state enterprise for the liquidation of coal enterprises [1]. But the development of such projects in Ukraine is almost unrealistic due to their high cost and lack of necessary funds for enterprises. And the European practice in this regard is very strict.

Thus, at this stage of development of the state economy, the collapse of the coal industry is too burdensome in terms of investment. Environmental problems are related to liquidation problems. Most of the land used by coal mining companies cannot be ecologically reproduced. In the old industrial regions, such as Donetsk and Makeyevka, damaged, polluted or withdrawn from economic circulation as a result of anthropogenic intervention areas with their size and location affect the formation of the entire functional and planning structure of the city. They are damaged or occupied by landfills, settling tanks, slag dumps, dumps of mine rocks, flooded. Their use for urban purposes without special measures for restoration and reclamation is almost impossible. The mining towns of Donbass are everywhere so-called brownfields[8]. And it takes an immeasurable amount of time and material resources to transform them according to European models.

Thus, environmental problems significantly reduce the overall efficiency of the restructuring of the fuel and energy complex by collapsing the coal industry. State management of the reproduction of the ecological balance of the coal mining complex requires significant technological and investment resources.

The curtailment of self-sufficiency requires the search for alternative sources,

including through imports. However, import operations require appropriate infrastructure. Unfortunately, the state does not have sufficient logistics capacity, and potential suppliers of thermal coal are characterized by considerable territorial remoteness. As a result of the geopolitical conflict in eastern Ukraine, there have been changes in the market for freight flows and their logistics. The change in the model of coal trade - the reorientation to the import of thermal coal to replace the export of coal for metallurgical production - has led to a change in the origin / destination of coal - from trade with Russia to transatlantic imports, which in turn necessitated an increase in existing port infrastructure quantity and quality for receiving vessels of large cargo capacity (including the type "Capesize"), which are most effective for such cargo flow. According to the World Economic Forum on the quality of port infrastructure, Ukraine in 2016 scored only 3.2 points out of 7 possible in 2016, despite the fact that in 2012 this figure was 4.0 points. In other words, the Ukrainian port infrastructure is assessed by business entities as more than average. At the same time, the positions of Ukraine's main competitors in the Black Sea-Azov Basin according to this rating are much higher [9].

The current transshipment capacity of Ukrainian seaports, which currently stands at 240 million tons, is not fully provided with adequate ground infrastructure capacity, so the modernization and creation of new facilities should be synchronized with the development of access roads to seaports. The problem of insufficient capacity of port railway stations and unsatisfactory railway communication is most acute in the seaports of Odessa, Mykolaiv, Mariupol, Berdyansk and Reni. Today, the solution to this problem is achieved due to the low level of capacity utilization (131.7 million tons per year, ie 54% of the design capacity). However, such a settlement is temporary and does not correspond to the trend of development of seaports in Ukraine [9].

Conclusions. The basis of a promising model for the development of the coal industry is the implementation of the functional load of the industry in the national economy, which is guaranteed by public administration measures. The primary function of the coal industry in the system of state tasks under current conditions is to ensure energy security. In the absence of expediency to turn the Ukrainian coal industry at any cost into the main supplier of the country's energy base, it must be given the role of guarantor of energy security of the state. The need to preserve the coal industry is determined by the historically formed social system of coal-bearing regions of the state. Preservation of the social system in the context of regionalization of public administration requires the involvement of resources of the coal industry to ensure the basic conditions for the functioning of the socio-economic system of coal-bearing regions.

A number of circumstances, reflecting the civilized way of coagulation of the coal industry, also prevent the dismantling of its own coal mining from the fuel and energy complex. These circumstances imply the development of a significant liquidation investment process with a radical restructuring of the social and economic system of the coal regions. Thus, European norms and positive experience in the restructuring of the coal industry dictate the need to form an appropriate public investment process in order to preserve the functionality of regional systems. Summarizing these aggravating

provisions, it should be noted that the state management of coal mining processes in order to achieve the planned effect should be carried out comprehensively with the involvement of environmental, social and infrastructure policy programs and have significant investment potential for energy reforms.

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CAUSE-ORIENTED ACTIVISM UNDER THE THREATS TO THE NATIONAL SECURITY OF UKRAINE AFTER 2014

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Annotation. The article examines cause-oriented activism as a general term to specify the types of political participation, which are the reaction of citizens to specific and relevant social problems. The author concludes that cause-oriented activism has risen in Ukraine since 2014, regarding the phenomenon to be not only a reaction to the aftermath of the military conflict, but also an indicator of the general increase of citizen engagement in the political process.

Key words: cause-oriented activism, security, boycotting, petitions, protests, volunteering.

Development of democratic societies is closely linked to the increasing number of the ways of political participation of the citizens. Nowadays, along with traditional types of political participation, such as election participation, the alternative types of political participation are being developed. An important form of modern political participation is cause-oriented activism. The political scientists consider the phenomenon to be a complex of the forms and types of political participation united by one common feature – they are citizens' response to the specific and relevant social problems. This reaction is more focused on solving problems than on the preferences for political candidates or party programs.

In 2014, Ukraine faced a set of nationwide challenges caused by the national security threats, including threats to the state integrity and sovereignty. These problems include the necessity to carry out the proper support for the armed forces and its reforming, to counter information warfare, to guarantee social support for the servicemen and their families, to meet social and housing needs of the militaries, to carry out integration of internally displaced persons, to minimize the consequences of the destruction caused by hostilities. The Ukrainian society has reacted to all these problems within the form of intensification of cause-oriented activism, in particular the unprecedented growth of volunteering. During the study period, namely after the Euromaidan protests and the Dignity Revolution of 2013-2014, there was a protest activity of citizens aimed at solving specific problems at the local level, which is also an example of cause-oriented activism. Therefore, the reaction of the Ukrainian society to the problems that have arisen since 2014 is an example of intense and diverse cause-oriented activism occurring in the specific conditions of the national security threats.

Although the fact that the issues of political protests, petitions, volunteering, and other manifestations of the activities held by the Ukrainian citizens after 2014 are widely researched, there is a general lack of research in the topic of cause-oriented activism in modern conditions of Ukraine. There has been little quantitative analysis of the topic because most researchers of the civic engagement of the citizens of Ukraine focus their

attention on particular types and manifestations of activism. The academicians do not use the concept of cause-oriented activism and a full list of its manifestations to analyse the reaction of the Ukrainian society to the national security threats [16; 26; 22; 36]. Therefore, the research of the forms and subject areas of cause-oriented activism used by the Ukrainian citizens in the face of threats to Ukrainian national security after 2014 is relevant. The aim of this research paper is to investigate the phenomenon of cause-oriented activism based on the analysis of theoretical papers, sociological researches, and publications in digital media.

Cause-oriented activism in modern political discourse. The American political scientist P. Norris, referring to the work of Ch. Pattie, P. Seyed, and P. Whiteley, points out that in modern conditions there is a need to distinguish between citizen-oriented actions and cause-oriented activism. Citizen-oriented practices include voting and supporting campaigns to support parties and candidates. They take place in the form of sharing leaflets, attending party meetings, carrying out of the events aimed at promoting election turnout. Cause-oriented activism includes citizens' response to the specific societal problems. According to P. Norris, an important feature of cause-oriented activism is blurring line between "social" and "political". P. Norris sets as an example of cause-oriented action when they purchase or boycott certain goods, petitions, demonstrations or protests. The scientist also regards volunteering and fundraising to address social issues as a form of cause-oriented activism [23, pp. 10-12; 24].

P. Norris does not specify the manifestations of cause-oriented activism by the means of certain classifications. Therefore, to classify types of cause-oriented activism we can use the classification developed by Swedish scientists J. Ekman and E. Amnå. The studies of P. Norris, J. Ekman and E. Amnå have one common feature: they specify the traditional forms of political participation associated with elections and the support of parties from the other forms existing on the verge of social and political. These scholars strongly convinced that political participation is manifest, that is, aimed at making power decisions, and latent one. Latent political participation covers all means of influencing circumstances in society, except those related to open political participation. Also, latent political participation is a sense of citizens' involvement in political processes, interest in politics [10, pp. 289-295].

According to Swedish scholars, open political participation is divided into formal political participation and political activism. They considered formal political participation, for example, to be in the forms of voting or deliberate refusal to vote during elections and referendums, membership of parties or organizations with political agendas, support for these organizations, contacts with officials. Political activism, according to J. Ekman and E. Amnå, includes protest and consumer participation as understood by J. Theorel, M. Torkal, J. Montero [10, pp. 289-291, 295; 42, pp. 334-357]. In our opinion, formal political participation corresponds to the type of citizens' activities called 'citizen-oriented actions' by P. Norris, and political activism corresponds to cause-oriented activism.

Latent political participation according to J. Ekman and E. Amnå is divided into such

varieties as social involvement (attention) and civic engagement (action). To understand social involvement, J. Ekman and E. Amnå use the definitions formulated by R. Adler and J. Goggin: social engagement is “activities by ordinary citizens that are intended to influence circumstances in society that is of relevance to others, outside the own family and circle of close friends” [2; 10, p.291]. This type of latent political participation as civic engagement contains signs of cause-oriented activism, because public activity is aimed at solving socially significant problems. So, civic engagement can reveal in volunteering or fundraising. The authors of the classification see social involvement as an attention to social problems or self-identification with a particular group, with societal or political agenda. In our view, social involvement, unlike civic engagement, cannot be regarded as a manifestation of cause-oriented activism, since attention or identification themselves cannot be a reaction to specific social problems.

Thus, it can be said that the manifestations of cause-oriented activism can be divided into two wide groups – political activism and civic engagement.

Manifestations of political activism in Ukraine after 2014. In the face of national security threats, various forms of political activism have spread in Ukraine since 2014. Thus, J. Ekman and E. Amnå regard one of the trends of political activism to be boycotting or buying certain products [10, p. 295]. As early as August 2013, in response to the blockade of Ukrainian exports, the non-governmental organization ‘Vidsich’ called for Russian goods not to be bought. The NGO provided instructions on how to identify these products, informing the public through Facebook and Twitter [50]. After the Russian Federation occupied the Crimea, this initiative was supported by a number of groups [51]. That is, the action began to turn from the initiative of one organization to an all-Ukrainian movement. In 2014, in the supermarkets of different cities of Ukraine in support of the initiative were held Flash mobs “Rosiiske vbuvae” (“Russian kills”). For example, such flash mobs were conducted by the activists of the cities of Brovary, Vinnytsia, Dnipro (then called Dnipropetrovsk), Poltava, Mykolaiv, Kropyvnytskyi (then called Kirovohrad) [3; 4; 8; 20; 58]. The actions continued in 2015-2016, the boycott extended to gas stations and banks of Russian origin [1; 5; 17; 21]. So, in the face of national security threats caused by Russia's intervention as an aggressor country, the result was a nationwide spread of boycotting practices of products and services of Russian origin.

Another trend of political activism is the signing of petitions [10, p. 295], and this kind of political activism gained particular importance in Ukraine during the period under investigation. This is due to the fact that on July 2, 2015, the Verkhovna Rada of Ukraine adopted the Law “On Amendments to the Law of Ukraine “On Citizens Appeals” according to Electronic Appeal and Electronic Petition”, which introduced a system of electronic petitions in Ukraine. The petitions can be submitted to the President Ukraine, the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine and local self-government bodies [53].

As of January 2020, i.e. 4 years after the introduction of the electronic petition system in Ukraine, more than 45,000 petitions have been submitted to the website of the

President of Ukraine. 57 petitions gained 25,000 votes – the number which is necessary to consider petitions by the President. Of these, 52 petitions have the hashtag “# without theme”, only 5 have the hashtag of a certain standard theme offered on the site. Nevertheless, all these petitions can be classified into specific topics. Thus, 19 petitions concern the activities of the Verkhovna Rada of Ukraine, the President of Ukraine and the Cabinet of Ministers of Ukraine, central and local executive bodies and local self-government bodies (1 of them is clearly jocular), 11 petitions concern law and order, 6 petitions concern transport issues, 5 petitions address issues of defense, sovereignty, interstate and inter-ethnic relations, 16 petitions address issues in other areas [12].

In the context of national security threats, 5 petitions concerning defence, sovereignty, interstate and inter-ethnic relations are of particular interest. One of them is a jokey character, the other concerns a referendum on Ukraine's accession to NATO, granting citizenship to the foreigners who defend Ukraine, exclusion of the Russian language from the text of the passport of Ukraine, cancelling of the social network “Vkontakte” blocking, which has been sanctioned. The other 52 petitions to the President of Ukraine do not address the issues of defence, sovereignty, interstate and inter-ethnic relations. Among these 52 petitions, there are the petitions concern criminalizing separatism, one covers social security issues for internally displaced persons [12].

More than 2000 thousand petitions have been submitted to the Verkhovna Rada of Ukraine website. Of these, 12 petitions have collected 2500 signatures required for consideration by the Verkhovna Rada. These petitions concern environmental protection, law and order, social protection, housing, health, defence, family, children, youth and gender equality. Only one of the petitions concerns national security threats, namely calling for the ban on certain channels that, according to the petitioners, spread misinformation and hostile propaganda against Ukraine [13]. On the website of the Cabinet of Ministers of Ukraine 235 petitions were submitted, of which 8 petitions collected 2500 signatures necessary for consideration by the Cabinet of Ministers. These petitions address education, environment, transport, family, children, youth and gender equality [11].

It is difficult to classify the petitions which have been submitted to local government units and gained the required number of votes. Such an analysis, at least about the municipal websites, requires the study of a significant number of Ukrainian cities. Nonetheless, the subject matter of the petitions submitted can be roughly assessed. Thus, A. Yemelianova, author of the National Study on Electronic Petitions in Ukraine” informs that for the year 2018 citizens of Ukraine submitted more than 30,000 petitions to local municipalities. The most popular petition topics are well-being, transport and roads, housing and communal services [57, pp. 6, 7, 9].

Thus, during the 2014 military conflict, Ukrainian citizens received a powerful tool for such cause-oriented activism as petitioning. Despite the conditions and consequences of the military conflict, most of the petitions concerned other issues of a peaceful nature for the country, only some of the petitions initiated by Ukrainian citizens were a response to the national security threats.

According to J. Ekman and E. Amnå another type of political activism is legal manifest political participation [10, p. 295]. As the researcher K. Havryliuk states, after the Revolution of Dignity, the pressure on the government continued not in the form of Maidan, but in the form of small actions [15, p. 278]. The Ukrainian researcher of protest activity of citizens of Ukraine I. Petrova gives examples of conventional (that is, permitted by the authorities) protests that took place in Ukraine in 2016. These protests were aimed against reducing the socio-economic standards of living, rising prices and utilities. In 2016, demonstrations were held in Ukraine to increase funding for scientific institutions, to release prisoners, and increase funding for the modern Ukrainian army. I. Petrova describes the protest of the Burshtyn Thermal power station workers on the increase in pay and the number of employees. She also notes an unusual (as in Ukraine) protest against the construction of a Syrian refugee camp [14; 26; 31; 32; 35; 41; 44; 46].

It can be concluded that a large number of legal protests in Ukraine during the study period were caused by unsatisfactory living standards and they were aimed at solving socio-economic issues. The deterioration of the socio-economic situation in Ukraine is also a consequence of the military conflict. Thus, the authors of the analytical report “War in the Donbass: the realities and prospects of settlement” say that the military conflict in Donetsk and Lugansk regions caused the Ukrainian GDP declines to 9.3% only in 2015, the effects of the war negatively affected the deployment of the banking crisis in Ukraine during 2015-2016, coal production in Ukraine decreased by 58.2% from 2013 to 2017 [45, pp. 43, 50-51]. Ukraine has suffered significant losses from the loss of property of state-owned enterprises located up to 2014 in the territory of the Autonomous Republic of Crimea, some territories of Donetsk and Luhansk regions [27, p. 44; 45, p. 44;].

According to the classification worked out by J. Ekman and E. Amnå political activism is not limited by the legal actions. In addition to legal forms of political activism (such as boycotting or buying certain products, petitions, allowed protests), there are illegal forms, including civil disobedience, damage to private property, road and rail blocking, squatting buildings, rallies and demonstrations accompanied by violence and protests, confrontations with the police or political opponents [10, p. 295].

Resentment caused by an aggressive policy of a neighbouring state is more likely to spur violence in the activities related to Ukraine's national security. An example of this is the blockage and arson of the building of the television channel “Inter”, whose representatives were accused of anti-patriotic propaganda, the storm of the Sberbank of Russia office in Kyiv. The blockade of Megapolis-Ukraine as a Russian-owned enterprise, blocking the entry of Russian trucks into Transcarpathia, riots and breaking the fence near Russian diplomatic missions in Kyiv and Odessa are illegal actions [9; 26; 38; 43; 49; 56].

The above examples of illegal activism in Ukraine can be seen as a certain destructive reaction of the society to the national security threats. But in general, after 2014 illegal activism in Ukraine was not limited by the agenda of the military conflict. Thus, I. Petrova considers the fights and riots that took place in the city of Lviv, Kyiv region, Chernivtsi, Mykolayiv and Dnipro to be caused by the unsolved problem of

household waste disposal [26]. Also, the practice of blocking roads and routes became more widespread in the period under review. For example, in Ukraine after 2014, roads were blocked to claim for road repairs, maintenance of land conflicts, environmental conflicts, dissatisfaction with the work of custom service and other local issues [22, pp. 12-13; 25; 30; 47; 48]. It should be clarified that the blocking of roads and routes is a crime under the Criminal Code of Ukraine [52].

Many of the protests that took place in Ukraine after 2014 had signs of both legal and illegal activism. The citizens of Ukraine called “Euro-bliakhari” have been conducting protests since March 2017. “Euro-bliakhari” in Ukraine are called citizens who have illegally purchased and transported old cars from Europe to the territory of Ukraine, which enables them to avoid certain payments to the state budget of Ukraine. Accordingly, “Euro-bliakhari” opposed state measures for customs regulation of car import. The actions took the form of both demonstrations and road closures [18; 55; 33]. Among the famous protests that took place in Ukraine after 2014, we can point on the protests near the Verkhovna Rada taking place from October 2017 to March 2018. The actions had features of both legal and illegal political activism. Protest demonstrations were accompanied by clashes with law enforcement and violence, an attempt to seize the building. The main demands of the protesters are the adoption of the law on elections based on open party lists, the creation of an anti-corruption court and the restriction of parliamentary immunity. The number of participants who took part in these protests ranged from a few dozen to 400 people [6; 7; 28; 29; 39].

Thus, in the face of national security threats, illegal political activism related to the reaction to the Russian aggression, as well as to other internal political and economic issues, became widespread in Ukraine after 2014. That is, during the period under reconsideration, there was a radicalization of political activism as such.

