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ANALYSIS OF CRISIS LEVEL IN REGIONS OF UKRAINE

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Abstract. The *purpose* of the paper is to identify the crisis level in regions of Ukraine in 2013–2015. The article also determines features, causes, and development of crisis situations in the regions of Ukraine and proposes measures to prevent the emergence and development of crisis situations or their disposal. *Methodology.* The basis for assessing the level of crisis in the socio-economic development of the region is to determine the level of deviation of actual indicators from the threshold values of socio-economic security. Such an assessment needs justification for the deviation of the actual indicators from the threshold values of socioeconomic security, which will correspond to a certain state of the depth of the crisis. The non-crisis zone characterizes the region as a powerful territorial centre of the country in the social and economic aspects. Actual indicators of the socio-economic development of this region are higher than the threshold values. Given the slowdown in the region's development, the lack of innovative mechanisms for increasing economic potential, and the expansion of social programs for the population, this region may become a pre-crisis zone. A quantitative indicator of the zone of pre-crisis state, its threshold is numerical measurements, characterized by a 25-percent deviation from the threshold level of the non-crisis zone, which corresponds to the limits of indicators from 1.0 to 0.75. The growth of the same pace of socio-economic development, the implementation of effective measures of crisis management will lead to the transition of the region into a non-crisis zone. With a further fall in the level of socio-economic development, the region will fall into a zone of moderate crisis. In order to return to a pre-crisis state, regional authorities should develop a reactive anti-crisis strategy and effective rehabilitation programs. A quantitative indicator of this zone, its threshold is numerical measurements, which corresponds to the limits of the indicators from 0.75 to 0.5. The timely implementation of liquidation measures to neutralize the effects of the existing ones and prevent new crises will lead to the transition of the region into a zone of deep crisis. The zone of deep crisis is characterized by a partial destruction of the socio-economic system of the region. Out of such a situation requires the use of systemic measures of anti-crisis state and regional management with the assistance of foreign aid. A quantitative indicator of this zone, its threshold is numerical measure, which is limited to 75 percent deviation from the threshold level of the non-crisis zone, which corresponds to the limits of indicators from 0.5 to 0.25. The zone of bankruptcy involves the complete destruction of the region as a social and economic system. The reasons for such a situation are force majeure circumstances (wars, natural disasters, man-made disasters, etc.). Such a state of the region is characterized by the cessation of the work of enterprises and organizations, the economic and social devastation of the region, the intensification of migration processes. The solution to the current situation is targeted state crisis management. A numerical indicator of this zone, its threshold is considered numerical measurements, characterized by more than 75 percent deviation from the threshold level of the non-crisis zone, which corresponds to the limits of indicators from 0.25 to 0.0. *Results* of the survey showed that there was a moderate level of crisis according to economic parameters with a high risk of transition into a deep crisis in 14 of 27 regions as of 2015. *Practical implications.* Thus, the conducted analysis on the crisis of socio-economic development of Ukraine's regions made it possible to detect the level of its depth according to social and economic parameters and to determine the weakest areas that need the most support and display in anti-crisis regional management. *Value/originality.* The conducted grouping requires the use of a differentiated approach to the selection of strategies for regional crisis management from the standpoint of crisis prevention, the withdrawal of the region from the crisis and management of its consequences.

Key words: crisis, crisis management, region, anti-crisis measures, crisis notification.

JEL Classification: R11, R12, R58

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1. Introduction

The urgency of the research. In recent years, there has been a sharp increase in crisis situations in Ukraine. Inflationary processes enclosed the entire system of credit, financial, and banking activities, business is reducing, the labour migration to countries of near and far abroad is increasing, and the share of the shadow economy is growing. These processes prevent the country and its regions from overcoming the crisis and make it even more protracted and deep, as well as create an unstable economic environment and social tension. It is necessary to make a fundamental restructuring of the economy of state regions, a redistribution of capital from the old forms of economic activity to new ones. If the crisis occurs, it is expected to use it as a method of restructuring the economy of the region. Otherwise, the further aggravation of contradictions will occur in all spheres of life. The depth and nature of crisis could threaten the very existence of the regional socio-economic system. Analysis of studies and publications. Crisis regions are a new problem for the economy of Ukraine that will eventually only become actual. Features of the crisis course in Ukraine led national researchers to an intense and in-depth research of a true phenomenon of the crisis of state development and nature of crisis processes that took place and are still ongoing in the regions of Ukraine. The contribution to the study on the emergence and development of crises at the meso and macro levels was made by the following Ukrainian researchers as O. Baranovskyi (Baranovskyi, 2009), T. Mirzodaieva (Mirzodaieva, 2005), S. Herasymchuk (Herasymchuk, 2010), S. Maiurenko (Maiurenko, 2011), N. Holiad (Holiad, 2004), B. Udovychenko (Udovychenko, 2011), M. Butko (Butko, 2011), T. Honcharova (Honcharova, 2004), and others. Works of these researchers, along with many other prominent scholars, gave the ground to formulate their own vision, which is reflected in this article, based on official data of the State Statistics Service of Ukraine (www.ukrstat. gov.ua). The aim of the study is to identify problems and evaluate the crisis situation of economic and social spheres of Ukraine's regions, examine features of crisis situations in regions of our country.

2. Assessment of crisis level of regions of Ukraine according to the economic parameter

It is proposed to consider indicators to assess the crisis level of regions of Ukraine according to economic parameters for 2001–2015, which are preferential for the support of the socio-economic development of Ukraine. In this context, the list of indicators of crisis-level assessment of the socio-economic development of the region should be as wide as possible, as the crisis is a systemic phenomenon and the more problematic positions would be found, the better. However, indicators of crisis-level assessment of regional development should reflect the severity of the crisis, resource capabilities of critical regions, the aggravation of basic parameters of life quality, and the concession of social services. As already noted, the assessment of crisis level of the socio-economic development of the region is realized through the indicative method, which is conducted by comparing actual and threshold values of social and economic security of the region.

The calculation of crisis depth of regions of Ukraine according to economic parameters is shown in Table 1.

The analysis showed that there was a moderate level of crisis according to economic parameters with a high risk of transition into a deep crisis in 15 of 27 regions as of 2015. This situation is extremely negative, as it affirms the lack of implementation of anti-crisis measures of a preventive nature into the regional management.

The high level of crisis according to economic parameters is caused by the low level of fixed capital investment, which makes it impossible to fully develop the material and technical potential of the region and to ensure the growth of its economy. Factors of fixed capital investment are economic interests of investors, geopolitical position of the region, the payback period of investment resources, investment appeal of the region, which is not always provided and provokes crisis situations in its economic development. Among the regions of Ukraine, the most indications of the economic crisis are observed in Volyn region. The assessment has shown that there are indicators of crisis processes in Volyn region that characterize the low level of innovative activity of industrial enterprises, a significant amount of transfers in the structure of GRP, low level of GRP, low level of export, high level of import, and a significant share of loss-making enterprises.

This situation is typical for most regions, which are in the area of moderate crisis. The causes of crisis of economic development in these regions are technical and technological backwardness of major industrial assets, low technological structure of the economy with low share of high technology products, the lack of innovative activity, that all determine the high amount of energy and raw materials, physical and moral obsolescence of equipment and technologies, unprofitableness of enterprises and low competitiveness of the products on the world markets. Dnipropetrovsk and Poltava regions, as well as the city of Kyiv, were in the non-crisis area according to economic parameters during 2013–2015. However, these regions have a very low share of innovative products, mainly industrial; the share of loss-making enterprises in the economy of the region is quite high, which creates conditions for their transition to the pre-crisis state. Accordingly, a serious threat of emergence and development of crisis situations is traced in these regions in case of proceeding the policy on neglecting innovations, stimulating the export activity, the absence of measures to upgrade the technical and technological base.

Table 1

Assessment of crisis level of regions of Ukraine according to economic parameters for 2013–2015, %

Region of Ukraine	Regional share of GRP in GDP of the state, %	Export-import coverage ratio	Fixed capital investment, % before GRP	Level of wear and tear, %	Share of sold innovative products in general output, %	Share of loss-making enterprises in all sectors of the economy of region	Share of export in GRP of the region, %	Share of import in GRP of the region, %	The ratio of transfers from the state budget to GRP, %	Average level	Crisis status
Vinnytsia	-39,5	55,3	-3,4	-10,2	-91,7	-38,6	-65,3	107,9	-60,9	-22,2	preceding a crisis
Volyn	-61,8	-46,5	-1,1	30,9	-76,0	-42,6	-49,2	-40,2	-67,7	-46,6	moderate crisis
Dnipropetrovsk	174,3	63,8	-12,3	-3,1	-83,7	-56,3	18,3	-33,7	45,5	6,8	no crisis
Donetsk	233,8	228,9	-22,7	5,9	-68,3	-50,2	-34,7	16,4	24,2	-38,3	moderate crisis
Zhytomyr	-55,7	20,4	-3,0	19,7	-73,3	-44,7	-64,1	58,5	-65,2	-30,2	moderate crisis
Zakarpattia	-60,5	-23,8	-5,8	21,0	-43,7	-22,8	9,2	-64,0	-70,5	-38,0	moderate crisis
Zaporizhzhia	13,2	73,1	-5,9	-0,9	-60,3	-52,7	25,2	-35,7	-11,9	-13,2	preceding a crisis
Ivano-Frankivsk	-47,0	7,6	24,9	22,4	-64,7	-35,3	-45,2	-4,1	-63,5	-31,2	moderate crisis
Kyiv	3,0	-63,9	79,6	47,2	-84,3	-40,6	-52,8	-52,3	-19,8	-29,5	moderate crisis
Kirovohrad	-59,1	73,8	0,0	-5,0	-67,3	-29,4	-68,3	177,0	-58,1	-11,4	preceding a crisis
Luhansk	15,9	186,9	-0,6	10,1	-74,3	-50,8	-19,2	19,8	-25,4	-4,4	preceding a crisis
Lviv	5,4	-46,6	53,5	12,6	-82,0	-43,8	-61,8	-31,3	-51,0	-35,1	moderate crisis
Mykolaiv	-42,6	100,5	12,6	1,5	-66,3	-46,3	-4,1	-3,3	-41,0	-17,3	preceding a crisis
Odesa	31,4	-53,5	12,4	17,4	-73,7	-47,2	-49,8	-45,1	-22,9	-33,0	moderate crisis
Poltava	-0,3	135,8	22,8	-9,5	-46,7	-48,2	-18,2	41,8	-3,1	0,05	no crisis
Rivne	-57,8	1,6	0,5	27,8	-94,3	-45,8	-60,8	27,2	-66,4	-36,1	moderate crisis
Sumy	-52,7	68,1	-17,9	2,5	3,3	-45,9	-35,3	24,6	-50,7	-21,4	preceding a crisis
Ternopil	-67,6	-32,1	-3,6	29,5	-67,7	-35,6	-81,8	89,4	-71,3	-34,5	moderate crisis
Kharkiv	64,2	-33,0	-7,2	-12,7	-49,3	-48,9	-62,6	-2,3	-12,3	-25,6	moderate crisis
Kherson	-62,2	80,4	-9,5	-2,5	-65,0	-42,9	-66,6	156,4	-62,8	-15,3	preceding a crisis
Khmelnytskyi	-52,7	-14,0	8,3	22,2	-79,3	-41,1	-72,2	43,7	-64,9	-35,0	moderate crisis
Cherkasy	-45,6	53,0	7,6	1,3	-91,0	-39,5	-50,4	35,7	-53,1	-26,6	moderate crisis
Chernivtsi	-73,6	-0,4	27,6	40,2	-68,3	-41,1	-78,0	100,8	-74,0	-27,0	moderate crisis
Chernihiv	-55,7	6,1	-21,2	0,3	-82,0	-45,9	-66,3	44,0	-57,3	-36,8	moderate crisis

* Calculated by the author according to the data (www.ukrstat.gov.ua)

3. Assessment of crisis level of regions of Ukraine according to the social parameter

In order to determine the crisis level of regions of Ukraine, it is necessary to analyse the crisis level of regions according to indicators of social development. The calculation of crisis depth of regions of Ukraine according to social parameters is shown in Table 2.

Regions that are in a deep crisis according to social parameters as of 2015 were Dnipropetrovsk, Donetsk, Zaporizhzhia, Luhansk and Mykolaiv, and the Autonomous Republic of Crimea, where the deviation level from the threshold non-crisis state is more than 50%. The social tension in these regions is pretty high, which is the reason that the conflict situations arise as a result of poor quality of life over the last decade.

Table 2
Assessment of crisis level of regions of Ukraine according to social parameters for 2013–2016, %

Region of Ukraine	Housing, m2 per inhabitant	Unemployment rate	Share of employable population in total number of population, %	Mortality rate	Share of population with per capita income below poverty line	Education expanses, % before GRP	Healthcare expanses, % before GRP	Culture and art expanses, % before GRP	Birth rate	Average level	Crisis status
Vinnytsia	31,6	-13,8	14,4	-52,0	-75,9	-30,4	-53,2	-87,1	-39,0	-33,9	moderate crisis
Volyn	1,2	-18,1	15,8	-44,3	-84,4	-20,4	-53,6	-86,1	-18,0	-34,2	moderate crisis
Dnipropetrovsk	15,6	14,3	15,3	-52,2	-67,1	-71,7	-78,0	-95,0	-39,1	-50,2	deep crisis
Donetsk	11,8	-2,1	15,8	-53,4	-64,5	-73,5	-75,0	-94,3	-46,5	-52,4	deep crisis
Zhytomyr	21,2	-26,7	17,6	-54,2	-78,5	-18,9	-49,0	-86,3	-34,3	-34,3	moderate crisis
Zakarpattia	11,3	-12,1	15,4	-36,2	-80,0	-5,9	-48,4	-83,4	-16,9	-28,5	moderate crisis
Zaporizhzhia	10,6	1,6	15,5	-49,7	-71,0	-62,6	-71,5	-93,2	-42,5	-50,3	deep crisis
Ivano-Frankivsk	15,1	-16,2	3,9	-38,1	-78,9	-31,8	-53,6	-85,2	-29,8	-35,0	moderate crisis
Kyiv	51,6	5,9	14,6	-53,2	-73,5	-57,2	-70,6	-90,7	-35,1	-34,3	moderate crisis
Kirovohrad	20,8	-18,8	14,3	-54,8	-78,9	-33,2	-56,1	-87,1	-41,4	-37,3	moderate crisis
Luhansk	18,0	-0,2	11,2	-53,6	-73,3	-63,9	-64,8	-91,0	-47,8	-50,6	deep crisis
Lviv	3,9	-12,4	12,8	-39,0	-77,3	-39,2	-61,7	-87,8	-34,5	-37,2	moderate crisis
Mykolaiv	7,8	-18,5	16,5	-49,5	-69,9	-47,1	-66,7	-89,8	-38,2	-50,1	deep crisis
Odesa	9,2	27,0	10,0	-48,1	-75,7	-60,7	-72,0	-91,5	-32,4	-37,1	moderate crisis
Poltava	21,8	-14,0	15,7	-55,0	-76,4	-64,2	-74,1	-92,7	-46,1	-42,8	moderate crisis
Rivne	4,1	-30,9	14,7	-40,4	-81,2	-22,2	-53,1	-85,3	-15,0	-34,4	moderate crisis
Sumy	14,3	-19,7	15,8	-55,3	-78,1	-40,9	-57,4	-88,8	-48,6	-39,9	moderate crisis
Ternopil	13,2	-27,9	6,7	-44,8	-83,4	-11,9	-45,4	-81,1	-35,7	-34,5	moderate crisis
Kharkiv	12,5	7,5	15,5	-48,7	-68,6	-64,6	-73,0	-92,7	-45,9	-39,8	moderate crisis
Kherson	13,0	-20,1	16,5	-48,6	-78,6	-21,9	-52,3	-86,0	-36,8	-35,0	moderate crisis
Khmelnytskyi	22,6	-18,7	16,4	-51,3	-78,9	-20,3	-51,9	-84,0	-38,1	-33,8	moderate crisis
Cherkasy	30,1	-24,4	16,4	-54,0	-72,3	-38,9	-58,2	-87,6	-45,8	-37,2	moderate crisis
Chernivtsi	11,3	-20,2	12,2	-39,4	-77,9	-7,7	-41,9	-82,2	-29,9	-30,6	moderate crisis
Chernihiv	25,5	-23,6	18,3	-60,5	-76,1	-36,5	-54,2	-85,3	-48,4	-37,9	moderate crisis
Kyiv City	3,9	49,7	21,7	-24,3	-32,0	-84,8	-87,9	-96,5	-35,4	-31,7	moderate crisis
Sevastopol City	2,6	42,9	3,4	-38,3	22,1	-51,4	-64,0	-84,4	-44,6	-33,5	moderate crisis

* Calculated by the author according to the data (www.ukrstat.gov.ua)

4. Conclusions

Therefore, by generalizing the conducted analysis on the crisis level according to economic parameters, it can be argued that the causes of the crisis, in the most of industrial regions of Central and Eastern Ukraine, are the following:
– business contractions in the economy of regions as a whole;
– high levels of corruption and shadow economy;

– the decrease of purchasing capacity of the region population;
– poor engineering and technical equipment of regions over the high level of wear and tear and low level of fixed capital investments;
– low innovation activity of enterprises in the region;
– the high amount of energy and raw materials, the dominance of industries of primary processing, especially in regions oriented to export.

The main causes of crisis situations, in addition to the above mentioned, for a number of regions of Ukraine (as Volyn, Zakarpattia, Ivano-Frankivsk, Ternopil, Khmelnytskyi, Chernivtsi, Cherkasy) that were in the area of moderate crisis according to economic parameters, are the following:

– remoteness from economic centres and raw material bases;

– lack of developed social and industrial infrastructures that makes the region unattractive to qualified labour force;

– historically formed conditions of operation, as a result, regions were not included to those of primary importance, those that are involved in the implementation of major social and economic programs;

– low efficiency of capital investments.

Thus, the conducted analysis on the crisis of socio-economic development of Ukraine's regions made it possible to detect the level of its depth according to the social and economic parameters and to determine the weakest areas that need the most support and display in anti-crisis regional management. Regional development is made in times of crisis at the state level, so there is an actual need to search and develop new strategies for socio-economic development, the implementation of which will create conditions for improving the quality of life in regions of Ukraine.

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THE INFLUENCE OF INTERNALLY DISPLACED PERSONS ON THE SOCIAL AND ECONOMIC DEVELOPMENT OF REGIONS IN UKRAINE

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Abstract. In terms of the issues aggravation concerning internally displaced persons and the disproportions in the social and economic development of regions as a result of the antiterrorist operation in Ukraine, an analysis of social and economic transformations in regional development under the migration processes influence and the search for their overcoming mechanisms becomes relevant. The *purpose* of the article is to analyse the impact of internally displaced persons flows on the social and economic development of regions in order to improve the regional development mechanisms in Ukraine. The research *methodology* includes a set of scientific research methods that provide a systematic approach to investigating the impact of internally displaced persons on the social and economic development of Ukrainian regions, theoretical approaches to state regulation of internal migration flows in conditions of decentralization of power and reform of public administration in the country. In the course of investigations, the following methods are used: statistical analysis and synthesis while determining the indicators of the IDPs burden on the regional social and economic systems of Ukraine; analysis while studying the main problems of internally displaced persons and their directions; logical synthesis and synthesis while drawing conclusions. The information base for the study consists of the legislative acts of the Verkhovna Rada of Ukraine, the Decree of the Cabinet of Ministers of Ukraine, statistical and reporting information of the Ministry of Social Policy of Ukraine, development of the UN Agency for Refugees, the UN ReliefWeb Specialized Service for the Coordination of Humanitarian Affairs, Inter-Agency Standing Committee, PROMAN, NGO "Labor and Health Social Initiatives", Ukrainian Helsinki Human Rights Union, research results of domestic and foreign scientists. *Results*. The article deals with the issues of effective reforming of regional development mechanisms related to solving the internally displaced persons' issues and their impact on social and economic processes in the regions. The internally displaced persons' influence analysis on the regional social and economic systems of Ukraine was conducted. The analysis allowed determining the rating of five regions with a significant load of IDPs and identifying the social and economic system in the region and the acutest elements. *Practical implications*. The peculiarities of internally displaced persons' migratory flows by regions and their impact analysis on the social and economic development of regions and Ukraine as a whole are to be investigated. *Value/originality*. The ways of positive social and economic dynamics of regional development enhancement due to the programs and regional development strategies correction, taking into account the resource potential of the IDPs in some areas, are proposed.

Key words: internally displaced persons in Ukraine, social and economic development of regions, regional development strategy, internal migration.

JEL Classification: R23, O15, R28, R12, L50

1. Introduction

The current changes in the social and economic development of individual regions and the country as a whole since 2014 were influenced by the massive internal migration of the population within the country. As a result of the armed conflict in Ukraine, about 4% of Ukraine's population is in the status of "internally displaced persons" (IDPs) and has migrated to other regions of the country.

On the basis thereof, there was an aggravation of problems in the social and economic spheres of the regions that added to the imbalances growth in regional development, especially in the eastern regions of Ukraine (Donetsk, Luhansk, Dnipropetrovsk, Zaporizhzhia, Kharkiv regions). A particular importance is paid to the following negative phenomena of regional development: the destruction of housing stock, social infrastructure and life support systems; the loss of real

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and other property by population, the complication with providing the population of the eastern regions with the necessary utilities, medical care, social and educational services; economic decline and rising unemployment due to the enterprises closure, the breakdown of economic ties; the breakdown of the financial, banking, transport infrastructure and communications and communications systems; low level of external and internal demand owing to inhibition of economic growth; decrease in the of purchasing power level of the population as a result of reduction of real incomes; lower quality of life; the population growth in the territorial communities of the eastern regions of Ukraine in connection with internal displacement; a sharp environment deterioration, complication of the environmental situation in the eastern regions; ineffective information policy (Yedynyj Veb-portal orhaniv vykonavchoi vlady «Uriadovyj portal», 2017).

Issues of IDPs adaptation in the conditions of new cities of residence, their integration into the region's social life and determination of the region's possibilities regarding the use of the IDPs potential for further development are still urgent ones.

The process of regional development and implementation of the regional development strategies of individual regions became complicated due to the difficult financial and economic situation, and the priority task of the regional policy was the creation of an effective and operative system of IDPs social protection and their immediate problems solution. Therefore, the issue of adherence to the IDPs principles in Ukraine as a whole and in certain regions, the definition of the IDPs problems and ways of their solution, as well as the analysis of the IDPs flows' impact on the regional development of Ukraine in the process of reform, is relevant.

The main difficulties of the state and regional policies were researched by the Ukrainian scientists, National Strategic Planning Institute scholars (Vlasiuk, 2016; Horbulin, Vlasiuk, Libanova, Liashenko, 2015; Chechel, Khlobystov, Orlova, 2017; Novikova, 2017), who identified the peculiarities and dynamics of the regions' development, development factors of socio-economic processes in the regions under the conditions of reform, investigated the risks and resource loss of the occupied territories potential, highlighted the IDPs social and economic problems. Individual scholars (Ryndzak, 2017; Yevdokymov, Shymanska, 2017; Nahorniak, 2016; Dustmann, Vasiljeva, Damm, 2016; Betts, Bloom, Kaplan, Omata, 2014) researched the international experience of internal migration of the population, identified the typical IDPs problems and certain mechanisms of the IDPs right execution and state support in various countries.

Further development is needed for identifying the risks from internally displaced people flows for regions' socio-economic development, for adjusting the state strategic programs of regional development under the reform conditions, for further IDPs integration to the social life of the region, and for the formation of effective state mechanisms for solving the IDPs problems in Ukraine. The presented unresolved difficulties while implementing the modern state regional policy determine the purpose of the study.

2. The social and economic development of the Ukrainian regions

According to the various indicators levels of socio-economic development, Ukraine lags far behind most European countries and during 2015–2016 the situation underwent significant changes. The entire social and economic sphere of Ukraine is in the process of reforming in the conditions of European integration processes. Priorities for government decentralization and public administration reform are defined in the main valid documents of a strategic nature, i.e. the Strategy for Sustainable Development "Ukraine 2020", approved by the Decree of the President of Ukraine on January 12th, 2015, and the State Strategy for Regional Development for the period up to 2020, approved by the Cabinet of Ministers of Ukraine dated August 6th, 2014. The conceptual foundations of the reform have been established by the Concept of Reform of Local Self-Government and Territorial Organization of Power of Ukraine (approved by the Decree of the Cabinet of Ministers of Ukraine dated April 1st, 2014). The regional development issues, in terms of the proper responses absence, will grow into threats to regional stability.

Currently, the critical risks for Ukraine's regional development are the inability to develop own potential at the expense of existing tools and sources of resources, the problem of full-fledged attraction of necessary resources, the destruction of economic ties within the country, the change of resource and migration flows that affect the effectiveness of the regional strategy and state social development implementation (Vlasiuk, 2016; Horbulin, Vlasiuk, Libanova, Liashenko, 2015).