Manifestations of civic engagement in Ukraine after 2014. J. Ekman and E. Amnå consider such examples of civic engagement as volunteering in social work, charity. These forms of activities have significantly transformed in Ukraine in the course of the military conflict [10, p. 295]. Thus, during the period under investigation, there has been an unprecedented increase in the volunteer movement in Ukraine. According to the 2014 GfK Ukraine survey, among people aged 16 and older, 9% of people started volunteering in 2013-2014. 6% have previously been involved in volunteering and continue to do so [54]. According to The Ilko Kucheriv Democratic Initiatives Foundation in 2018, the percentage of those who volunteered during 2018 increased from 12% to 18% [34].

The first stage of development of the volunteer movement of Ukraine 2014-2018 was volunteer support to the participants of the Euromaidan in 2013-2014. During the Maidan, volunteers collected food, medicines, household items and handed them over to the residents of tent camps, and personally enacted social, educational, information and medical works [16, p. 17].

After beginning of the fighting in 2014, the main areas of volunteering in Donetsk and Luhansk regions were the evacuation of the local population during the armed hostilities, the supplement of products, clothing, medicines for military personnel to the

front line, repair of military equipment, humanitarian, psychological and legal assistance to internally displaced persons [37, pp. 3-4]. Coordinator of the Volunteer Council of the Ministry of Defence of Ukraine D. Arakhamiia reported that in 2015, more than 1.5 million Ukrainians assisted the Army at least once, while 14500 people professionally conducted volunteering on continuous base [19].

Obviously, since 2014, the volunteer movement in Ukraine is focused mainly on the assistance of the Army and military personnel, assistance to internally displaced persons, i.e. persons affected by the military conflict. Volunteer movement in Ukraine includes volunteering in social work to benefit the protest participants, servicemen, internally displaced persons. According to J. Ekman and E. Amnå's classification these activities refer to civic engagement. Other types of volunteering also take place in Ukraine, such as repairing military equipment. These manifestations of volunteering can hardly be attributed to a specific example of the classification worked out by Swedish political scientists, but obviously such volunteering is also a prime example of cause-oriented activism.

J. Ekman and E. Amnå regards charity as another form of civic engagement [10, p. 295]. According to the research of the Ilko Kucheriv Democratic Initiatives Foundation, after the 2014 Dignity Revolution, the number of people (aged 18 and over) who provided financial or material assistance to the individuals or organizations increased from 29% in 2012 up to 47% in 2015. However, this percentage further declined: down 42% in 2016, 41% in 2017, 38.5% in 2018, but in general, the level of involvement in charity is still higher than before 2014 [34]. According to the Ukrainian Philanthropists Forum, in 2015 charitable expenses to provide material support to the army amounted to UAH 50 million, and in the following 2016, 2017, 2018 – UAH 13, 7 and 9 million, respectively. It should be noted that despite the reduction of charitable expenses in favour of the army in 2016-2017, during this period there was a significant increase in the total amount of charitable expenses. Thus, in 2015 they amounted to UAH 727 million, and in 2016, 2017 and 2018 – to UAH 1.5 billion, UAH 2.4 billion, and UAH 1.8 billion, respectively. During the years under consideration, social protection and health expenditure were the highest. At present, there is no accurate information on the amount of charitable assistance to the victims of the war. However, according to the Ukrainian Philanthropic Forum, during 2015-2018, ATO participants and their families, displaced persons (internally displaced persons) were among the main beneficiaries of the assistance [40].

So, after 2014, there has been a general increase in charity as a form of cause-oriented politics in Ukraine. This increase is indicative of an increased willingness of the citizens to donate funds to address a variety of societal issues, including helping the military and people affected by the conflict.

Conclusions. An analysis of subject area for different forms of cause-oriented activism in the studied period gives the opportunity to draw several conclusions.

First, Ukraine's national security threats have significantly influenced the agenda for cause-oriented activism in Ukraine. To strengthen national security and reduce the effects of military conflict, Ukrainian citizens have used more forms of cause-oriented

activism than other forms of political participation. The Ukrainian society has responded to the problems caused by the military conflict mainly through the following forms of activism: boycotting of aggressor products, volunteering for the army, volunteering for social work to benefit the servicemen, internally displaced persons and other citizens, war-affected persons. Volunteering has become the main form of public reaction to the consequences of the military conflict. Responses to national security threats have often occurred as illegal forms of activism, accompanied by riots, seizure or destruction of buildings.

Secondly, the military conflict caused a general negative impact on the economic situation in Ukraine, which led to the spread of protests with demands of socio-economic nature, which is also a form of cause-oriented activism.

Third, during the period under investigation, a system of electronic petitions was launched in Ukraine, corresponding to a new form of activism – the submission of electronic petitions. The petitions were aimed not only at solving national security problems, but also at a vast array of diverse socio-political issues. This makes it possible to argue that despite the grave consequences of the military conflict, the system of using electronic petitions in Ukraine is an effective democratic instrument and can be used in peacetime.

Fourth, since 2014, Ukrainian citizens have become more active in providing charitable assistance to address a wide range of societal problems, including those related to the consequences of the military conflict.

Fifth, the social tension and radicalization of the society during the military conflict have led to the radicalization and proliferation of forms of illegal activism in areas not directly related to the national security. The most common forms of illegal activism in Ukraine are the blocking of roads and railroads, and demonstrations accompanied by violence. In any case, acts of illegal activism pose a threat to the national security, as they encroach on such a component of the national security as public order.

Therefore, after 2014, in the face of national security threats in Ukraine, a cause-oriented activism intensified. The phenomenon was aimed both at solving problems and consequences of the military conflict and at solving other issues of internal life of the country. A cause-oriented activism had manifestations of both legal and illegal character. In any case, the practice of legal cause-oriented activism in the country is constructive and demonstrates the further democratization and development of the civil society in Ukraine.

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PHILOSOPHY AND THEOLOGY

VALUES IN THE SPHERE OF EDUCATION: MARKETING APPROACH

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Annotation. *The article considers the main values of the modern educational sphere. Customer focus, valuable market supply and value of relationships present three whales that are the basis for the successful development of educational business.*

Key words: *Value, customer focused business, product, relationships.*

The current global socio-economic, political and environmental situation poses a major challenge to the education system. Most domestic higher educational institutions simply do not keep up with the changing reality, which results into question the very idea of the expediency of their operation. In recent years, there has been rapid development in the field of educational services, and this market can be described as capacious and dynamic. That means, there is an urgent public need for educational services, and existing educational systems and educational institutions are not able to adequately meet it. In this article, the author attempts to analyze the outlined problem situation in terms of marketing approach. Marketing as a practical activity has a powerful tool set for the development of any business. Education today is also an important and extremely successful business, which has a great intellectual and spiritual mission and gives great social benefits to the society as a whole.

The purpose of our study is to identify and describe marketing values in educational sphere. The purpose is embodied in the following tasks:

- specify the concept of "value" within the meaning of marketing;
- identify educational values;
- analyze the values of the modern educational sphere.

Today, business is significantly transforming, as doing modern marketing, so it is worth considering the basic values of modern marketing, which should be implanted in the educational environment. Educational institutions, especially higher education ones, try to use various marketing tools to update their services. Alternative educational platforms are also based on the principles of Digital Marketing. But in order for the introduced marketing tools to be effective and contribute to the development of the education market in our country, we need to look deeper, into the value base.

Value is any material or ideal phenomenon that is important to the person or society for the sake of which it acts, spends energy, time, money, health, etc., for the sake of

which it lives.

Value is a property of any object, phenomenon to meet the needs, desires, interests of the social subject (individual, group of people, society). This is how the value is determined in a general philosophical context.

From an economic point of view, value is the dialectical unity of the usefulness of a thing for the consumer, as well as the value (socially necessary production costs) for the producer. The term "value" has many synonyms: dignity, merit, benefit, usefulness, good, property, value, etc. [1, 898].

Marketing focuses on product values and business values in general. The value of the product implies its ability to perform tasks, solve customer issues. Today, the consumer needs not just products, but effective solutions. Accordingly, the value of a business is determined by its focus on creating such solutions, technologies that can improve people's lives.

Company values – which are also corporate or fundamental values – are the fundamental beliefs on which business is based. These are the main principles used when interacting with other companies, customers and employees. In addition, properly defined values help the company to determine the direction of movement and ensure a sustainable reputation. They set the tone for customer engagement, help sell products and make important decisions [2,3].

Let's consider the values of modern marketing that are relevant to educational sphere.

The first and main value of marketing is the Customer, his/her needs and desires. Modern business is mostly customer-focused. Before starting the process of creating a product, service, you should thoroughly examine customers: who they are, what are their worldviews, habits, rules, what they feel, what they dream about and what they want. The more emotional and intelligent the product, the deeper you need to understand the customer. Educational services are a complex psycho-spiritual product that actualizes a range of different human emotions.

Speaking of domestic classical higher education (institutes, universities), the value here has always been the very fact of having higher education by a person, prestige, status of the university and teachers, the scientific potential of the educational institution. Of course, these values are still relevant today, but the fact of changing priorities becomes obvious: the high ideals of science and education are inferior to anthropocentrism. In the center of the educational system today is a student with his/her needs, requests and aspirations. The educational system in general, and higher education in particular, must also be customer-focused. Even such titans of education and science as Oxford, Cambridge, Harvard, Yale, etc. are deliberately switching from prestige to popularity, from elitism to affordability. They introduce the programs allowing to educate anyone who wants to be educated, and thousands of disparate students are being brought together in educational communities.

In marketing, there are terms of "gaining customers", "lifelong customer", i.e. successful companies try to establish such relationships with customers and employees,

in which the latter show extreme loyalty to the company and products that they become regular consumers over the years. We consider it appropriate to emphasize the fact that education for modern person will be relevant throughout life. Our contemporaries, and specifically the generation of Millennials, will prefer not to have one profession, but to periodically change activities, gain new experience in various fields. Even within the framework of one professional orientation, you will have to constantly acquire new knowledge and skills, increase your professionalism and do it quite often. Thus, for most people, the need for education will be periodically updated and society will need new educational and intellectual products. Accordingly, educational institutions must be ready to implement this request, and organize such an educational space to which customers would like to return whenever the need arises.

In order to understand and find your client (student), marketing offers a powerful set of research. Thanks to such research, the management of the educational institution receives objective and up-to-date information about its customers, their preferences, inquiries and leitmotifs; information on the basis of which the strategy of development of the institution is formed and important decisions are made regarding the organization of the educational process.

The second marketing value for educational sphere is the Product. Understanding the importance and profile of the product usually correlates with the study of customer needs and preferences. In marketing, when creating a product focus on two indicators: pain and passion. Pain is a customer problem that needs to be solved; passion is the main desire, the aspiration of the customer, which must be satisfied. Successful are those products/services that relieve pain or help to achieve the desired. In terms of education, it is a service focused more on desire of a person. The need for self-development, the desire to become better, learn a certain thing, gain new experience, increase professionalism, status, join certain social groups and more. According to the specified needs the profile of the service is formed:

- Basic higher education;
- Certification training;
- Additional education;
- Educational project;
- Series of author's courses/workshops;
- Individual consultations;
- Intensive workshop, etc.

The market of educational services in Ukraine is currently quite colorful. If basic higher education is mostly represented by licensed educational institutions, then the online sector is an uncontrolled educational environment, where exists a vast majority of dubious low-quality "educators" who disorient more than educate.

At the same time, the study of the demand for educational services shows the persistent need of modern society for additional educational products. Also, modern consumers need to learn conveniently, personally, accessibly, qualatively.

1. Conveniently – at a convenient time, anywhere, without separation from the main

professional activity. It should be noted that this requirement is successfully supported by most domestic higher educational institutions and is implemented in convenient interfaces, electronic dean's office systems, on-line platforms, electronic applications, etc.

2. Personally – independently moderate the learning process, choose the desired topics, teachers, learning schedule. Unfortunately, this requirement for the educational process is not yet available for most national higher educational institutions. A credit-module system of education has been introduced, which provides for student mobility and personalization of the educational route, but neither educational institutions nor students have such, first of all, financial opportunity.

3. Accessibly – the use of on-line platforms, programs and applications that allow to fully receive educational content and provide feedback at an affordable price. The global quarantine measures related to the COVID 19 epidemic have accelerated the implementation of this option, and today higher and secondary education institutions are ready to provide educational content on accessible traffic. The sector of accessible on-line education has also been expanded in educational institutions around the world.

4. Qualitatively – the gained knowledge and skills help to solve professional or life problems. Work on the quality of services is the most important component of marketing of any successful company, for which the management does not spare efforts, time and costs. A valuable, successful product is, first of all, a quality product. The quality of education today is questionable not only in the domestic field, but also in the countries where education is really a successful business. Leading specialists and teachers try to prescribe professional competencies for educational specialties, based on modern requirements, but this is not always possible. In our view, this is due to the loss of contact between the knowledge and the rapidly changing reality. Information loses its relevance even before it accumulates in knowledge. Neurobiologists also state the fact of evolution of the cognitive function of a modern person, which requires transformation of the appropriate epistemological paradigm. However, the constant guideline is the understanding of the quality of education as a person's readiness and ability to perform professional tasks.

Based on the above market situation, domestic educational institutions have to meet the existing social needs, form an appropriate market offer, consolidate their positions in the sector of online education. Digital Marketing, Agile tools, on-line learning platforms and applications, the latest educational technologies, educational management and administration help to prepare an appropriate educational offer.

The third marketing value that is fair to educational shpere is the value of Relationships. Relationships, connections, cooperation, partnership are extremely important in business circles. Instead of being in a conflicted, antagonistic relationship, business units prefer to join forces to achieve maximum results, launch joint projects and campaigns.

Relationships in the educational system since long time have been quite distant: Teacher-Student, Professor-Student; internal hierarchy and subordination was maintained: Head of the Departments, professor - laboratory assistant, graduate student, etc. Distance

should be replaced by understanding of the value of partnership, teamwork to achieve the highest scientific and educational goals. It is effective as an internal partnership between students, teachers, graduates; and external collaborations between universities; educational institutions and business units, professional groups, urban communities, etc.

It is quite sad to realize the fact that the university has lost the status of a scientific and intellectual center. Today, outstanding discoveries belong not so much to scientists as to influential corporations and famous businessmen, which undermines the scientific authority of educational institutions. Therefore, cooperation is the solution to this problem. The university should become an educational space, an intellectual HUB, which combines scientific potential, generates business ideas, initiates social projects. Then the educational institution will be a center of scientific, business and social life, which is extremely attractive to all contact groups.

Modern world needs to change according to the needs of societies in all areas, including business. The twenty-first century places new demands not only on technological progress, but also leads to significant changes in the education system, which is one of the main conditions for the successful development of the country. Science in general is the nervous system of our age. In the modern conditions of existence of world scientific achievements we are more and more convinced of expediency of its movement, changes, adaptation to vital requirements.

Professional knowledge is a guarantee of professional success, authority and further life prospects of the individual. And every specialist can do as much as he/she knows. The knowledge and skills acquired in higher education institutions are the very foundation on which it is possible to build a temple of individual professional skills. Thus, education in the marketing sense has its values that should be realized and strengthened.

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PROBLEM OF GENDER EQUALITY IN THE POSTMODERN ERA

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***Annotation.** The article deals with the issue of gender equality in the postmodern era. It is established that a woman's nature (and a man's) appears as a historically mobile form. It is illustrated that the modern theory of gender relations is based on the emergence and functioning of gender studies, gender history, and the third wave of feminism.*

Key words: gender, gender studies, gender history, postmodernism, poststructuralism, queer theory.

Problem statement. The postmodern era as a whole can be described as an epoch of the disintegration of a holistic view of the world, as an open system from the standpoint of plurality, in which there is no center resembling a rhizome that opposes immutable linear structures (one of the key concepts of postmodern philosophy). [5]. Thus, the problem of gender equality in postmodern times arises from a different angle. Modern times give reasons for the contradictions of theory and practice in gender and gender equality and gender equality in particular. Therefore, it is important to turn to the postmodern era's philosophical works on the social significance of gender and the nature of social relations between men and women, particularly the identification of the individual with a particular sex, the emergence of queer theory. The issue of equal rights and opportunities of the sexes has always been relevant, but right now, the whole civilized world is trying to build its social life on this principle. The key to solving this problem is to understand that the relationship between the sexes should not be based on antagonism but rather be complementary, tolerant, lenient, which, in general, is indicated by modern gender theory.

Degree of scientific development of the problem. Researchers who have recognized the social and/or economic expediency of acknowledging a woman's right to self-determination and political rights devote their work to studying the problem of gender equality. The French philosopher Simone de Beauvoir put much effort into this. However, the real interest in gender issues was aroused by such authoritative American researchers and human rights activists as Joan Scott [15], Judith Butler [14], Betty Friedan, Angela Davis, Andrea Dworkin [5]. English philosopher and writer Denise Riley paid much attention to gender issues [5]; German feminists and philosophers - Gisella Bock [3], Uta Frevert [5]; Bulgarian researcher Lyudmila Yordanova [5]; Russian researchers Natalia Pushkareva [8] and Lorina Repina [9] and many others.

Ukrainian researchers do not stand aside from gender studies. In this context, it is worth mentioning the works of I. Goyan [16], S. Storozhuk [16], T. Martsenyuk [7],

O. Kis [3], L. Gentosh [3], and others. Many other researchers widely popularize the ideology of gender and social equality among the extremely conservative Ukrainian population. However, even these extensive works do not make it possible to say that the problem is finally exhausted. In today's fast-changing world, gender issues are almost daily replenished with meanings that need to be understood in unity with the fundamental problem of identity for the modern world.

The aim of the article is to identify the problem of gender equality in the historical and philosophical definition, the peculiarities of developing the principles of gender equality and feminist thought in the postmodern era.

Results. Unlike Soviet scholars, who mostly worked peacefully along the Marxist paradigm lines, Western science in the 1970s and 1980s debated the crisis of "historicism" and the associated methods and approaches to reconstructing the past. Feminist gender scientists certainly did not stay away from these discussions [3].

Attempts to gain objective knowledge of past ages were replaced in the 1980s by doubts about the possibility of this and a critique of the Hegelian thesis that "everything really is reasonable" and that history is a "reservoir" of this rationality and meaning. Awareness of the relativity of knowledge and ideas about the past, about the results and ways of its reconstruction, became the basis for the historical reception of many philosophical theories, united by the general term "poststructuralism." Postmodernism and poststructuralism of the 1980s and 1990s were a typical "avant-garde reaction" to the modernist theories of the student revolution era — structural functionalism and social constructivism in sociology, structuralism in ethnology and folklore, and neo-Freudianism in psychology. The clearest exposition of postmodernist concepts can be found in Jean-François Lyotard's book "Postmodernism Explained to Children". Jean-François Lyotard believed that postmodernism's central principle recognizes the Other, recognizing plurality - approaches, concepts, interpretations, etc. [3].