The presence of regional stark comparison asymmetries in the regions' development in Ukraine (different quality of economic and social development planning at the regional level, different levels of urbanization, different levels of income per capita, different levels of agricultural land use efficiency, different state of human development indicators) was negatively affected by massive internal population migration in Ukraine since 2014.

The social and economic development of the Ukrainian regions in 2015 – early 2016 showed mixed dynamics. The beginning of 2016 was characterized by more positive tendencies in comparison with 2015. One could observe the gradual restoration of certain development indicators or slowdown of their rates, which testified to the regions stabilization tendencies. Positive

trends could be observed in the spheres of industrial production, construction works, capital investment, retail trade. At the same time, the situation in the regions was affected by a number of destabilizing factors (the crisis in the socio-economic sphere, declining incomes, slow steps towards entering EU markets, external aggression that had been going on for a third consecutive year), which had an impact on development indicators. That situation was conditioned by the fact that in early 2016, the socio-economic development of most regions in Ukraine was characterized by a continued reduction of direct foreign investments, reduced agricultural output, risen unemployment, increased social tensions, and significant wage indebtedness. Those indicators are interrelated: the general macroeconomic instability increases the unattractiveness of the investment climate and the outflow of foreign investment, which affects the level of production and the state of the labour market and payment of wages and forms negative trends in the regional economic development (Vlasiuk, 2016; Horbulin, Vlasiuk, Libanova, Liashenko, 2015).

3. Basic problems of the massive internal migration of the population in Ukraine

The massive internal migration of the population within the country is connected with a number of burdens that arise both within the IDPs themselves and in society as a whole. At this stage, it is important to study the problems and needs (primary and secondary) of internally displaced persons, as well as the services provided to them, the level of satisfaction with these services, the definition of a trust credit to state and non-state institutions, services, IDPs organizations, their effectiveness in providing services to these persons. Solving the problem of increasing the effectiveness of the social protection of the population requires an active regional policy implementation by the state (Nahorniak, 2016).

Based on analytical studies by the UN Refugee Agency (United Nations Refugee Agency, 2014), the UN Relief Web Specialized Service (Relief Web, 2017), Inter Agency Standing Committee (The Global Shelter Cluster, 2016), PROMAN Consortium, (Ministerstvo sotsialnoi polityky Ukrainy, 2017), a social survey conducted by the NGO "Labor and Health Social Initiatives" (MHO «Sotsialni initsiatyvy z okhorony pratsi ta zdorovia», 2015), the research of the Ukrainian-Helsinki Human Rights Union (Ukrainska Helsinska spilka z prav liudyny, 2017), it is advisable to identify the problems regarding the work with Ukrainian IDPs at the state level and the directions for their solution (Table 1).

A particular attention ought to be paid to the results of the internally displaced persons' needs and services assessment in Ukraine, which was conducted by the NGO "Labor and Health Social Initiatives". In the study,

Table 1
Issues of IDPs in Ukraine

Issue	Direction for solving the issue (2015–2016)
Uncertainty about the legal status of the IDPs and the absence of a nationwide support program	The Law of Ukraine "On Guaranteeing of Rights and Freedoms of Internally Displaced Persons" provided the IDPs registration procedure and the creation of a Single Information Database for this population group (Verkhovna Rada of Ukraine, 2017). It ensured IDPs with the right to work, including a simplified system of individuals' registration and entities, obtaining the status of the unemployed, pensions, social insurance, social services, training, voting rights, conditions for temporary or prolonged stay, including the favourable credit facilities for construction and housing, protection against discrimination, the right to voluntarily return to places of residence.
Low level of meeting the IDPs needs	The IDPs welfare level was generally lower than that of the local population, but the risk of IDPs poverty was not significantly different from that of the local population, and even for small households it was slightly lower.
Short-term delivery of medical, legal, administrative, psychosocial services	59.6 thousand of internally displaced families, which were raising 55.4 thousand children, received social services and assistance in 2016 (Ministerstvo sotsialnoi polityky Ukrainy, 2017). The Resource Centre, which carried out analytical work and advocacy in order to improve the legal framework, also provided direct humanitarian and counselling assistance to internally displaced persons in places of compact residence. The Resource Centre received support from the United Nations Development Program in Ukraine. Simplified procedures and quotas for children with refugee status or additional protection for compiling Ukrainian state exams (ZNO) were introduced. Together with other international partners, the inclusion of tolerance lessons and educational materials in kindergartens and schools' curriculum was promoted.
Discrimination, administrative and bureaucratic obstacles to the IDPs rights execution	Almost 18% of IDPs were discriminated on the territory of Ukraine. Only 6% voted in the local elections in 2015. In October parliamentary elections of 2014, all IDs (about 500,000 as of October 2014) did not have the right to elect a member of the Verkhovna Rada of Ukraine in the majority constituency for a new residence. In October 2015, at the local elections, 1,345,100 displaced persons did not gain their rights (MHO «Sotsialni initsiatyvy z okhorony pratsi ta zdorovia», 2015). In order to inform the IDPs of their rights and needs, various training, roundtables, meetings with representatives of the non-governmental sector supported by international donors were held.

Accommodation issues	The Government established simplified conditions for the possibility of obtaining shelter for permanent use for war invalids, members of their families and displaced families or victims, which enabled them to be in a housing list. In March 2017, Oschadbank introduced a program of IDPs crediting for the housing purchase within 90% of its value for up to 30 years at 20% per annum. At the same time, lending conditions do not match the IDPs possibilities (Ministerstvo sotsialnoi polityky Ukrainy, 2017).
Lack of employment prospects	During 2016, 24.3 thousand unemployed from the IDPs category used the services of the state employment service (Ministerstvo sotsialnoi polityky Ukrainy, 2017). A comprehensive informational and explanatory work was provided to internally displaced persons regarding the conditions for registration, re-registration at the State Employment Service and the provision of social services in employment support.
Dependence on external financial assistance	The work and coordination of international organizations took place on the basis of the Strategic Humanitarian Response Plan, which assessed the situation with regard to IDs and the resources to be recruited. The analysis was based on a cluster approach. The obstacle to the provision of humanitarian assistance was regulatory acts, according to which charitable assistance from international organizations was taxed at a 15% tax on personal incomes. The need to abolish that rule was highlighted by most international donors who did not see the logic of taxing humanitarian aid for IDPs. Appropriate changes were adopted by the Ukrainian parliament on March 2nd, 2015.

the IDPs identified the needs that were satisfied at a high or sufficient level: humanitarian – 51.2%, medical – 45.8%, residential – 36.6%, psychological – 32.8%, social – 30.5%, cultural – 28.3%, financial – 27.2%, legal – 20.7%, political – 12.4% (MHO «Sotsialni initsiatyvy z okhorony pratsi ta zdorovia», 2015). All these needs should be realized with the support of state, regional, and local programs on IDPs. Therefore, it is advisable to carry out an analysis of the IDPs in a regional context for a more detailed study of the needs and problems and the determination of the IDPs flows' impact on the socio-economic development of regions.

4. Analysis of the IDPs burden on regional socio-economic systems

There are international organizations and think tanks in the world that successfully use different methods for analysing and monitoring social problems, public opinion, demographic trends, refugee and internally displaced persons (Statista, Pew, International Organization for Migration (IOM)).

The author carried out an analysis of the IDPs burden on regional socio-economic systems of Ukraine according to individual indicators of IOM (Table 2):
1) the number of IDPs per 1000 population;
2) the number of IDPs for 1000 square km of territory;
3) the number of IDPs for 1 UAH of gross regional product (GRP) per capita.

The analysis allowed determining the rating of the five regions with a significant IDPs burden (the largest number of internally displaced persons is registered in the Donetsk, Luhansk, Kharkiv, Zaporizhzhia regions and Kyiv), and five regions with average IDPs load (Kyiv, Dnipropetrovsk, Poltava, Odesa, Sumy regions). Other regions of Ukraine received an insignificant IDPs burden, which had a minimal impact on the socio-economic indicators of these regions.

Table 2
Burden Indicators influencing the regional social and economic systems in Ukraine (based on (Derzhavnyj komitet statystyky Ukrainy, 2017)

rating	Region	The number of IDPs per 1000 population, persons	Region	The number of IDPs for 1000 square km of territory, thousand people	Region	The number of IDPs for 1 UAH of GRP per capita of individuals
1	Donetsk	170.74	Kyiv city	151.91	Luhansk	27.01
2	Luhansk	133.65	Donetsk	27.33	Donetsk	26.74
3	Kharkiv	78.71	Luhansk	11.00	Kharkiv	4.60
4	Zaporizhzhia	68.35	Kharkiv	6.77	Zaporizhzhia	2.32
5	Kyiv city	43.41	Zaporizhzhia	4.37	Dnipropetrovsk	1.15
6	Kyiv	28.19	Dnipropetrovsk	2.40	Odesa	0.85
7	Dnipropetrovsk	23.68	Kyiv	1.99	Kyiv city	0.82
8	Poltava	21.52	Odesa	1.07	Kyiv	0.82
9	Odesa	14.96	Poltava	1.07	Kherson	0.47
10	Sumy	13.85	Cherkasy	0.69	Poltava	0.46

The analysis made it possible to determine the impact on different socio-economic systems of the region, which was reflected in internal indicators of development, namely:

•   the first indicator (the number of IDPs per 1000 population) is a very significant burden for IDPs in Donetsk, Luhansk, and Kharkiv regions, which means the difficulties with IDPs integration into local communities, the risk of discrimination, violence. From the economic point of view, the IDPs burden on the population of the region means changing the labour market situation, including in the long run, which also means the need for further analysis of IDPs sex-age groups and their propensity to find work;

•   according to the second indicator (the number of IDPs per 1000 sq. km of territory), the high loading of IDPs in Kyiv, Donetsk, Luhansk regions, characterized by the load on the territorial systems (institutional components of the region), including the existing transport and telecommunication infrastructure, local natural resources of the region, as well as changes in the urbanization level;

•   according to the third indicator (the number of IDPs per 1 UAH of gross regional product per capita) indicates the burden of IDPs on the economic prosperity of the region. The largest load on this indicator is in Luhansk and Donetsk regions.

The study by the International Labour Organization, the UN Relief Web Specialized Service for the Coordination of Humanitarian Affairs, the analysis of the international technical assistance project "Partnership for Urban Development" («Partnerstvo dlia rozvytku mist» Proekt PROMIS, 2016), the research of Yasno Research & Consulting Group (Yasno Research & Consulting Group, 2017), the regional target programs of the regional state administrations of Ukraine (Luhanska oblasna derzhavna administratsiia, 2017; Zaporizka oblasna derzhavna administratsiia, 2016) made it possible to conclude that the work issues solving with the IDPs at the regional level is for the short-term period, and the actions of regional and local authorities are aimed at meeting the immediate needs (material assistance, temporary housing, employment) and do not foresee the integration of internally displaces persons in the socio-economic life of the region. However, at the state level, adoption of new regulatory documents is taken place, new organizations are created to help and support internally displaced persons, create new jobs, retraining staff (both people seeking employment and those who provide new services), volunteer movement and charitable help are being developed. That is, in fact, the institutionalization of social rehabilitation of internally displaced persons in Ukraine is carried out.

Internally displaced persons have a high potential, which puts forward the task of their attraction and use as a resource for the region and the country development.

The economic, labour, and entrepreneurial activity of IDPs must be maintained, consolidated and used in the process of their integration. The positive effects of the IDPs integration at the regional level are manifested in the revitalization of entrepreneurial activity, the stimulation of community development through the assistance of international organizations, the growth of quality and quantity of labour potential, the strengthening of social activity at the expense of social activists among the IDPs, increase in revenues to the local budget at the expense of taxes and fees from IDPs, development of the consumer market (Novikova, 2017).

5. Conclusions

In the context of social and economic processes reforming in Ukraine, the promising direction of state policy is to strengthen the competitiveness of the regional economy, as well as the intensive development of interregional cooperation within the country. The negative consequences of the antiterrorist operation were reflected not only in the regional development indicators, where most of the IDPs moved but also all indicators of socially-economic development of Ukraine. The regions that have undergone major social and economic changes and that faced with the resolution of the most acute problems of IDPs (Donetsk, Luhansk, Kharkiv, Zaporizhzhia regions, Kyiv city) have not established the effective mechanisms of regional governance for solving the issues of internally displaced persons in various spheres of their social life.

On the principle that the main objective of the regional policy is to minimize regional disproportions and prevent the emergence of depressed territories, its priority is to restore the positive socio-economic dynamics of regional development by adjusting programs and strategies for regional development taking into account the IDPs resource potential in the following areas:

•   activation of IDPs economic involvement in regional development (systematization of data collection on needs, IDPs qualifications with further employment monitoring; quality retraining programs provision for IDPs; extension of the benefits list for employers hiring IDPs);

•   intensification of cooperation with international donors (targeted assistance to cover urgent needs, financial assistance for the deployment of infrastructure projects);

•   strengthening the human capital of the region on the basis of social dialogue and constructive interaction of authorities, public organizations, and IDPs, strengthening the social ties and communications, overcoming the social and cultural contradictions;

•   provision of social assistance to IDPs on the basis of differentiation, for the provision of assistance depending on the health state, welfare level and social status of IDPs;

- the integration of the IDPs into the decentralization reform implementation aimed at strengthening the institutional capacity of the regions, the formation and introduction of new mechanisms for stimulating regional and local development, budget

decentralization, and the formation of capable territorial communities;
- assistance in solving IDPs housing problems in the long run on the basis of concessional mortgage lending for internally displaced persons.

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INTERNATIONAL ASPECTS OF STATE REGULATION OF SOCIO-ECONOMIC RESPONSIBILITY OF ENTREPRENEURSHIP: EXPERIENCE FOR UKRAINE

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Abstract. The *subject* of the study is the socio-economic aspects of the social responsibility of business (CSR) in 4 countries. The purpose of the article is to study the experience in regulating the socio-economic responsibility of entrepreneurship in the United States, Sweden, India, and China to determine the direction of formation of the state mechanism of socio-economic responsibility of entrepreneurship (SERE) in Ukraine. The *methodology* of the article became theoretical researches of foreign scientists, their synthesis, systematization, and analysis for the development of the application of experience in Ukrainian realities. The analysis showed how different states of CSR policy differ in each of these countries and made it possible to draw conclusions about the application in Ukraine. So, the experience of Sweden is useful in reviewing the social reporting obligation, as well as the experience of China. In the case of the USA, the role of the state in regulating CSRs in enterprises should be noted but, at the same time, the significant social consciousness of American entrepreneurs as recognized philanthropists, who are actively introducing ethical codes and key stewards from the implementation of CSR, are seen by society and aimed at improving the well-being of society. In China, the government plays an important role in the implementation of CSR for state-owned enterprises. In addition, laws are adopted to improve the rights of employees, to equalize gender differences, to increase the level of production, quality of products, which leads to an improvement in the quality of life of the country's population. All this becomes relevant for Ukraine and can be used in our country as well. Indian experience draws attention through the adoption of a unique decision on the indifference of charity activities by Indian companies with a certain level of profit and the adoption of them by the rules of corporate social responsibility. In entrepreneurship, these measures have not received support and a large number of enterprises artificially lower their profits. Also, the problem of effective reform of Indian social responsibility is the high level of corruption in the state, as well as the ineffectiveness of the current legislation. Taking into account all these disadvantages when developing its own policy of developing social and corporate responsibility of business, Ukraine is able to build a strong and effective mechanism of a socially responsible society. For the Ukrainian realities, the following areas are emphasized: the approval of the obligation of social reporting for large enterprises of all forms of ownership and state enterprises in general, the improvement of Ukrainian legislation in the field of social responsibility of business, the study of the possibility of introducing the obligation of charity for large enterprises from different sides (that is, how this will affect society, how it will affect the work of enterprises, how can it be regulated by law, what kind of reaction this will cause in society); conducting of informational and consulting measures by the Government of Ukraine for the dissemination of knowledge, skills, competences for the implementation and implementation of socio-economic responsibility at Ukrainian enterprises.

Key words: social responsibility of business, socio-economic responsibility of entrepreneurship, charity, philanthropy, social reporting.

JEL Classification: M21, M41, L30, F20

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1. Introduction

In the modern world, social responsibility of business is an important element of the functioning of any enterprise, providing opportunities for effective business development. The socio-economic aspect of social responsibility manifests itself in the application of economic levers for its realization. In other works of authors, the basic forms and tools of socio-economic responsibility of entrepreneurship were given. In this research, we study the experience of two developed countries (the USA and Sweden) and two Asian countries (China and India) that are actively developing their economies. The experience of these countries will be useful to Ukraine to build a solid system of socio-economic responsibility of business. The purpose of the article is to study the experience of regulating the socio-economic responsibility of the state of the USA, Sweden, China, and India in developing the areas of stifling in Ukraine and building a functioning mechanism of socio-economic responsibility of entrepreneurship. The methodology of the article was the systematization, synthesis, and analysis of theoretical studies on the subject of the research. The work gradually reveals the essence of state policy in the developed countries: the USA and Sweden, and then we turn to the experience of China and India, after which the possibility of using one or another measures in Ukrainian realities is analysed.

2. Sweden's and the USA's experience in the regulation of SERE

First, we will research the experience of Sweden and the United States, countries with a developed economy, in which CSR has been developing for a long time and occupy a significant place in the activities of enterprises.

Sweden is traditionally considered a country with a social economy and therefore the system of social responsibility in it is set at a high level. In this study, we will also consider the main elements that can be attributed to socio-economic responsibility.

Turning to figures, we can present the following achievements of Sweden, which are recognized by the world community:

1. 2007 – Sweden topped the Responsible Competitiveness Index. This index was based on a range of parameters covering climate, working environment, corruption and social issues among companies in 108 countries. In particular, the report highlighted gender equality in Sweden.

2. 2010 – Climate Competitiveness Index 2010 acknowledges the Nordic countries to be in the forefront of combating climate change and promoting the development of "cleantech," an umbrella term for innovations that reduce emissions or energy consumption.

3. 2010 – World Economic Forum's Global Gender Gap Report 2010 states that Sweden and the other Nordic countries "emerge as top performers and true leaders on gender equality ... and thus serve as models and useful benchmarks for international comparisons." (Sweden leads by example in corporate responsibility).

CSR in Sweden is a part of the industrial policy, which objective is to strengthen competitiveness and create more jobs and growing companies. The issues of the Swedish Parliament linked to CSR include human rights, decent working conditions, environmental considerations and anti-corruption efforts, as well as gender equality, diversity, business ethics, and taxation. All of them are interconnected with SERE as they have an economic base and as well some of them is a direct economic tool that influences business and society (The Swedish Government policy for corporate social responsibility).

In Table 1, the main developments of Sweden's CSR are presented.

So, do we see that some measures are being taken by the government in Sweden that increasing the level of SERE, and namely: the obligatory social reporting of state-owned enterprises, the adoption of laws that regulate the economic instruments of SERE, the implementation of measures for the spread of social responsibility among the private sector.

Now we will turn to the experience of the United States, a country with almost the largest history of using such a tool of SERE as a philanthropy and charity. The US refers to the American model of CSR, which differs little role of the state in the regulation of social responsibility. Most of the tasks are assigned to the enterprises. But despite this, the US is a country with a developed CSR system and strong social protection for workers and consumers.

It is the tradition to contribute a part of the profits for charity in order to improve the attitude of the local community towards a particular production and has formed an American model of social responsibility. American businessmen are involved in financing a wide variety of non-profit projects, and through this, they solve various social problems (vocational education, pension and social insurance, environmental protection).

The state does not directly interfere in these processes, but only stimulates them through a system of privileges and subsidies.

In particular, the United States introduced tax incentives aimed at helping employers compensate for the cost of hiring disabled people, pensioners, young people, and veterans (Kolosok, 2015).

U.S. businesses face social responsibility. According to the A. Carroll model CSR has 4 dimensions: economic, legal, ethical, and discretionary responsibilities. Discretionary responsibility is defined as the presumption that a company will voluntarily serve society. Such service reaches beyond economic, legal, and even ethical responsibilities. Most businesses support the fight against hunger (Forte, 2013).

Table 1

The main developments of Sweden's CSR

#	Sphere of developments	Characteristic	SERE direction
1	Legislative	Sweden was the first country (2007) to demand sustainability reports from state-owned enterprises. The reports have to comply with guidelines from the Global Reporting Initiative (GRI).	It's a tool of SERE that reflects main aspects of enterprise's CSR.
2	Administrative	Since many years the government has made several attempts to encourage and inspire Swedish companies to engage in strategic CSR. The Ministry for Foreign Affairs has a platform for dialogue with business, social partners, labour unions and NGOs working with social responsibility and has during the past years organized and participated in several seminars about CSR including anti-corruption. The Swedish International Development Cooperation Agency (Sida), a government agency, is increasingly working together with the private sector to stimulate development, innovation, entrepreneurship, and CSR in developing countries. Sida aims to contribute to the promotion of sustainable and inclusive business practices through its experience of operating in less explored trade environments.	The development of socially responsible entrepreneurship through private sector conducting seminars, business cases and so on that can increase the level of socio-economic responsibility of entrepreneurship.
3	Adjudication	There are specific laws in Sweden, civil and criminal, on health and safety, equal opportunities, the right of the collective agreement, corruption and discrimination as well as other human rights-related challenges.	These laws regulate as well economic base of CSR and namely: taxation, corruption, legal business etc.

Table is built on the base of Overview of CSR developments at the national level

In relation to another SERE instrument – social reporting, it should be noted that in the US it is not regulated by the state, a required framework for reporting does not currently exist, but has a lot of names: "environmental reports", "social reports", "climate change reports", "carbon reports", "triple bottom line reports" and "sustainability reports" among others.

Despite the lack of regulations in the United States requiring companies to disclose, increasingly more and more companies are issuing CSR reports for a variety of reasons. Research suggest that there are three main theories for this increasing trend: (a) to manage the perceptions of key stakeholders, which is explained in signalling theory; (b) to convey the organization's values to the public, which is called impression management theory; and the most widely cited reason (c) to establish that the organization's activities are in line with social norms, which is legitimacy theory. In addition to the organization's motivations for disclosure, there is a growing demand for this nonfinancial information (Cecil, 2008).

Besides, in the USA, it is typical for businesses to list ethics codes and concentrate on the following stakeholder groups – community. The USA entrepreneurs tended to zero in on issues that were not directly connected to their activities. They paid attention to arts, education, culture, and the quality of life. The U.S. firms focused on issues connected to the well-being of the community (Forte, 2013).

Consequently, we see that in the United States, there are some other forms of implementation of SERE – philanthropy, the most widespread in this country, tax incentives for the development of SERE and the orientation and development of the community. There are no requirements for providing social reporting though. The US experience can be useful for Ukraine in several directions, which will be further dispersed.

3. Regulation of SERE in China and India

First, let us look at the example of China as emerging economies. So, CSR has now become a party to the day in China, but it still remains a problematic issue that is related to the cultural and social factors of China. It should be noted that if before the CSR was inherent by foreign-owned companies operating in the Chinese market, now local companies are introducing CSR as well (Buhmann, 2005).

The fact of increasing priority of Chinese CSR during last years is based on the growing interest in the sustainable development of Chinese society. It is also very important sign due to China's leading position in the worldwide production chain.

In China, CSR is interconnected with "harmonious society" – the concept that is built on the base of Confucius study and aimed to develop stable and harmonic Chinese society (CSR Asia, 2016).

The most significant law provision with respect to CSR is the 2005 amendment to the Company Law. The Company Law, which is the law detailing a general operating framework for companies, refers to general principles of Social Responsibility for companies. The "Harmonious Society" should be achieved thanks to the Scientific Development Concept, which is the current Chinese ideological guidance, and calls for sustainable development and social welfare such as the gap between rural and urban development, unequal income distribution, insufficiency of household wealth, ecological degradation, and lack of efficient use of resources. CSR is also seen as an important component

of companies' competitiveness, as put forward in the CSR Guidelines for State-Owned Enterprises. Interestingly, CSR is also considered as a driver for corporate innovation (CSR Frameworks in China and the European Union).

Now we can observe the increase in a number of social reports and the development of charitable and volunteer activities (Mullich, 2009).

At the Third Plenary Session of the 18th Central Party Committee on comprehensive reform in November 2013, social responsibility was announced as one of eight focus areas for further reform for Chinese SOEs. In addition, since 2008, state-owned companies have been obliged to publish annual CSR reports. These can be used to start the discussion with state-owned companies about CSR.

The state actively promotes the development of CSR, adopting relevant laws or making changes to existing ones (CSR Frameworks in China and the European Union). List the main laws of the People's Republic of China in the sphere of CSR: Company Law (Amended 2005), Labour Law of the People's Republic of China (1998), Labour Contract Law (2008), Law on the Protection of Rights and Interests of Women (2002), Production Safety Law (2002), Article 26 of the Constitution (1982, amended 1988, 1993), Environmental Protection Law (1989), Law on the Environmental Impact Assessment (2003), Law on the Promotion of Clean Production (2003), Law on Prevention and Control of Water Pollution (1984, amended 2008).