Addressing the subjective aspects of historical knowledge has opened up a number of new topics and fields of research. Among them, "women's history" ("women's studies") stood out in the 1970s, which later, in the 1980s, was transformed into gender history. "Women's history" grew based on the feminist movement of the XIX-XX centuries, which advocated equal rights for men and women, adhering to the view that there are no "gender" differences between them. However, the so-called second wave of feminism of the 2nd half of the XX century, emphasized the significant differences between the male and female perception of reality, recognizing the "specificity" of women in relation to men [6].

At the intellectual and ideological levels, the starting point of this stage of the struggle (the "second wave") is the famous work of the French philosopher Simone de Beauvoir "The Second Sex" (1949) [1]. A representative of existentialism understands women's status in different societies as "other" in relation to men. In the United States, a similar sensation was caused by the work of Betty Friedan's "Mystery of Femininity" (1963) [11], which is based on the results of a survey of her classmates in college after 15 years after graduation. The "problem without a name" confused educated housewives,

members of the middle class in America, who did not have the opportunity to realize their potential in the public sphere. Of course, African-American researchers could not help but criticize the author's complaints. "We have nothing to feed our children and ourselves, even though we work all day" - here are the class and racial features of the situation of women. Activists such as Angela Davis, known in the USSR, criticized the US "arms race" for ignoring the social problems of vulnerable groups, including black women. The second wave of feminism abounds in a variety of issues. Women's entry into the labor market, decent wages, unpaid domestic work, social support from the state are not a full list of the problems. "Personal is political" is a well-known slogan of activists who have raised the issue of violence against women on the political agenda, both in the family and in the workplace. "My body is my business," - said feminist organizations that fought for the right to safe and legal abortion, contraception, that is, control over their own reproductive behavior. International women's organizations have gone to third world countries to fight traditions that harmed women's health and put them to death - so-called "female circumcision," "honor killing," stoning in case of betrayal, and so on. Andrea Dworkin criticizes the tradition of reproducing female beauty - from foot binding in China to the modern cosmetics industry. For the sake of inscribing in the norm of superfemininity, sexuality, desirability for men, women are ready for anything because "fashion needs sacrifices" [7].

Interestingly, the rise of feminism - its "second wave" in the '60s and '70s, caused controversy about the existence of the subject of study - in other words, about "separateness," and in fact - about the very essence of the category "woman / women." Are there any women? For all the answers to this question, even among feminist philosophers themselves, there is the idea that a woman does not always feel like a woman, but only when society reminds her of it. In particular, Denise Riley, in the book "Is this my name?" noted that it is impossible to be a woman every minute. A woman out of control, out of communication, alone with herself - who is she, a woman, or a person without gender identification? You can think about it, but try to tell someone, outside the context of detailed theorizing, that "a woman is an empty category." The philosopher Laura de Downes successfully answered such considerations with the title of her article: "If a woman is just an empty category, then why am I afraid to walk alone at night?" Born through historical feminism and the theory of social construction of gender, gender methodology in history equips the researcher with tools to write a different political history and history of power, as it forces them to see masculine discourse and the influence of the "colonizer" on "colonized" (women, sexual minorities and all sexually deprived). No wonder today the women's movement in Ukraine is developing on a full scale; Ukrainian women's organizations are becoming a political and social force, taking significant steps in the development of gender studies. On the other hand, supported by the concepts and ideas of postmodern philosophers, gender methodology includes such approaches to the analysis of texts on political history, which allow not only seeing the contradictions between theory and practice (declared equality and de facto alienation of women from politics at the decision-making level) but, also, observing, analyzing

unaccented, latent forms of women's political discourse and political behavior; attempts of women to interfere in politics and direct it, even when they are formally removed from it, and even more so in periods when women's political and political-economic elites began to form and develop [10]. Here again, the leading role belongs to sociologists, but they usually depict and conceptualize only the latest political situation and cannot prove with certainty whether this or that trend is typical of the Ukrainian mentality, "well-forgotten old" or innovation. Based on the Habermas's definition of "public sphere" ("the sphere that serves as a link between the state and society"), researchers of political history note that in such a definition, women should have been involved in research analysis, and turned out to be discarded, despite all their significance. After all, defining the public sphere, Jürgen Habermas did not include in it such an important social component as, for example, public opinion, in the formation of which women have traditionally played a very significant role [3].

The third wave is related to the era of postmodernism and post-structuralism - the 1990s. As activism has not fully delivered the expected results, the approach to the problem is changing. Michel Foucault's theory of power warns: even if people are not directly controlled, even with ones activism, they fit into the system of power, they play by its rules. Therefore, it does not make much sense to fight. Instead, at the level of identities, playing their own social roles, ones can change the world - to resort to alternative, less "rigid" and traditional gender and sexual roles on their own. The concept of "queer" activism - a critique of normativity [7].

In particular, the American philosopher and gender theorist Judith Butler, whose work has significantly influenced political philosophy, ethics, sections of feminism and literary theory, author of the famous work "Gender Concern: Feminism and the Undermining of Identity" turns to queer theory [14]. Queer means "other." In a broad sense, it is any person who differs from some predetermined normative model. In the context of gender theory, queers are people who do not consider it possible to meet either the standard patterns of men or the standard patterns of women, and then this list of standard gender identities can be extended. Queers are people who have invented their own identity or at least stated it as a goal [2].

So far, no wave is considered complete because not in every country women have an opportunity and a right for even an education. Over time, it is noteworthy that more and more women's issues are understood, discussed, and criticized - so theory and practice take more diverse forms. Activists follow different paths to achieve a common goal - the complete emancipation of humanity [7].

The concept of "gender" appears in the second half of the twentieth century's socio-humanitarian knowledge as a derivative from the concept of sex. However, gender is not a biological but a socio-cultural category: an individual does not receive "gender" automatically from birth but acquires it in the process of inclusion in public life. The Glossary of the Gender Information and Analytical Center "Krona" on gender states that gender is a set of cultural and social characteristics that cover all human activity areas.

In the interactional and institutional approaches (developed since the '80s of the XX

century), gender is an independent, not conditioned by biological sex, constructed by culture and society characteristic of man, something that people do not have for granted, but (meaningfully or meaninglessly) demonstrate, interacting with different people in different institutional situations. Biological sex and gender are different constructed characteristics that can be combined in a person arbitrarily and independently [7].

Today, "gender" is understood as a system of interpersonal interaction, through which the idea of the male, female, and other sexes are created, confirmed, and reproduced as categories of social order. In 1985, researcher Joan Scott defined the subject field, which was presented as: 1) a set of symbols and images that characterize men and women in culture ("gender stereotypes"); 2) a set of norms - religious, pedagogical, scientific, legal, political, which consolidate the different positions of men and women in society ("gender norms"); 3) problems of self-expression, subjective self-perception and self-awareness ("gender identity"); 4) social relations and institutions that shape them (family, market, education, etc.) [15]. Thus, gender has become a "social sex." Her views were supported by American researchers George Kelly, Natalie Zemon Davis, Russian - Natalia Pushkareva [8], Lorina Repina [9]. Numerous works published in the 1980s and 1990s have shown professional acceptance by historians around the world. The structure and scheme under the influence of postmodernism were replaced by the principle of "subtle interconnectedness," where the micro-approach forced us to recognize the polycentrism and diversity of the world around us, the pluralism of subjects and objects of historical knowledge [6].

Modern theories of gender relations prove that social differences between men and women have no biological origin, are not "eternally given," but only acquired, attributed to the individual by society. " In addition, the concept of "gender" is multiple and situational. The notion of what it means to be a woman or a man varies depending on the historical and socio-cultural context. For example, being a man now and a hundred years ago are absolutely different things. Men in Ukraine and, for example, in Sweden also have different experiences and different social expectations. When they talk about gender, they also mean concepts such as masculinity and femininity (social notions of what it means to be a man or a woman) that reflect gender identity.

Gender studies criticize traditional notions of men and women's roles based solely on reproduction and physical strength. Instead, egalitarian roles are offered as an alternative, where men and women have the opportunity to choose behavioral patterns depending on their abilities and desires. Masculine and feminine traits are not permanent formations; they can change depending on the specific context and socialization stage. Masculinity and femininity formations may take as long as people are connected to society. Thus, gender identity is constantly in the process of construction. Gender studies criticize the phenomenon of gender polarization (attempts to see only differences in women and men) because women - a heterogeneous group - are diverse on the inside, as well as men. Androcentrism and patriarchy as a norm of public life are also criticized. When one talks about gender, they mean, first of all, inequality, not just the difference between men and women. In conjunction with inequality, it is about hierarchy, stratification, and

power, embedded in gender relations. Gender theory involves a change in social reality, the purpose of which is to ensure gender equality.

Gender studies is a general name for a methodological approach to the study of factors, processes, and results of the social construction of gender. Gender studies are interdisciplinary and are related to many socio-humanitarian and even natural sciences. Gender studies cover the following research areas: women's studies - the study of women and their experiences; feminist studies - differ from women's studies in that they study, first of all, power relations, patriarchy, androcentrism; men's studies - the study of inequalities and hierarchies, power relations among men, the experience and role of men in society; studies of gays and lesbians - the study of the experience and life of gays and lesbians; queer studies - more critical than the previous ones and cover a broader object of study (categories of people who do not fit into the traditional norm of "female-male") that criticizes heteronormativity [7].

Gender history, as part of a new interdisciplinary field of research - gender research - was formed in the Western culture in the late '70s - the early '80s of the XX century. The movement received a new impetus from the desire to give the feminist consciousness its own historical retrospective. It was then that many young scholars in Western Europe and America paid considerable attention to the history of women, rightly believing that the study of the past, as well as the analysis of the present, should be based on information concerning both sexes [12].

The emergence of gender history meant the selection into "separate productions" of topics that were previously considered simply "the history of customs" (sexuality, homosexuality). Mastery of gender methodology makes it possible to identify "loci" of these topics in other thematic complexes (for example, to study the peculiarities of homosexual discourse in friendship or heretical movements), "open eyes" to dissonances of history that do not fit into the concepts, constructs or norms - that is, to look at the whole history of sexuality in a new way. For example, the history of adultery or the history of convents of various denominations can be presented as a research problem through the prism of the history of lesbianism [3].

Gender history is designed to combine the history of sexuality, the history of homosexuality, historical feminism (women's history), and historical andrology. The subject of gender history is the history of the formation and functioning of the system of relations and interactions that stratify society based on gender, the history of ideas about "male" and "female" as categories of social hierarchical order. Speaking of the subject of gender history, it should be emphasized once again that it is not just a "field in history," the history of the relationship between the sexes, but the study of hierarchies within each sex. One of the famous American feminist sociologists Dorothy Smith [4], developing the concept of feminist sociology, formulated its main feature: the researcher's position is the observer's position from within - because feminist sociology focuses on knowledge of society from within. Applying this approach to history also forces the researchers to study the mechanisms of formation and functioning more than to record the existence of certain connections, relationships, interactions between the sexes and within each of

the articles. The "final" pure definition of gender history is not found in any work on the history of articles. Researchers often believe that the definition of the subject of gender history should implicitly follow from the general content of both specific historical and theoretical works on this topic. One of the influential German feminists, Gisella Bock, called all women's history (historical feminism) a gender history.

The attitude to the content of the subject of "gender history," as pointed out by Giselle Bock, not surprisingly seems to many too simplistic, and therefore wrong. Gisela Bock's compatriot Uta Frevert, who is also referred to in German article history, said that gender history is still different from women's because "gender history is a problem of how societies of the past and the men and women who they lived in them, treated the differentiation of articles, how they described this differentiation, what significance they attached to it." In other words: twenty years ago, scientists were tasked with "inscribing" women in the history from which they were "expelled"; now such a task seemed wrong from the very beginning - the desire to "inscribe" began to be understood as an agreement with the existence of a certain already existing and recognized reconstruction of the past, which would be good in everything, if not for the absence of women. Therefore, the task was reformulated: not to write, but to write another story or, more precisely, stories (women, men, transgender people, homosexuals) - stories of articles in the broadest sense, which would show how it happened that people learned the former one-sided picture of the past as universal. Bulgarian researcher Lyudmila Yordanova also defined the content and essence of gender in history, in somewhat complicated lexical terms: "Gender history is not the history of men and women or their relationships, but the history of constellations of those attributes (essential features) that are associated as two natural forms of existence of human beings." Researcher Joy Parr said differently: "Women's history has studied the history of women's lives, gender - historizes the very concept of a woman" - as well as the concept of man, or gay, and others. [3].

The international community constantly monitors the state of affairs with equal rights and opportunities. Gender equality is included in a number of leading international reports, highlighting the importance of the value of gender equality. In particular, the Gender Equality Index is one of the important components of the annual international Human Development Report of the United Nations Development Program. As of 2014, Ukraine ranks 83rd in terms of human development. The International Freedom of the World report also has a section on "personal autonomy and individual rights" [13].

However, some annual international reports focus only on gender equality. The Global Gender Gap Report 2014, prepared by the World Economic Forum, measures the gender gap in four important inequality areas between men and women: economic participation, education, political representation, and health [7].

Conclusions. The postmodern era is a denial of the modern era. After all, the central principle of postmodernism recognizes plurality - approaches, interpretations, concepts, interpretations, etc. The postmodern era is too diverse, it lacks a single center from which everything begins and moves in a given direction, and therefore it is challenging to predict the development of a phenomenon studied in historical and philosophical terms.

In the context of gender, gender equality, the lack of a certain focus, orientation in the development of society and the interaction of the sexes is manifested primarily in the critique of normativity; in non-standard gender identity; in non-traditional gender and social roles; in the variability of feminine and masculine traits of the individual; in the emergence of homosexual discourse; in a new look at the whole history of sexuality and a new vision of the history of lesbianism; in the complete emancipation of humankind; in the crisis of "historicism."

The postmodern era demonstrates the emergence of gender studies that criticize traditional notions of the relationship between men and women; identifies gender history as part of a new scientific field of gender research designed to combine the history of sexuality, the history of homosexuality, historical feminism, and historical andrology; allows the third wave of feminism to take place, which involves a departure from the norms, the emergence of the concept of "other," the queer theory. Thus, we have every reason to say that gender identity is in a continuous creation process and, therefore, cannot be completed.

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THE NETWORK OF RELIGIOUS ORGANIZATIONS IN CHERNIVTSI OBLAST, ITS HUMAN AND MATERIAL RESOURCES

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Annotation. The article presents a thorough study and comparative analysis of the dynamic processes in the religious network of Chernivtsi Oblast. A qualitative transformation in the religious life of the region during the first two decades of Ukraine's independence is noted. Making use of little-known sources and historiographical investigations, the author specifies the trends in quantitative and qualitative indicators regarding religious organizations, places of worship and human resources.

Key words: Church, trends, religious organizations, church institutions, parishes, places of worship, religious workers, clergymen.

Introduction. The study of the nature and peculiarities of religious life in Chernivtsi Oblast during the independence of Ukraine confirms that the Church as a social institution is permanently present in the public space being proactive in finding effective models of its functioning in the context of reforming the Ukrainian society. Denominations, through their public service, concern for sojourners' morale and spiritual level, and education activities, perform their social functions, trying to promote the implementation of faith-based values. Therefore, due to radical changes that Chernivtsi Oblast saw at the turn of the millennium in all spheres of society, interest in religious matters has increased significantly: that's because it is at this time that the number of registered religious organizations, church workers and clergy, places of worship, monasteries and, along with that, religious schools, religious publications etc. is growing rapidly.

The purpose of this survey is to comprehensively examine the dynamic nuances of church and religious life in Chernivtsi Oblast in the first two decades of the sovereignty of the Ukrainian state on the following three indicators: religious organizations / communities, religious buildings, religious workers and clergy. The achievement of this goal includes such tasks as: to highlight the peculiarities of Chernivtsi Oblast as one of the smallest regions of Ukraine, its multicultural and multi-religious specificity; to study the dynamics of the religious network of the region according to the following data: quantitative composition of organizations / communities, facilities, and human capacities; to carry out a comparative analysis of the dynamics of the religious network in quantitative and qualitative terms.

Problem / Methodology. Church institutions and religious organizations of Chernivtsi Oblast have always played a leading role in the formation of spiritual values of Bukovynians, as well as influenced the improvement of cultural, spiritual, educational and social work in the region. The religious processes in Northern Bukovyna determine

the rise of national reconstruction and state-building activities in the region, despite the intermittent conflicts between the local religious groups. Such transformations in religious processes have always been of interest to many scientists, both domestic and foreign, which encourages new research in this field. Data sources of the survey, mainly based on the current archive of the Department of Cultural Heritage, Nationalities and Religious Affairs of Chernivtsi Oblast State Administration, made it possible to identify the exact characteristics of Chernivtsi Oblast religious life and its manifestations in the context of socio-political transformations. Along with this, a substantial portion significant set of archival sources on the issue is kept in the Central State Archive of the higher governmental offices and administration of Ukraine. These materials permitted to find out about the trends in the regional religious processes, the state of the local religious network and its human and material resources, and to address concerns of legislative provision of freedom of conscience and state-church relations.

Analysis of the church and religious life of the region in the post-Soviet period in the context of socio-political transformations requires a methodologically robust approach: it is calibrated sequencing of methods including problem-historical approach to presenting historical material on the early period of Ukraine's independence, comparative-historical analysis when comparing similar indicators and facts of the particular period in history, retrospective approach to the disclosure of the historical past through the study of legacy of traditions, statistical technique - for the analysis of many and various quantitative indicators, analysis and synthesis - in the study of sources and literature, periodization (diachronic) as a tool for structuring research, that provides the facility to explore the development of religion in Chernivtsi Oblast and specific trends of the church life in the region of the period studied.

The scientific novelty of the study is that it explores the history of the religious network in Bukovyna in the early period of independence in conjunction with the state-church relations in general; the dynamics of the religious network of the region is traced, and a comprehensive comparative analysis of the dynamics of the religious network in quantitative and qualitative terms is carried out.