These laws regulate CSR and SERE in particular, including the socio-economic dimension in the field of ensuring employment, rights of workers, production of quality products, etc.

A particular attention for Ukrainian enterprises deserves the experience of operating and regulating the activities of state-owned enterprises: the obligation of their social reporting and a higher level of social responsibility inside the country are observed precisely at state enterprises.

Moving on to the experience of India, which in the sphere of CSR decided to go further than other countries: in 2013, it entered into force Article 135 of the Law "On Companies", which obliges large companies to disclose information about CSR. In addition, India has become the first country in the world to make obligatory charity. Thus, the Law "On Companies" sets mandatory deductions for CSR at a rate of 2% of the average net profit for the three financial years for companies with either own funds of over 5 billion INR (more than 77 million USD), or a turnover in excess of 10 billion INR (more than 155 million USD), or a net profit of 50 million INR (more than 775 million USD) during the fiscal year (Legislative regulation is intensifying worldwide). From this, we see that it is a socio-economic responsibility that manifests itself when an enterprise uses economic instruments in addition to social actions.

Traditionally, CSR in India was implemented as charity, and it was not discussed by companies, so there were almost no documents on its implementation.

As some observers note, CSR practices in India are still within the charitable space but moved from the institutional framework (educational, research and cultural) to community development through various projects (Handbook on Corporate Social Responsibility in India).

In 2014, the next development of CSR was taken place – the Indian government also adopted the "Corporate Social Responsibility Rules", which, along with Article 135 of the Company Law, are two of the most important documents that provide the legal basis for CSR.

These rules establish a certain list of activities that can be attributed to the enterprise's CSR. These are: the elimination of extreme hunger and poverty; promotion of education; promotion of gender equality and women's empowerment; reducing infant mortality and improving maternal health; the fight against the human immunodeficiency virus, acquired immunodeficiency syndrome, malaria and other diseases; ensuring ecological sustainable development; improvement of professional skills; assistance in the development of social projects; contribution to the National Assistance Fund or the Prime Minister created by the central government or state governments for socio-economic development and assistance and funds for the well-being of caste, tribes, other classes, minorities and women, etc.

An important part of this law is Clause 4 of Article 135, which stipulates that the Council of each company specified by law must approve the Corporate Social Responsibility Policy for the company and disclose the contents of such Policy in its report, as well as place it on the company's website (India: Corporate Social Responsibility).

The CSR Annual Report includes information on CSR policies, with mandatory reference to web pages of CSR projects and programs; structure of the CSR Committee; average net profit for the last three fiscal years; planned costs for CSR; detailed information about the money spent on CSR during the fiscal year; the amount is not spent, if any, its causes (if the company cannot spend the minimum necessary expenses, the company should indicate the reasons in the report of the non-compliance, so that no penalties were fixed.); the direction in which the amount spent during the fiscal year (Ronald, 2014; India: Corporate Social Responsibility).

Conducting reforms in India has faced many problems, which are explained by the country's heritage: companies began to reduce their profits so as not to make charitable deductions, and the high level of corruption does not allow for the full development of CSR. In this, we see the similarity with the Ukrainian present, but taking into account these facts will make

possible to make a more effective mechanism of SERE in our country.

4. Directions of development of SERE in Ukraine

Considering the experience of 4 countries that occupy a significant place in the modern business world, some suggestions can be made for Ukraine, which will help to create a solid system of socio-economic responsibility in the country.

The main elements of the Swedish model that can be proposed for our country are as follows:

1. Obligatory social reporting for all large enterprises operating in Ukraine. This applies both to foreign companies and to Ukrainians by origin.

2. Government support for explanatory work with entrepreneurs on the importance of implementing and expanding socio-economic responsibility at the enterprise.

3. Study of Swedish legislation in the field of CSR will be a solid basis for its regulation in Ukraine, and namely, the principles, standards, and level of state interference in the regulatory process.

The United States is an economic leader in the world and, of course, can be an example for our country in the field of regulation of SERE. We can highlight the following elements of this model:

1. The orientation of entrepreneurs to philanthropy. To inform about the benefits of the implementation of SERE, the main advantages for the community.

2. Provision of preferential taxation for entrepreneurs who carry out CSR activities and have real results for the community and the state.

3. Determination of the main group of stakeholders as a society, that is, entrepreneurs need to reorient not to the fact that the implementation of SERE brings an increase in profits, but what it gives to society in general. The main objective of SERE is to increase the welfare of the population.

The American model is an effective mechanism, but there is a little role of the state in implementing the CSR; most of it is assigned to enterprises, which in Ukraine cannot be applied now, as then domestic entrepreneurs focus only on making a profit. And at this stage of development of our state, strict regulation is required from the government. In these circumstances, the experience of China and India becomes an occasion.

An example of China for our country is also useful given the similarity of the historical heritage of the economic system. Like in our country, CSR is generally based on already existing labour legislation, but development is getting the same, as China is now in the economic space. Useful for Ukraine can be distinguished as follows:

1. Fixing the obligation of social reporting of state-owned enterprises and giving them a general presiding

role in the implementation of CSR. That is, they are becoming an example for others.

2. Adoption of new and improved existing legislation that regulates employees' rights, gender equality, production standards and product quality, environmental protection.

Indian experience is interesting enough because of the innovative idea to move away from the arbitrariness of CSR and to introduce charity commitment to enterprises that have reached a certain level of profit. For Ukraine, one can distinguish the following, which can be implemented by the government:

1. To establish the conscientiousness of charitable activities for enterprises with a certain level of profit.

2. The obligation to approve the corporate social responsibility policy for these enterprises.

3. Taking into account the negative experience of reforms in India and the implementation of a monitoring system for compliance with the curtain.

Thus, the proposed measures can create a solid mechanism of socio-economic responsibility in Ukraine.

5. Conclusions

The taken theoretical assessment showed the basic measures of state for the development of CSR. It becomes clear that the countries that actively develop their economy and gain momentum in the global arena are increasingly focused on the implementation of the latest methods for business and society development. But the analysis showed a difference in the policies of each of the states. Sweden, for example, is distinguished by the fact that the state is focused on the adoption and approval of the laws regulating the sphere of CSR, as well as the Government conducts a series of measures to disseminate the knowledge of the importance of this practice. While in the United States, the level of state intervention is moderate and there is a tendency to delegate tasks to the level of enterprises, although there are tax breaks. The level of social consciousness of US entrepreneurs is high, as they are recognized philanthropists and focused on improving the welfare of society, the introduction of ethical codes in their activities.

Characteristic of China is the "Harmonized Society", which regulates the CSR by the state. Taking into account the international activity of the country, it increasingly focuses on world standards and improves the quality of products and life of the population. In addition, China increases the role of state-owned enterprises in the implementation of CSR.

But the most prominent for researchers in this field is the experience of India, which was the first in the world to withdraw from voluntariness and legally enforce the obligation of charity for large enterprises with a certain level of profit. Although it has gained resistance inside

the country, it remains the only supporter and deserves careful study.

For Ukraine, the experience of all these countries is beneficial and each of them has certain results that can be applied in our realities, and namely: consolidation of the obligation of the social report, improvement of the national legislation, introduction of an effective system of taxation, government's activities on informing entrepreneurs regarding the importance of implementing the SERE. All this will help create an effective mechanism for the effective socio-economic responsibility of entrepreneurship in Ukraine.

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MODELLING THE ECONOMIC SECURITY
OF REGIONAL EXTERNAL TRADE FLOWS

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Abstract. *Subject of research:* assessment and management of economic security of regional foreign trade flows of regions of Ukraine. *Methodology:* during the research, statistical analysis and analytical analysis (in the study of the main aspects of the formation of foreign trade flows of the region) are used. Mathematical modelling in economics (when creating a model of the two-dimensional normal distribution of regional foreign trade streams) and methods of analysis for risk assessment, conditioned by the formalization of the uncertainty of the operation of regional foreign trade operations are also used. *The purpose of scientific research:* mathematical modelling in economics in the management of economic security of export-import flows of regions of Ukraine; analysis of the structure of regional foreign trade flows in Ukraine and their respective risks; creation of the field of economic security of foreign trade flows of the region. *The conclusion of the research:* the study of limits and quantitative analysis of the risk of regional foreign trade flows in some regions of Ukraine is reduced to the creation of the area of crossing the main splicing ellipses of two-dimensional normal laws of export-import flows of these regions. After that, it will be possible to make a comparative assessment of the competitiveness and economic security of the regions. *The purpose of the article* is to develop an economic-mathematical model of quantitative risk analysis and to find appropriate boundaries of foreign trade flows of the region, which allows setting the thresholds of regional export-import operations for optimal management of the process of foreign trade flows of the region. The foreign trade flows of Ivano-Frankivsk, Mykolaiv, and Kherson regions of Ukraine based on a two-dimensional normal distribution are modelled. Areas of threshold values of indicators of foreign trade flows of regions from the point of view of economic risk are defined, which, in contrast to existing one-dimensional approaches, takes into account elements of the interconnection of foreign trade flows of the region. The methodical conditions for constructing split ellipses of foreign trade flows of the region for comparative estimation of the risk of competitiveness and economic security of the regions are developed. This will make possible to conduct a systematic analysis of the region's economic development and to take measures both at the local level and at the state level in order to neutralize a number of threats to its economic security.

Key words: export-import flows, differential function, two-dimensional normal distribution law, ellipse scattering.

JEL Classification: R580, C120

1. Introduction

It is known that the economic security of foreign trade operations of the region is related to the volumes of exports and imports, domestic prices, changes in the rates of national currencies, interest rates, aggregate demand and GDP, employment levels, and generally affects the macroeconomic equilibrium. At the same time, taking into account the complexity of the process of export-import operations in the region, the issues of mathematical modelling in economics of the risk of foreign trade flows of the region are not sufficiently studied, which play a significant role in the problem of regional economic recovery and management of the

socio-economic development of the region. Therefore, the problems of studying models and methods of mathematical modelling in economics of economic security of foreign trade flows of the region have become a priority. Thus, the modelling of economic risk in the system of predictive-analytical calculations and improving the methods of managing regional risks is an important scientific task.

The close relationship between the elements of the foreign trade sphere and the economy of the country, in general, determine the need for effective state policy aimed at optimizing all processes and eliminating disproportions between the levels of socio-economic development of the regions. Taking this into account,

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the issue of establishing a system of indicators for regional export-import operations and their thresholds is relevant.

2. Literature review

Expansion of exports plays a significant role in the development of foreign trade in Ukraine. I.G. Kurochkina (2015) believes that Ukrainian producers need effective functional tools to stimulate exports – an increase in its physical and cost volume.

According to the official website of the State Statistics Committee of Ukraine (2015, 2016, 2017), we emphasize that in 2016, the surplus of the foreign trade balance amounted to 337.3 million dollars. According to the data, the volume of exports of goods and services in Ukraine in 2016 amounted to 44.885 billion dollars, and import – 44.548 billion dollars. Compared to 2015, exports shrank by 4.1% and imports increased by 3.7%. The foreign trade balance surplus amounted to 337.3 million dollars. In 2015, the surplus was 3.828 billion dollars. In January-November 2016, the import of goods exceeded exports by 2.324 billion dollars. The data are given without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and a part of the area of the anti-terrorist operation.

According to the official website of the State Statistics Committee of Ukraine (2015, 2016, 2017), over 9 months of 2017 the export of goods amounted to $31327.2 million, imports – $35199.2 million. Compared to 9 months of 2016, exports grew by 21.1% (by $5,454.5 million), import – by 27.3% ($7555.9 million). The negative balance was 3872.0 million dollars (9 months of 2016 were also negative – 1770.6 million dollars). Foreign trade operations were conducted with partners from 219 countries of the world.

It should be noted that, in the face of falling domestic purchasing power, exports are one of the most important factors of economic growth.

L. Dedyaev (2014) formulates the strategic goal of forming the commodity structure of Ukraine's exports taking into account high-tech products. M. Kryvoruchko (2015) believes that the indicators of export and import flows of minerals in the regions of Ukraine are not correlated with each other.

T. Melnyk, K. Pugachevska (2015) investigated the import dependence and export slope of the industry of the regions of Ukraine, which determines the consequences of exceeding the volume of imports over domestic production.

V.V. Oskolsky (2014) determines the reason for the low efficiency of the Ukrainian export of the regions according to Finger-Kreinin index. V.G. Andriychuk V.G., Ivanov E.I. (2014) assesses the export-import flows of the regions after the signing of the Association Agreement with the EU when the conditions of foreign trade with European trading partners for Ukraine have improved.

Lall, S.V., Koo, J. and Chakravorty, S. (2003) claim (using India as an example) that regions with less specialization and more diversified exports tend to experience higher rates of economic growth.

Lapshin V. I., Kuznychenko V. M., Ovcharenko Yu. S. (2014) analysed indicators that characterize the state of export and import flows in the regions of Ukraine in 2014 compared to 2013.

Marianne Matthee and Wim Naudé (2008) estimated a cubic-spline density function for the Herfindahl-index measure of export diversity. They found out that export diversity declines as the distance from an export hub increases.

O. Bilorus and O. Havryliuk (2015) propose to intensify the search for internal reserves to increase the competitiveness of domestic products and diversify our country's export position in the global economic space. This will provide the increase of volumes of external trade.

3. Finding a differential function of a normally distributed two-dimensional random variable of export-import flows in the Ivano-Frankivsk region

We shall use the following legend: GRP – gross regional product; EX_R – total volume of export of the region; IM_R – total volume of export of the country. Export regional dependency ratio $L^R_{exs} = \frac{EX_R}{GRP}$. The coefficient of import regional dependence $L^R_{ims} = \frac{IM_R}{GRP}$. In general, the threshold values of the indicators are defined in the economic literature, as $L^R_{exs} > 0,5$ and $L^R_{ims} > 0,5$.

Figure 1 shows the value of coefficients L^R_{exs}, L^R_{ims} for those regions, for which the values of these coefficients belong to the interval (0,25;0,5) in 2016.
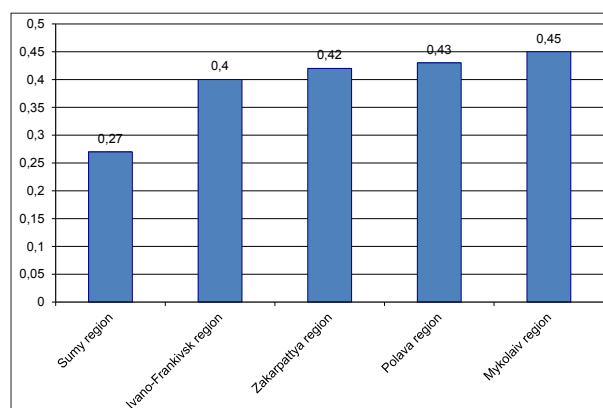
Fig. 1. The value of the coefficient of regional dependence from export $0,25 < L^R_{exs} < 0,5$ in 2016 by the regions of Ukraine

Source: Built by the authors on http://www.ukrstat.gov.ua

Figure 2 shows the value of coefficients L^R_{ims} for the regions, in which the values of these coefficients belong to the interval $(0,25;0,5)$ in 2016.
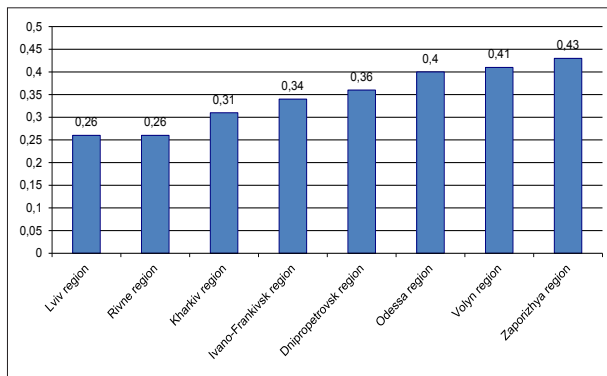
Fig. 2. The value of the coefficient of regional dependence from import $0,25 < L^R_{ims} < 0,5$ **in 2016 by regions of Ukraine**

Source: Built by the authors on http://www.ukrstat.gov.ua

We will select the Ivano-Frankivsk region, which is represented in Fig. 1 and Fig. 2. The export-import flows for this region are characterized as follows:

$$L^R_{exs} = 0.4, \qquad L^R_{ims} = 0.34, \qquad \frac{L^R_{exs}}{L^R_{ims}} = 1.17 \,. \qquad (1)$$

Although the export coverage coefficient is in the range of threshold values ($\frac{L^R_{exs}}{L^R_{ims}} > 1$), the coefficient of regional dependence from import and the coefficient of regional dependence from export do not reach their threshold values by 20% and 32%. For the analysis of export-import flows of Ivano-Frankivsk region, we consider the system of two independent compatible random variables X (export) and Y (import), which are statistically characterized by one-dimensional normal distribution laws – export regional flows (Fig. 3a):

$$N(0.4, 0.9), \qquad M(X) = 0.4, \sigma_x = 0.9\,; \qquad (2)$$

regional flows of import (Fig. 3b):

$$N(0.34, 0.92), \qquad M(Y) = 0.34, \sigma_y = 0.92\,. \qquad (3)$$

Their correlation coefficient $r_{xy} = 0$.

a)

b)
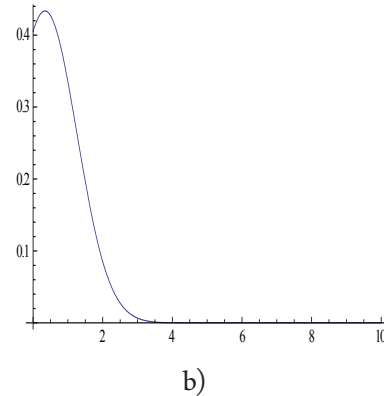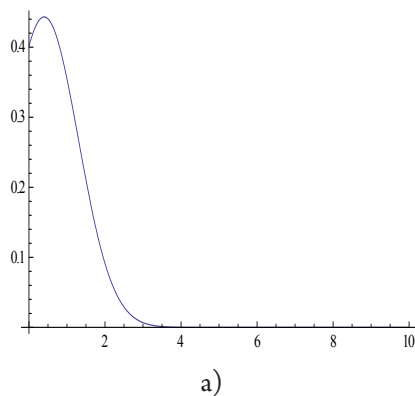
Fig. 3. One-dimensional normal distribution laws – export regional flows (a) and imported regional flows (b)

The differential function f (x, y) of a normally distributed two-dimensional random variable (X, Y) of the export-import flows of Ivano-Frankivsk region for the period of 2014–2016 is as follows:

$$f(x,y) = \frac{1}{3.352\pi} e^{-\frac{(x-0.4)^2}{1.62} - \frac{(y-0.34)^2}{1.6924}} \qquad (4)$$

In space, the differential function (4) of the normal distribution (1) is represented by the surface (Fig. 4).
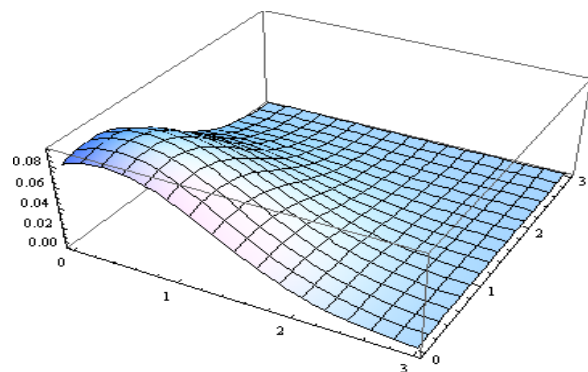
Fig. 4 The surface of the two-dimensional probability density of export-import operations in the Ivano-Frankivsk region

4. Determination of the area of permissible risk of export-import flows

We find the equation of the main scattering ellipse if the confidence probability of a random variable (X, Y) falling into the ellipse is 0.95. The equation of the principal ellipse of scattering has the following form:

$$\frac{(x-4)^2}{4} + (y-3)^2 = 5,9915 \qquad (5)$$

The plurality of points of the ellipse will be called the area of permissible risk of export-import flows in the Ivano-Frankivsk region.

We determine the area of permissible risk of export-import flows of the region in such form:

$$D = \{(x, y) \mid 0.4 < x < 0.6, 0.4 < y < 0.6\}\,.$$

We find the probability of getting a normally distributed random variable (X, Y) into the area of permissible risk. We calculate:

$$P((x,y) \in D) = \left(\Phi\left(\frac{0.6-0.4}{0.9}\right) - \Phi\left(\frac{0.4-0.4}{0.9}\right) \right) \left(\Phi\left(\frac{0.6-0.34}{0.92}\right) - \right.$$

$$\left. - \Phi\left(\frac{0.4-0.34}{0.92}\right) \right) = (\Phi(0.2) - \Phi(0))(\Phi(0.28) - \Phi(0.06)) =$$

$$= 0,07926(0,11026 - 0,02392) = 0,0068$$

Thus, for the random variables X and Y, the export-import flows of the Ivano-Frankivsk region, distributed according to one-dimensional normal laws, respectively, $N_x(0.4, 0.9)$, $N_y(0.34, 0.92)$, with a given confidence probability of 0.95, an area of admissible risk was found in the form of the principal split ellipse of the two-dimensional random variable (X, Y) of the export-import flows of the Ivano-Frankivsk region in the form of formula (5). The probability of a normally distributed random variable (X, Y) in the permissible risk region is found. As a result of the calculations, it is established that in 2016 the calculated indicators for the Ivano-Frankivsk region are not within the thresholds, therefore, the foreign trade activity of these regions needs to be adjusted.

5. Two-dimensional normal laws of distribution of export-import flows of the Mykolaiv and Kherson regions

We have a sample of the general population (X; Y) for the Mykolaiv and Kherson regions for 2014, 2015, 2016, and 2017.

Tables 1-2 present the numerical characteristics of the one-dimensional normal distribution of export (Table 1) and import flows (Table 2).

The coefficient of correlation of export-import flows r_{xy} for Mykolaiv region is $r_{xy} = 0,9817$ and for Kherson region is $r_{xy} = 0,9811$. This indicates the connection between two random variables, which is close to the

linear one. Thus, the quantities are dependent and compatible.