The time-frame for the task covers the period from 1991 to 2010. The lower chronological limit is determined by the process of religious revival in Ukraine of the late 80's and the early 90's of the twentieth century, as well as changes in public policy for state-church relations that prevailed in Ukraine and Chernivtsi Oblast in the context of the proclamation of state sovereignty and independence. The upper chronological limit, on the one hand, reflects the change in religious policy resulting from the installation of the new political forces, and on the other, the elimination of the State Committee of Ukraine for Nationalities and Religious Affairs, and later its territorial units (December 9, 2010), with mixed consequences for the implementation of state policy in the field of inter-confessional and inter-ethnic relations.

Results. Chernivtsi Oblast, as is well known, is one of the smallest regions of Ukraine that occupies only 8,100 sq. km (1.3 percent of the country's area) with a population of 904,000 living in 417 settlements. Along with this, this region is eighth in terms

of number and second (after Zakarpatska Oblast) in terms of the density of religious organizations (2.74 communities per 1 settlement) [24, p. 117]. At the same time, it is one of the few regions that have historically been formed under the influence of polyethnic, multicultural and multi-confessional factors, which, in turn, led to the rooting of specific religious and ritual traditions, special interfaith, inter-religious and state-church relations and effective patterns for dealing with problems of their functioning. Therefore, here, along with the general trends in all-Ukrainian religious processes, some specific features can be traced. This is due primarily to the national composition of the population (more than 80 nationalities) [24, p. 117] and geographical location of the region which is the intersection of economic, political, national and religious influences with various cultural and historical traditions.

Overwhelming majority of religiously active population of the region identify themselves with the main religious movements, the Ukrainian Orthodox Church, Moscow Patriarchate (UOC), the Ukrainian Orthodox Church, Kiev Patriarchate (UOC-KP), the Ukrainian Greek Catholic Church (UGCC), the Roman Catholic Church (RCC), the Russian Orthodox Old-Rite Church (Bilokrynytska Hierarchy) (ROORC-BH), numerous Protestant denominations, and Jews. According to the 2009 Information Report, 660,000, persons, i.e. 73 percent of the population, claimed a denominational association. Among the supporters of religious organizations, the number of retirees was almost 240,000 persons [23, p. 150; 3, p. 109]. However, the above figures, firstly, should not be considered completely reliable, because many religious organizations have no fixed membership, and secondly, confessions used different methods to count members of their communities. Moreover, there was a trend among the leaders of religious organizations to over-report the number of parishioners. One of the factors that influenced the objectivity of information about the number of representatives of a particular denomination is the effect of “cultural confession”. It is that an individual who does not profess any religious belief and does not participate in any religious practice, nevertheless affiliate themselves with some religion.

Comprehending faith-related values of the residents of the region, and thus historical past, it is not difficult to conclude that most of the population of Chernivtsi Oblast identify themselves as Orthodox. However, the total number of religiously active members of various Protestant communities has been and continues to be almost at the same level as that of the Orthodox Churches in the region. It is worth saying that we consider Protestants not only adherents of the major denominations in the region (Baptists, Pentecostals, and Adventists), but also organizations of new religious movements and various groups.

The analysis of the activities of religious communities on the territory of Chernivtsi Oblast allows us to state that new approaches in relations between the state authorities and religious organizations after independence and implementation of the 1991 Law on Freedom of Conscience and Religion have galvanized activities of various religious communities in the region [21, p. 98]. In the early 1990s, the expansion of the religious network in the region has become dynamic reflecting the stable growth of the religious

institutions network. According to the 27 January 1992 Report of O. Prykhodnyuk, the Religious Affairs Comissioner of the Verkhovna Rada under the Cabinet of Ministers of Ukraine in Chernivtsi Oblast, since the celebration of the Millennium of Kyivan Rus' the Baptism celebration of the 1000th anniversary of the Christianization of Kievan Rus, "that the number of religious communities that resumed their activities, and were newly formed and registered is 198, of which 111 UOC communities, 14 UAOC communities, 5 UGCC communities, 1 ROORC community, 6 RCC communities, 1 Jewish community, 23 Evangelical Christian Baptist (ECB) communities, 18 EC communities, and 19 Seventh-Day Adventist (SDA) communities. 65 bulding and repair permits were granted, of them 36 to the UOC communities, 3 to the UAOC communities, and 26 to the Protestant communities" [21, p. 98].

Having traced the transformation processes of the religious-institutional network, we observed a fairly high increase in the number of religious communities, especially in the first five years of the independence. Thus, there were 519 registered and 32 unregistered religious organizations in Chernivtsi Oblast as of 1990. The registered congregations included 360 communities of the UOC, 3 communitis of the UAOC, 10 communities of the RCC, 2 communities of the UGCC; 6 communities of the ROORC, 75 communities of the ECB, 26 communities of Evangelical Christians-Pentecostals (ECP), 36 communities of the SDA, and one Jewish community. The unregistered were 13 independent ECP communities, 5 communities of the Seventh Day Adventist Reform Movement (SDARM), 13 communities of Jehovah's Witnesses and 1 community of the Council of Evangelical Churches (CEC) [20, p. 129]. During 1991, their number increased by only 5 units, which amounted to 556 religious organizations, of which 33 were not registered with the government (0.9 percent increase) [21, p. five]. Already in 1995 the number of religious communities increased to 795, of which 37 operated without registration (44 percent increase) [11, p. 1]. Consequently, by the end of 2000, 15 faiths were represented with 943 registered religious organizations (915 communities) and 124 non-registered religious bodies (an increase of 34.2 percent). Among them, the UOC (389/9); the UOC-KP (119/4; 40 communities of the denomination virtually disintegrated); the RCC (26); the UGCC (17); the ROORC (7/2); the ECB (140/13); the ECP (72/30); the SDA (86/4); independent communities of the ECP (5/5); the SDARM (5/12); Jehovah's Witnesses (20/21); the CEC (2); Jews (8/1); Muslims (1); RUNVira (1); the Hare Krishna movement (0/1); Nazarens (1/5); Baha'i Faith (1); Charismatics (11) [12, l. 2, 15]. Thus, during the period 1991-2000, the number of religious organizations in the region rose by 516 units, an increase of 93.6 percent.

Between 2001 and 2010, the increase of religious organizations slowed down significantly compared to the early 1990s, which indicates the exhaustion of the extensive development of the religious environment, but the dynamics of this indicator in Chernivtsi Oblast stabilized at around 0.5 percent to 5.6 percent per year. In fact, the same declining trend can be observed in the country in general: in the 1990s, the annual increase in the number of religious organizations was 5-8 percent, while in 2000-2005 it was 4.5 percent, and during the period 2007-2009 it was only about 2 percent [12, p. 2; 17, p. 3].

As of 2005, there were 1064 registered religious organizations (1029 communities) and 110 unregistered (an increase of 10 percent) active in the region. Therefore, at that time the religious network of the region was a broad denominational spectrum including the UOC (an increase to 399 communities); the UOC-KP (an increase to 142 communities); the ROORC (8); the Autonomous True Orthodox Church (ATOC) (active since 2002 as a catacomb church, the movement of ‘non-commemorating’ - 1); the RCC (30); the UGCC (22); the ECB (135/7 - registered and non-registered, respectively); independent congregations of the ECB (8/7); the ECP (87/8); independent congregations of the ECP (12/3); the SDA (94/4); the SDARM (7/11); Jehovah’s Witnesses (24); the CEC (3); RUNVira (3); the autonomous religious organization ‘Dažboh’s Grandsons’ (1); the Hare Krishna movement (0/1); Nazarens (1/5); Baha’i Faith (1); supporters of Sri Chinmoy (0/1); Muslims (1); Buddhists (1); Maharishi (0/1); The Sant Mat movement (Surat Shabd Yoga) (0/1); Full Gospel Church (6); independent organizations of charismatic movement (11/3); The Associations of Jewish organizations and communities of Ukraine - VAAD (3); Hasidim (2); Progressive Jewish movement (2); other Jewish communities (0/1) [15, 1, 2, 15].

By the end of 2010, there were already 1,142 religious organizations in Chernivtsi Oblast, of which 1,097 were communities [19, p. 32; also see: 18, p. 40] representing 27 confessions, denominations and movements, and 127 non-registered units (8 percent increase). On average, there were 2.74 religious organizations per settlement. Orthodoxy was represented by four movements, the UOC had 437 organizations, of which 426 were communities. It is worth paying attention to the insignificant number of Ostashem as an internal church association of the RUOC. By the way, they functioned under the patronage or within the structure of the Moscow Patriarchate in the region. The UOC-KP had 168 organizations, of which 158 were congregations; the UAOC - 6; the ROORC - 10/8 (registered and unregistered, respectively). In addition, 1 community of the ATOC and 1 neo-Christian denomination, the Church of Our Lady of the Transfiguration (the Church of Theotokos), affiliated themselves with Orthodoxy. Catholicism was represented by three churches: the RCC (33/30); the UGCC (24); the Armenian Catholic Church (1). Protestantism was represented by 16 denominations including the ECB (185 organizations together with the Regional Association of the ECB supervising 159 communities). Furthermore, there were 10 independent congregations of the ECB and The Spiritual Administration of the Associations of Evangelical Christian Churches of Chernivtsi Oblast overseeing 7 congregations, and 3 unregistered CEC congregations. Another denomination, the Church of Evangelical Christians-Pentecostals, was less numerous, with 106 organizations including the regional assembly of 89 congregations. In Chernivtsi, there was The Regional Center of the United Church of Evangelical Christians with 12 independent communities under its supervision [24, pp. 122-127]. The SDA was represented by 98 organisations (95 congregations), including Bukovyna Conference of SDA Churches that embraced Chernivetsi, Ivano-Frankivsk and Ternopil Oblasts. There was also an independent SDA congregation. The SDARM was another representative of the Adventist movement in the region, with the Ukrainian

Union Conference of the Church, a structural unit of the Central-European Division, supervising 19 congregations [see: 7, p. 350-352]. The Jehovah's Witnesses movement was represented by 63 communities [24, pp. 125-128].

There were small communities of neo-Christian charismatic churches represented by the association of the Ukrainian Church of the Full Gospel with seven congregations, and twelve independent communities of this movement. Minority religions were the Union of the Church of God in Ukraine (2), the New Apostolic Church (1), Nazarens (6); Buddhism (1), 1 independent Muslim community, the Ukrainian Lutheran Church (1).

Jewish religious communities represented The Association of Jewish religious organizations of Ukraine (3), The Association of the Chabad Lubavich Jewish religious organizations (3), Progressive Judaism (2); other Jewish communities (1), Messianic Judaism (1).

Other new religions did not advance much in the region, represented by The International Society for Krishna Consciousness (1), supporters of Sri Chinmoy (1), the Church of Jesus Christ of Latter-Day saints (Mormons) (1), Baha'i Faith (1), The Sant Mat movement (Surat Shabd Yoga) (1), Maharishi (1), The Science of Mind (1). Among new faiths, there is also RUNVira, a Neopaganist organization, represented by 4 groups: 'Oberih', 'Dažboh's Grandsons', 'Siaivo', 'Verkhovyna'. Furthermore, as noted in the 2010 Information Report, adherents of Roerich's Agni Yoga, Ivanov's teaching, The Church of the Last Testament, "Bioenergetic Theology", a non-Christian movement "Ecumenical Christian Apostolic Church of the Sun", etc. practiced their beliefs [24, apk. 128-133; 3, c. 111-112].

So, our analysis confirms that, between 2001 and 2010, the increase of religious organizations slowed down significantly, both in the region and in Ukraine, as evidenced by the quantitative indicators of religious organizations, which in Chernivtsi Oblast have grown by only 202 units, nearly 2.5 times less in comparison with the first decade of the independence (18.9 percent), and in Ukraine, 11,641 units, or 49 percent [17, c. 3]. In this context, it should be noted that, firstly, there was a significant number of religious organizations in the region that were active no longer, but were included in the total number of communities, and secondly, there were constant fluctuations in the number of unregistered communities, most of them Protestants (about 90 percent). Thus, the study of the dynamics of growth of the religious network in its quantitative dimension shows that during the period studied, the total amount of religious organizations in the region increased by 718 units (12.8 percent), and by 26,431 units (127.1 percent) nationwide. This, in fact, indicates that the institutional composition of the religious network in the region almost completely satisfied the religious needs of believers in quantitative terms [17, pp. 3-4].

In this regard it is important to note that in the region, there were localities (46 as of 2010, or 13.4 percent of the total number) which, for one reason or another, had no religious organizations. These settlements were located in raions (regions) of Vyzhnytsia (3), Hlyboka (3), Zastavna (4), Kelmentsi (4), Kitsman (1), Novoselytsia (3), Putyla (21), Sokyrany (3), Storozhynets (3) and Khotyn (1). Finally, there are also a significant

number of settlements in the region where religious buildings and church property was used for other purposes [24, p. 120], confirming that the mechanism for solving the issue of restitution of religious properties still needs improvement.

It should be noted that the quantitative indicators given by some researchers of church and religious life in the region, namely V. Dokash [5; 6], V. Leshan [8; 9], M. Lahodych [2] and others, are somewhat different from those that we give. For example, if, according to V. Dokash, at the beginning of the independence (1991) in Chernivtsi Oblast region, there was 422 registered communities and 179 unregistered (a total of 601 units) [6, p. 104], when, according to our sources, this figure was only 556 units [21, p. 5, 10, p. 1]. V. Leshan [8, p. 122] reports on 726 (676 registered and 50 unregistered) units in 1992, and according to the data that were at our disposal, there were only 607 religious organizations at that time [21, p. 5-6]. To this it should be added that there is also a marked difference in other quantitative indicators (places of worship, clergy, monasteries, children's educational institutions, etc.). The inaccuracies we found when analyzing the quantitative dynamics of religious organizations in the region indicate their most probable causes. These may be errors in calculating the quantitative data on registered / unregistered religious communities; inappropriate study of the material base; inappropriate approach to fixing / registering religious organizations and communities - without clearly distinguishing between religious organizations and religious communities (the second is part of the first), obtaining quantitative data directly from religious organizations, and the like.

Apart from the actual number of religious communities, another important aspect is availability of places of worship to religious communities in quantitative and qualitative terms. The democratization of public life and the emergence of new opportunities for freedom of religion have undoubtedly improved the material basis for religious practices in Chernivtsi Oblast. According to archival sources, more than 100 objects of worship and religious artefacts were returned to religious communities from museum collections and expositions [16, p. 7] during the independence, and the increase in the number of religious buildings during this period showed positive dynamics: whereas in 1991 there were 505 religious buildings [4, pp. 113-114], by the beginning of 1992 that number had risen to 539, 112 of them were owned by religious organizations, 50 were objects of architectural heritage, 51 were new buildings, and 14 were under construction. The UOC had 366 churches, of which 43 architectural monuments; the UAOC - 6/3; the ROORC - 6/1; the RCC - 12/2; the UGCC - 7/1; the ECB - 75; the CEC - 2; the ECP - 23; the SDA - 40; Jews - 2 [21, pp. 95-96].

In 1995, there were 617 places of worship [4, p. 113-114], and in 2000 services were conducted in 789 religious buildings and in 75 rented premises adapted for prayer. In total, 569 buildings were owned, including 491 religious buildings and 78 adapted for prayer, 220 units were in free use, and more than 100 churches were under construction. Of them, the UOC owned 375 churches and 41 buildings under construction; the UOC-KP - 77/6; the ROORC - 6; the RCC - 23; the UGCC - 14/2; the ECB - 109/23; the ECP - 72/7; the SDA - 86/24; the SDA RM - 3/1; Jehovah's Witnesses - 10/4; Jews - 5; Nazarens

- 1; Baha'i - 1; Hare Krishna - 0/1, etc. [13, l. thirty; 4, p. 113-114]. Thus, between 1991 and 2000, 284 religious buildings for different faiths were built and put into operation in Chernivtsi Oblast, and the increase in availability of places of worship to religious organizations was 56.2 percent [12, p. 2]. In comparison, 2597 churches and places of worship were built during this period in Ukraine; another 1836 religious buildings were under construction [25, p. 6]. In this regard, it should be emphasized that since 2000, the dynamics in numbers of religious buildings as well as religious organizations, has slowed somewhat, therefore, availability of places of worship to religious communities remains very much on the agenda.

As of 2005, religious organizations in the region had the opportunity to freely conduct services in 848 places of worship [15, p. 3]. Note that at that time, the best provided with religious buildings were the SDA (100 percent) and the UOC (96.1 percent). Other religious organizations were provided as follows: the ECP - 85.8 percent; the ECB - 70.8 percent; the RCC - 72.7 percent; the UGCC - 65.2 percent; Jehovah's Witnesses - 56 percent; the UOC-KP - only 54.1 percent [22, p. 147; 16 p. 7].

As of 2010, there were 922 prayer buildings in the region: in comparison with 2000, the increase was 133 units, or 16.8 percent. The SDA (100 percent) and the UOC (98 percent) had the highest percentage of availability of facilities, the ECP reached 90 percent, the ECB - 73.7 percent, the RCC - 72.7 percent, the UGCC - 65.2 percent, Jehovah's Witnesses - 56 percent, and the UOC-KP reached only 55 percent of availability of places of worship [24, p. 124]. Considering the given data, we have admitted that the response to the shortage of facilities could be construction or purchase of buildings, which would allow not only balance material basis, but also improve legislation in the relevant field. But, as it turned out, this approach did not correct the problem. It can be assumed that this problem persists due to the continuous tension between Moscow and Kiev patriarchates in Chernivtsi Oblast: competing diocesan administrations artificially expand their institutional networks and claim religious buildings. In general, total level of provision of religious organizations with places of worship was 81 percent in the region [24, p. 124; 15, p. 3].

Despite the unstable political and economic situation between 1991 and 2010, with the support of local executive authorities, enterprises and sponsors, 370 new religious buildings were built and put into operation, which is almost 36 percent of their total. In 2010, plans were developed for the possible use of land plots for the construction of about 100 more church buildings. It should be noted, that of all religious buildings (922), 657 were owned by religious organizations, 185 - donated buildings; 80 - adapted for prayer needs; 435 - architectural monuments; 83 - rented premises [24, p. 124; 15 p. 3]. The above data reflect reality in the religious life of the region, yet they showed some discrepancies between the estimated number of religious buildings and the growth rates of the religious network. To summarize, the number of religious buildings in Ukraine amounted to 15,155, or 66.5 percents, of these, in 2000-2010 3,075 places of worship were built, and 988 buildings were under construction [17, c. 5].