Fig. 5 (a) shows a graph of the differential function of export flows for the Mykolaiv region:

$$f(x) = \frac{1}{\sigma_x \sqrt{2\pi}} e^{\left(\frac{(x-a)^2}{2\sigma_x^2}\right)}, a = 0,4958; \sigma_x = 0,1150; \qquad (6)$$

Fig. 5 (b) shows a graph of the differential function of import flows for the Mykolaiv region:

$$f(y) = \frac{1}{\sigma_y \sqrt{2\pi}} e^{\left(\frac{(y-b)^2}{\sigma_y^2}\right)}, b = 0,6177; \sigma_y = 0,1343; \qquad (7)$$
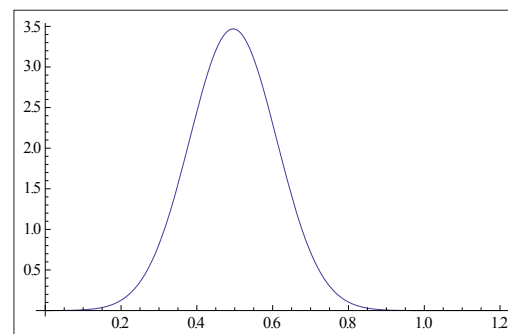
a)
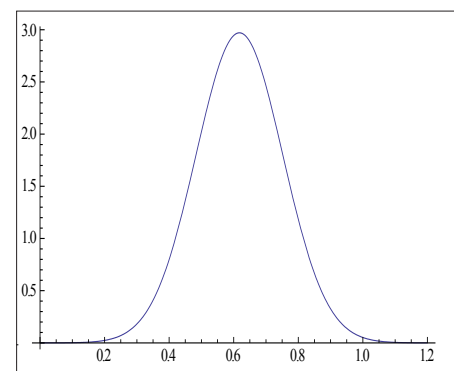
b)

Fig. 5. Differential functions of export (a) and import (b) streams of Mykolaiv region

Table 1

Numerical characteristics of one-dimensional normal distributions of export flows of the regions

Region	Pearson Criteria Terms	One dimensional normal distribution of export regional flows law	Asymmetry	Excess
Mykolaiv	$9,0549 < 14.1$	$N_{exp}(0,4958; 0,1150)$	$0,3827$	$-0,4897$
Kherson	$2,4158 < 14.1$	$N_{exp}(0,1994; 0,0374)$	$-0,0513$	$-0,6092$

Source: calculated by the authors

Table 2

Numerical characteristics of one-dimensional normal distributions of import flows of the regions

Region	Pearson Criteria Terms	One dimensional normal distribution of export regional flows law	Asymmetry	Excess
Mykolaiv	$9,4833 < 14.1$	$N_{imp}(0,6177; 0,1343)$	$0,5058$	$-0,3002$
Kherson	$9,1391 < 14.1$	$N_{imp}(0,2682; 0,0523)$	$0,0728$	$0,5192$

Source: calculated by the authors

Similarly, in Fig. 6 graphs of the differential function of export and import flows of the Kherson region are constructed with values: $a = 0,1994; \sigma_x = 0,0374$; $b = 0,2682; \sigma_y = 0,0523$

a)

b)
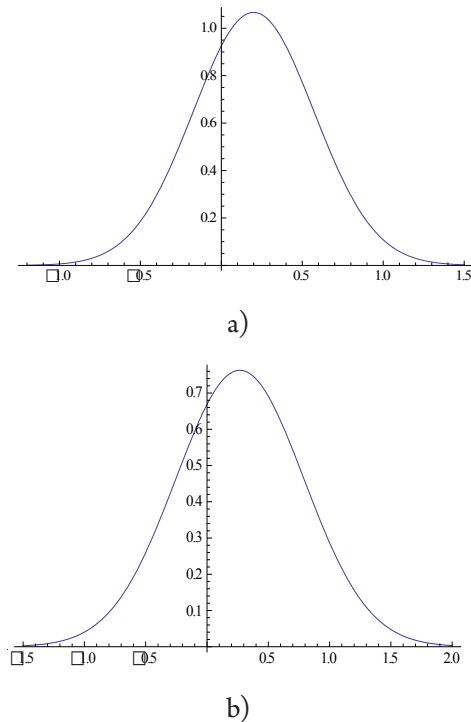
Fig. 6. Graph of the differential function of import (a) and export (b) streams of the Kherson region

Fig. 7 shows two-dimensional surfaces of the normal distribution, constructed according to formulas (6) and (7), respectively, of export-import flows of Mykolaiv region (Fig. 3 (a)):

$$f(x, y) = \frac{171,85}{\pi} e^{-13,8\left(\frac{(x-0,4958)^2}{0,0132} - 127,1262(x-0,4958)(y-0,6177) + \frac{(y-0,6177)^2}{0,018}\right)} \quad (8)$$

Export-import flows of Kherson region (b):

$$f(x, y) = \frac{1250}{\pi} e^{-13,3\left(\frac{(x-0,1994)^2}{0,0014} - 1003,1595(x-0,1994)(y-0,2682) + \frac{(y-0,2682)^2}{0,0027}\right)} \quad (9)$$

6. Findings

For the diffusion ellipses of export-import flows of Mykolaiv and Kherson regions, we obtain the following equations:

$$\frac{(x-0,4958)^2}{0,0132} - 127,1262(x-0,4958)(y-0,6177) + \frac{(y-0,6177)^2}{0,018} = 0,22359, \quad (10)$$

$$\frac{(x-0,1994)^2}{0,0014} - 1003,1595(x-0,1994)(y-0,2682) + \frac{(y-0,2682)^2}{0,0027} = 0,23956 \quad (11)$$

Figure 8 shows the diffusion ellipses of export-import flows for the Mykolaiv (a) and Kherson (b) regions constructed according to formulas (10) and (11) respectively.

a)

b)
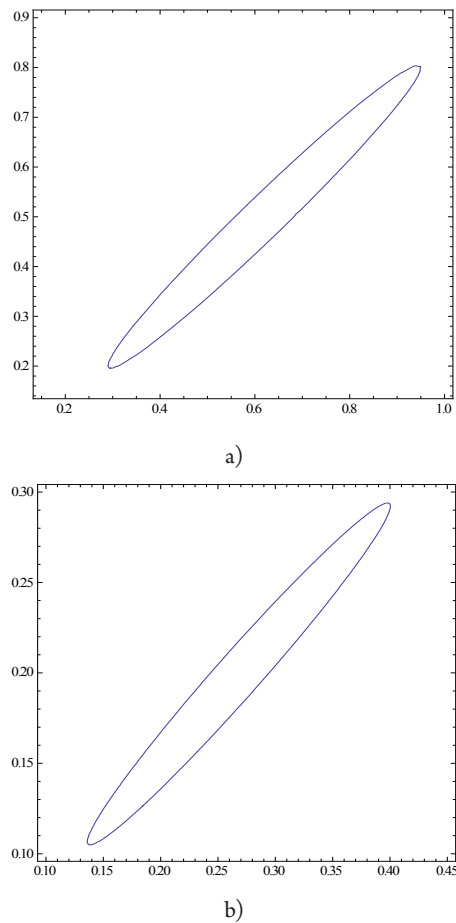
Fig. 8. Ellipses of scattering of export-import streams of the Mykolaiv (a) and Kherson (b) regions

a)

b)

Fig. 7. Two-dimensional surfaces of the normal distribution of export-import flows of Mykolaiv (a) and Kherson (b) regions

The crossing of the areas depicted in Fig. 8 is shown in Fig. 9.
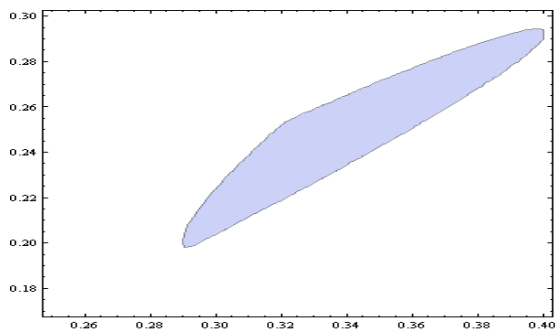
Fig. 9. The crossing of the main splicing ellipses of export-import flows of the Mykolaiv and Kherson regions

The area depicted in Figure 9 can be considered as a common area of permissible risk of regional foreign trade flows in the Mykolaiv and Kherson regions.

Consequently, the study of limits and quantitative analysis of the risk of regional foreign trade operations is reduced to the construction of the area of the crossing of the main splicing ellipses of two-dimensional normal laws of export-import operations.

7. Conclusions

Thus, by constructing diffuse ellipses for regions of different types of development, which will be the areas of the threshold values of these indicators, it will be possible to carry out a comparative assessment of the competitiveness and economic security of the regions. This will allow conducting a systematic analysis of the region's economic development and taking measures both at the local level and at the state level in order to neutralize a number of threats to its economic security.

For other regions of Ukraine, one can find the probability of a two-dimensional random variable reaching the main diffusion ellipse, which can be taken as an estimate of the permissible risk of their foreign trade operations.

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MONITORING OF INTERNATIONAL DONOR ASSISTANCE IN THE CONTEXT OF THE DEVELOPMENT OF AMALGAMATED TERRITORIAL COMMUNITIES

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Abstract. The research is conducted within the framework of the joint project of the F. Ebert Foundation (Germany) and the Institute of Economic and Legal Studies of the National Academy of Sciences of Ukraine (Ukraine) "The Experience of the Association of Territorial Communities in Eastern Ukraine: Economic and Legal Aspects". *The subject of the study* is the theoretical, methodological, and practical aspects of monitoring international donor assistance in the context of the development of amalgamated territorial communities (ATC) based on the example of Bilokurakyne and Novopskov ATC. *Methodology*. The system approach (in substantiating the directions of monitoring and established procedures for monitoring each component of the life of amalgamated territorial communities), logical generalization (in determining the state of development of amalgamated territorial communities), method of absolute, relative, and mean values, analysis of the dynamics series and structural shifts (in determining the dominant trends in the formation and development of ATC), method of economic analysis and synthesis (in determining the content of the monitoring), method of comparison (when the violations in the process of ATC), graphical method (the construction algorithm combined operation and development of local communities) imaging method (for presenting the results of the total amount of international aid to ATC) are used in the work. *The purpose* of the research is to develop theoretical, methodological, and practical approaches to the monitoring of international donor assistance in the context of the development of amalgamated territorial communities. The article suggests using monitoring as the most effective tool for controlling economic and social phenomena and processes. The authorial scheme for constructing a procedure for the monitoring of functioning and development of amalgamated territorial communities is developed. The monitoring of international donor support of the Bilokurakyne and Novopskov settlement amalgamated territorial communities (SATC) is conducted. As a result, it is *concluded* that the total amount of international donor assistance for Novopskov SATC amounted to 22.5 million UAH for 2015–2016, for 2015 – 13 million UAH, and for 2016 – 9.5 million UAH with a population of 12,316 thousand people in the community. The population in Bilokurakyne SATC was 13,226 thousand (for the present – 13,700 people), which is 910 more than in Novopskov. In 2016, the donor assistance for Bilokurakyne community amounted to 14.25 million UAH, which is 4.75 million UAH more than in the same period in the neighbouring community. The above dynamics indicates, on the one hand, the absolute logic nature in the distribution of financial assistance between the communities in terms of the conceptual nature of the decentralization reform in Ukraine; on the other hand, such tendencies require the establishment of the main reasons for the non-equality of the donor assistance. Moreover, it is found that the majority of donor funds had been distributed between Novopskov and Bilokurakyne SATC in order to develop infrastructure, that is, road repair, sidewalks, social facilities (clubs, schools, kindergartens, hospitals, etc.), lighting. The most active assistance was received from such donors as the UN Children's Fund (UNICEF) – in Bilokurakyne SATC, and EU/UNDP in Novopskov SATC.

Key words: international donor assistance, amalgamated territorial communities, monitoring of functioning and development of amalgamated territorial communities.

JEL Classification: F53, H54, O18, O19

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1. Introduction

The urgency of the chosen field of research is based on the modern social and economic trends, namely:

Firstly, in 2014, the government's decentralization reform has gained momentum in Ukraine, which contributed to the intensification of so-called "donor relations". So, according to the Ministry of Economic Development and Trade of Ukraine, as of July 1, 2016, 301 projects of procurement technical assistance had the state registration (re-registration) and are being carried out for the amount of 5.3 billion USD. According to the forecasts of the Ministry of Economic Development and Trade of Ukraine, in the near future, it is expected an increase in the volume of financing of projects through international assistance, as in 2014, some new large-scale programs of cooperation with the EU were launched, namely, the program of border cooperation for 2014–2020: "Ukraine – Romania", "Ukraine – Hungary – Slovakia – Romania", "Ukraine – Poland – Belarus", "the Black Sea Basin" within the framework of the European Neighbourhood Instrument with a total budget of more than 365 million euros. Taking this into account, there is an urgent need for strict control over the use of international revenues. One of such tools of control is monitoring. Based on the data obtained from the monitoring, the forecast of possible changes in the living conditions of the European territorial communities is being carried out and scientifically substantiated recommendations are being worked out, or already taken measures on social and economic development of the territory are being adjusted, which are the basis for substantiation of corresponding administrative decisions at the early stages of occurrence of problem processes or phenomena, with the purpose of their prevention, overcoming or neutralizing of influence.

Based on the above, the **purpose of the work** is to monitor the international donor support in the context of the development of the amalgamated territorial communities on the example of Bilokurakyne and Novopskov settlement amalgamated territorial communities.

In order to ensure the fulfilment of the stated purpose, the following **tasks** are set and solved:
- to reveal the theoretical provisions of monitoring the functioning and development of amalgamated territorial communities;
- to submit monitoring of a separate component of the functioning and development of the Bilokurakyne and Novopskov settlement amalgamated territorial communities, namely, the results of their support by international donors for the period of 2015–2017.

2. Review of previous research and publications

In modern science, there is a powerful tool of research methods that are used to solve various academic tasks, including methodological support for studies of the development of the united territorial communities. The choice of methods depends on the object and subject of the study, their purposes and objectives, information provision, etc. The monitoring mechanism consists of interconnected stages, which determine its content, the sequence of implementation and functioning. Consequently, monitoring as an integral part of the diagnostics of the development of the united territorial communities is a necessary procedure, the purpose of which is to assess completeness and effectiveness of the proposed measures aimed at overcoming, eliminating negative trends, and identifying appropriate organizational measures aimed at ensuring their effective existence.

A significant contribution to the development of scientific and methodological principles for monitoring and evaluating regional development strategies and programs in Ukraine was made by domestic economists B. Vynnytskyi, M. Lendel, Yu. Rateichak, I. Sanzharovskyi and others (Lendel, 2007).

Moreover, the results of the presented study are based on the analysis of the main provisions of works of foreign authors S. Brown, P. Brunel, Z. Moravetskiy, S. Klepatskiy, S. Stoke, M. Robinson, J. Touscoz, H.-A. Schraepler, W. Friedman, who considered the use of international assistance, as well as peculiarities of economic and legal regulation of international relations in this area.

Among the domestic scholars and researchers, we should highlight the works of Y. Hanushchak, I. Kaliushko, V. Kolosova, O. Saienko, N. Slynko, N. Starostenko, A. Tkachuk, and others (Hanushchak, 2013, Starostenko, 2014), which are aimed at studying issues of creation and development of amalgamated territorial communities (ATC) in Ukraine.

While paying tribute to the scientific works of these scholars, it should be noted that for the present, there are no monitoring results in the context of the united territorial communities, therefore, this issue will need further research and will be considered in the proposed article.

3. Theoretical provisions for monitoring the functioning and development of amalgamated territorial communities

It should be noted that the essence of the monitoring organization is reduced to the formation of a standard model of the system of observation, collection, processing, and presentation of scientifically substantiated information characterizing the state of development of the social and economic sphere of amalgamated territorial communities.

Generally, modern science considers monitoring (from the Latin "monitor" – someone who monitors) as a complex of observation, collection, processing, and provision of information on quantitative and qualitative

changes in the development of natural, technical and social processes or phenomena, which allows permanent control of the state of the object of the study, the result of which is to obtain an assessment of the state and identify negative trends in the development of the investigated process or phenomenon. In particular, this definition is the own development of the co-author of the article Boichenko E. the main provisions of which are presented in the memorandum "Monitoring the establishment and functioning of amalgamated territorial communities in the regions of Ukraine."

Monitoring makes it possible to obtain the necessary information, which is important for the adoption of appropriate management decisions to improve the living conditions of amalgamated territorial communities.

The organization of monitoring is appropriate to consider as the construction of a structurally functional, organized system, the main elements of which are communication and information-analytical structures. The communication structure is designed to ensure the regular collection, accumulation, and storage of information concerning the condition and development of amalgamated territorial communities. The construction of informational and analytical systems is conditioned by the collection and accumulation of statistical information and information obtained from reports, based on observational results, sociological studies, expert estimation, implicit sets, model predictions, and so on.

The organization of monitoring of the functioning and development of amalgamated territorial communities lies in the formation of a constantly updated information base, which is designed to provide the necessary information for the study and its conservation. The information component of monitoring the functioning and development of amalgamated territorial communities is: social and economic indicators published by the State Statistics Service of Ukraine; information obtained on the basis of sampling surveys of the social and economic development of amalgamated territorial communities; information obtained on the results of sociological research; information obtained in the course of research by the staff of scientific institutions. Information provided in reports on the implementation of fundamental or applied scientific topics, scientific reports, analytical notes, articles, theses of conferences, dissertations, etc. Monitoring of the functioning and development of amalgamated territorial communities is carried out in accordance with some certain stages (Table 1).

The frequency of monitoring is once a year. However, a significant increase in the impact of social and economic risks leads to accelerating the changes in the conditions of functioning and development of amalgamated territorial communities. Consequently, in such a case, the frequency of the monitoring may be once a month, a quarter or a half-year.

Monitoring of the functioning and development of the ATC consists of the following parts: organizational, executive, managerial (Figure 1).

The organizational part of the monitoring solves the problem of selecting the object of the monitoring, the formation of data sets for the monitoring and the choice of the monitoring methods.

Tasks of the executive part of the monitoring system are to obtain a general assessment of the status and assessment of changes, identify negative changes (deviations), and identify symptoms of changes and admissible deviations.

Table 1

Stages of monitoring of the functioning and development of amalgamated territorial communities

No.	Stage	Characteristics
1	Organizational	Involves defining of goals and objectives of the monitoring; coordination of the research period; periodicity of its implementation, formation of a surveillance system; needs, volume, collection, sources, systematization, and processing of primary information about the research objects taking into account quantitative and qualitative indicators; development of forms of documents for data collecting and accumulation; determination of costs associated with the introduction of monitoring and obtaining the necessary information; preparation of job descriptions, which include the characteristics of the work, tasks, and responsibilities of the employee, qualification requirements and their responsibilities; instruction, training, training of personnel in accordance with the monitoring tasks.
2	Executive	The research is carried out on the basis of the tool, with the help of which causal relationships and trends of the development of the components of the research object are established. Comparison of the obtained results with the previous or normative (reference) indicators is carried out, which allows determining the state of the research object. At this stage, the reasons for the changes that are occurring and establishing are proved, the problems that cause them.
3	Supervisory	Involves the control over processes and phenomena that occur in the functioning and development of amalgamated territorial communities. Comparison of results with the planned indicators is carried out. Possible options for measures that would help to overcome negative trends in development are developed.
4	Administrative	Involves making proved management decisions for executive authorities. Implementation of planned activities (programs, development strategies). An assessment of the effectiveness of management decisions is obtained, based on the monitoring of the implementation of the management decisions.

Source: made up by the authors on the basis of (Lendel, 2007)
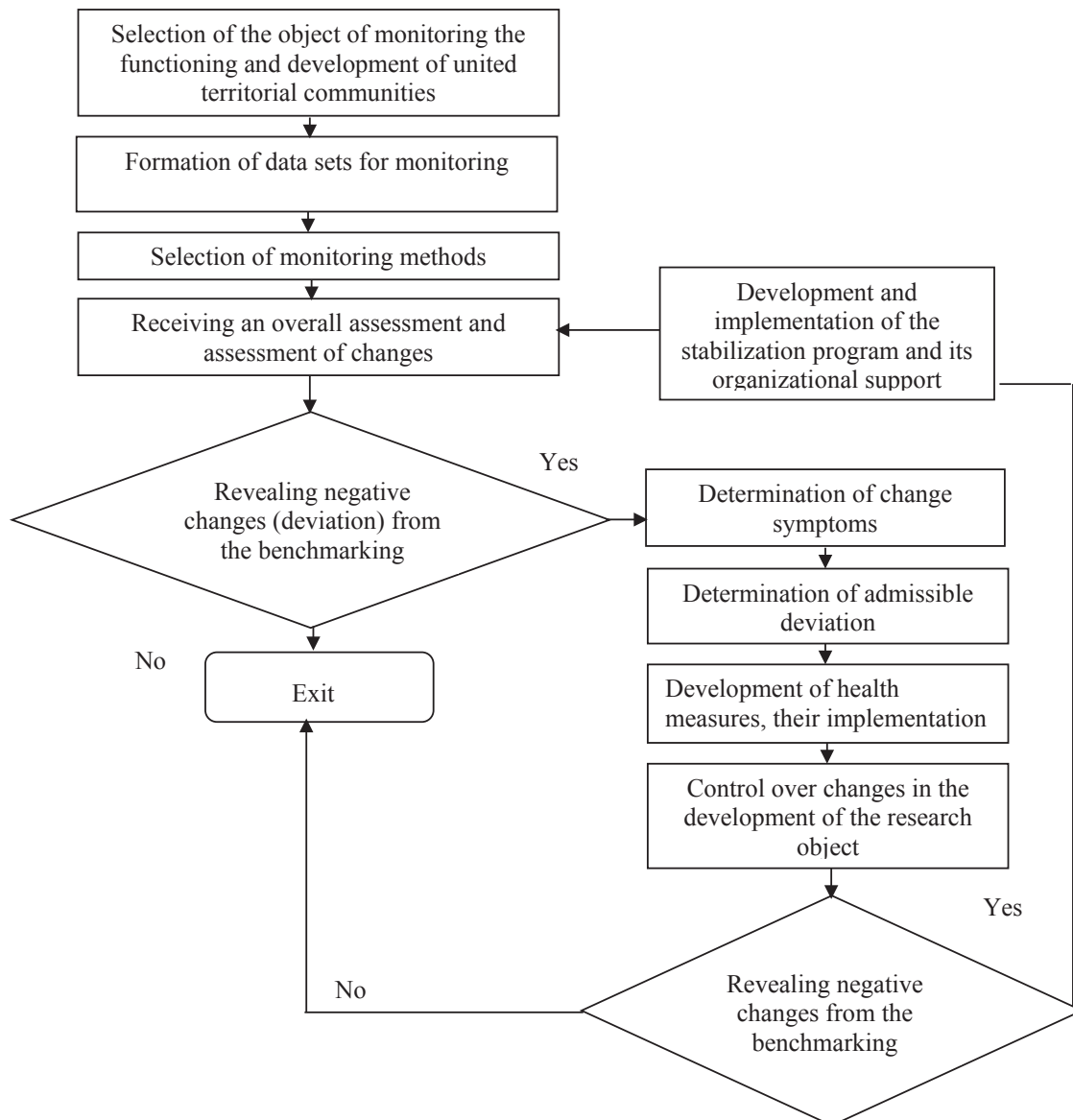
Fig. 1. An algorithm for constructing a procedure for monitoring of the functioning and development of amalgamated territorial communities

Source: compiled by the authors according to the research results

The managerial part performs some certain monitoring tasks: the development of recreational activities, their implementation, control over changes in the development of the research object, the development and implementation of the stabilization program and its organizational support. The sequence of monitoring the functioning and development of amalgamated territorial communities is given.

Taking into account the limited scope of results of the research in this scientific work, as an example, we will monitor the separate component of functioning and development of the Bilokurakyne and Novopskov ATC, namely, the results of their support by the international donors.

Based on the analysis of scientific points of view, which is detailed in the scientific research of the co-author of the article Vasilchuk N.O. "The results of the support of the combined territorial communities by international donors and also based on the legal framework on international assistance and the development of OTG in the article, as a result of the support of the joint territorial communities, by international donors means a certain sequence of actions of donors, recipients, special the authorized bodies in support of structural reforms and implementation of programs of socio-economic development of Ukraine in qualitative or quantitative terms.

In addition, it should be noted that, practically, the international support is provided in two ways: through

international technical assistance (ITA) and in the form of humanitarian assistance. In particular, the ITA is implemented by concluding an international financial agreement to support structural reforms in the country, which envisages the transfer of funds on a gratuitous and irrevocable basis to the state budget of the country after the implementation of mutually agreed terms for the allocation of funds, that is, there is no direct assistance to the communities from the international donors. Distribution of the ITA in view of the support of the ATC is not directly, but in the form of the state subventions, through the State Fund of Regional Development and the development budget.

4. Monitoring the results of the international donors' support for the Bilokurakyne and Novopskov settlement united territorial communities for the period of 2015–2017

As it has been already outlined in the beginning of the article, the organizational support of the monitoring involves a clear sequence of actions. The organizational support for monitoring the results of international donors' support of the Bilokurakyne and Novopskov SATCs is presented in (Figure 2).

Despite the fact that in Luhansk region as of November 18, 2017, there are 4 SATCs, only two communities – Bilokurakyne and Novopskov – were selected for the study. This choice is determined by the fact that the abovementioned communities began functioning in 2015, unlike in Chmyryvska

(December 2016) and Troitska (April 2017) (Profil Novopskovskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady, 2016, Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady, 2016) the existence of which lasts on average a year, so, it is not appropriate to speak of the results in figures, since for a correct analysis and building on its basis of solid conclusions it is necessary at least 3 years (a series of dynamics).

It should be noted that the total area of Novopskov SATC as of 01.11.2017 is 226 sq. km, the population is 12,316 thousand people (as of 01.01.2015): urban population – 9,868 people, rural population – 2,448 people. This information is essential for the conclusions (Stratehiya rozvytku Novopskovskoyi selyshchnoyi OTH na period do 2025 roku).

According to the monitoring results, the volume of the capital investments on enterprises of the region in 2015 amounted to 13 million UAH. During this period, there is no information regarding the number of implemented projects. However, the report on the implemented projects, which is posted the official site of Novopskov SATC, shows that the volume of construction works at the expense of the ITA is 900 thousand UAH. During the year of 2015, 21 residential buildings with a total area of 2.2 thousand square meters were put into operation. Subvention in the amount of 999.3 thousand UAH was received for energy saving measures in the maternity home of Novopskov SATC from the regional budget. Within the framework of the EU/UNDP project "Community-Based Approach to Local Development",

Monitoring purposes	Data gathering and reporting on the state of ITA for the development of ATC; Diagnosis formation about the current state of ITA for the development of ATC; Determination of efficiency of the activities of the international assistance of ATC; Determination of the greatest donors by funding and number of projects in ATC; Determination of the top-priority spheres of the designed purpose of ITA in ATC; Forecasting of results for the support by international donors of the ATC.
Monitoring tasks	Receiving qualitative and quantitative assessment of ITA for the development of ATC at the target moment; Determination of the efficiency and direction of the risks affect which occur in the process of receiving ITA for the development of ATC; Construction of the most suitable mechanism of receiving ITA for the development of UTC; Determination of deviation (absolute and relative) between actual and standard (sample or received for standard) data.
Monitoring tools	Choosing the study subject; Determination of the monitoring methods; Determination of the deadline for the monitoring; Formation of the data base.
Monitoring methods	Monitoring of the international donor support within the framework of the development of the UTC.

Fig. 2. Organizational support for the monitoring of the international donor support for the Bilokurakyne and Novopskov SUTCs

Source: made up by the authors on the basis of review of previous research and publications

4 public organizations are implementing micro-projects. The total amount for micro-projects is 1.2 million UAH, of which the project funds are 870 thousand UAH, 13 thousand UAH was allocated from the regional budget, community contributions – 61 thousand UAH, funds of rural and settlement budgets – 237 thousand UAH (Stratehiya rozvytku Novopskovskoyi selyshchnoyi OTH na period do 2025 roku).

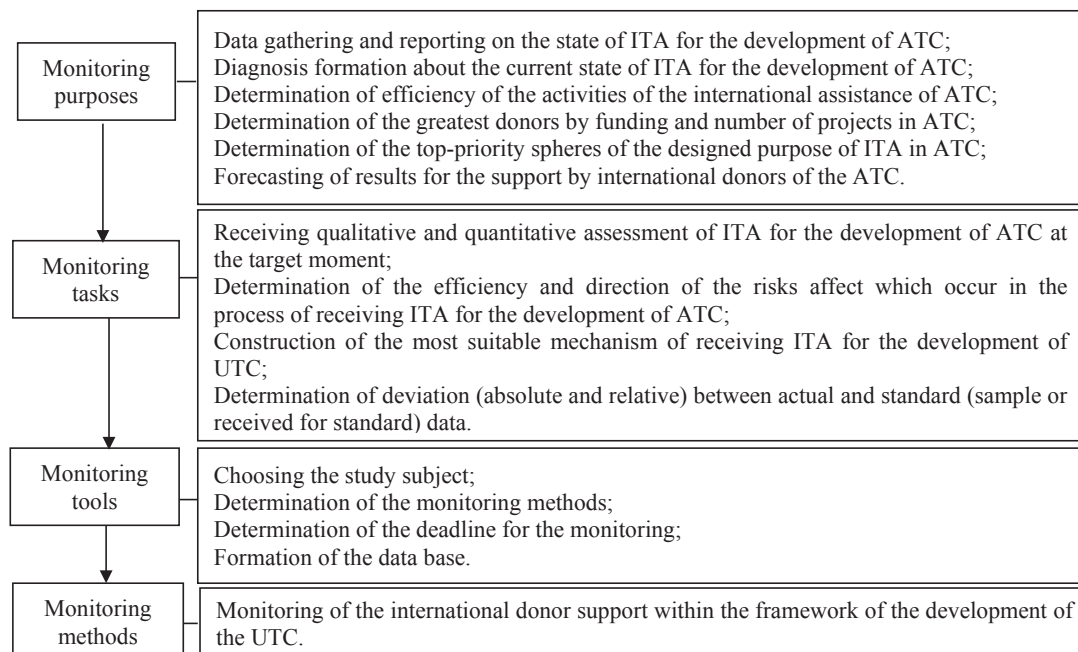In **2016**, Novopskov SATC, with the support of the international donors, implemented 19 projects, totalling 9.5 million UAH. The budget of Novopskov SATC for 2016 was approved without a basic and reverse grant, in addition, in 2016, Novopskov ATC received 1,507 thousand UAH of the subvention funds for the maintenance of institutions of secondary education per 1 inhabitant, which testifies to its capability (Stratehiya rozvytku Novopskovskoyi selyshchnoyi OTH na period do 2025 roku).

The main volume of the ITA was aimed at the introduction of street lighting in the village of Osynove with innovative technologies. Within the project, supports and photomodules were installed on the main street of the village (Slobozhanska). The project was implemented with the participation of Osinivska NGO, Novopskov Village Council and the EU/UNDP Project "Local Development" (Stratehiya rozvytku Novopskovskoyi selyshchnoyi OTH na period do 2025 roku).

At the expense of the state subvention for the overhaul of the building of the PEI "Teremok" of Novopskov VC with the use of energy-saving technologies, 1.4 million UAH was spent. The street lighting was reconstructed using innovative technologies in the village of Makartetyne. Modern LED lamps were installed on the existing supports, the cost of which is 83,750 thousand UAH. The capital repair of the Preschool Educational Institution "Svitlyachok" of Novopskov VC for the amount of 826,580 thousand UAH was carried out. Thus, the total amount of the state subvention for 2016 amounted to 2,274,059 million UAH (Stratehiya rozvytku Novopskovskoyi selyshchnoyi OTH na period do 2025 roku).

From the development budget in 2016, there was received the sum of almost 2,974,231 million UAH, which was allocated for the reconstruction of the roof of the PI "Novopskov Settlement House of Culture of Novopskov Village", the cost is 877,251 thousand UAH. Major repair of sidewalks in the village of Novopskov, Shkilna Str., the cost is 91,657 UAH. Pavement tracks in Novopskov village in Magistralna Str. were repaired, the main cost was 461,300 UAH, and the overhaul of the asphalt concrete pavement road was also carried out in Hazoprovodska Str. in the village of Novopskov, which cost 560,432 UAH, and in Vyshneva Str. in the village of Osynove, which cost 923,591 UAH (Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady, 2017).

Overhaul of the roof of the two-storey building of the Preschool Educational Institution "Svitlyachok" of the Novopskov Village Council was executed for 355,562 UAH. The cost of the energy-saving technologies that were used during the major overhaul of the Preschool Educational Institution "Svitlyachok" was 518,171 UAH. For the major overhaul of PEI "Dzvinochok" of Novopskov VC (insulation of the facade), it was spent 177,733 UAH. Overhaul and insulation of the roof of the Preschool Educational Institution "Dzvinochok" of Novopskov VC cost 372,695 UAH. In total, it was spent 1,424,161 million UAH (Profil Novopskovskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady 2016 rik).

The new construction of the street lighting with innovative technologies in the Osynove Village Council, the installation of photomodules on the support was implemented thanks to the attraction of the ITA, which came to the State Fund of Regional Development and was distributed to the territorial community in the amount of 1,358,523 million UAH.

At the expense of the settlement budget, in 2016, children's and sports equipment was purchased, a playground in park "Aidar" of Novopskov village was arranged for a total of 129,077 thousand UAH. The arrangement of the site near Novopskov RCCL (Ukrainska Str.) cost 65,528 thousand UAH. Purchase of children's and sports equipment, the arrangement of a playground in Osynove-1 village, Mahistralna Str. near the House of Culture of Gas Workers – 91,590 thousand UAH. The sum of 43,466 thousand UAH was spent for laying of paving slabs in Ukrainska Str. near Novopskov RTMA, thus, the total sum amounted to 329,661 thousand UAH.

At the expense of compatible subvention from the state budget to the local budgets for the formation of the infrastructure of the ATCs (1 million 200 thousand UAH) and the settlement council (198 thousand UAH) in 2016, a new garbage truck was purchased for the community utilities.

Since 2017 has not finished yet, there is still no final data on support for the ATCs by the international donors.

In the same way, we will present the monitoring of Bilokurakyne SATC. According to the information provided on the official site of the community, the area of Bilokurakyne SATC as of 01.11.2017 is 789.50 sq. km. The total number of settlements included in SATC is 24. The population as of 01.01.2017 was 13,700 people. The administrative centre of SATC – the village of Bilokurakyne (Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady).

The information regarding the number of implemented projects in Bilokurakyne SATC is absent. However, in order to draw some conclusions, the dynamics of the procurement technical assistance can be reflected in the capital investments in actual prices (thousand UAH per person) for the period of 2010–2015, which is presented in (Figure 3).

Capital investments of Bilokurakyne SATC for 2010–2015
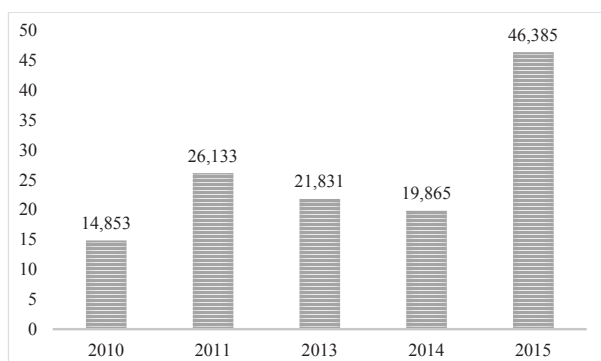
Fig. 3. Dynamics of the capital investments (thousand UAH) for the period of 2010–2015

Source: made up by the authors on the basis of (Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady)

Based on the figure, we can conclude that the dynamics of the capital investment for 2010–2015 has not stable tendencies. There are constant fluctuations, but in 2015, there is an increase in the investment, which may indicate an increase in donor assistance to communities.

During 2016, a total of 28 projects were implemented in the amount of 14.25 million UAH, of which 6 ones are being implemented now for a total of 903 thousand UAH. In 2016, Bilokurakyne SATC applied and became the winner in the competition for the investment programs and regional development projects, which are realized at the expense of the state fund of the regional development under the project for the total amount of 2.4 million UAH, "Major repair of the highway in Pidhirna Str., Bilokurakyne village", on the project "Overhaul of the building of the Central ambulatory of general practice of family medicine, Bilokurakyne village" in the amount of 4.1 million UAH. In 2016, the implementation of the project "Major repair of the House of Children and Youth Creativity" was completed with the support of the IOM Mission in Ukraine. At the expense of international technical assistance for the project implementation, the sum of 1.0 million UAH was received, in addition, at the expense of the United Nations Children's Fund (UNICEF), the repair works were carried out in the premises of the pre-school educational institutions "Sonechko" and "Berezka" in the village of Bilokurakyne, and kindergarten "Zirochka" in Neshcheretove village for the total amount of 1.0 million UAH (Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady).

The total amount of subvention funds from the State Budget to the local budgets for the formation of the infrastructure of the UTC in 2016 amounted to 12,421,717 million UAH.

A vacuum machine for the cleaning of cesspits and transportation of waste to a disposal site for the amount of 794,280 thousand UAH were purchased at the expense of the state budget subventions received from the international donors, an excavator for construction, loading, repair, and other work which cost 839,000 thousand UAH, garbage truck – 896,000 thousand UAH, a tractor with a trailer and a mower for the amount of 277,700 thousand UAH, a dumper – 737,000 thousand UAH, a motor grader for the construction of road infrastructure – 2,348,000 million UAH. A dump truck was purchased at a cost of 750,750 thousand UAH, an auto hydraulically operated lift – 1,517,700 UAH. Thus, the attracted sum amounted to 8,160,500 million UAH (Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady).

The major repair of the water supply system in the village of Kuriachivka was made at the expense of the ITA in Bilokurakyne SATC, the cost of which was 592,093 thousand UAH, as well as the repair of the water supply systems in the village of Bunchukivka, the cost of which was 1,231,838 million UAH.

The administrative building was reconstructed for the rural club in the village of Oleksandropil, the cost of which was 370,804 thousand UAH. The administrative building with auxiliary buildings and facilities was reconstructed for the communal enterprise "Bilokurakyne-Komunservis", the cost of which was 813,517 thousand UAH. The total amount of the assistance was 1,184,321 million UAH.

Major repair of sidewalks, the cost of which was 621,739 thousand UAH, was made. Some parts of the roads were repaired, the total cost of which was 482,749 thousand UAH. Major repair of the roads, the cost of which was 740,570 thousand UAH, was made.

At the expense of the State Fund for Regional Development, the water supply system was restored, Oleksandropil village, in the amount of 305,200 thousand UAH. In addition, the sum of 896,400 thousand UAH was allocated for the purchase of a vacuum machine for clearing potholes and transportation of waste to a recycling site, and for an excavator – 997,900 thousand UAH. The total sum is 2,199,500 million UAH (Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady).

At the expense of the local budget, in 2016, the street lighting was reconstructed in the following villages: Neshcheretove, Pankivka; Tsiluikove; Shaparivka; Oleksandropil; Kuriachivka; Popivka, Khomenkove Pershe. The recreation area and the stadium in Mira Square, the village of Bilokurakyne; the recreation area in Kuriachivka; 10 children's playgrounds were purchased and installed in the villages of the community. The cost was 448,083 thousand UAH.

For the year of 2017, the strategy provided the implementation of 64 regional development projects totalling 50.7 million UAH. For the first half of 2017, the total investment attracted in the economy of the Bilokurakyne region amounted to 36.6 million UAH,

which is 3.7 times as much as the investments compared to the same period last year (1 half of 2016 – 9.9 million UAH), or 1911.1 UAH per person.

The volume of capital investments in agriculture for the first half of 2017 is 13.3 million UAH, in the education sector – 4.8 million UAH, in the field of culture – 1.5 million UAH, in the field of medicine – 1.4 million UAH, infrastructure – 15.6 million.

According to funding sources, 1.0 million UAH or 2.7% – the funds of the UNDP Children's Fund (UNICEF), 1.0 million UAH or 2.7% – funds of IOM, 5.9 million UAH or 16.1% – funds of the state budget, 2.2 million UAH or 6.0% – funds of the regional budget, 13.2 million UAH or 36.1% – funds of local budgets, 13.3 million UAH or 36.4% – own funds of enterprises and organizations.

During 2017, at the expense of the local budget, major repair of the bridge-passage was carried out in the villages of Neshcheretove, Kuriachivka, Tsiluikove. The street lighting in the villages was reconstructed: Oleksiivka, Zaikivka, Lubianka, Lyzyne. The total cost was 182,244 thousand UAH. Also, major repair of roads in the village of Bilokurakyne was carried out, the cost of which was 2,302,820 million UAH. The total sum is 2,485,064 million UAH (Profil Bilokurakynskoyi selyshchnoyi obyednanoyi terytorialnoyi hromady).

5. Conclusions

Generalization of the scientific points of view in relation to the monitoring made it possible to establish that this is a complex of observations, collection, processing, and provision of information on quantitative and qualitative changes in the development of natural, technical, and social processes or phenomena, which allows for continuous monitoring of the state of the object of the study, the result of which is to obtain an assessment of the state and identify the negative trends in the development of the investigated process or phenomenon. The main objective of the monitoring is to obtain the necessary important information for the adoption of appropriate management decisions to improve the living conditions of amalgamated territorial communities.

The organizational support of monitoring of the international donor support of Bilokurakyne and Novopskov settlement amalgamated territorial communities was proposed, which allowed establishing the dominant trends in the formation and development of the SATC.

As follows from the monitoring, it is concluded that the total amount of the international assistance for Novopskov SATC for 2015–2016 amounted to 22.5 million UAH, for 2015, 13 million UAH, and for 2016 – 9.5 million UAH with a population of 12,316 thousand people in the community. The population of Bilokurakyne SATC was 13,226 thousand people (now – 13,700 people), which is 910 more than in Novopskov. The donor assistance for Bilokurakyne community in 2016 amounted to 14.25 million UAH, which is 4.75 UAH million more than in the same period in the neighbouring community. Such a situation, on the one hand, points to the absolute logic in the allocation of financial assistance among the communities in terms of the conceptual nature of the decentralization reform in Ukraine; on the other hand, such trends require the establishment of the main causes of the non-equality of the donor assistance.

In addition, it is found that the majority of the donor funds were allocated for Novopskov and Bilokurakyne SATC to develop infrastructure, namely, repair of roads, sidewalks, social facilities (clubs, schools, kindergartens, hospitals, etc.), lighting. The most active assistance was received from such donors as the UN Children's Fund (UNICEF) – in Bilokurakyne SATC, in Novopskov SATC – EU/UNDP.

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THE ROLE OF SOCIALLY RESPONSIBLE MARKETING IN THE REPRODUCTION OF THE HUMAN CAPITAL AND REDUCTION OF ITS FIKTIVIZATION PROCESSES

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Abstract. *The urgency of the research.* Before the modern person at different stages of reproduction of the human capital, there are many calls and risks that need to be considered and also to adapt to consequences of their action. *Target setting.* Use of marketing tools is rather a perspective direction of improvement of processes of the human capital reproduction. However, improvement of these processes is promoted by only socially responsible marketing. *Uninvestigated parts of general matters defining.* Almost unexplored are questions of use of marketing tools in the realization of processes of reproduction of the human capital. The *purpose* of the paper is to study the use of marketing tools for more effective implementation of reproduction processes of human capital at different stages. The issue of reproduction of human capital is considered in such areas: education, health, and social and labour sphere. *Methodology.* The paper is based on a critical analysis of scientific researches in the sphere of socially responsible marketing and processes of reproduction of human capital. These issues are researched by Blagov Yu.E., Carroll A., Hrishnova O.A., Kotler P., Lantos J., Lambin J., Libanova E.M., Mishchuk H.Yu., and others. *Results.* Issues of the human capital reproduction are considered in the following spheres: education, healthcare, and social and labour sphere. It is defined that in modern conditions, social responsibility has to become a basis for the creation of all system of the public relations and cover all stages of reproduction of the human capital. Socially irresponsible marketing leads to the formation, accumulation, and distribution of the fictitious human capital and other its unproductive forms. *Practical implications.* Now reproduction of the human capital in Ukraine is rather strongly influenced by fiktivization processes connected with the distribution of its unproductive forms. In this context, socially irresponsible marketing of educational and medical institutions, enterprises-employers, pharmaceutical and intermediary firms, plays a considerable role. Socially responsible marketing is impossible without the general spread of the ideology of social responsibility in society. The concept of social responsibility should become widespread in all spheres of public life, should become a fundamental basis of social and labour relations and one of the most important directions for overcoming a systemic socio-economic, political, and military crisis in Ukraine.

Key words: socially responsible marketing, fictitious human capital, human capital reproduction, education, health, social and labour issues.

JEL Classification: M14, M31, O15

1. Introduction

Now processes of reproduction of the human capital happen in rather difficult conditions – reforming of an education system and healthcare, multi-vector changes in the social and labour sphere, changes in the content of labour and its forms related to the development of information and communication technologies, strong influence of system social and economic, political, military crisis. Before the modern person at different

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stages of formation of labour potential, development, use, and saving of the human capital, there are many calls and risks which need to be considered and also to adapt to consequences of their action. In such conditions, the research of questions of management of reproduction of the human capital at all stages acquires special relevance, increase in the efficiency of processes connected with it is the key to restoration of socially oriented economic growth, expansion of opportunities of productive employment, ensuring the welfare of the population. The use of marketing tools is rather a perspective direction of improvement of processes of reproduction of the human capital. However, only *socially responsible marketing* helps to improve these processes. Marketing, which does not have such a characteristic, provokes and propagates the processes of human capital fiktivization.

Various aspects of socially responsible marketing are researched by Blagov Yu.E., Carroll A., Kotler P., Lantos J., Lambin J. and others; processes of reproduction of human capital – by Hrishnova O.A., Libanova E.M., Mishchuk H.Yu., etc. But almost unexplored are questions of the use of marketing tools in the realization of processes of reproduction of the human capital in various spheres of labour potential/human capital formation, its development, use, and preservation.

The purpose of the article is to study the use of marketing tools for more effective implementation of the reproduction processes of human capital at different stages, prevention of its fiktivization. The issue of reproduction of human capital is considered in such areas: education, health, and social and labour spheres. The emphasis is made on the social responsibility of marketing activities at all levels and in all areas of this process.

2. Social responsibility of marketing

Development of the concept of socially responsible marketing has begun rather recently – in the third quarter of the XX century. Classical definition of socially responsible marketing at microeconomic level was offered by P. Kotler (Kotler, 1972, 2008) who, in particular, notes that the concept of socially responsible marketing proclaims a task of the enterprise establishment of requirements, desires, and interests of target markets and their satisfaction more effective and productive than at competitors in the ways, which keep or increase welfare of both the consumer, and society in general. Thus, socially responsible marketing is considered as an essential competitive advantage of the enterprise. At the same time, it is an effective remedy for social development.

Socially responsible marketing is a process of identification and satisfaction of needs of consumers taking into account their real, healthy interests, and also needs of nature of all society, its sustainable development. Socially responsible marketing can't

stimulate consumption of harmful production or induce consumers to spend money for services that will not benefit either themselves or society.

At the micro level, socially responsible marketing is also considered as a voluntary activity of business structures for the solution of social problems, assistance to the population, territories and, on the one hand, based on decision-making, proceeding from the common humanitarian goals and values of society, and with another – considering objective need of business to be socially responsible, including through active realization and updating of the activity among the population, strengthening its business and social reputation (Agramakova, 2011).

Consideration and satisfaction of social needs is an important prerequisite for the effective marketing activity of any modern enterprise, but especially – state authorities, educational and medical institutions, public organizations. This also applies to people as participants in social and labour relations. It is quite promising to apply socially responsible marketing at the individual level to ensure the processes of reproduction of human capital. In the twenty-first century, when the information is spreading very easily and quickly, social responsibility in marketing activities is of particular importance since any false information, on the one hand, spreads quickly and can bring significant harm to society and, on the other hand, it can be detected rather quickly and lead to significant financial losses.

3. The concept of the fictitious human capital

In modern conditions, social responsibility has to become the uniting national idea, a basis for the creation of all system of the public relations, their dominant, and to cover all aspects of the formation of labour potential, development, use, and saving of the human capital. Socially irresponsible marketing leads to the formation, accumulation, and distribution of the fictitious human capital and other its unproductive forms.

We define a fictitious human capital as a result of unproductive and unlawful investments (or deformed as a result of prolonged non-use) of a person's current and accumulated stock of fictitious characteristics of health, knowledge, skills, abilities that this person is purposefully employed in social and labour relations, not contributes to the growth of labour productivity, but it affects the growth of income of its owner, reducing the possible profits of the enterprise and national income (Hrishnova & Brintseva, 2015). Fictitious human capital is formed primarily in the field of education and vocational training, healthcare, social and labour sphere. The isolation of these areas as the main characteristics of the processes of human capitalization is due primarily to the fact that in these areas, processes of human capital formation, accumulation, and use are the most dynamically taking place.

4. The role of socially responsible marketing in processes of human capital reproduction

Depending on the sphere of reproduction of human capital, one can distinguish the following directions for using marketing tools (Table 1).

Formation of labour potential/human capital in the educational sphere requires significant investments, much of which is done by domestic households and individuals. A promising direction for diversifying funding sources is the search for grants for training, internships, participation in various educational events funded by international organizations. The following marketing tools help to increase the efficiency of these processes: self-presentation and self-promotion during participation in various educational events, preparation of qualitative applications for grants, scientific projects. To prevent further fiktivization and the formation of unproductive forms of human capital, the acquisition of fictitious documents about education, marketing

at all levels must be virtuous, socially responsible. This applies not only to self-marketing but also to the marketing of educational institutions and various types of educational services because often enough the formation of fictitious capital is promoted not only by the demand for low-quality education but also by the availability of educational institutions that provide such services.

Within the framework of expanding cooperation between educational institutions and business, the formation of professional competencies for future employees is a promising direction in the development of dual education, that is, the combination of theoretical training in an educational institution and practical – at the enterprise. This gives an opportunity to take full account of special requirements of the workplace to the characteristics of the employee and to form them, as well as to select the most suitable workplace for the person. The social responsibility of marketing in these

Table 1
The role of socially responsible marketing in processes of human capital reproduction

Stages and areas of reproduction of human capital	Sphere of education	Sphere of healthcare	Social and labour sphere
	use of marketing tools for:		
Formation of labour potential / human capital	- investments for the formation of human capital/labour potential from the state and international organizations; - effective self-presentation and self-promotion during participation in various educational events; - responsible marketing of educational institutions; - development of the system of higher education in Ukraine, ensuring a wider representation of domestic higher education institutions in international rankings, etc.	- investments for the formation of human capital/ labour potential from the state and international organizations; - approval of health-conservation values; - promotion of a healthy lifestyle, etc.	- self-presentation and self-promotion during education in order to create a positive impression of potential employers; - successful internship, obtaining recommendations for further employment, etc.
Human capital development	- attraction of investments for the development of human capital from the state, employers, international organizations, public organizations, and non-state funds; - establishment of values of comprehensive, harmonious human development in society, etc.		
The use of human capital	- expansion of opportunities for further training, acquisition of new competencies during work activity; - dual education; - obtaining a second higher education, etc.	- expansion of opportunities for the participation in healthcare-saving measures; - expansion of opportunities for obtaining a better social package, which provides greater possibilities for saving health, etc.	- increase in the volume of providing intermediary services in the labour market (human resources agencies, outsourcing companies, etc.); - providing additional competitive advantages in the labour market; - socially responsible marketing of employers in the labour market, etc.
Preservation of human capital	- establishing a culture of lifelong learning; - encouraging entrepreneurs to invest in educational activities for the general population, etc.	- increased participation in healthcare-saving measures; - encouraging entrepreneurs to invest in health-saving measures, etc.	- establishment of social and labour values in society, the aspiration to use existing human capital as productively as possible; - adaptation of workers to new forms of labour organization, which are changing under the influence of information and communication technologies, etc.

Note. Developed by the authors

(as in other) processes requires, first and foremost, the most complete, transparent and honest information about the possibilities of dual education and further employment.