During the independence, there also had been the change in the staff, which ensured

the life of religious organizations, also changed. In this context, the specificity of the rules for admission to the clergy of Protestant communities, and of the Orthodox and Catholic confession should be taken into account. The former reject the principle of apostolic acceptance (ordination / consecration), which makes it possible for those ordained to hold the priesthood ministry without leaving their secular occupation or profession. For latter, consecration is an essential component of ordination to the ministry. It follows that ration of clergy staffing in Protestant communities is much higher. The growth in the number of clergy was undoubtedly in line with the expansion of the network of religious organizations in the region. Thus, 571 registered clerics (presbyters, deacons) and 922 church workers (psalmists, preachers) served in religious communities of the region at the beginning of 1991, of these, in the UOC - 220 priests, 4 deacons, 119 psalmists; in the UAOC - 2 priests; in the RCC - 2 priests; in the UGCC - 1 priest; in the ROORC - 11 priests; in the ECB - 53 elders, 104 deacons, 393 preachers; in the ECP - 21 elders, 25 deacons, 167 preachers; in the SDA - 117 elders, 74 deacons, 243 preachers. The number of clerics and church workers operating in the region unofficially, was 38, of which in the ECP - 16, in Jehovah's Witnesses communities - 13; in the SDA RM - 5; in the CEC - 4 [29, p. 127-129]. In 1995, 1164 priest and church workers served communities in the region [4, p. 113-114], and by the end of 2000, their number increased to 1250 (including 25 foreigners: in the RCC communities 12, in the ECB communities - 2, in the ECP communities - 2, in the SDA communities - 2, in the New Apostolic Church community – 1, in the Mormons communities - 6). Also, there were approximately 1,500 church workers in the region [12, p. 3]. Thus, as compared to 1991, the number of priests increased by 679 persons, and the number of church workers increased by 578 persons, representing 118.9 percent and 62.6 percent growth, respectively.

In the course of our research, we again find a slowdown in growth, this time for the number of clerics and church workers after 2000. There were 1,484 clerics (including 25 foreigners) who provided pastoral care and counselling to the religious communities, of which 16 (10 – from Poland) – to the RCC communities; 2 (1 – from Romania) – to the ECB communities; 1 (from Germany) – to the New Apostolic Church community; 6 (1 – from the USA, 1 – from Canada) – to the Mormon communities. At that time, the best ratio of clerics was in the ECP, the ECB, and the SDA (100 percent or more); in the UOC (82,7 percent); in the UOC-KP (62,5 percent); in the UGCC (57.8 percent); in the RCC (51.6 percent), in the Jewish communities (55.5 percent), and the ROORC (41.6 percent) [14, p. 5]. At the beginning of 2006, there were 1704 clerics (including 19 foreigners) ministering to the communities. However, the ratio of clerics was as many as 146 percent, twice the ratio for the Protestants, and 91.3 percent more than for the Orthodox communities [16, p. 9]. During the year their number increased by 83 persons resulting in 1,787 persons (including 21 foreigners, of which 2 - in the UOC; 1 - in the ROORC; 4 - in the RCC; 2 - in ECB; 2 - in The Spiritual Administration of the Associations of Evangelical Christian Churches of Chernivtsi Oblast; 7 – in the Mormon communities, and 2 - in Jewish communities).

By the end of 2010, 1,848 clerics (of them 24 foreigners, including 2 – in the UOC

communities; 1 – in the ROORC communities; 8 – in the RCC communities; 4 – in the ECB communities, 5 – in the Jewish communities, and 2 – in the WAC communities) and 1,600 church workers ministered to all registered (1142) and unregistered (127) religious organizations of the region [24, p. 122]. Minor changes occurred in the percentage of staffing of the clergy of religious organizations in the region, namely: in the UOC, this figure was 93.42 percent; in the UOC-KP - 73.41 percent; in the UGCC - 56.52 percent; in the RCC - 27.5 percent; in the ROORC - 37.5 percent. This figure was quite high among Protestants: in the ECB - 195.8 percent; in the ECP - 304.6 percent; in the SDA - 215.2 percent; in Jehovah's Witnesses communities – 100 percent [1, p. 115]. Compared to 2000, the number of clerics in Chernivtsi Oblast increased by 598 persons, and the number of church workers - by 100 persons (47.84 percent increase of the former and 6.6 percent increase of the latter), while nationwide, their number increased from 21,281 to 30,516 persons (43.4 percent increase) [17, p. 6].

As you can see, the number of clergy in the region exceeded the need for personnel by 706 units. According to statistics, there were an average of 1.3 clerics per religious community. Such a significant increase is also explained by the fact that during this period, both in Ukraine and in Chernivtsi Oblast, the number of religious educational institutions increased significantly, which, in turn, resulted in increase of the number of students. Thus, it appears from the foregoing that the ratio of clerics in the religious communities remained higher for in the region with church and clergy remained higher in Protestant communities than in Orthodox or Catholic communities, exceeding almost twice the need. This gives grounds to assert that the confessional-religious configuration of the church-religious network in Chernivtsi Oblast was stable. Nationwide, the ratio of clergy in Protestant communities is higher than in Orthodox communities (1.5 and 0.9 in 2010, respectively, compared to 1.4 and 0.8 in 2000) [17, p. 6].

Conclusions. Our analysis, the objective of which was to reveal the dynamics of the religious network of Chernivtsi Oblast in various aspects, suggests to us that the changes in the religious life of the region represented the situation in Ukraine as a whole. Particularly notable is the stage of extensive development of religious life in the region, because the period of activity (between 1991 and 2000) gave way to a period of moderate growth (from 2001 to 2010) of the religious network with a constant annual gain of 4 percent. Further growth of religious organizations depended mainly on the ability of the Church to embrace new forms of catechism and missionary work, and to raise qualification requirements for clerics and church workers, and the like. In the end, the democratization of state-church relations and the development of their infrastructure enabled confessions to fulfil their purpose, to satisfy the religious and spiritual needs of believers.

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MEDICINE AND PHYSIOLOGY

THE EFFECT OF CERIUM, ZINC AND IRON CITRATES ON THE INDICATORS OF EMBRYOTOXICITY AND NEPHROTOXICITY OF CADMIUM SALTS WHEN COMBINED IN AN EXPERIMENT ON RATS

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Annotation. The aim of the study was to determine the effect of metal citrates (cerium, zinc, iron) when combined with cadmium salts (chloride / citrate) on the indicators of embryotoxicity and nephrotoxicity in rats.

An experimental study was carried out on female rats with dated gestation. In addition to the control group, there were 2 groups of isolated administration of cadmium and 6 groups of combined administration of cadmium salts with metal citrates (cerium, zinc, iron). Operational slaughter was carried out on the 13th and 20th days of pregnancy. The embryotoxic effect of the isolated and combined effects of the test substances in the groups was calculated and compared according to the following indicators: the number of embryos (average in the group), total, pre-implantation, post-implantation embryonic mortality. Studied and compared the massometric readings of the kidneys of rat embryos under the influence of cadmium when administered alone. Regularities of changes in the weight of the kidneys were revealed upon combined administration of cadmium with metal citrates.

Key words: embryogenesis, cadmium, cerium citrate, iron citrate, zinc citrate, embryonic mortality, kidneys.

The current level of development of industrial technologies does not allow the transition to environmentally friendly production, one of the most common environmental pollutants are heavy metal ions, in particular cadmium and its compounds[1, 2, 3]. Lack of information and limited explanation of the embryotoxicity of heavy metals, especially cadmium, prompts researchers to actively study the effect of different doses of this ecotoxicant and different ways of metal ingestion on the parameters of embryogenesis[4, 5, 6]. The shift of anthropogenic contribution to environmental pollution has led to exceeding the maximum allowable concentrations of cadmium in some regions of our country and abroad in soils, water, air and food [7, 8, 9].

The aim of the study was to determine the effect of metal citrates (cerium, zinc, iron)

when combined with cadmium salts (chloride / citrate) on the indicators of cadmium embryotoxicity in rats. Investigated the effect of heavy metals when administered alone and when combined with citrates on the formation of kidneys of the embryo and newborn in rats.

Material and research methods. An experimental study was carried out on female rats with dated gestation. In addition to the control group, there were 2 groups of isolated administration of cadmium and 6 groups of combined administration of cadmium salts with metal citrates (cerium, zinc, iron). The cadmium chloride solution was ionic at a dose of 1.0 mg / kg body weight of the female. In our experimental models, we used solutions of citrates of cadmium at a dose of 1.0 mg / kg body weight of the female, iron (at a dose of 1.5 mg / kg), cerium (at a dose of 1.3 mg / kg) and zinc (at a dose of 1.5 mg / kg) obtained by the aquananotechnological method. The condition of renal development in 10-day-old rats was also studied. Solutions of the investigated substances were administered to pregnant females enterally through a tube once a day from the first to the 19th day of pregnancy. During the experiment, the state and behavior of the rat females, the dynamics of body weight were recorded, and on the 13th and 20th days of pregnancy, surgical slaughter was performed. The embryotoxic effect of the isolated and combined effects of the test substances in the groups was calculated and compared according to the following indicators: the number of embryos (average in the group), total, pre-implantation, post-implantationembryonic mortality. In 20-day-old rat embryos and 10-day-old rats, kidneys were removed for morphometric studies. The obtained results were processed by the method of variation statistics. The probability of statistical studies was assessed using Student's t-test.

Analysis and generalization of the obtained results. Calculation of the obtained experimental data revealed the embryotoxicity of cadmium chloride and cadmium citrate when isolated, but the level of embryotoxicity was different.

Isolated administration of cadmium chloride led to a decrease in the average number of embryos and an increase in embryonic mortality on both the 13th and 20th day of embryogenesis compared to the control. The number of embryos on the 13th day in the experimental group exposed to cadmium chloride was significantly lower ($p \leq 0,001$) and was 8.12 ± 0.31 against 9.50 ± 0.20 of the control group. In the groups of combined exposure, this indicator showed a modifying effect of metal citrates on the embryotoxicity of cadmium chloride, the number of embryos was restored. The highest level of compensatory effect on the embryotoxicity of cadmium chloride according to this indicator was determined in the group of combined exposure to iron citrate, which had no significant difference with the control (Fig.1).

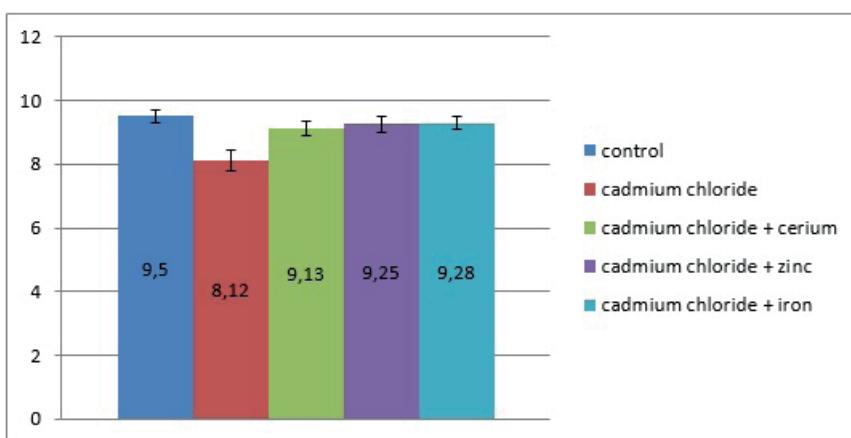


Fig.1. Indicators of the average values of the number of live rat embryos in the control and experimental groups with the introduction of cadmium chloride on the 13th day of pregnancy.

On the 20th day of embryogenesis, the mean value ($M \pm m$) of the number of embryos tended to decrease in the group of isolated exposure and in the groups of combined administration of the studied substances. Namely: in the group of isolated exposure to cadmium chloride, the number of embryos continued to decrease, which is logical due to the prolongation of the negative factor and was 7.75 ± 0.40 against 9.50 ± 0.20 in the control. This difference was significant, $p \leq 0.001$. In the groups of combined exposure, the number of embryos was significantly higher compared to the group of isolated administration of cadmium chloride, but had no significant difference with the control, which we also regard as a modifying effect of biometal citrates on the toxicity of cadmium chloride (Fig. 2).

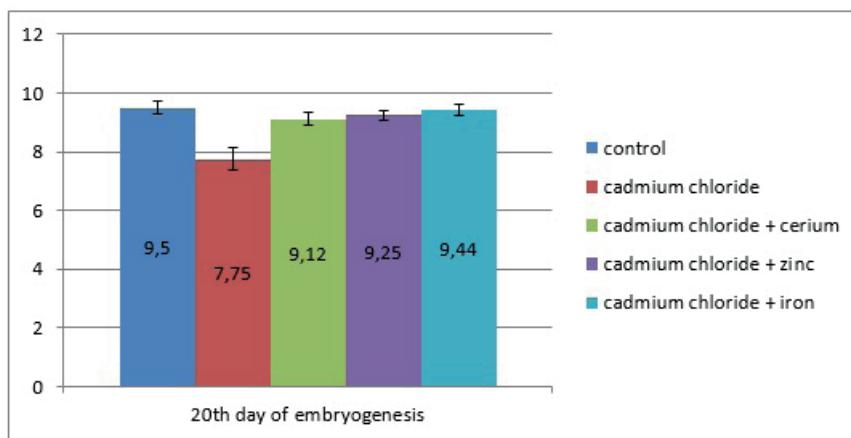


Fig.2. Indicators of the average values of the number of live rat embryos in the control and experimental groups with the introduction of cadmium chloride on the 20th day of pregnancy.

Analysis of the calculations of total embryonic mortality (TES) in the groups of isolated and combined administration of cadmium chloride revealed the following trend. At both terms of the study, the highest rate of WEU was determined in the group of isolated administration of cadmium chloride: on the 13th day it was equal to 0.22 ± 0.02 against the control 0.05 ± 0.02 , and on the 20th day increased 5 times to 0.25 ± 0.02 (in the control - 0.05 ± 0.02).

The increase in the studied indicator is the result of continued daily administration of cadmium chloride to pregnant females, which provoked increased cadmium intoxication and as a protective mechanism - self-abortion by the female embryos (embryo resorption). In the groups of combined administration of cadmium chloride with metal citrates, the rate of total embryonic mortality at both observation periods was more than halved compared to the isolated administration, indicating the compensatory effect of cerium, zinc and iron citrates on embryotoxicity in chloride.

The obtained results showed that the greatest reduction in total embryonic mortality occurred in the group of combined administration of cadmium chloride with iron citrate at both terms of embryogenesis studied by us. This indicator in this group on the 13th day significantly exceeded the control and was 0.08 ± 0.03 , and on the 20th day twice exceeded the control values of 0.10 ± 0.02 ($p \leq 0.05$). Administration of zinc citrate on the background of cadmium intoxication also reduced overall embryonic mortality in the group, but to a lesser extent than the introduction of iron citrate. Cerium citrate in combination with cadmium on days 13 and 20 reduced overall embryonic mortality by 1.8-fold compared with isolated administration of cadmium chloride. Thus, the degree of reduction of embryotoxicity of cadmium chloride in the groups of combined administration is quite pronounced, but the level of compensatory effect of individual citrates on overall embryonic mortality is different.

Comparison of the embryotropic properties of cadmium chloride and cadmium citrate in the groups of isolated administration revealed a higher level of embryotoxicity of cadmium chloride according to classical criteria in an experiment on rats. The highest level of total, pre-implantation and post-implantation embryonic mortality was determined in the cadmium chloride group.

In the groups of combined administration of metal citrates with cadmium, a significant decrease in embryotoxicity indicators was determined in the groups of combination of cadmium with iron citrate for all studied indicators. Iron citrate at the indicated dose can be considered as a new bioantagonist to the embryotoxic properties of cadmium salts when administered in an experiment in rats.

The following parameters were determined in the groups with the introduction of cadmium citrate. When cadmium citrate was administered to female rats in isolation, the mean values of the number of embryos were higher compared to the cadmium chloride administration group, which indicates a less toxic effect of cadmium citrate on the overall course of embryogenesis despite the identity of cadmium doses. On the 13th day, the number of embryos was 8.62 ± 0.20 , and on the 20th day - 8.75 ± 0.27 . In the groups of combined administration, an increase in the number of embryos was observed at

both terms studied, which we regarded as a decrease in the embryotoxicity of cadmium citrate. According to this criterion, the highest compensatory effect was observed in the group of combined administration of cadmium citrate and iron citrate, in which on the 13th and 20th day the number of embryos did not have a significant difference with the control values (Fig. 3).

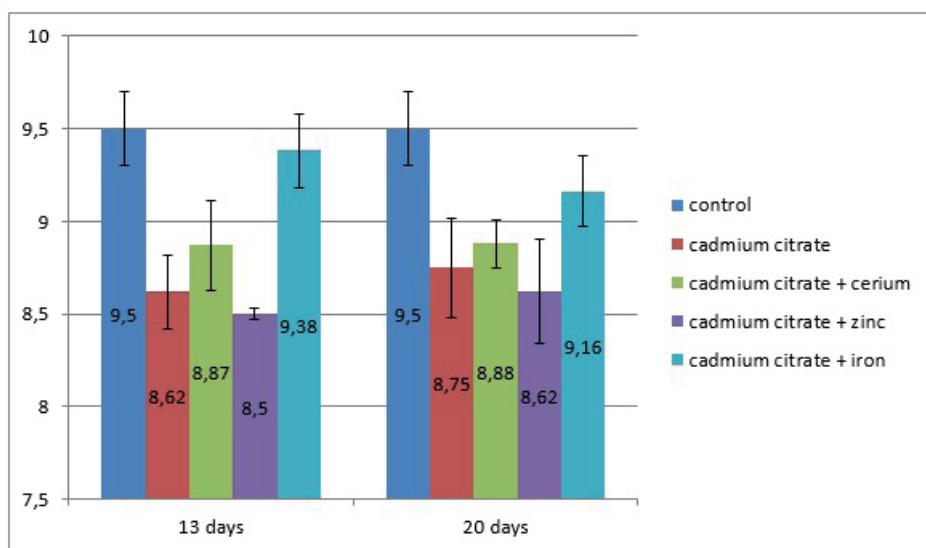


Fig. 3. The average number of live rat embryos on the 13th and 20th days of embryonic development in the control and experimental groups on the effects of cadmium citrate.

Examining the rates of total embryonic mortality and comparing them in the groups with isolated and combined administration of cadmium citrate, it was determined that the highest rate of total embryonic mortality was observed in the group of combined administration of cadmium with zinc. Such results have come as a surprise because zinc and its compounds are essential and widely used in medical practice. In this group on the 13th day the total embryonic mortality was 0.16 ± 0.05 , and on the 20th day 0.15 ± 0.02 , which was not significantly higher than in the group of isolated administration of cadmium citrate. In the groups of combined administration of cadmium citrate with cerium / iron citrates, the rates of total embryonic mortality were lower (iron citrate) or equal to (cerium citrate) indicators of the group of isolated administration of cadmium citrate (Fig. 4).