More efficient use of human capital will be facilitated by the use of marketing tools to improve the quality and increase the volume of mediation services in the labour market (human resources agencies, outsourcing companies, etc.), providing additional competitive advantages in the labour market, socially responsible marketing of employers in the labour market, etc. At the stage of preserving human capital, it is expedient to use marketing tools in order to establish social and labour values in society, use of available human capital as productively as possible, an adaptation of workers to new forms of labour organization, which are changing under the influence of information and communication technologies, etc.

It is necessary to emphasize the decisive role of the individual in the purposeful, effective, rational formation of his human capital. Indeed, people often fall victim to ill-fated information in education, healthcare, employment, especially when they are willing to obtain good at a low price, with little effort, bypassing moral norms, etc. But there are ways to check information, look at documents, ask the opinion of those who have already received such dubious services, that is, to force them to get true information. Not always consumers take responsibility, and therefore – often suffer from malicious marketing.

5. Conclusions and prospects of further developments

Currently, the processes of reproduction of human capital in Ukraine are strongly influenced by the processes of fiktivization, which are associated with the proliferation of its unproductive forms. In this context, the socially irresponsible marketing of educational and medical institutions, employers, and pharmaceutical and intermediary firms plays a significant role. An important factor in the privatization is also the reduction of social responsibility of employees in the formation of their human capital and the implementation of various measures of self-marketing.

Socially responsible marketing is impossible without the general spread of the ideology of social responsibility in society. The concept of social responsibility should become widespread in all spheres of public life; become a fundamental basis of social and labour relations and one of the most important directions of overcoming a systemic socio-economic, political, and military crisis in Ukraine.

It is necessary to strive and demand that the marketing information that promotes the competitiveness of the enterprise, organization or employee adequately reflects their objective characteristics and does not lead to the further diversification of the national human capital, the spread of false information, and the formation of a distorted perception of reality in a professional environment. The ideology of social responsibility should become the basis for the renewal of our society and the further development of the economy. It also implies the further development of continuous learning, in particular, the dual system, the spread of ideas of human development, rational consumption, the formation of a model of a healthy lifestyle, spiritual values in the whole society.

At the same time, citizens' awareness of personal responsibility for their own lives, health, education, and competitiveness in the labour market, in particular, rational consumption and a conscious consumer choice, despite the seductive, dubious advertising, are essential.

Further research requires an assessment of the efficiency of human capital reproduction processes, taking into account the impact of activities of state authorities, enterprises, public organizations, and individual households on their progress; the question of the optimal choice of marketing tools at different stages of reproduction of human capital, as well as various aspects of reducing the process of fiktivization in the field of human capital.

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EVALUATION OF INVESTMENT ATTRACTIVENESS INDICATORS OF REGIONS IN UKRAINE

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Abstract. The theoretical and methodological principles for assessing the investment attractiveness of the regions *are the subject of the research. The aims of the research* consist in improving the existing approach for measuring the level of investment attractiveness of territorial systems in the direction of taking into account the possible multicollinearity and determining the share of investment attractiveness factors in the aggregate indicator on the basis of calculated values of determination coefficients, which respectively provide to distinguish the priority directions in the formation of regional investment policy aimed at raising the level of investment attractiveness of regions of Ukraine. *Methodology.* The article deals with the research of theoretical and methodological approaches to the definition of investment attractiveness of Ukrainian regions by means of general scientific methods of analysis: systematization and generalization, induction, deduction. *Results.* To assess the investment climate in the regions of Ukraine, an improved existing approach for measuring the level of investment attractiveness of territorial systems is proposed in the direction of taking into account possible multicollinearity and determining the share of factors of investment attractiveness, which is based, in particular, on the selected indicators, in particular: the volume of direct foreign investments per capita (FORINV); per capita net exports (NETEXP); the number of economically active enterprises per 10 000 population (ENTRP); volumes of industrial production (PROM); population income (REV); volume of retail trade turnover per capita (TOV); volume of completed construction work (BUD). It is proved that the priority and intensity of influence on the indicator of investment into fixed capital per capita of factors of investment attractiveness varies for different regions of Ukraine, therefore, according to the conducted analysis, the investment attractiveness of the researched regions are determined by such factors as the volume of direct foreign investments per capita, the volume of net exports per capita, the number of economically active enterprises per 10 000 population, volumes of industrial production, population income, and volume of completed construction work. The dynamics of values of general indicators of investment attractiveness for five regions of Western Ukraine are determined, which allowed substantiating the absence of a stable positive tendency in any of the regions to change the values of the general indicator of investment attractiveness, as well as establishing the existence of negative trends accumulation in the formation of investment attractiveness factors, which leads to a decrease of indicators of volumes of foreign investments per capita and volumes of investments in fixed capital per capita during the researched period. *Practical significance.* The use of the proposed approach made it possible to obtain competitive, scientifically substantiated results, which could become a methodological basis in the process of planning and practical implementation of the measures to create the investment attractiveness of regions and their territorial systems. The possibility of identifying the priority areas of influence on factors of investment attractiveness in order to increase the volume of investments attraction into the regional economic system is the determining positive side of the proposed approach.

Key words: investment attractiveness, region, evaluation, indicators.

JEL Classification: R10, R58, E22

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1. Introduction

In general, investment climate of regional system is characterized by two main components: the investment attractiveness of a region with the following characteristics such as investment potential and regional investment risks, as well as the activity of investment processes in the region. Investment activity in a region is the intensity of investments attracting into the real and financial capital of the subjects of the regional economy. Investment attractiveness of a region is a set of objective conditions, means, opportunities, and restrictions that determine the intensity of investments attracting into the capital of subjects of the regional system. Accordingly, identification of effective levers of management and regulation of processes in social and economic systems that can provide the improvement of the level of investment attractiveness of the respective systems is a priority task in the process of forming a favourable investment climate within a region, as well as the whole country.

2. Analysis of recent research and publications

The main problems and prospects of development for increasing the investment attractiveness of the regional economy were investigated (Bagautdinova N.G. and others, 2014), while they interpreted investments as not only as a source of economic growth but also as a factor of competitiveness of a regional economy. The authors examined the impact of investment attractiveness on the formation of competitive advantages of a territory and have identified the following factors: resource base, climatic conditions, consumer market, legislation (tax, customs, budget etc.), state of the economy, willingness of state authorities for cooperation, availability of necessary infrastructure, protection of investors' rights, administration of guarantees and so on and so force. In order to attract investments in any state, region or municipality, the authors note one of the most important conditions, that is, effective regulation of investment activity and protection of the investors.

The realization of an objective assessment of the investment attractiveness of the territories for the potential investors (Shaykheeva D. and others, 2016) disclosed through the use of special geographic information systems (GIS). The authors pay attention to the lack of tools for the real attraction of investments, which facilitate the improvement of the economic competitiveness of Russian regions. Thus they propose a methodology for integrated assessment of investment attractiveness of rural and urban areas of the Republic of Tatarstan using geographic and information technologies.

In the classification of national and regional resources that determine social and economic opportunities of territories, (Mustafakulov, 2017) explores the priority directions of ensuring the social and economic

development and assesses the value of investment attractiveness of regions with a long-term historical specialization in agricultural production.

Whereas investments are a major factor of regional and municipal development (Damborský M. and others, 2009) point out that the arrival or departure of a significant foreign investor can have a significant impact on the entire city, regional, possibly even national economy. Due to the investment attractiveness, problems of investors' arrival and decision-making processes that are related to them are important, as well as the problems of so-called "rooting", for example, of inflow of direct foreign investment into the Czech Republic.

Simultaneously (Kharlamova, 2014) analyses investment opportunities and potential of regions of Ukraine. At the same time, the regions are estimated by the level of investment potential and the degree of investment risks, as well as by the experience of previous investment activity in a region. The author proposed the so-called territorial investment marketing, based on results of complex monitoring of the regional investment climate in Ukraine.

(Nikolova L. and others, 2013) considered the effectiveness of the investment process, which, together with the investment risk and investment potential, determines the investment attractiveness of a region and, therefore, the investment climate, characterize the growth of the gross product of a region by investing in physical and human capital. The authors determine the investment attractiveness of a region by comparing two parameters that reflect the conditions of investors' activity: investment potential and investment risk.

Thus, in researching the investment opportunities and assessing the investment attractiveness of the territories for potential investors, first of all, the authors focused on the efficiency of the investment process in terms of the correlation between the investment risks and investment potential, while scientific research is rather fragmentary in determining the level of influence of investment attractiveness factors of the regions in Ukraine on the indicator the amount of investments in fixed capital per head with the determination of the weight coefficients of each factor; determination of dependency model, as well as appropriate values of determination coefficients for factors of investment attractiveness of the regions in Ukraine; the determination of the weight of each of the factors of investment attractiveness in the aggregate indicator on the basis of the calculated values of the determination coefficients; the determination of the priority directions in the formation of regional investment policy directed to raising the level of investment attractiveness of the regions.

The purpose of the research is to determine the weightings values of each of the factors of investment attractiveness in the aggregate indicator based on the calculated values of the determination coefficients,

which, accordingly, will allow distinguishing the priority directions in the formation of a regional investment policy directed to raising the level of investment attractiveness of the regions.

3. Methodological approaches for assessing the investment attractiveness of regions

Aimed at obtaining quantify assessment of the level of investment attractiveness of the Western Ukraine's regions, we have calculated the general indicators of investment attractiveness. Similarly, as in the research (Pil'ko, 2015), index of investment attractiveness of a region was determined using the formula of a multidimensional average as the following:

$$InvAttr_i = \frac{\sum_{j=1}^{n} k_j \, p_{ij}^{\text{н}}}{\sum_{j=1}^{n} k_j} \quad i = \overline{1, m} \qquad (1)$$

where $InvAttr_i$ – index of investment attractiveness
i – the name of a region;
m – number of regions researched ($m = 5$);
k_j – weight factor j – the indicator taken to assess the investment attractiveness of a region;

$p_{ij}^{\text{н}} = \dfrac{p_{ij} - \overline{p_j}}{\sigma_j}$ – normalized value, j – an indicator of

investment attractiveness, i – name of a region;
$\overline{x}_j$ – average arithmetic value, j– features;
σ_j – average square deviation value, j – features.

At the first stage of the research, for the purpose of assessing the investment attractiveness of the Western Ukraine's regions, we have selected the following indicators: the volume of direct foreign investment per head (FORINV); the volume of net exports per head (NETEXP); the number of economically active enterprises per 10 000 of population (ENTRP); the volumes of industrial production (PROM); population income (REV); volume of retail commodity circulation per head (TOV); the volume of completed construction work (BUD).

To ensure the comparability of valuable indicators in space and time, they were taken into account in the analysis conducted at comparable prices. Corresponding

values of the pair correlation coefficients calculated on the basis of statistical information (Website of the State Statistics Service of Ukraine) in five regions between the factors of investment attractiveness and the volume of investments in fixed capital per head in the respective regions are given in Table 1.

As the results of calculations, the priority and intensity of influence on the indicator of the investment amount in fixed capital per head factors of investment attractiveness vary for different regions. In particular, the indicator of the volume of direct foreign investments is decisive in the formation of investment attractiveness for Ivano-Frankivsk and Ternopil regions. At the same time, this indicator has the smallest impact on the indicator of the volume of investments in fixed capital per head in the Chernivtsi region. The indicator of net exports is decisive in determining the investment attractiveness of Ivano-Frankivsk region, and it is significant for Transcarpathian region and practically does not determine the volume of investment inflows in Ternopil region. The impact of a number of economically active business entities on the indicators of volumes of investment in fixed assets is significant only for Ivano-Frankivsk region, and it is moderate for Transcarpathian, Chernivtsi, and Ternopil regions, and it is very weak for Lviv region. An indicator of volumes of industrial production is crucial for the formation of investment attractiveness for all the researched regions. A similar conclusion can be made regarding the indicators of the volume of construction work, commodity circulation per head, and income level of the population.

Previously conducted correlation analysis of the selected indicators calculated on the basis of relevant statistical information for the period of 2010–2016 in Lviv, Ivano-Frankivsk, Transcarpathian, Ternopil, and Chernivtsi regions showed a close linear relationship between the indicator of retail commodity circulation and the rest of the selected indicators. In order to obtain objective information about the level of investment attractiveness of the researched regions, paying a special attention to the unconditional significance of this indicator in the process of research and analysis of investment attractiveness of a region, but taking into account the presence of obvious multicollinearity in the

Table 1
Level of influence of investment attractiveness factors on the indicator of investments volume in fixed capital per head for the period of 2010–2016

Region \ Indicator	Ivano-Frankivsk	Lviv	Transcarpathian	Ternopil	Chernivtsi
FORINV	0,953578	0,637224	0,712734	0,856981	0,314745
NETEXP	0,878385	0,451838	0,702651	0,171373	0,528961
ENTRP	0,716765	0,236998	0,512683	0,617231	0,655
PROM	0,837307	0,758836	0,9015	0,881197	0,840663
BUD	0,648143	0,938307	0,983799	0,924228	0,777479
TOV	0,894129	0,763858	0,903224	0,873514	0,727303
REV	0,82418	0,788102	0,906775	0,940229	0,811318

array of factors, caused by this indicator, we decided to exclude this indicator from the further analysis.

In other words, according to the analysis conducted, the investment attractiveness of the researched regions is determined by such factors as the volume of direct foreign investments per head, the volume of net exports per head, the number of economically active enterprises per 10 000 population, volumes of industrial production, the size of incomes, and the volume of construction works.

As the weights values of each of the selected indicators, the values of the determination coefficients between the volume of investment in fixed capital per head and these indicators were taken. In this case, the determination coefficient was calculated on the basis of a model that best approximates the actual distribution to the corresponding form of analytical dependence. Accordingly, in order to determine the investment attractiveness indicator of each of the researched regions, the individual weightings coefficients of each of the factors of investment attractiveness in the aggregate indicator have been calculated. As the results of the analysis showed, the weighting coefficients of each of the factors of investment attractiveness have different meanings depending on a region. This is our conclusion after approximating the actual distributions of the values of the investment attractiveness factors and the values of indicators of investment in fixed assets to different forms of analytical dependencies. To choose the form of such dependences, an approximation to the linear, exponential, degree, quadratic, logarithmic, and polynomial curves of 3 and 4 orders was made. A model that is best to describe the interdependence researched was selected based on logical and statistical compliance requirements. Taking into account the nature of the models' behaviour, which is given by polynomial dependencies of higher orders, they were not used in the analysis.

The dependency models, as well as the corresponding values of the determination coefficients for investment attractiveness factors, are as follows:

Ivano-Frankivsk region:
$y = 0,041x_1^2 - 0,23x_1 + 0,008, \quad R^2 = 0,979$
$y = -0,051x_2^2 + 0,014x_2 + 0,05, \quad R^2 = 0,806$
$y = 10^{-7}x_3^2 - 0,001x_3 + 0,11, \quad R^2 = 0,694$
$y = 5*10^{-6}x_4^2 - 0,0001x_4 + 0,003, \quad R^2 = 0,744$
$y = 0,004x_5^{0,713}, \quad R^2 = 0,405$
$y = 7*10^{-5}x_6^{1,152}, \quad R^2 = 0,721$

Lviv region:
$y = 0,158x_1^2 - 0,174x_1 + 0,052, \quad R^2 = 0,427$
$y = 0,011x_2^2 + 0,009x_2 + 0,006, \quad R^2 = 0,587$
$y = -3*10^{-10}x_3^3 + 10^{-6}x_3^2 - 0,002x + 0,604, \quad R^2 = 0,152$
$y = 3*10^{-6}x_4^2 - 0,0001x_4 + 0,007, \quad R^2 = 0,623$
$y = 0,001x_5^2 - 0,001x_5 + 0,004, \quad R^2 = 0,891$

$y = 2*10^{-6}x_6^2 - 0,001x_6 + 0,012, \quad R^2 = 0,823$

Transcarpathian region:
$y = 0,373x_1^2 - 0,237x_1 + 0,039, \quad R^2 = 0,859$
$y = 0,008x_2^2 + 0,004x_2 + 0,002, \quad R^2 = 0,748$
$y = 10^{-10}x_3^{2,404}, \quad R^2 = 0,289$
$y = 0,001e^{0,018x4}, \quad R^2 = 0,825$
$y = 0,002\ln(x_5) + 0,001, R^2 = 0,978$
$y = 5*10^{-7}x_6^2 - 5*10^{-5}x_6 + 0,001, \quad R^2 = 0,889$

Ternopil region:
$y = 8,582x_1^2 - 1,092x_1 + 0,037, \quad R^2 = 0,825$
$y = -0,252x_2^3 - 0,007x_2^2 + 0,007x_2 + 0,003, \quad R^2 = 0,225$
$y = 2*10^{-10}x_3^{2,304}, \quad R^2 = 0,445$
$y = 0,0001x_4^{0,835}, \quad R^2 = 0,788$
$y = 0,001x_5 + 0,001, \quad R^2 = 0,854$
$y = 3*10^{-7}x_6^2 - 10^{-5}x_6 + 0,002, \quad R^2 = 0,9$

Chernivtsi region:
$y = -1963,9x_1^3 + 443,64x_1^2 - 33,18x_1 + 0,82, \quad R^2 = 0,824$
$y = 0,628x_2^3 - 0,007x_2 + 0,002, \quad R^2 = 0,64$
$y = 4*10^{-9}x_3^3 - 10^{-5}x_3^2 + 0,012x_3 - 4,237, \quad R^2 = 0,528$
$y = 3*10^{-5}x_4 + 0,001, \quad R^2 = 0,707$
$y = -0,0002x_5^2 + 0,002x, R^2 = 0,691$
$y = 2*10^{-5}x_6 + 0,001, \quad R^2 = 0,658$

where y – the volume of investments in fixed capital per head; x_1 – the volume of direct foreign investments per head; x_2 – the volume of net exports per head; x_3 – the number of economically active enterpises per 10 000 population; x_4 – volumes of industrial production; x_5 – the amount of income of the population; x_6 – the volume of completed construction work.

Based on the calculated values of the determination coefficients, we determined the real proportions (weights) of each of the factors of investment attractiveness in the aggregate indicator (Table 2).

Table 2
Weights values of investment attractiveness factors in the aggregate index

Region	Weights values of investment attractiveness factors					
	x_1	x_2	x_3	x_4	x_5	x_6
Ivano-Frankivsk	0,225	0,185	0,159	0,171	0,093	0,167
Lviv	0,122	0,167	0,043	0,178	0,254	0,236
Transcarpathian	0,187	0,163	0,063	0,18	0,213	0,194
Ternopil	0,205	0,056	0,11	0,195	0,212	0,222
Chernivtsi	0.204	0,158	0,13	0,175	0,171	0,162

As we can see from Table 1, the indicators of values of foreign investment per head, net exports per head and industrial production are crucial in the process of forming the investment attractiveness of Ivano-Frankivsk region. In other words, the investors in the process of passing decisions about the choice of investment object in Ivano-Frankivsk region are oriented to export-oriented

types of economic activity, as well as activities, in which foreign investors are already working. At the same time, activities focused on the domestic regional and national market are not investment attractive in Ivano-Frankivsk region. Compared to other investigated regions, the level of investment attractiveness of Ivano-Frankivsk region is very sensitive to investing in export-oriented activities (18.5%) and amount of foreign investment per head (22.5%). The stimulation of export-oriented industries should become the priority of the formation and practical implementation of regional investment policy.

The indicators of the population's income, the volume of construction works performed, as well as the volume of industrial production will be determinative for the formation of the investment attractiveness of Lviv region. Accordingly, stimulation of development and investments attractiveness in activities directed to domestic (regional and national market), in particular, construction and industry will be the priority in forming the regional investment policy, aimed at raising the level of investment attractiveness of Lviv regional systems.

In the process of forming the investment attractiveness of Transcarpathian region, measures aimed at raising the level of populations incomes, increasing the volume of executed construction works, as well as the volume of direct foreign investments per head are a priority. In other words, the export potential of Transcarpathian region is used only partially, and accordingly, investments in export-oriented activities determine changes in the investment attractiveness of the region by only 16.3% after Ivano-Frankivsk and Lviv regions.

Almost the same situation takes place in Ternopil region. In the formation of investment attractiveness, the most important are the indicators of performance of construction works, the growth of population incomes and the volume of foreign investment per head. Accordingly, the actions that are directed to attracting foreign investment in construction and industry, which are oriented on the regional and national markets will have the most positive impact on the investment attractiveness of Ternopil region. Paradoxically, paying attention to the predominantly agrarian specialization of the region, the impact of investment attraction by the measures on export-oriented activities is very insignificant for the indicator of investment attractiveness (the lowest indicator from all 5 regions is 5.6%).

To form the investment attractiveness of Chernivtsi region, increase the volume of foreign investment per head, industrial production and population incomes should be the priority areas of regional policy. That is, again, the investment attractiveness of the region is currently determined by the types of economic activity that involve attracting of foreign capital and are oriented towards the domestic (regional and national markets). In other words, efforts of central bodies of state power, as well as local self-government in the direction of the formation of a strategy and practical measures for the implementation of investment policy, should be aimed at the activation and development of these factors and influence levers.

4. Evaluation results of investment attractiveness of regions of Western Ukraine

Calculated by the formula (1) the values of general indicators of investment attractiveness for five regions of Western Ukraine for 2010–2016 are shown in Table 3.

As it can be seen from the dynamics of the values of general indicators of investment attractiveness for five regions of Western Ukraine (Fig. 1-5), there is no established positive trend of changing the values of the general indicator of investment attractiveness in any region. Additional values of investment attractiveness indicator reveal a presence of a positive influence of the analysed factors of investment attractiveness on investment processes in the respective region. Negative values of the respective indicators reveal the negative influence of factors of investment attractiveness on processes of attracting investment resources to the region.

Fig. 1. Dynamics of values of investment attractiveness indicator of Ivano-Frankivsk region

Table 3
General indicators of investment attractiveness of Western Ukraine regions

Region	2010	2011	2012	2013	2014	2015	2016
Ivano-Frankivsk	-1,126	-0,462	0,219	0,445	0,463	0,285	0,176
Lviv	-0,958	-0,037	0,021	0,492	-0,249	0,207	0,523
Transcarpathian	1,580	-0,424	-0,452	-0,269	-0,203	-0,436	0,204
Ternopil	-0,446	0,199	0,579	1,014	-0,038	-1,065	-0,354
Chernivtsi	-0,774	-0,039	0,546	0,739	0,242	-0,454	-0,258
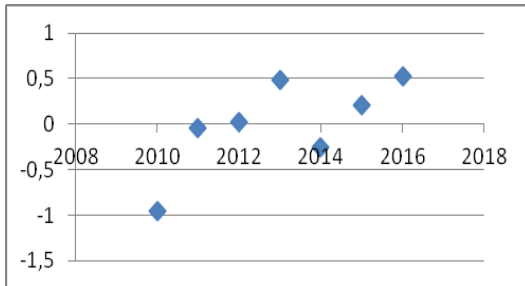
Fig. 2. Dynamics of values of investment attractiveness indicator of Lviv region
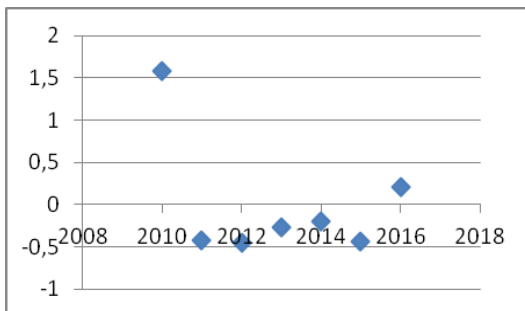
Fig. 3. Dynamics of values of investment attractiveness indicator of Transcarpathian region

Fig. 4. Dynamics of values of investment attractiveness indicator of Ternopil region
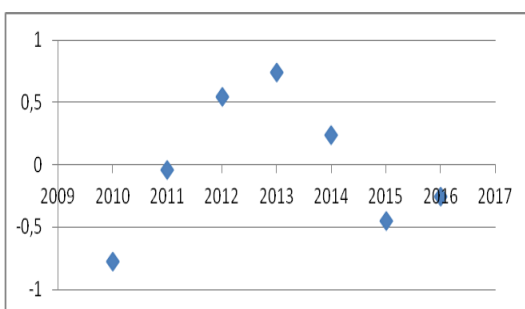
Fig. 5. Dynamics of values of investment attractiveness indicator of Chernivtsi region

The harsh deterioration of the value of generalizing investment attractiveness in 2014 and the presence of positive trends in improving the investment attractiveness, started in 2015 are the mutual feature for values dynamics of all regions without exception. The worst situation with investment attractiveness was in Transcarpathian region during the period of 2011–2015. Accumulation of negative tendencies in the formation of investment attractiveness factors has led to a decrease in the indicators of foreign investments volumes per head and volumes of investments in fixed capital per head during the investigated period.

5. Conclusion

1. As a result of researches, particular results of which are presented in this publication, the existing approach to measuring the level of investment attractiveness of the region has been improved and developed in order to take into account possible multi-colourarity and determination of the proportion of investment attractiveness factors. The use of the proposed approach has allowed obtaining the competitive scientific results that can become the basis for planning and practical implementation of measures for the creation of investment attractiveness of regions and their territorial systems. The possibility of identifying the priority areas of influence on investment attractiveness factors in order to increase the volume of the attraction of investments into the regional economic system is a determining positive side of the proposed approach.

2. It should be noted that the practical realization of measures to create the investment attractiveness of regions of Western Ukraine should be based on the following directions: increase in the investment's volume in fixed capital per capita; formation and dissemination of measures to attract foreign investment in construction and industry that are oriented to regional and national markets; increase in direct foreign investments per capita; stimulation of export-oriented production in the regions; increase in the investments in agrarian specialization of the regions.

3. Prospects for further development of the investment climate assessment of the regions of Ukraine will be based on ways formation to increase the investment attractiveness of the regions and to justify the concept of investment support for the development of regional economic systems.

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THEORETICAL AND METHODICAL APPROACHES TO THE FORMATION AND EVALUATION OF THE QUALITY OF TOURIST SERVICES

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Abstract. The study, the results of which are described in the article, is devoted to analysing and substantiating approaches to the assessment and quality assurance of tourism services, which form their competitiveness, namely factors and indicators of quality. After all, the integration and globalization of the world society determine the development of tourism as a catalyst for these global processes, and world practice has proved that tourism can be an effective way to solve many socio-economic problems. *The subject of the study* is the peculiarities of assessing the quality of tourist services. *Methodology.* The methodological basis of the work is a system of general scientific and special scientific methods, mainly, in the process of research, there are used such methods as system-analytical and dialectical methods – for the theoretical generalization of the investigated material; structural and logical method – in systematizing factors and indicators of the quality of tourist services. *The purpose of the article* is a theoretical justification of approaches to the quality of tourist services and optimization of their quality assessment. In the research, approaches to the interpretation of the concept of quality are presented and analysed, features of services in general and tourism in particular are concentrated, and it is suggested to group and classify factors and indicators of their quality. The interpretation of the notion of quality is ambiguous, both in Ukrainian and in foreign literary sources, and depends on the point of view on this notion. In our opinion, the most thorough definition characterizes the quality of products and services as a complex feature that determines their suitability to the needs of the consumer. Taking into account the specificity of the term "service", peculiarities determining the approaches to their evaluation are studied, such a service can be considered a product dominated by intangible elements and also there are separate material components. The peculiarity of tourist services is that they provide the satisfaction of financial and intangible (spiritual) tourist needs of the person, which includes transportation services, accommodation services, and other travel services, not related to transportation and accommodation. Awareness of factors that determine quality is the starting point for improving it. We carried out an extrapolation of factors of the quality of goods, tourism services as a special type of goods, and made their classification. Quality score is a quantitative or qualitative set of specific requirements for the characteristics (properties) of an object that make it possible to implement and verify them. To determine the quality level, we have suggested a classification of quality indicators of tourism service. *Conclusions.* Tourist service is considered as a specific activity aimed at creating the conditions for the effective realization and use of tourism product, which is the result of the purposeful activity of the tourist enterprise. Factors of the quality of tourist services should be grouped according to peculiarities of their manifestation (forming, restraining and storing), and managing individual determinants (tourism potential, material base, personnel qualification, marketing research on the relevance and life cycle of services, ongoing maintenance of facilities, timely overhaul of production capacities services, measures of ecological and economic stability, introduction of standards of service and analysis of their observance, material interest personnel, using the principles of quality system) can be directed to act on the overall quality. Indicators of quality of tourist services are pointers of their quality. Establishing the optimal value of a certain quality index (according to the classification suggested in the study) and its comparison with the actual manifestation of this indicator, one can characterize the degree of conformity of the tourist service to its requirements. The latter is aimed at improving the quality of tourist services, and, indirectly, the requirements to them.

Key words: quality, service, tourist service, quality factors, quality indicators.

JEL Classification: L15, L83, L84

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1. Introduction

Integration and globalization of society determine the development of tourism as a catalyst for these global processes, which is becoming more and more significant determinant of the socio-economic development of the country. The modern world cannot be imagined without tourism: international organizations are studying, considering and developing ways and opportunities for tourism development, it is planned by national governments, discussed in the media, and in the end, almost every day the average consumer in one way or another touches on tourism.

Tourism has all the features that define it as an independent branch of the economy that arose in the process of social division of labour and covers all kinds of human activities that are aimed at organizing rest and renew people's health.

At the same time, it is logical that the question arises about the quality of tourism services as a specific product since the problem of assessing the quality of services in general and tourism in particular is due to a number of their specific features.

The **aim of the study** is a theoretical justification of approaches to the quality of tourist services and optimization of their quality assessment.

The **subject of the study** is peculiarities of assessing the quality of tourism services.

Methodology. The methodological basis of the work is a system of general scientific and special scientific methods; in particular, the following methods were used in the process of research: system-analytical and dialectical methods – for the theoretical generalization of the investigated material; structural-logical method – in systematizing factors and indicators of the quality of tourist services.

The approaches to the interpretation of the concept of quality are presented and analysed in the article, features of services in general and tourism services in particular are concentrated, and it is suggested to group and classify factors and indicators of their quality.

2. Scientific approaches to the terminology of the quality of tourist services

The interpretation of the notion of quality is ambiguous, both in Ukrainian and in foreign literary sources, and depends on the point of view on this notion.

Quality is a philosophical concept, from the terminology of the humanities. In Aristotle's logic, quality is one of the 10 categories, on which Aristotle divided all things of reality. As one of such categories, quality is a by-side circumstance with the help of which the thing acquires the qualities of some type; a by-side circumstance that indicates what the thing is (its meaningful qualities and forms) and how it works (its abilities and skills); a by-side circumstance, which is an external valuation form (Shynkaruk, 1986).

The ISO 8402-1986 standard defines quality as a "set of features and characteristics of a product or service that ensures its ability to meet claimed or foreseeable needs."

According to the Law "On Consumer Rights Protection" "the proper quality of goods, jobs or services is a property of a product that meets the requirements established for this category of products in the regulatory acts and regulations, and the terms of the contract with the consumer."

According to UNWTO, quality is a performance at a certain price for any client's tasks and expectations that are not prohibited by law, while respecting the requirements of safety, hygiene, and availability of services, the harmony of the human and natural environment.

Thus, the quality of products and services is a complex feature that determines their suitability to the needs of the consumer.

Taking into account the specificity of the term "service", it is necessary to note features that determine approaches to their evaluation.

Services are products that do not have a real, tangible form, "which exist in the form of useful effective work" (Prokhorov, 1980). Consumption of services mainly occurs at the same time as their production. These are the benefits that cannot be stored and accumulated (Mazur, 2011). Therefore, unlike the market where products are sold in real form, the services market is directly related to the processes of production and consumption. As the classic of marketing thought P. Kotler points out, in this market, there is no transfer of ownership, possession of property (Kotler, 2006). It is not characterized by aposteriority (post-production realization), on the basis of which on the other markets surplus goods are periodically accumulated.

As the most effective sphere of the market from the point of view of consumer interests, the market of services at the rates of development is increasingly ahead of the market of products manufactured in real form. Such an increase in production and service delivery is the main content of post-industrialization – the transition of modern economies to a new high-quality state (Bulatov, 2005). Prospects for the development of countries and regions in post-industrialization are determined by the development of their market of services, indicators of which become important indicators of socio-economic development.

The market of services is a complex part of a single market space, based on the general market principles of management, namely: freedom of choice, customer orientation, competitive nature of relations. At the same time, it is allocated in a separate direction of research, the general principles of management which have a specific character. The market of services is not similar to other markets mainly due to the following reasons:
1) high level of uncertainty of the service, which prevents the sellers from their promotion on the market;

2) the impossibility of comparing and evaluating services until their acquisition.

In the economic theory, the service is considered as a special consumer value, expressed in a certain beneficial effect, which satisfies the needs of people and society.

Services are actions, the result of which is consumed in the process of their provision. They represent the activity of the individual in favour of another person, "purposeful activity, the results of which have a manifestation in the beneficial effect" (Lyubitseva, 2006).

In commerce, services are labour-intensive, meaningful activities, the results of which are reflected in the useful effect, the specific consumer value. The feature of the service is the coincidence in time and in space of processes of production, sales, and consumption of its consumable value. Such a definition is enshrined in the Law on Protection of Consumer Rights – the activity of the executor for the provision (transfer) to the consumer of a specified contract of material or intangible good, carried out on individual orders of the consumer to meet his personal needs.

Services are characterized by specific characteristics that distinguish them from other goods: inseparability from the source, intangibility, insecurity, and instability of quality. The abovementioned characteristics mainly determine the specificity of evaluation and standardization of their quality.

To give a comprehensive definition of a service is not an easy task. The difficulty lies in the fact that in practice products are offered that are components of individual services and material goods (for example, passenger air transport services include not only the movement of passengers and luggage in space but also food during the flight). We support the idea that the service can be considered a product dominated by intangible elements and also there are certain material components. In this case, exclusively intangible benefits should be the main motive for the purchase of consumer services.

In the basis of the selection of the market for tourist services or the tourist market, which includes the services of the tourist industry, among the markets for other services lie their specificity and peculiarities of the approach to the interpretation.

Such authors as T. Androsova (2008), A. Chernihovskaya (2007) separate these concepts, based on the fact that in the market for tourist services, in their opinion, there occurs the sale of a specially developed tourist product, while the tourist market is not only a set of services sold but also a corresponding infrastructure that provides its functioning.

Other authors, in particular, O. Lyubitseva, N. Kudla identify these concepts. Thus, O. Lyubitseva points out that "the market of tourist services or the tourist market is an objective basis for the formation of the growth and diversification of social needs and the corresponding deepening of the social division of labour. It is a part of

the global services market, its specific component. The tourist market is a sphere of satisfaction of the needs of the population in services related to rest and content of leisure travel" (Lyubitseva, 2006).

Russian author G. Yakovlev (2007) believes that "the tourist industry is a collection of facilities, vehicles, catering, entertainment, objects of cognitive, business, recreational, sports, and other activities, organizations that provide excursion services, as well as services of guides' translators.

In the broader understanding, the tourism industry is considered by O. Lyubitseva. In the framework of the tourism industry, it includes not only enterprises of the tourism industry, but also other elements and structures involved in the organization of tourist consumption. Tourism industry according to O. Lyubitseva (2006) includes three subsystems: organizational and institutional, functional and economic, territorial and economic.

Thus, in the broad sense, the term "tourism industry" includes not only tourist enterprises, hospitality, food, transport facilities, but also state institutions of law, monetary and tax policy, consulting and customs services, tourist resources and population of territories, tourists; and tourism services respectively – the activities to meet the needs of tourists by these enterprises.

Different definitions of tourist services occur in the professional literature (Table 1). Mainly, A. Kornak and M. Montigyer-Loyba (2012), under the term tourist services, mean "any exchange or sale of the results of human labour that is related to the direct or indirect satisfaction of needs before and during the trip and at the place of tourist stay, but is not a consequence of the direct production of objects. They depend on the presence of a tourist customer."

Somewhat differently this concept is defined by V. Gavoretsky (2007), who by the term tourist service understands "any socially useful actions that ensure satisfaction of the material and intangible (spiritual) tourist needs of a man. They are equally related to the maintenance of a tourist (material needs, for example, accommodation, food), and so to his personality (spiritual needs, for example, cultural and entertainment)."

In his turn, R. Lazarek calls tourism services "any actions, which satisfy the needs of tourists connected with the trip and actualize their purpose in the tourist territory, that is, satisfy the needs of tourists before, during, and after the trip." In this definition, the author focuses on the goal of tourism services that is to meet the needs of tourists (Herasymenko, 2013).

In the Law of Ukraine "On Tourism", there is no special definition of the term "tourist service" but there is given a definition of accompanying and tourism services and goods (1995). Accompanying tourism services are understood as services and products designed to meet the needs of consumers, the provision and production

Table 1
Interpretation of concepts "tourist service" and "tourism product"

Author, source	Definition of the concept
Law of Ukraine "On Tourism" (1995)	A tourist product is a pre-designed complex of tourist services that combines not less than two such services that are being sold or offered for sale at a specified price, which includes transportation services, accommodation services, and other travel services not related to transportation and accommodation (services for organizing visits to cultural objects, recreation and entertainment, sale of souvenirs, etc.).
International recommendations on tourism statistics (2008)	A tourist product is a combination of different aspects (characteristics of places visited, modes of transport, types of accommodation, activities) around a specific centre of interest (excursion to a natural reserve, farm stay, visits to historical sites).
Glossary of terms on international tourism (2006)	Tourist product is an orderly set of tourist services, jobs that provide consumption of tourist services and goods. This is a collection of many elements: natural resources, cultural, architectural, geographic places of interest, technological capabilities, equipment, and systems of enterprises of tourism infrastructure.
V. Kvartalnov (2003, p. 42, 47)	Tourist services are a segment of the service sector that provides for meeting the needs of people and implementing their activities in their free time: rest, entertainment, travel. A tourist product is a collection of real (consumer items) and non-real (services) consumer values necessary for the full satisfaction of the needs of tourists that appear during their travel.
I.M. Shkola (2005, p. 9)	Tourist services are services of subjects of tourist activity in relation to accommodation, food, transport, informational and advertising services, as well as services of cultural, sport, everyday life, entertainment, etc., aimed at satisfying the needs of tourists. Tourist product is a complex of tourist services necessary to meet the needs of the tourist during his travel.
A.P. Durovych (2004, p. 61-62)	Tourist product is the result of social labour in the form of tourist services, which have a consumer value. In the broad sense, tourist product is any kind of tourist services. Tourist services are the purposeful production activity, which satisfies the needs of tourists and does not accept, as a rule, material form. Tourist services can be characterized as invisible goods of a special kind.

of which will be reduced significantly without their implementation for tourists, and typical tourist services and goods are designed to meet the needs of tourists, the provision and production of which will be significantly reduced without their implementation for tourists.

The generalization of approaches to the definition of the essence of tourist services allows us to identify their main functions, namely:
- economic, which stimulates the development of branches of the economy, increases the standard of living of the population;
- technological, which serves as a means of delivery of goods to meet the basic needs of tourists and tourist destinations;
- providing, which creates the appropriate conditions for the consumer (rest, treatment, business, shopping, etc.) outside the place of his permanent residence.

According to the recommendations of the World Tourism Organization UNWTO, the quality of tourism is interpreted as an element of quality of life during the temporary stay of tourists outside the place of permanent residence.

3. Factors of the quality of tourist services

Awareness of the factors that determine the quality is the starting point for improving it (Strokovych, 2010).

We will extrapolate the quality of goods and travel services as a special type of goods (Fig. 1).

As can be seen from the figure, the factors of the quality of tourist services, similar to the goods, are proposed to be divided into three groups. The factors that directly shape the quality of expediency include: tourism potential, material resources of the enterprise and the conditions of service, qualifications of the staff.

To the factors that maintain quality, we refer: research on the life cycle of services, ongoing maintenance and overhaul of the material base, the application of measures to preserve the tourism potential, etc.

It is expedient to include the development and implementation of service standards, the analysis of the accuracy of their compliance, the material and moral interest of the personnel, and the use of principles of the quality system.

Analysing the proposed classification of factors of the quality of tourist services, one can mention those that can be regulated and unregulated factors that do not depend on the activity of the enterprise providing the services. And if the enterprise can only indirectly influence the initial tourist potential of the region, then other factors can be optimized by means of certain strategically directed measures. Such measures should be based on identified indicators, indicators of the quality of tourist services.
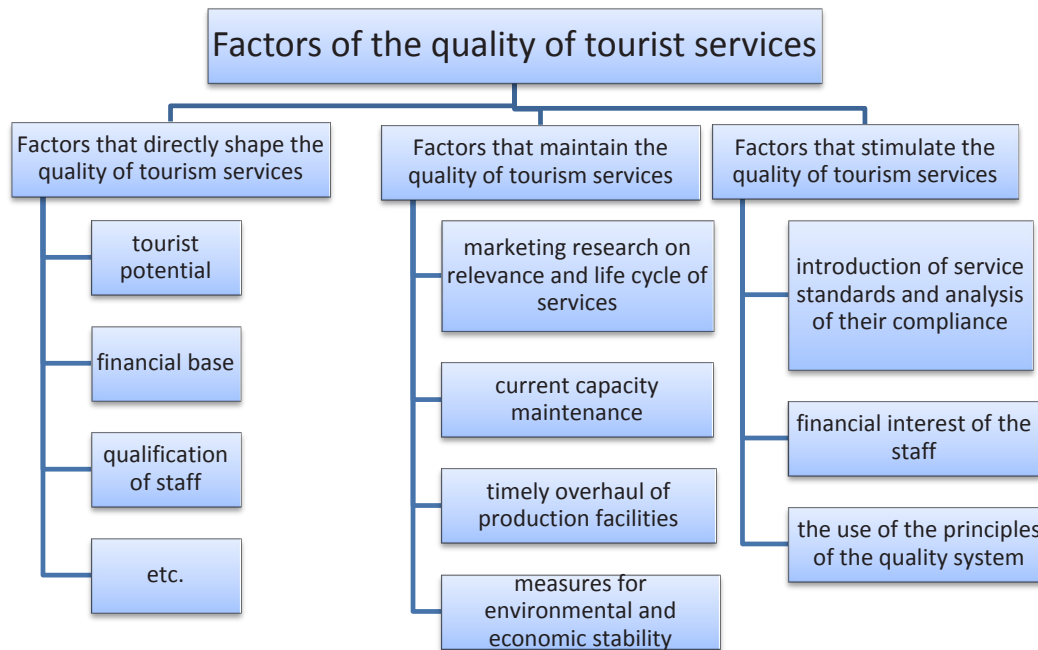
Fig. 1. Factors of the quality of tourist services

4. Basic indicators of the quality of tourist services

Quality score is a quantitative or qualitative set of specific requirements for the characteristics (properties) of an object that make it possible to implement and verify them.

To determine the quality level, we have suggested the main indicators of the quality of tourist services (Fig. 2).

Consequently, understanding the concept of the quality of tourism services, as a combination of individual indicators, will allow rationally evaluating it and maximally optimizing the standards of service in the tourism industry, taking into account factors of its quality.

5. Quality tools for tourist services

It should be noted that for measuring travel services, there are: standards, technical and commodity norms, the culture of service, consumer rights protection, etc.

At the same time, the standardization itself (state, public, mixed) in the sphere of tourism business should be considered also in the sphere of protection of consumer interests. In conditions of market relations, any activity, including tourism, requires unification and standardization. First of all, it concerns the offered services. What concerns tourism communication, experience, they cannot be a priori standar dized, since one of the main motives of a tourist trip is the desire for acquaintance and direct contact with the unique, original culture of certain people who are spatially localized.

Therefore, speaking about standardization in the tourism business, one should speak not about the standardization of social and cultural diversity, but about the standardization of levels of comfort – those parties and the properties of services that have a consumer value and, therefore, should have a guaranteed equivalent of quality, comfort, security, etc. All other aspects of the tourist trip are and must be unique, ethnically or regionally conditioned. Such standardization is undesirable (Alexandrova).

However, it should be noted that the quality assessment also depends on the client's expectations, which in turn is determined by the personal needs of the individual, the client's prior experience and the exchange of experience between clients. Only the client can assess the relevance of the service to their perceptions, the purpose of the service, its duration, availability, speed, and cultural level of service.

In order to ensure the high quality of tourist services, enterprises develop and use internal standards of service for the employed, that is aimed at the stability of the provision of tourist services and are unconditional for the performance of a particular enterprise. Such standards are organizational and guidance, methodological documents that reflect requirements to goals, organizations, technologies, and the provision of certain types of work.

They have a multi-purpose meaning, as they serve the function of the instruction, the textbook for learning and the basis for control. Our quality indicators, classified by blocks, can be used as a basis for tourism service standards and, accordingly, used for the purposes mentioned above.

Indicators of quality of tourist services

Indicators of purpose

the suitability and functionality of the tourist product and individual tourist services:
- reaching the aim of the trip;
- completeness of service provision;
- efficiency of using time in securement tourist services;
- etc.

Indicators of reliability

the ability to effectively carry out tourism activities at a given time, modes and conditions:
- reliability of concluded transactions;
- securement of services according to the programme of the tour;
- thoughtful action in case of force majeure.

Aesthetic indicators

the perfection of the securement of tourist services:
- harmony,
- conformity of style and fashion;
- ethics and skill level of the personnel;
- value of a tourist service.

Ecological indicators

absence of harmful influence of the environment and on the environment:
- security level when getting a tourist service:
- ecologically clean destination;
- degree of compliance with environmental legislation.

Ergonomic indicators

correspondence to psychological perception and physical features of a person:
- comfort of the interaction of "personnel-tourist";
- convenience of transport, furniture, and other equipment, etc.;
- adherence to the moral and ethical positive microclimate.

Economic indicators

relevance to the ratio of "price-quality":
- costs for the development, production, and testing of tourism services;
- complexity of service provision;
- degree of satisfaction of consumer expectations.

Fig. 2 Indicators of quality of tourist services

6. Conclusions

Tourist service is considered as a specific activity aimed at creating the conditions for the effective realization and use of tourism product, which is the result of the purposeful activity of the tourist enterprise.

Factors of the quality of tourist services should be grouped according to the peculiarities of their manifestation (forming, restraining and storing), and managing individual determinants (tourism potential, material base, personnel qualification, marketing research on the relevance and life cycle of services, ongoing maintenance of facilities, timely overhaul of production capacities services, measures of ecological and economic stability, introduction of standards of service and analysis of their observance, material interest personnel, using the principles of quality system) can be directed to act on the overall quality.

Indicators of quality of tourist services are pointers of their quality. Establishing the optimal value of a certain quality index (according to the classification suggested in the study) and its comparison with the actual manifestation of this indicator can characterize the degree of conformity of the tourist service to its requirements. The latter is aimed at improving the quality of tourist services, and, indirectly, the requirements to them.

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STRATEGIC MANAGEMENT ANALYSIS IN THE EU COUNTRIES

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Abstract. The concept of national and regional development strategies for small and medium-sized enterprises (SMEs) are studied for a long time, as small and medium businesses are the foundation of the economy and the basis for effective country functioning. The business development program of the European Union countries is particularly interesting because there are several levels that correspond to each other and give full effect on the SMEs development. The EU standards are higher than in non-EU countries; therefore, it is worth considering legislative documents, as well as statistics showing the indicators of openness and access to the development of small and medium-sized enterprises (SMEs). The complexity and comparative novelty of studying such a problem in Ukraine led to the need to explore sources of information in the original language due to the lack of information in Ukrainian or Russian. All these suggest that the problem of creating strategies at the national and regional level is more relevant and important to study in the West that demonstrates the current state. *The subject of the study* is to analyse the effectiveness of implementing strategies for the development of small and medium-sized enterprises as well as the impact of national and regional policies on their functioning and development in the European Union countries. *Methodology.* The authors highlighted the peculiarities and main features of the development strategies implementation for small and medium-sized enterprises in the EU countries through a comparative analysis of the legislative framework, statistical and other data that help assess the performance and effectiveness of the implemented strategies. The content analysis helps to identify peculiarities of the implemented strategies in quantitative and qualitative forms. The thorough analysis using the above-mentioned methods allowed doing a qualitative study of national and regional strategies in the context of the development of small and medium-sized businesses in the EU countries. *Practical importance* is that the results of this study will lead to a wider acquaintance with progressive strategic methods of management of small and medium-sized enterprises. This will enable the plan development of concrete actions to improve the efficiency of enterprise management in less developed countries. In turn, raising awareness on this issue will reduce the number of inefficient and non-innovative enterprises. *Scientific novelty* of the article is to determine the theoretical basis of the differences that at the current development stage are increasingly manifested as certain contradictions in the compilation and improvement of small and medium-sized enterprises, development of strategies at the national and regional levels. Small and medium-sized enterprises, in their turn, have a wider access to their development. *Conclusions.* As a result of the main development strategies of small and medium-sized enterprises of the EU countries, there should be identified the differences and common features of different strategies for innovations of small and medium-sized enterprises. The interaction of the national and regional strategy with actual results and existing strategies is explored.

Key words: strategic management of enterprises, national and regional strategies, development of small and medium-sized enterprises.