Thus, the analysis of the obtained results revealed that in the groups of combined administration with cadmium citrate the greatest modifying effect on embryotoxicity of cadmium is exerted by iron citrate, namely the indicator of its preimplantation embryonic mortality has no significant difference with control in both studies. higher than the control, but lower than the indicators of the group of isolated administration of cadmium citrate.

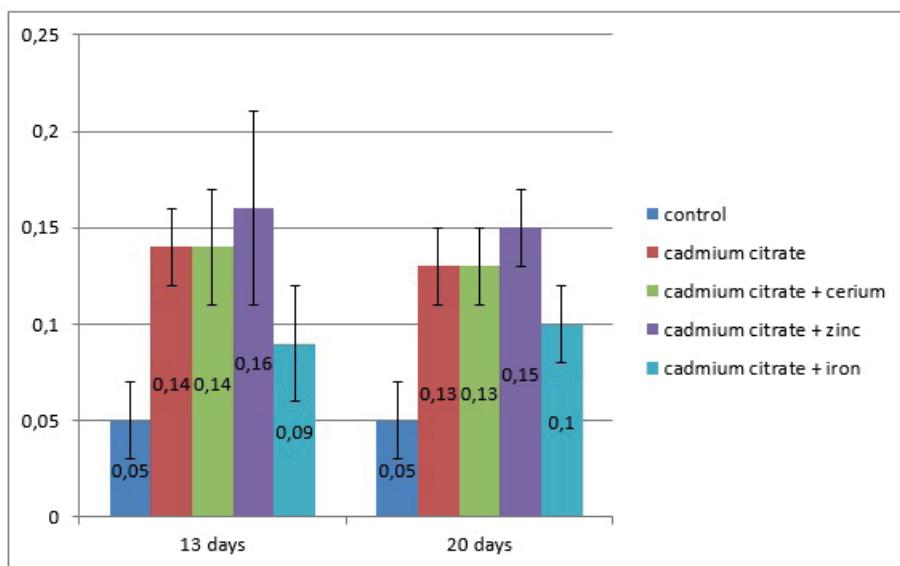


Fig. 4. The average rates of total embryonic mortality on the 13th and 20th days of embryonic development of rats in the control and experimental groups with the introduction of cadmium citrate.

The influence of the studied factors on the weights of the kidneys of embryos and rats in the experiment revealed morphometric differences. The introduction of cadmium chloride led to an increase in kidney weight. On the 20th day of embryogenesis, when exposed to cadmium chloride, the mean value of the embryonic kidney mass was 13.6 ± 0.4 mg, which was significantly higher ($p \leq 0.05$) than the control of 9.5 ± 0.5 mg. The effect of isolated administration of cadmium citrate reduced kidney weight to 6.7 ± 0.6 mg. On the 10th day of postnatal development of rats, the trend of changes in kidney mass was maintained: control values were 73.6 ± 4.2 mg, exposure to cadmium chloride - 83.6 ± 4.5 mg, and cerium citrate - 44.5 ± 5.6 mg. In the groups of combined administration, the restoration of the massometric parameters of the kidneys of rats to the control was determined.

Conclusions. Comparison of the embryotoxic properties of cadmium chloride and cadmium citrate in the groups of isolated administration revealed a higher level of embryotoxicity of cadmium chloride according to classical criteria in an experiment on rats. The highest levels of total, preimplantation and postimplantation embryonic mortality were determined in the group exposed to cadmium chloride.

In the groups of combined administration of citrates of the studied metals with cadmium, a significant decrease in embryotoxicity was determined in the groups of the combination of cadmium with iron citrate for all studied indicators. Iron citrate in this dose can be considered as a new bioantagonist of embryotoxic properties of cadmium salts.

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PATENT DUCTUS ARTERIOSUS IN TERM NEWBORNS: APPLICATION OF ELECTRONIC HEART AUSCULTATION

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Annotation. This study presents the results of the use of computerized heart auscultation of full-term infants with echocardiographic signs of patent ductus arteriosus detected during the first days of life. Infants who maintained these symptoms during the first 3 months of life had significant differences in the data of the phonocardiogram recorded on the second day of life.

Key words: patent ductus arteriosus, computer-assisted auscultation, term newborn.

Introduction. The ductus arteriosus (DA) is the vascular connection between the pulmonary artery and the fetal aorta that closes shortly after birth. DA usually closes functionally in 12-18 hours and anatomically in 2-3 weeks after birth. If it persists after 6 weeks in infants over 36 weeks of gestation (except in the case of shunting during complex congenital heart disease), it is a sign of a patent ductus arteriosus (PDA) due to the impossibility of complete postnatal closure. The frequency of spontaneous DA closure after this age is very low. Usually, the ability to predict the closure of DA in full-term infants who do not have clinical symptoms at the time of discharge from the hospital (at the end of the third day of life) is limited [1, 6].

PDA in full-term infants is diagnosed with a frequency of 3-8 per 10 000 live births, and accounts for 5-10% of all congenital heart defects [2, 7].

Children with small isolated PDA are usually asymptomatic, the degree of pulmonary over-circulation and left ventricular overload in a small PDA is minimal. In children with moderate to severe PDA, symptoms can range from shortness of breath during exercise to heart failure. Clinicians recognize that timely identification of PDA and its hemodynamic significance is extremely important. In patients with small PDA, noise is usually the only finding, but its characteristics vary in newborns [1, 6]. Auscultation of the heart with heart murmurs is a traditional screening tool for clinical diagnosis. However, the accuracy of this method of auscultation is subjective and dependent on skills [9].

The availability of innovative methods of sound recording using phono- and spectrograms provides important assistance in diagnosis. Computerized auscultation of the heart (computer/automatic phonocardiogram analysis) includes recording of heart sounds using an electronic stethoscope, visualization, storage, analysis of digital recordings. Standardized auscultation and phonocardiogram (PCG) evaluation systems can help implement cost-effective screening programs [4, 5].

With the rapid development of signal processing techniques, computer auscultation can increase the accuracy of a specific cardiac diagnosis and reduce the number of unnecessary referrals for repeated echocardiographic examinations. A pilot study

has been published to test the ability of e-auscultation followed by a computerized phonocardiogram evaluation algorithm to accurately differentiate physiological and pathological noises in children. Compared with echocardiography, the computer algorithm had a sensitivity of 87% and a specificity of 100%, a positive prognostic value of 100%, a negative prognostic value of 90% and an accuracy of 94% [4]. It is proved that the method of computerized auscultation can reach a high sensitivity of 100% and a specificity of 91.67% for the detection of PDA.

The aim of the study was to examine the data of computer analysis of phonocardiogram in full-term infants with different terms of ductus arteriosus closure.

Research methodology. A screening of 253 full-term infants was performed. Prenatal ultrasound examination of the fetus showed no signs of any structural abnormalities of the heart and large vessels. In the group of examined children were not identified any pathological changes during traditional auscultation, differentiated pulse oximetry. There were no signs of hemodynamic or respiratory disorders. The children had no signs of asphyxia at birth. They were staying with this mothers.

Electronic auscultation and Doppler echocardiography were performed during the first 4 days of life.

Newborns with signs of hemodynamically insignificant PDA at the time of examination (PDA with minor shunting) were selected to the observation group: duct diameter up to 1.4 mm/kg body weight; PDA to left branch of pulmonary artery (LPA) ratio <0.5; maximum blood flow velocity PDA >2 m/s; final diastolic blood flow velocity in the pulmonary artery and/or its left branch <0.2 m/s; diastolic flow in the postductal descending part of the aorta is unidirectional; the ratio of left atrium to aorta <1.5; antegrade diastolic blood flow in the anterior cerebral and superior mesenteric arteries [8]. Exclusion criteria - the presence of any other diagnosed congenital disease of heart or large blood vessels.

Electronic auscultation was performed with a Thinklabs (USA) ds32a+ digital stethoscope in the mode of maximum sound amplification and narrowed listening spectrum. The sound was recorded on a Sony-ICD-UX71 (Japan) digital voice recorder. The procedure was performed during sleep or in the absence of screaming or increased child movement. Auscultation was performed at 5 standard points. The duration of recording at each point was about 10-15 seconds to obtain 20-30 heart cycles. The analysis of the obtained phonocardiograms was performed using the developed computer program "Hearttone-D" and included the selection of stable fragments at recording points, filtering (separation from other sounds, such as respiratory sounds), automatic detection of heart sounds in fragments, calculation and evaluation of heart parameters cycles after identification of heart tones [8]. Doppler echocardiographic examination was performed immediately after auscultation on the device MyLab25Gold by Esaote (Italy) and Z.ONE.Ultra by ZONARE (USA).

The following parameters were analyzed: the ratio of the average values of all maxima of the first and second tones ($s1_a_max / s2_a_max$), the ratio of the maximum modulo values of the first and second tones ($s1_max_a / s2_max_a$), the ratio of the

width of the first and second tones ($s1_width / s2_width$ ratio), the modulus of the amplitude of the interval between the first and second tone ($s1_a_max / m1_mean$), the maximum modulus of the first tone and the modulus of the amplitude of the interval between the first and second tone ($s1_max_a / m1_mean$), the ratio of the average value of the maxima of the second tone the second and first tone ($s2_a_max / m2_mean$), the maximum modulus of the second tone and the modulus of the amplitude of the interval between the second and first tone ($s2_max_a / m2_mean$).

The study was approved by the Commission on Biomedical Ethics of the State Institution "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine".

Statistical data processing was performed using standard packages of applied statistical analysis Statistica for Windows v. 6.1. The Mann-Whitney statistical criteria for samples that does not correspond to normal distribution were used. The critical value of the significance level (p) <0.05 was selected for all types of analysis.

Results and discussion. Echocardiographic signs of hemodynamically insignificant DA were detected in 97 full-term newborns (47 boys and 50 girls; gestational age - 38.74 ± 0.04 weeks; birth weight 3357 ± 12 g).

Successive echocardiographic examination after at the age of three months revealed the preservation of PDA symptoms in 2 children, which was 2.1% among children with PDA in the first days of life and 0.79% among the general group of examined children.

Phonocardiogram parameters of the newborns received on the second day of life were analyzed (10 records of children with the PDA detected at the age of three months, and 140 records of children in whom PDA was not detected at the age of three months). The results are presented in the table 1.

Significant differences in auscultatory characteristics were found for the third ($s1_max_a/s2_max_a$), the fourth ($s1_a_max/s2_a_max$, $s1_a_max/m1_mean$, $s1_max_a/s2_max_a$) and the fifth standard auscultation points ($s1_a_max/m1_mean$, $s1_max_a/m1_mean$, $s1_max_a/s2_max_a$).

The most significant differences were found in auscultatory features characterized by the ratios $s1_a_max/s2_a_max$, $s1_a_max/m1_mean$, $s1_max_a/s2_max_a$ in fourth and $s1_a_max/s1_mean$, $s1_max_a/m1_mean$, $s1_max_a/s2_max_a$ in the fifth standard auscultation points.

Therefore, the presented differences concerned the ratios of the average values of the maxima of the tones and the maxima modulo values of the first and second tones, and the ratios of the amplitudes of the tones and the modulo of the amplitudes of the intervals between the tones.

The most significant were the ratios of the average value of all maxima of the I tone to the average value of all maxima of the II tone $s1_a_max/s2_a_max$ ($p=0,0003$) and the ratio of the maximum modulus value of the I tone to the maximum modulus value of the II tone $s1_max_a/s2_max_a$ ($p=0,0011$) in the fourth auscultation point. This may be due to various acoustic phenomena of hemodynamics in the small circulation correlating with the future closure or non-closure of the ductus arteriosus.

Table 1

**Indicators of electronic recordings of heart tones in full-term
newborns with patent ductus arteriosus**

Indicators	Groups of newborns with PDA						Significance according to Mann-Whitney U Test, p	
	PDA closed (140 records)			PDA persisted after three months of age (10 records)				
	Average	Median	Standard deviation	Average	Median	Standard deviation		
The first point of auscultation								
s1_a_max/ s2_a_max	1.37	1.123	0.94	1.72	1.42	1.13	0.3553	
s1_a_max / m1_mean	30.51	28.45	17.83	31.67	22.37	18.79	0.8734	
s1_max_a / m1_mean	34.77	30.92	20.01	31.85	22.37	18.65	0.7021	
s1_max_a/ s2_max_a	1.39	1.28	0.88	1.67	1.42	1.10	0.4684	
s2_a_max / m2_mean	30.69	26.34	19.31	40.40	9.01	40.49	0.5501	
S2_max_a / m2_mean	33.35	30.13	19.20	40.68	10.46	40.24	0.5395	
s1_width/ s2_width	0.750	0.68	0.32	0.75	0.81	0.14	0.3003	
The second point of auscultation								
s1_a_max/ s2_a_max	1.22	1.02	0.77	1.07	1.08	0.19	0.9675	
s1_a_max / m1_mean	16.62	14.87	8.76	16.44	15.97	4.31	0.6252	
s1_max_a / m1_mean	19.70	17.28	11.12	20.97	21.55	7.16	0.4063	
s1_max_a/ s2_max_a	1.22	1.02	0.80	1.13	1.12	0.22	0.7020	
s2_a_max / m2_mean	17.56	14.40	10.92	18.29	15.67	7.05	0.4017	
S2_max_a / m2_mean	20.15	17.90	11.17	22.21	20.09	10.21	0.4249	
s1_width/ s2_width	0.68	0.64	0.26	1.05	0.62	0.68	0.1792	
The third point of auscultation								
s1_a_max/ s2_a_max	1.30	1.05	1.12	1.81	2.09	1.21	0.2301	
s1_a_max / m1_mean	17.86	15.03	10.70	15.10	14.47	4.83	0.7417	

s1_max_a / m1_mean	20.51	16.82	12.82	17.55	17.22	3.42	0.8356
s1_max_a / s2_max_a	1.19	0.92	0.96	1.62	1.79	0.84	0.0494
s2_a_max / m2_mean	20.20	18.46	11.23	16.31	9.45	11.99	0.2430
s2_max_a / m2_mean	25.74	22.34	15.18	17.50	10.91	10.90	0.1099
s1_width / s2_width	0.72	0.67	0.29	0.72	0.67	0.14	0.5969
The forth point of auscultation							
s1_a_max / s2_a_max	1.09	0.96	0.72	1.87	1.80	0.67	0.0003
s1_a_max / m1_mean	33.91	28.28	23.91	49.80	45.59	22.39	0.0233
s1_max_a / m1_mean	35.91	30.37	23.91	49.80	45.59	22.39	0.0510
s1_max_a / s2_max_a	0.89	0.76	0.47	1.43	1.33	0.50	0.0011
s2_a_max / s2_mean	38.22	36.80	20.19	26.98	24.90	6.54	0.0779
s2_max_a / m2_mean	49.41	43.90	26.81	35.69	31.70	10.16	0.1703
s1_width / s2_width	0.66	0.64	0.16	0.65	0.66	0.11	0.8300
The fifth point of auscultation							
s1_a_max / s2_a_max	1.32	1.06	0.82	1.69	1.95	0.64	0.0629
s1_a_max / m1_mean	32.51	28.10	21.66	45.25	47.75	8.26	0.0111
s1_max_a / m1_mean	36.19	34.54	22.32	45.39	47.75	8.48	0.0389
s1_max_a / s2_max_a	1.17	1.03	0.75	1.64	1.95	0.69	0.0492
s2_a_max / m2_mean	29.25	24.06	19.09	32.11	24.53	12.12	0.2190
s2_max_a / m2_mean	37.33	30.64	24.83	34.64	24.53	15.46	0.9608
s1_width / s2_width	0.80	0.69	0.50	0.63	0.63	0.07	0.2704

Conclusions. The study found that ductus arteriosus continued to function at three months of age in 2.1% of children with patent ductus arteriosus in the first days of life

(97 newborns) and 0.79% among the total group of examined children (253 newborns).

All patent ductus arteriosus in 97 neonates were hemodynamically insignificant and were not accompanied by any clinical signs, including not having any auscultatory features during traditional auscultation.

The use of computer heart auscultation with subsequent phonocardiogram analysis revealed differences in the ratio of indicators that characterize different acoustic phenomena of hemodynamics in newborns with patent ductus arteriosus in the first days after birth, depending on the prognosis of its closure.

The most significant were the ratios of the average value of all maxima of the I tone to the average value of all maxima of the II tone $s1_a_max/s2_a_max$ ($p=0,0003$) and the ratio of the maximum modulus value of the I tone to the maximum modulus value of the II tone $s1_max_a/s2_max_a$ ($p=0,0011$) in the fourth auscultation point. Most likely this is related to various acoustic phenomena of hemodynamics in the small circulation correlating with the future closure or non-closure of the ductus arteriosus.

The results show the benefits of use of the computer heart auscultation for screening and subsequent prognosis of patent ductus arteriosus, to limit the necessity of costly examination methods including Doppler echocardiography.

The use of the computer heart auscultation allows planning the individual management of a patient with patent ductus arteriosus immediately after discharge from the hospital.

The study protocol was approved by the Local Ethics Committee of an participating institution. The informed consent of the patient was obtained for conducting the studies.

No conflict of interest was declared by the authors.

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THE DEGREE OF ACCUMULATION OF CADMIUM AND ZINC IN THE LIVER OF EXPERIMENTAL ANIMALS

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Annotation. Cadmium, a heavy metal that has a toxic effect on living organisms. One of the places of its accumulation in the body is the liver. Zinc, a metal with which cadmium is able to compete for a place in biological structures. The work is devoted to the study of the accumulation of cadmium and zinc in the liver of males and pregnant females during their administration.

Key words: cadmium, zinc, liver.

Cadmium is a highly toxic heavy metal widely known for its adverse effects on cell fermentation systems and oxidative stress [4]. When absorbed, it will accumulate in the body throughout life. People are primarily exposed to this metal by inhalation and ingestion, and may suffer from acute and chronic toxicity. Cadmium common in the environment will remain in soils and sediments for several decades [5].

The mechanism of cadmium toxicity is not fully understood, but its effect on cells is known [8]. Cadmium and zinc have the same oxidation states. Cadmium displaces zinc from biologically important structures, for example from enzymes and primarily from metallothionein, thereby preventing its action as a scavenger of free radicals in the cell [7]. This causes the synthesis of new molecules of this protein and leads to changes in the distribution of zinc in tissues, that is, to its accumulation in the liver and kidneys, as well as to a decrease in its concentration, for example, in the bones [1].

Women are thought to be at greater risk of increased Cd accumulation as the concentrations of Cd in the blood, tissue, and urine are higher than in males due to lower concentrations of iron [6]

Thus, the aim of the work was to find out the degree of accumulation of cadmium and zinc in the liver of males and females with a dated gestational age after individual administration of cadmium chloride and combined with zinc succinate)

Materials and Methods. Experimental studies were carried out on female and male Wistar rats (nursery "Dali-2001", Kiev).

For embryonic studies, female rats with dated gestational age were obtained using the vaginal smear method. At the stage of proestrus and estrus, males were placed in a cage with females at a rate of 1:3, the first day of pregnancy was established based on the detection of sperm in a vaginal smear. On the 13th and 19th days of pregnancy, surgical slaughter was performed. The pups were removed from the uterus, checked for the "live-dead" test, weighed, recorded, photographed and fixed in 10% formalin solution. To simulate the

effect and toxic effect of exposure to cadmium chloride, we daily administered a solution of cadmium chloride per os to females throughout pregnancy (at a dose of 2.0 mg / kg). We have chosen a dose 100 times less than the LD50 and twice as much as that which can enter the body from outside in case of cadmium pollution of the environment [2]. In addition to the control group (n females = 20), a group of isolated administration of cadmium chloride at a dose of 2.0 mg / kg (n females = 20) and an experimental group of combined administration of cadmium chloride (2.0 mg / kg) and zinc succinate at a dose of 5 mg / kg (n females = 20). According to the conditions and requirements of the embryonic experiments, we provided a complete food ration, drinking water and careful care for the females; the introduction of metal solutions (probing) was carried out from the first day of pregnancy every day at the same time of day (from 10 am to 12am).

Males were also divided into three groups: control (n = 20); group of isolated administration of cadmium chloride at a dose of 2.0 mg / kg (n = 20); group of combined administration of cadmium chloride (2.0 mg / kg) and zinc succinate at a dose of 5 mg / kg (n = 20). Slaughter was carried out on the 13th and 19th days of administration of the compounds.

Sample preparation and measurement of the metal content was carried out in accordance with GOST 30823-2002. The quantitative measurement of the content of metals in the samples was carried out on an EMAS-200 CCD atomic emission spectrometer. A standard spectral buffering mixture according to GOST 30823-2002 was used as a diluent.

The quantitative determination of cadmium in the analyzed objects was carried out at a wavelength of 228.802 nm, zinc - 213.856 nm. The arc current in all cases was 15 A, the optical gap of the device when measuring cadmium and zinc was equal to 0.4.

Atomic emission analysis with arc atomization allows for qualitative and quantitative elemental analysis of samples of almost any nature.

The EMAS-200 CCD atomic emission spectrometer is a modern analytical device, controlled by a computer and performs all the necessary calculations independently with minimal operator participation. The results obtained were processed by the method of variation statistics. The reliability of statistical studies was assessed using the Student's t-test.

Animal studies were carried out in accordance with the "General Ethical Principles for Animal Experiments" (Kiev, 2001), which are consistent with the European Convention for the Protection of Experimental Animals (Strasbourg, 1985).

Results and Discussion. Analysis of the results of experimental studies revealed that when cadmium is injected, it accumulates in the liver. This is supported by the literature, which states that cadmium accumulates to a large extent in the liver [3]. The amount of cadmium in the liver of pregnant females increases 60 times on day 13 th and 83 times on day 19 th of pregnancy as compared with the control group (Fig. 1). The same trend was found in the liver of males.

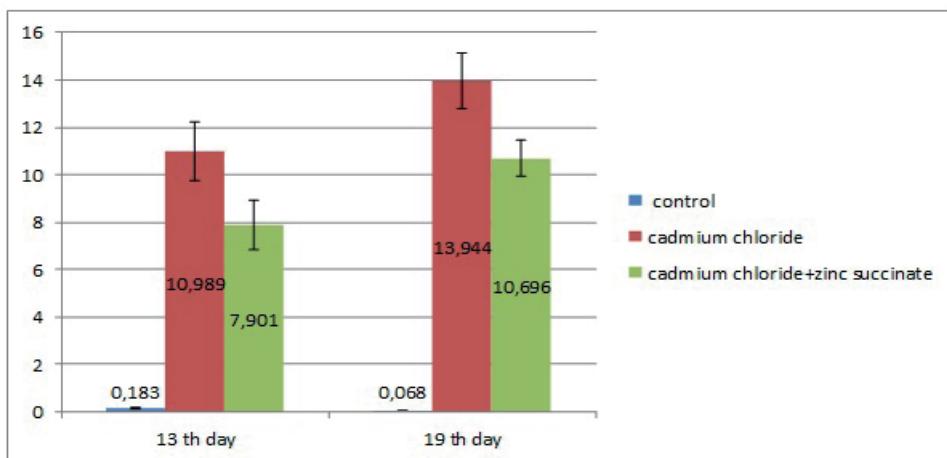


Fig. 1 Degree of cadmium accumulation in the liver of females on the 13th and 19th days of gestation, µg / g

With the combined administration of cadmium chloride and zinc succinate, we observe a decrease in the accumulation of cadmium in the liver of females. On day 13 th, the amount of cadmium decreases by 28%, and on day 19 th by 23%. In males, a significant decrease in the level of cadmium in the liver by 10% is observed only on the 19th day of administration.

When studying the degree of zinc accumulation in the liver of experimental animals, we found that in females, over time, the amount of zinc in the control group increased by 1.46 on day 19 compared with day 13 (Fig.2)

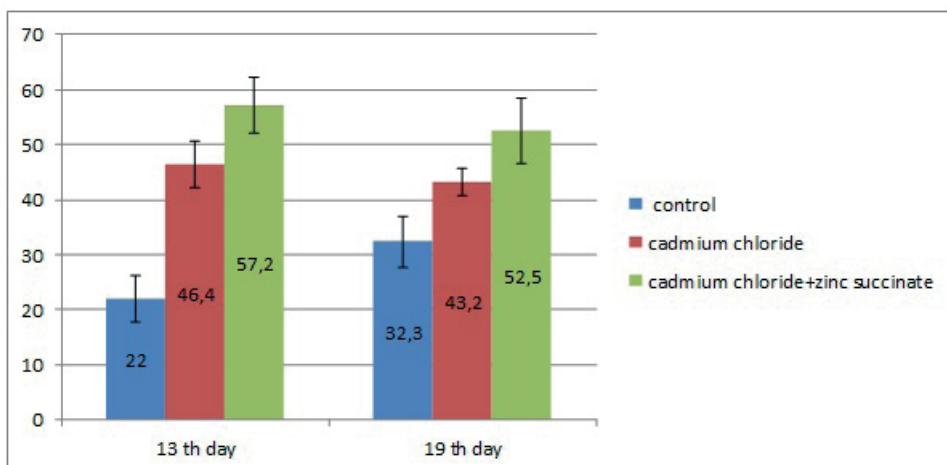


Fig.2. The degree of zinc accumulation in the liver of females on the 13th and 19th days of gestation, µg / g.

With the isolated administration of cadmium chloride, we observe an increase in zinc concentration by 2.1 times on the 13th day and 1.3 times on the 19th day of pregnancy compared with the control. With the combined administration of cadmium and zinc succinate, the concentration of zinc in the liver is expected to increase, both in comparison with the control and in comparison with the individual administration of cadmium chloride due to the intake of zinc from outside. So, on the 13th day of pregnancy, the zinc content increases by 23%, and on the 19th - by 21.5%.

In males, a slightly different picture is observed in the liver (Fig. 3).

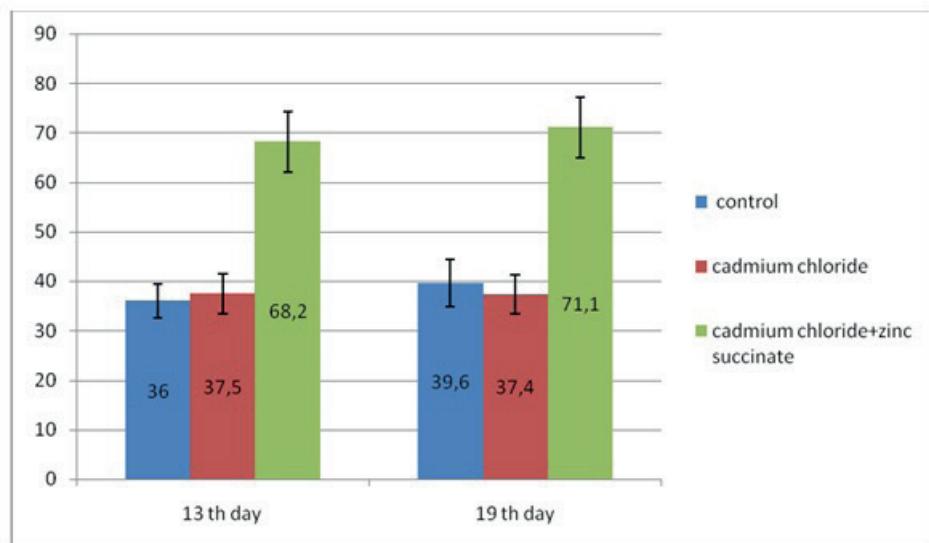


Fig.3. The degree of zinc accumulation in the liver of males on the 13th and 19th days of administration of the compounds, $\mu\text{g}/\text{g}$.

Over time, the amount of zinc remains unchanged in the control group. With individual administration of cadmium, there is no significant increase in zinc concentration compared to the control. But with the combined administration of cadmium chloride and zinc succinate, the zinc content increases by an average of 1.86 times compared with the control and the group of individual administration. At the same time, no significant difference was found between the 13th day of administration and the 19th day.

Conclusions. Thus, it can be seen from the results obtained that the joint administration of zinc and cadmium can reduce the concentration of cadmium in the liver. We also observe that during pregnancy under unfavorable conditions (poisoning with cadmium salts), the concentration of zinc in the liver increases. It can be assumed that a certain protective mechanism is activated that allows the female to preserve the offspring as much as possible.

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RESULTS OF REMOTE TREATMENT IN PATIENTS WITH MUSCLE-NON-INVASIVE BLADDER CANCER

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Annotation. The treatment of non-muscle invasive bladder cancer (NMBC) remains relevant today. The medical community has not reached a consensus on the confident use of one or another chemotherapy drug for intravesical chemotherapy. The aim of the study was to assess the results of treatment of patients with NMBC who received intravesical chemotherapy with the chemotherapy drug Doxorubicin. During 2018-2020. 66 patients with bladder cancer (BC) at the age of 14 - 80 years were observed. The study included patients with RSM stage Ta, T1, histologically G1-G2. All patients were divided into 2 groups. The first group underwent only transurethral resection (TUR) of the bladder, the second group of patients underwent combined treatment of TURP and intravesical administration of Doxorubicin. According to the results of the study, it was revealed that patients who underwent intravesical chemotherapy have better disease-free survival.

Key words: bladder cancer; intravesical chemotherapy, recurrence, progression, risk groups.

Introduction. Urinary bladder cancer (UBC) ranks first among cancers of the genitourinary system. According to the European Association of Urologists (EAU), bladder cancer ranks 7th in prevalence in men and 17th in women in the world [1]. In Ukraine, an average of 11.4 cases of urinary bladder cancer and 4.4 cases of mortality per 100 thousand people have been registered. Men in Ukraine get sick about 4 times more often than women. Mortality from this pathology continues to remain at a fairly high level – 4.4 per 100 thousand people [2].

About 75 % of patients at diagnosis have stage Ta, T1, and in people younger than 40 years, this figure is even higher [3]. High recurrence and progression characterize bladder cancer as an aggressive disease [4].

Transurethral resection (TUR) followed by adjuvant intravesical chemotherapy is the gold standard among organ-sparing treatments for muscle-noninvasive bladder cancer (MNBC) [5, 6]. However, the increase in the frequency of relapses and progression does not allow to prefer one or another intravesical chemotherapy [7, 8, 9]. This necessitates a comparison of the treatment of patients with MNBC [10, 11].

Due to the high recurrence rate in the first three months after TUR, patients should receive adjuvant intravesical chemotherapy [12]. To determine the indications for adjuvant intravesical chemotherapy, it is recommended to distribute patients into risk groups. It is necessary to evaluate the morphological and clinical characteristics of the tumor, such as: size, number of tumors, stage, histological grade (G), recurrence rate. Therefore patients are divided into the following groups:

- Low-risk group: single tumor, recurrence-free period not less than 3 months after

TUR, stage pTa, histological differentiation G1 or G2. For patients of this group, a single intravesical administration of a chemotherapy drug is sufficient.

- Intermediate risk group: multiple tumors, pT1G2, multiple relapses - adjuvant intravesical chemotherapy is recommended for all patients.

- High-risk group: pT1, histologically G3, multiple tumors, frequent relapses in the first 6 months, the prognosis for such patients is most unfavorable and they are recommended long-term intravesical chemotherapy or immunotherapy.

A single injection of chemotherapy drugs is indicated for all patients after TUR biopsy of the bladder. If it is impossible to carry out instillation immediately after the operation, it is recommended to perform it in the first 24 hours, otherwise the risk of recurrence doubles [13, 14].

As for the method of selection, administration, number of instillations of the chemotherapeutic agent - all this is quite individual in relation to the patient and the treatment regimen. It has been proven that early postoperative single instillation promotes the destruction of circulating tumor cells formed as a result of TUR, and acts on residual tumor cells in the resection area and on small formations, which was not visible during TUR [15, 16, 17].

The aim of the study. Was to evaluate the results of treatment of patients with MNBC who underwent transurethral resection of the bladder, and patients with MNBC who underwent TUR with subsequent intravesical instillations of Doxorubicin.

Materials and methods. The results of treatment of 66 patients who underwent treatment and follow-up in the clinic at the Institute of Urology of the National Academy of Medical Sciences of Ukraine during 2012-2018 are analyzed. The youngest patient was 14 years old, the oldest was 89 years. The mean age was 62.11 ± 1.57 years. The ratio of men to women was 4.58:1.

The criterion for inclusion of patients in the study was the presence of urothelial bladder cancer stage Ta, T1; histologically G1-G2, total EORTC glass score up to 9 points. The exclusion criteria were patients with T2 bladder invasion, histologically G3, patients who had previously received adjuvant chemotherapy (ACT) or BCG therapy.

All patients were divided into 2 groups. In the first group ($n=32$) patients underwent only TUR of bladder tumors. In the second group ($n=34$) was combined treatment TUR and intravesical administration of Doxorubicin 50 mg according to the scheme 1 / week – 4 weeks, 1 / month – 4 months [18]. The reason for intravesical chemotherapy was the presence of risk factors in the patient such as: the formation of more than 2 cm and multifocal growth. Tumor growth was confirmed histologically in all patients. Clinical and morphological characteristics of the two groups of patients are shown in table 1.

Statistical processing of the results was performed using Microsoft Word, Excel applications, and the χ^2 -criterion was used to determine the differences between qualitative variables. The reliability of the differences is set at $p < 0.05$.

Table 1

Characteristics of patients by groups

Characteristic	Group TUR (n=32)	Group with Doxorubicin (n=34)
Median follow-up time, months	24	24
Primary tumor, n	11	15
Relapse, n	21	19
Tumor invasion, n		
Ta	17	18
T1	15	16
Differentiation grade, n		
G1	20	19
G2	12	15
Number of tumors , n		
single	22	21
multifocal	10	13
Tumor size, n		
≤ 3 cm	19	19
≥ 3 cm	13	15

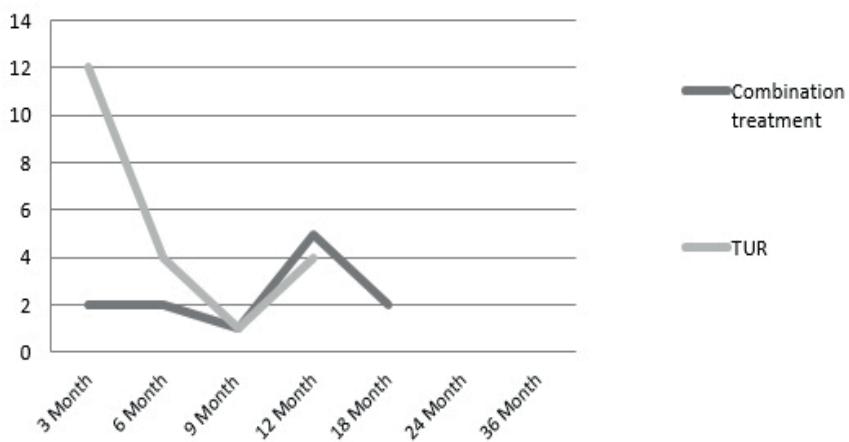


Fig. 1. Relapse rate graph in groups

Results. The duration of observation was 24 months. Analysis of the results showed that when performing TUR without further intravesical chemotherapy, the recurrence was 65.6 % (21 patients), with 11 patients showing disease progression.

During the observation it was found that in the group where only TUR was performed, recurrences most often occur in the first 6 months. In the combined treatment group, relapses were most common after the first year. The recurrence curve is presented

in figure 1. This gives us the opportunity to say that ACT delays the recurrence-free period.

In the group of patients who underwent combination treatment – TUR and the course of Doxorubicin recurrence was 38.2 % (13 patients), 2 patients had disease progression. Figure 2 shows the quantitative manifestations of recurrence in both groups throughout the observation period.

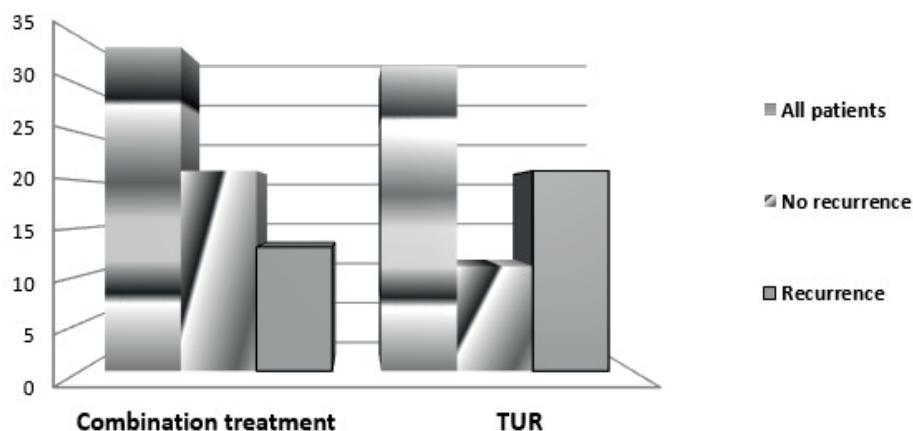


Fig. 2. Treatment results graph

Conclusions. Analyzing the dynamics of recurrence of UBC, we can conclude that the implementation of TUR followed by intravesical administration of Doxorubicin can reduce the recurrence rate, thereby increasing the recurrence-free period, which has a positive effect on reducing disease progression. The possibility of using chemotherapy in the early period, ease of implementation, lack of side effects allow to recommend ACT in clinical practice in order to improve treatment outcomes.

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TACTICS OF THE SCENE INSPECTION DURING THE INVESTIGATION OF FALSIFICATION AND TURNOVER OF FALSIFIED MEDICINES

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Annotation. *The article is devoted to the research of the tactical features of the scene inspection in the investigation of falsification and turnover of falsified medicines. Particular attention is paid to the factors that influence the choice of tactics, in particular; the investigative situation that took place during the scene inspection. Based on the study of investigative practice, a system of tactics, which is the most appropriate in a specific situation of the scene inspection, has been formed. Typical investigative mistakes and shortcomings of the scene inspection during the investigation of this criminal offenses' category are systematized. The need for further scientific developments is proved, the problems are indicated.*

Key words: *scene inspection, scene inspection tactics, scene inspection situations, investigation of falsification and turnover of falsified medicines.*

Formulation of research problem. The effectiveness of establishing all the circumstances related to the falsification and turnover of falsified medicines depends significantly on the ability of investigators to use the full range of tactical recommendations developed by criminalistic science to conduct individual investigative (search) actions. Scene inspection is one of the most common and informative investigative (search) actions, which is an important means of obtaining information about the mechanism of the crime and the identity of the offender, and is the basis for making investigative versions and correctly determining the direction of the investigation.

This leads to the emergence of certain tactical features in the scene inspection during the investigation of falsification and turnover of falsified medicines. Such features are primarily in the narrow specificity of criminal activity, which affects both the variety of locations and the elements of the situation, which depend on the method of falsification, the presence and type of traces and other elements of criminalistics characteristic.

Failure to take into account these features by investigators and other participants in criminal proceedings leads to the loss of evidence, the need to repeat the investigative (search) actions, contributes to the emergence of problematic investigative situations. In this regard, the correct understanding of the investigator of the whole set of tactical features of the scene inspection is the basis for an effective investigation of this criminal offense.

Analysis of recent research. A significant contribution to the development of the theoretical foundations of the scene inspection tactics in the pre-trial investigation of

criminal offenses was made by well-known criminalists: O. Baiev, V. Honcharenko, V. Zhuravel, N. Klymenko, V. Kolmakov, V. Komakha, V. Konovalova, M. Saltevskyi, V. Shevchuk, V. Shepitko and others.

However, today, both in the theory and in practice, there are a number of problems associated with the scene inspection tactics in the investigation of certain types of crimes, which remain controversial. In addition, it should be noted that in the modern criminalistics literature in the formation of methodology for investigating the falsification and turnover of falsified medicines, the issue of scene inspection tactics is considered superficially, usually within the general recommendations without regard to situational conditionality. The above confirms the relevance and the need for further research on this topic.

The purpose of the article is to study the criminalistics nature and importance of scene inspection as a scientific category, to determine the main factors influencing the formation of a system of scene inspection tactics that are appropriate during the investigation of falsification and turnover of falsified medicines. In addition, it is important to clarify the impact of scene inspection on the effectiveness of pre-trial investigation of this category of criminal offenses, the formation of tactical recommendations, as well as the establishment of further areas of research.

Outline of the main material. Before proceeding to a detailed research of the tactical features of this investigative (search) action, considerable attention should be paid to defining the scene inspection as a scientific category and clarifying its significance.

In the criminalistics literature, there are different approaches to determining the content and significance of the scene inspection in the investigation of crimes. Yes, V. Kolmakov considers the scene inspection as the most complex investigative (search) action, which is often the primary action [3, p. 51]. In turn, V. Konovalova notes that the scene inspection has a certain specificity, which distinguishes it from other investigative actions. In particular: 1) the scene inspection is aimed at detection an indefinite range of evidence, the nature of which is dictated by the characteristics of the crime, by the method of its commission and concealment; 2) when detecting information, the investigator must decide on its relevance to the investigated crime and the probative value [4, p. 49]. According to V. Shepitko the investigators direct perception of the scene and the discovery of physical evidence becomes the source material, acquaintance with which allows reconstructing the crime event, and in some case the offender identity. The specific of the perception of the crime reflection determines the scene inspection tactics that can be used [7, p. 4]. The scene contains significant information about the crime and the perpetrators.

The peculiarity of the scene inspection is that during its implementation the consequences of the event are investigated in the form of material manifestations - the crime scene. The scene inspection involves the implementation of cognitive activity, which is characterized by the following features: 1) the retrospective nature of the activity (cognition is turned to the past); 2) cognition is carried out in the form of proof (by means of criminal procedure); 3) such activity is performed by a special entity

(investigator or prosecutor); 4) cognition pursues the goal - to obtain information that is important for establishing the truth in the case; 5) the means of carrying out activities are defined in the criminal procedure legislation [8, p. 88].

As noted by N. Klymenko, the scene inspection is mostly the first investigative action, the closest in time and space when the investigator encounters the crime, the action is the most time consuming (may take a long time), the most productive (allows to establish a significant amount of information on all aspects of the crime) (requires the use of a number of tactics and means of criminalistics techniques) [2, p. 11].

Given these approaches, in our opinion, it is necessary to identify certain features of the scene inspection in the investigation of falsification and turnover of falsified medicines, which determine both the tactics of the scene inspection and their systems that can be used. First of all, it should be noted that falsification and turnover of falsified medicines is an ongoing crime, the main purpose of which is a stable and long-term income from illegal activities. Therefore, given the specific investigative situation, an immediate inspection of the scene is not always appropriate, as such activities are usually not limited to a single event and in the absence of disclosure, and the risk of traceability and loss of evidence is minimal.

The concept of "scene" in the investigation of this category of crimes has a peculiar nature, due to the specific mechanism of criminal activity, the characteristics of the objects to be inspected, the multidisciplinary nature and variety of methods of falsification and turnover of falsified medicines. The scene in this category of crime is usually the premises within which the production, manufacture, storage or sale of falsified medicines took place. These should include production shops and warehouses, pharmacy premises and office and warehouse premises for the wholesale sale of medicines, apartments. Less often, the scene is areas, entrances, yards, streets, ie those places where there was a sale, purchase or transportation, movement of falsified medicines.

In most cases, the scene is "other property of a person", which means a vehicle, land, garage, other buildings or premises of domestic, office, commercial, industrial and other purposes, etc., which are owned by a person [9]. In this regard, it is necessary to pay attention to the rather unequivocal position of the Supreme Court of Ukraine on the inadmissibility of a search under the guise of the scene inspection [10]. According to this position if the pre-trial investigation conducted a scene inspection that was actually a search, which is carried out only on the basis of the judge decision (according to part 2 of article 234 of the Criminal Procedural Codex) such evidence is inadmissible and cannot be used by the court.

The main tasks of the scene inspection in the falsification and turnover of falsified medicines are: 1) study, recording and assessment of the crime scene; 2) establishing the method of falsification and turnover of falsified medicines.; 3) detection, fixation and seizure of falsified medicines, equipment, raw materials and other means of criminal activity, documents and money; 4) analysis of available factual data on the crime; 5) establishing the number and possible locations of accomplices in the falsification and turnover of falsified medicines.

In our opinion, it should be noted that when investigating the falsification and turnover of falsified medicines, the investigator, prosecutor must take into account a number of factors that influence the choice of tactics of the scene inspection. These include: the investigative situation at the time of the scene inspection, the availability of criminalistics information, as well as the features of the scene being inspected. As rightly noted by V. Shepitko, depending on the nature of the crime scene reflection, it is possible to imagine situations where the event of the crime: 1) has a real reflection; 2) does not have a complete reflection; 3) does not find its explicit reflection; 4) has a false reflection [6, p. 219].

Thus, the tactics of the scene inspection in the falsification and turnover of falsified medicines is associated with the formation of a tactics system developed in accordance with current criminal procedure legislation based on the investigative practice, taking into account situational conditionality, study of recurrence and typical situations. The variety of investigative situations during the investigation of such crimes determines the tactics of specific investigative (search) actions and covert investigative (search) actions.

Based on the above, when investigating the falsification and turnover of falsified medicines during of the scene inspection, the investigator encounters the following typical situations: 1) the event of the crime has a real reflection; 2) the event of the crime does not have a complete reflection; 3) the event of the crime does not find its explicit reflection; 4) the event of the crime has a false reflection.

When the event of the crime is actually reflected, the investigator has no doubts about the nature of the event and the persons involved in it. Sufficient information allows us to assume the reality of the event. As a rule, such a situation occurs when conducting a scene inspection based on the results of the suspect's detention in hot pursuit immediately after detecting the fact of falsification or turnover of falsified medicines, without entering information into the Unified Register of Pre-Trial Investigations. Whereas, the event of the crime is not fully reflected, the task of the investigator is to restore the full picture of the event.

Situations of actual and incomplete reflection of the crime scene when inspecting the scene are favorable for the possibility of gathering evidence. At the same time, in the organizational plan, the preparatory stage of such an investigation scene requires addressing issues related to the involvement of a specialist. Thus, V. Alekseychuk notes that during the inspection of the scene, the specialist can influence the investigator's perception of the range of subjects involved in the crime. In particular, to draw his attention to the specific traces and features of objects, their design features, information about which may be important during the investigation, will have probative or operational significance. These can be obvious traces, signs of objects of the situation or implicit (invisible, faintly visible, hidden, and destroyed). It is also important for the full clarification of the circumstances of the crime to establish the absence of certain changes in the situation that should take place in such a situation, or to identify such signs that indicate their artificiality and indicate the staging of certain circumstances [1, p. 84].

When inspecting the scene, also points to the role of a specialist V. Yaremchuk says

that when inspecting the scene, also points to the role of a specialist, emphasizing that the tactics of involving a specialist in investigative (search) actions depend on whether they are verbal or nonverbal. The specific of involving a specialist in the inspection of the scene depend on the type of crime, the nature of the reflection at the scene of its signs. If the event of the crime has a real reflection, the help of a specialist is to model the event that took place, in the analysis of individual traces. In case of its incomplete reflection, the specialist assists the investigator in the analysis of individual traces, reconstruction of the event. If the event of the crime is not clearly reflected, then in this case the specialist participates in the analysis of the destroyed traces. The role of using a specialist in a situation where the event of the crime has fake display reflected is especially important. The specialist can help to identify traces, analyze them, compare different traces with each other; also he can explain to the investigator additional.

When investigating crimes of this category, the objects of inspection may be buildings, premises or dwellings of citizens, which are characterized by a large area and the presence of numerous items to be inspected. In this regard, it is necessary to compile a detailed photo table and a diagram of the scene. It is also advisable to use video recording, which allows you to objectively record the fact of detection and seizure of falsified medicines, directly from the suspect at their place of residence or work. At the same time, it is important to record during the video recording the psychological reaction of the suspects to what is happening. Video recording is also useful in order to capture the individual characteristics and features of falsified medicines, which are often not always possible to inspect at the scene due to the large volume.

Therefore, for the first situation of inspection of the scene it is necessary to use the following tactics: 1) comparison of traces, objects and objects, things or their parts from the scene, with the primary data on signs of falsification found on falsified medicines; 2) establishing the number of criminals, their criminal experience, the availability of professional skills by the leaving traces.

The production or manufacture of falsified medicine is a complex process, the essence of which is the activities of criminals aimed at creating or modifying medicines. At the same time, the tools, equipment, packaging material and other components used by criminals leave their specific traces of falsified medicine, which can be detected without expert examination. Thus, in the actual reflection of the crime event, the signs of falsification, which were found during the inspection of falsified medicines, must coincide with the production and material base, which was found at the scene. In particular, in the presence of signs of changes in the composition of the medicine by the way of manufacturing falsified medicinal raw materials, it is necessary to identify equipment for mixing, drying, packaging of such raw materials. If there are signs of falsifying of the medicinal product packaging, printing equipment or remnants of the ordered printing products must be found at the scene.

Thus, based on the results of comparing the actual situation at the scene with the primary information about the falsified medicines, the investigator may conclude that: 1) the signs of falsified medicines and the material and technical base found at the scene

correspond to each other; 2) falsification of medicinal products that were preliminarily detected in whole or in part requires other equipment, raw materials, components rather than those that were detected during the inspection of the scene; 3) equipment, raw materials, components found at the scene were not used in the production, manufacture of falsified medicines that were preliminarily detected.

In the first case, there is a truly comprehensive reflection of the scene by the investigator. The second case gives grounds to conclude that there are other premises with material and technical base, which in combination with equipment, raw materials, components that were found at the scene were used by criminals for a single purpose. Thus, it is widespread practice of placing equipment in different places for a) production of medicinal raw materials in various buildings and premises is quite common; b) production of printing products, packaging material; c) packaging of counterfeit medicines; d) storage of counterfeit medicines. The presence of signs of the third case indicates that the material and technical base found at the scene is not related to the investigated crime or is related to another case of falsification and turnover of falsified medicines.

An important tactic method in the scene inspecting is to establish the number of criminals, their criminal experience, and the availability of professional skills by leaving traces. In the investigation of falsification and turnover of falsified medicines, it is important to analyze the following signs and properties of objects and traces at the scene: a) the time of occurrence of traces at the scene. (In particular, during the inspecting of the place of production or manufacture of falsified medicines it is necessary to analyze the stage of the technological process at which it stopped during the inspection); b) connections of the scene of investigation with the place where or near which it is located or another place (for example, connections of the premises and the building, garage and garage cooperative, etc.); c) structure and regularities of traces, connections of traces among themselves, the mechanism of their formation; d) the occurrence possibility of traces from one or more participants in the crime; d) the use of objects and technologies that require special knowledge.

In the process of inspecting the presumed place of production of falsified medicines, the investigator establishes: what facts indicate that the premises under inspection are the place of manufacture of falsified medicines; whether this place is accessible to other persons or it is specially adapted for criminal purposes and hidden from outsiders; what indicating for the methods of production or sale of falsified medicines. It is important to fix the conditions of handling medicines, which are regulated by special regulations of the Ministry of Health of Ukraine. Failure to comply with these rules is a gross violation of licensing requirements and often indicates the criminal nature of the activity.

In a situation where the event of the crime is not clearly reflected, we can assume that: a) destroyed data at the scene (changes in the environment disappeared, and the act of their selection became impossible; however, the destruction of information at the scene (traces and evidence) characterized by the emergence of other information - traces of their destruction); b) there was no event in this place. As a rule, such a situation is

typical when conducting an inspection of the scene after a certain period of time, after entering the information into the Unified Register of Pre-trial Investigations, including if the inspection is previously conducted by the State Service of Ukraine on Medicines and Drug Control.

The situation where an scene investigation is conducted through a significant period of time has a number of negative factors, due to the fact that a) the information contained in the act of inspection has no force of proof, in contrast to the protocol of the scene; b) when conducting an inspection in the order of departmental investigation, the circumstances to be clarified in criminal proceedings shall not be established. This results in the impossibility of a full and objective examination by investigators due to the destruction of traces at the scene. That is why we believe that the investigator should directly inspect and find out all the circumstances of the incident.

Therefore, the investigator is primarily faced with the task of clarifying and verifying the existing data contained in the inspection report, the departmental inspection protocol on the basis of information that is left in the material scene. In this regard, for the second situation of inspection of the scene it is necessary to use the following tactic methods: 1) comparison of the situation with the primary data that contained in the materials of the inspection of the State Service of Ukraine on Medicines and Drug Control; 2) modeling of a crime event with the help of information contained in the materials of the inspection of the State Service of Ukraine on Medicines and Drug Control.

Finally, if the event of the crime has a false reflection, there is a situation of reflection not of the event of the crime, but of another event, ie during the staging. In these cases, it is necessary to pay attention to the so-called negative circumstances, which contain information not about the crime, the reflection of which they allegedly are, but about the staging of the crime.

Thus, the inspection of the scene as an investigative (search) action is aimed at directly identifying and fixing the situation at the scene, traces of the crime and other factual data relevant to establishing the circumstances of the crime. The effectiveness of the scene inspection during the investigation of falsification and turnover of falsified medicines is due to the following factors: timely visit to the scene of the investigative operative group, qualified actions of the investigator and specialists and the use of developed forensic recommendations [5, p. 201].

In the formation of criminalistics recommendations for the investigation of falsification and turnover of falsified medicines, it is important to study and systematize the typical investigative errors and shortcomings of the inspection of the scene. According to the results of generalization of materials of investigative and judicial practice, the main disadvantages of the inspection of the scene in the investigated category of crimes are: a) non-involvement in the inspection of the scene a highly qualified specialist; b) lack of individualization of objects and subject in the inspection protocol; c) lack of use of technical means, in particular, photo, -video recording; d) lack of drawing up schemes, plans when inspecting large premises, terrain; d) focus only on the traces associated with pharmaceutical activities, insufficient attention of the subjects of the scene investigative

to the traces-reflections of man.

First of all, it should be noted that insufficient attention was paid to the composition of the investigative operative group. The lack of use of special knowledge during the investigative expertise significantly affects its result. In addition, given the need to record traces and signs of falsification, which are important to describe in the protocol, it is advisable to use photo and video fixation during the investigative expertise.

An important disadvantage is the insufficient attention of the subjects of the investigative inspection to the trace reflections of humans. Such as fingerprints, footprints, especially in places not available to casual visitors. In our opinion, the reason for this disadvantage is that the persons who inspect the scene in the investigation of falsification and trafficking falsified medicines are psychologically focused on the direct detection of traces of such activities in the form of falsified medicines, as well as objects and substances that display the stages of their manufacture. They are aimed at identifying the economic component of criminal activity. As a result, the detection and fixation of other categories of traces remain out of consideration. At the same time, fingerprints and other traces-reflections of human life allow to establish the group nature of the crime, as well as to establish other criminalistics signs of falsification and trafficking of these medicines. Accounting of such information is one of the factors for establishing the organized nature of criminal activity on falsification and turnover of falsified medicines.

Conclusions. Summing up, we note that an effective inspection of the scene involves knowledge of the investigator of a variety of tactics, their correct and appropriate use in a particular investigative situation, the use of special knowledge and technical facilities to fully fixation all the circumstances of the event. Successful use of the scene inspection is the key to an objective and successful investigation of falsification and turnover of falsified medicines, as it allows you to get an represent of the circumstances of the incident relevant to criminal proceedings, the mechanism of the crime and the identity of the offender, to put forward investigative versions and correctly determine the direction of the investigation.

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