JEL Classification: L100, O018, E610, F200, F430

1. Introduction

Consideration of the creation conditions, development and performance of small and medium-sized enterprises in the economies of the European Union countries remain relevant, as enterprises cooperate with each other, regardless of the boundaries and cultural or economic differences. The central place is taken by the state policy that stimulates, supports small businesses with various types of benefits, loans, grants, cooperation encouragement and the experience from other countries. Not only a strategy that is a desirable situation in the future where the enterprise or country should be, but also valid actions that are available for enterprises. A particular attention should

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be paid to stimulating the development of small and medium-sized enterprises in underdeveloped regions and districts to create new types of businesses, providing technical and financial support. A promising trend is that the emphasis is done on the region strengths, but the weaknesses are taken into account, and there is being developed the strategy of innovation development, which is already a necessity of the modern age. That is, the development of alternative energy sources, the maintenance of a sustainable environment, the natural resources protection are the industries that are receiving the most attention at the moment.

The credit availability, the barrier absence to create bureaucracy and corruption are positive factors for the development of the core of the economy – small and medium-sized businesses.

One of the main categories in business is the long-term planning strategy, indicating the activity goals, the timing of their achievement, tactical plans, and resources that will give a complete picture of how the company or any enterprise sees itself through a certain time interval. A peculiarity is the necessity to adapt the company activities, the production of products or the provision of services for certain regions or countries, for the efficiency and appropriateness of providing their services or goods.

Business strategy is a strategy of business units that determines the direction of action to ensure competitive advantages in a specific area of the organization (Horielov & Bolshenko, 2010). That is, starting any commercial activity, the entrepreneur should be responsible not only for the beginning of his own enterprise performance but also for further development, the activity direction, that is, the perspective of 3-5 years (sometimes more).

In the literature concerning strategic planning, there are two opposing views on the understanding of the strategy. In the first case, the strategy is a concrete long-term plan to achieve a specific goal, and strategy development is the process of finding a specific goal and drawing up a long-term plan. This approach is based on the fact that all emerging changes are predictable, the processes occurring in the environment are deterministic and fall for complete control and management.

In the second case, the strategy refers to the long-term qualitatively defined direction of the enterprise development concerning the sphere, means and forms of its activities, the system of internal relations, as well as the enterprise position in the environment (Business strategy).

The company strategy is a comprehensive management plan that should strengthen the company position in the market and ensure coordination, attraction, and satisfaction of consumers, successful competition and the achievement of global goals. The strategy development process is based on a thorough study of all possible fields of development and activity, and consists of choosing a common direction, mastering

the markets served by needs, competition methods, attracted resources and business models. In other words, the strategy means the company's choice of its path of development, markets, competition methods, and doing business (Examples of business strategies for leading companies in the world).

In other words, the strategy is an integral part of the company's development; it determines the movement direction, taking into account all the information on the advantages and disadvantages. It is important not to forget that the choice of strategy and the possibility of enterprise development are also dependent on state policy and landmarks set by the state itself. That is, the creation of all prerequisites for development is very important for the enterprise performance and their enrichment of the country's economy. This paper concerns SMEs – small and medium-sized enterprises, as they are the basis of any country's economy.

In the developed countries, the share of small and medium-sized enterprises is more than 90%. This is an indicator of the population employment, the population involvement in business processes and the enrichment of their own country's economy. During globalization, we are witnessing the cooperation of SMEs with foreign SMEs and this expands borders, facilitates international trade. However, one should pay attention to the possible barriers that cover international treaties or their absence, taxes and customs duties, which in its turn complicates the trade and does not contribute to the economic development.

It is impossible to predict all possible events that may occur during the strategy implementation. Therefore, it is necessary to use generalized, incomplete and inaccurate information while choosing among various alternatives. In the search process, concrete alternatives are revealed; more information that is accurate appears and can cast doubt on the original choice. The successful strategy implementation is impossible without a constant feedback.

Such concepts as strategies and benchmarks should not be confused. The benchmark is the goal that the company seeks to achieve, and the strategy is a means to achieve the goal. Benchmarks are a higher level of decision-making. A strategy is justified by one set of benchmarks will not be the same if the organization's benchmarks are changed.

After all, the strategy and benchmarks are interchangeable at both individual moments and at different levels of the organization. Some performance parameters (for example, market share) at one point can serve as benchmarks for the firm, and in the other, they will become its strategy. Further, since the benchmarks and strategies are made within the organization, a typical hierarchy arises: the upper levels of control are strategy elements, on the bottom they turn into benchmarks (Sumina, Guseynov, 2016).

Therefore, a regional policy is very important for modern SMEs development. It encourages development,

innovations, attracts resources and capital, especially for the least developed regions. Therefore, when there is a talk about business development, we should first of all look at the development of regional or national strategies and how they encourage their own SMEs.

When we talk about business activity, the enterprise strategy must start with its origins, namely, the strategy of stimulating entrepreneurial activity at the state level or at the level of the European Union as a whole. This is very important when the state adopts a policy direction that regulates and encourages entrepreneurs to establish enterprises. Nevertheless, the vast majority of the EU countries encourage small and medium-sized businesses, and there are several reasons for this.

The first reason is historical. After World War II, Europe did not immediately recover from those losses and consequences, and in the late 1960s, the European Union had to stimulate small businesses in order to accelerate economic growth. Large companies were subject to severe restrictions on their activities for a number of reasons. In most cases, because they did not want to participate in the development programs of the undeveloped areas, in the process of automation they reduced a large number of workplaces, there was a problem of environmental pollution. In addition, innovation activities also started to decrease.

All of these factors have been combined to stimulate small and medium-sized businesses, which in its turn, for the 21st century, have proven that small and medium-sized businesses account 85% of the GDP of the European Union (Dryha, 2009).

First, it is worth noting that Small Business Act for Europe is the backbone of the EU policy on SMEs, based on the Think Small First Principle (EUROPE 2020 A strategy for smart, sustainable and inclusive growth, 2010). This principle includes self-advisory and compilation of SMEs opinions, a legislative regulation that refutes business procedures, SBA test that analyses implications of the introduction of some legislative acts for SMEs, and the work of SME messengers promoting SME legal acts and policies.

Among the successful and promising programs for stimulating SMEs development is Horizon 2020, which has been operating since 2014. The main ideas of the program are not only the attraction of a larger number of SBA enterprises but also the innovation stimulations, which has already become an integral part of the development of any enterprise. Consequently, the Horizon 2020 program finances SBA in the amount of 8 billion euros, and advocates joint research and innovation projects (between the EU countries and partners) (SMEs).

That is, such an initiative involves the creation of Innovation Union, which in its turn involves the development of innovations at the local, regional, and national levels. Problems that are central and need to be addressed in the future are energy, transport, climate

change, rational use of resources, health, environmental products. In addition, it is planned to expand and improve intellectual property rights (Arabey, 2010).

Moreover, the involvement of educational institutions and a creative approach to learning and the use of skills acquired during the training period is also a priority for the EU countries. The strategy encourages young graduates to innovate through scholarships and financial assistance, as well as ongoing consultations and trainings.

All these and much more are aimed at implementing the following principles by 2020:
- smart economy's development based on knowledge and innovations;
- sustainable growth – encouraging productive use of resources, "green" and more competitive economies;
- inclusive growth – promoting economies with high levels of employment that coordinate economic, social, and territorial growth (The Small Business Act for Europe).

Another initiative of COSME (the Competitiveness of Enterprises and Small and Medium-sized Enterprises) will provide financial assistance and guarantees for small and medium-sized businesses at all stages of the enterprise establishment. This program also helps entrepreneurs with training, education and advice to support their activities. You can also add that the program is aimed at creating the right environment for creating and running a business (annual report on European SMEs 2015/2016, 2016).

Looking at the growth of SMEs in 2013–2015, it can be seen the following: from -1% in 2013 to 1.1% in 2014 and 1.5% in 2015. For comparison, one can draw attention to the level of large enterprises growth: from 0.3% to 1% in 2014 and 1.3% in 2015. That is, SMEs have started to develop more dynamically (EU Status Report 2016: Strengthening European Investment for Jobs and Growth, 2016).

It is possible to trace the employment growth and the level of the added value in the EU countries. The employment grew from -1% (2013) to 1.5% (2015), and the added value increased from 1.45% (2013) to 5.7% (2015). That is, we see a clear growth and progress made by the EU countries after the adoption of SMEs stimulus programs.

It is also worth noting the new EU strategy, which covers the regulation of foreign investment by 2030. It provides advice on the creation of a new European External Investment Plan, in order to maintain employment levels in Europe, as well as throughout the world. According to this plan, the European Strategic Investment Fund is expected to attract 116 billion euro in 26 member countries for more than 200 000 small and medium-sized enterprises (Arutyunova, 2010).

That is why we see that the framework for legislative regulation and stimulation of SMEs has had the result, so for the full analysis and comparison of the strategies

of the EU countries, it is necessary to consider the enterprises of some countries and to analyse the state strategies of business stimulation.

At present, the general attention of the business towards the strategy is rapidly increasing. The methods of network strategic planning are being developed and implemented when the strategy is formed simultaneously and agreed on several technologically or functionally related enterprises. There are whole "clumps" of territorially close or functionally related enterprises operating on the basis of an agreed strategic perspective (such groups of companies have been called "business systems"). At the same time, the strategies are rarely complex in nature, which significantly reduces their reality, effectiveness and efficiency.

That is, the company strategy is the central part of the entire enterprise, sets the main directions, goals and a general sense of the business existence. It is important to choose the right strategy, which can provide new competitive advantages, development in the modern period, and plays the main role of any enterprise – to make a profit.

The conclusion can be implied that the enterprise strategy and the potential for enterprise development depend on a properly chosen national strategy, so one should look more closely at the examples of the European Union and other foreign countries to understand, which strategies are promising and which directions are important for the successful development.

2. Strategic development analysis of SMEs in Poland

National strategies for encouraging SMEs are a very important issue for the EU that seeks to develop basic things to achieve enormous success at the highest level.

Polish experience shows that in 2014 the growth of the added value was at the level of 4.6%, and by 2015 6.9%. The workplace creation in 2008-2014 was 4,6%, and in 2015 – 1.6%. The forecasts for the same indicators for 2016–2017 are 0.2% the added value and 4.8% for workplace creation. As a whole, in 2015 for 100 inhabitants, there are 4.1% of companies (Small and medium enterprises in Poland – obstacles and development).

The main trends in the enterprises' development in Poland are:
- the sector in Poland is smaller than in the other EU countries and the number of enterprises is the smallest among the other EU countries. The profit is 36%, which is one third less than the big companies receive;
- the most widespread are companies engaged in industry and trade;
- small and medium-sized enterprises take three times more loans from banks, which in turn leads to the fact that among the debtors, there are more SMEs than large companies;

- SMEs have the same average growth rate as big businesses, but they are more dependent on market fluctuations, so the added value has not returned to the level of 2014;
- SMEs development is focused on improving productivity because they make better use of resources and workforce. This leads to the conclusion that the contribution of Polish SMEs to innovative development is greater than in the added value;
- SMEs invest more in people than in equipment. SMEs allocate one-third of their profits to people, so the number of the involved in SMEs is constantly increasing;
- the biggest barrier to growth is large taxes and bureaucracy;
- the access to bank loans is much easier than in the other EU countries. As a result, the enterprises that receive loans are twice as likely to spend on innovation;
- SMEs have a problem in finding qualified staff that has the necessary knowledge and skills in managing SMEs. But despite this, Polish companies rarely encourage their employees to acquire additional skills;
- small businesses are slowly developing.

It should be noted that there is no state regulation of SMEs in Poland. The valid documents fall within the jurisdiction of the entire EU. The promotion of SMEs development is provided by the EU funds. At the state level, there are government agencies and ministries that have financial assistance programs primarily for innovation and human capital, as well as counselling, training, and development.

There are also regional programs, but among them are priority projects of an innovative nature. Polish Business Development Agency (PBDA) operates in Poland, which manages budget funds and funds allocated by the EU to implement programs. It also provides counselling, information, training, and financial services.

The state strategy focuses on such priority tasks as increasing innovation, developing small businesses in the eastern regions of the country, improving the workers' skills, reducing bureaucratic procedures, and opening a wider access to business development.

The negative phenomena of SMEs development are (as a percentage):
- taxes size (20%);
- tax collection system (8%);
- labour legislation (9%);
- political instability (9%);
- access to finance (13%);
- workforce insufficient qualification (3%);
- business licensing and permissions (3%);
- corruption (3%) (21).

On the example of Warmian-Masurian Province, the strategy of small business development until 2025 was developed. This region is industrial only for 33%, which is below the average in Poland – 33.5% (annual report on European SMEs 2015/2016, 2016). It has

the highest unemployment rate and the lowest GDP. It is assumed that the GDP of this province will grow from 0.06% (2010) to 0.7% by the end of 2020. And the number of innovative enterprises will increase from 12.4% (2011) to 22% (2020) (Bei, Tomson, 2013).

In order to develop a strategy, there were conducted analyses of the positive aspects of this region and its benefits. It is a clean environment, therefore, the potential for the development of tourism and light industry (food, forestry) is most likely. In addition, there is potential for the renewable energy development sources. In the region, the presence of foreign investors is small.

On this basis, some priority goals are developed. The first goal is an effective SMEs support policy that is benefits, financial support, and easier access to information and technological innovations. The second one is the involvement of a large number of domestic and foreign investors – programs for attracting investment, creating economic zones. The third goal is the involvement of public organizations of entrepreneurship – promoting entrepreneurship at the school level, educational programs and activities of organizations. The fourth one is increasing the economic potential of small enterprises competitiveness – the creation of innovation centres, research centres, technology parks, and support for innovation initiatives. The fifth goal is the development of the information society – the computerization and increase of the Internet access (Measures to stimulate business and employment in VSEs and SMEs, 2015).

Therefore, a detailed analysis, identifying strengths and weaknesses, as well as thinking for the future, helps to find ways to create a strategy, identify the priority goals and objectives, without which this strategy will not work. It is very important to set real goals and allocate enough time for their implementation.

3. Development analysis of small and medium-sized business in France

Another country, which strategy will be considered, is France. During 2014, the added value of SMEs was 0.3%, and in 2015 it was 2.6%, the number of enterprises per 100 inhabitants was at the level of 4.5. If to consider the workplace creation, then it can be seen that for the period of 2008–2014, 17.9% of workplaces were created, but 2015 represents only 0.1%.

Taking into account the common features, it should be noted that less than 50% of the population is involved in SMEs. Small and medium-sized enterprises represent 99.8% of French business (SME Investment and Innovation France, Germany, Italy and Spain, 2015). When it comes to investment and innovation, one can note the following:
- weak economy of recent years has led to a reduction in the allocation of funds for innovation due to fears of uncertain economic conditions;

- another problem is reducing the demand for SMEs and small profits;
- for a long time investments were high, but they went to construction, so we can talk about a decline in SMEs investment;
- French innovators show good results but still remain below the EU average (SME Performance Review, 2016).

Speaking about state regulation, it should be noted that SMEs are involved in the Ministry of small and medium-sized business, trade and crafts, and regional offices. France is actively implementing the principles of Small Business Act for Europe. In 2015 and the first half of 2016, 3 out of 10 principles were implemented (Measures to stimulate business and employment in VSEs and SMEs, 2016).

In the summer of 2016, the prime minister of France said that starting from 2017 the tax rate would decrease from 33% to 28%. However, he did not mention whoever this reduction will be applied, it is only a part of those whose income does not exceed a little more than 38 thousand euros. Moreover, the tax on credit will increase from 6% to 7% (Summary of french regions' regional innovation strategies, 2012). Nevertheless, despite this, it is argued that the "SMEs test" is not yet sufficiently developed, which determines the impact of the adopted laws on the actual state of affairs.

To review the strategy for the poorly developed region, the authors chose the province of Auvergne, which is on the level 20 according to the French economy with the lowest GDP and employment rates (Auvergne Smart Specialisation Strategy, 2014). The location without access to the sea, inside the country, is not very favourable. However, it is necessary to dismantle the weaknesses and strengths.

Weaknesses can be determined such factors as the outflow of the able-bodied population, a large number of microenterprises that do not have a certain structure, are family businesses and are not engaged in innovation, insufficient research into innovations in industries that are dominant in the region – chemical, machine building, metallurgy, not effective regional policy that does not contribute to business development.

Strengths are the presence of private research companies, good results in implementing the allocation of funds from the funds for SMEs development, the basis for conducting research.

Therefore, with the help of Structural Funds and the Cohesion Fund (2014-2020), a Smart Specialization program was selected. The province Auvergne has developed five priority goals:

The first goal is to produce and supply the market with more health and well-being products. The second goal is to develop new products and services for sustainable agricultural production. The third goal is to improve the attractiveness of the area by establishing sustainable living spaces. The fourth goal is to ensure physical and

digital tracking of events. The fifth goal is to strengthen the information gathering and analysis system and the enforcement system (Regional Council of Auvergne).

For this in 2014, 10% of the budget funds went to the development of regional programs. Since that year, a program called "Digital Auvergne" has been launched, which is developing high-speed networks throughout the region. All priority development directions are initiated by the executive service of Regional Council (Profile the SME sector in Germany, 2015).

That, France is trying to lower taxes and encourage the opening of new SMEs to launch the economy and its growth after an all-embracing crisis throughout the European Union. A detailed program for the development of economically backward regions and close monitoring of its implementation by the EU government structures will help to see the outcome of reforms in the near future.

3. Germany's experience in implementing SMEs reforms

In Germany, SMEs account for 99.7% of all commercial enterprises, with 2.7 enterprises per 100 inhabitants. In 2014, GDP growth was 3.8%, and in 2015 it was 4.2%. Regarding employment, in the period from 2008 to 2014, it was 20.2%, and in 2015 it was 1%, but the total number of working people at SMEs was 68% of the total able-bodied population (The German Mittelstand – an Overview, 2012).

The most important thing to note when it comes to the development of SMEs in Germany is the so-called Mittelstände, which are the backbone of the German economy because they are family businesses. They are characterized by a high degree of managerial interest as a result, a high degree of specialization, flexible decision-making, long-term focus on responsible organizational culture, long-term training and additional education, decentralized presence (The Central Innovation Programmers for SMEs, 2017).

In addition to public policy and the EU policies, such a program of encouragement is the Central Innovation Program of SMEs for those enterprises wishing to develop new or thoroughly improve the existing products, processes or technical services. The program was presented in 2008, with a rethinking of the principles in 2015 and will be in place by the end of 2019. All SMEs with a number of workforce up to 499 can apply for individual assistance or in co-operation with other enterprises.

There is also a special regulation for transnational projects, which includes the IraSME Network, a network of ministries and sponsoring agencies that are coordinators or holders of national or regional collaborative research programs between SMEs. The research and technology companies are also invited to participate. There are also international cooperation agreements with foreign partners, but only German companies can receive funding (Regional Innovation Strategy 2020 for Mecklenburg-Western Pomerania, 2014).

Looking at regional development strategies, it is possible to have a look at Mecklenburg-Vorpommern, which in 2013 contributed 1.83% to the national GDP and 11.2% of unemployment, which took the 2nd place in the number of the unemployed after Berlin (Auvergne Smart Specialisation Strategy, 2014). The regional development program for 2014–2015 was presented in 2013. The SWOT analysis identified the following priority areas:
- energy and climate;
- sustainable development and new materials;
- health and biomedical sciences;
- food industry;
- mobility;
- information and communication technologies.

The main activities were also highlighted, among them the strengthening of state support towards SMEs, the provision of venture capital for R&D, the maintenance of the establishment of industrial parks, and platforms for discussing further initiatives (OP Mecklenburg-Vorpommern ERDF 2014-2020, 2014).

There were also indicated expected results:
- at least 150 projects at enterprises collaborating with research centres;
- more than 5,500 workplaces;
- investments support in 380 SMEs in the amount of more than 600 million euros;
- reduction of carbon dioxide emissions by the equivalent of more than 20 thousand tons of CO_2;
- 250 km of new or expanded cycling lanes (along with municipal roads) and 200 km of new or expanded leisure cycling lanes;
- 80 thousand sq. m of created or restored open space;
- 200 new or upgraded public and educational infrastructure in 230 thousand square meters (Unemployment rates, seasonally adjusted).

That is, the German economy has its own "trump cards" to increase and sustain the productivity of SMEs or to encourage their performance. The state of the economy, from which the regional development programs began to operate, was one of the best in the whole EU, so the results for 2020 should be very positive.

4. Greece's regional strategies for SMEs support

It would be interesting to consider the regional strategies of countries, which are in debt crisis. Let us consider the example of Greece, which has been in a state of crisis for a long time and is now faced with difficult times of debt obligations and negotiations with creditors.

For the period of 2008–2014, the level of employment reached 24.3%. Now the indicator has not changed

significantly 23.5% (The Central Innovation Programme for SMEs, 2017). The added value for SMEs for the period 2008–2014 is -0.7%. According to 2015, it is -1%. However, for 100 inhabitants there are 6.5 SMEs.

It should be noted that microenterprises are the basis of the Greek economy (2016 SBA Fact Sheet Greece, 2016). In general, SMEs are ¾ of the added value and 90% of employment in the country (The Small Business Act for Europe). Nevertheless, SMEs have not been able to reach the level of large firms, which saw an increase of 19% from 2008 to 2015.

Such an indicator as access to financial resources is the lowest in Greece in the EU countries. Moreover, this means that credit financing is not sufficient for the development of SMEs in the country, including venture capital. In addition, their debt is gradually increasing.

The initiatives launched by Greece at the state level try to remedy the situation and improve the state of the economy. The EU programs and commitments to lenders are aimed at the overall development of the economy and the focus on innovations. One of these is Research and Innovation Strategies for Smart Specialization (RIS3), implemented by 1 national and 13 regional strategies, focusing on the following areas:
- agri-food;
- health and medicine;
- information and communication technologies;
- power engineering;
- environment and sustainable development;
- transport;
- materials and construction;
- tourism, culture, creative industries.

The strategy for the introduction of these strategies has created a specialty strategy council of smart specialization, consisting of representatives of ministries and regional bodies, as well as regional councils in 13 regions of Greece (OP Competitiveness, Entrepreneurship and Innovation, 2017).

The program of Competitiveness, Entrepreneurship and Innovation is very interesting and it is a detailed plan and continuation of the program mentioned above. The priorities are:
- entrepreneurship development support with sectorial priorities;
- adaptation of workers, enterprises and business environment to new development requirements;
- mechanism development for supporting entrepreneurship;
- technical support.
Among the expected results:
- increased R&D and innovation costs from 0.34% to 0.51% of GDP in all regions;
- introduction facilitating of information and communication technologies for SMEs;
- the Internet speed increase;
- help more than 1000 companies to develop new products;

- help at least 22.5 thousand enterprises and create more than 8 thousand workplaces;
- increase the use of alternative energy sources, improve energy efficiency, etc. (Local Analysis North Aegean Greece, 2017).

It is interesting to consider an operational program aimed at developing the region that brings the country's lowest GDP profits – the North Aegean islands. The SWOT method has identified strengths and weaknesses. Among the strengths, there are natural and cultural resources, the availability of powerful educational resources and the research base, the presence of Greek banks. But each of these strengths has a negative side, for example, insufficient investment in natural resources to save them, insufficient investment in education and research, and limited cooperation between educational institutions and enterprises (North Aegean OP, 2014).

Basing on these data, a strategy for 2014–2020 was developed, aimed at:
- entrepreneurship support and stimulation, especially SMEs;
- entrepreneurship and investment involvement in research and development;
- strengthening the role of information and communication technologies;
- employment increase and more people attraction;
- health and social security improvement;
- environmental protection and sustainable development.

The expected results:
- support for 35 new SMEs and encouraging cooperation of 15 enterprises with educational institutions;
- creation of 140 workplaces, etc. (Small and medium enterprises in Poland – obstacles and development).

That is, Greek strategies, as well as the EU-wide regional development strategies, are also detailed and look very successful, but only actual results will show the effectiveness of the chosen and implemented strategies, taking into account the deep economic crisis in Greece, which is one of the most serious.

Considering the EU strategies, we see the hierarchy of decision-making – the overall strategy of the European Union goes to others, "lower" levels – national, and those are divided into regional ones. Each level has its own control and enforcement authorities, so it is easy to follow responsibility, and who is responsible for it.

It can be concluded that SMEs support and development strategies are present at different levels in the EU countries. There is a level of the Union and there is a national level. The strategies are detailed, very clearly developed, which must make their result in their implementation. However, according to already existing results, we can say that the success of such changes and the implementation of strategies depending on the general situation in the country that the above examples have demonstrated.

5. Conclusions

The key principles for developing a strategy for small and medium-sized enterprises is a documentary level in the form of laws both national and regional strategies, financing business incubators and encouraging the opening of innovative enterprises for those regions in need. It also includes attraction of foreign capital and stimulation of cooperation within the EU and with the countries-EU partners are a powerful policy for SMEs development and innovation, which is a priority in the modern era.

Having analysed the existing strategies and the results, it can be said that these results reflect the general tendency of the enterprise development. For example, in Germany, small family businesses formed the basis for the development and growth of the economy after World War II. The protracted crisis in Greece, which has led to an unsatisfactory state and still requires radical actions, gives such a reality where the promotion of small and medium-sized businesses is not very effective since the population is in poor financial position and lending is not sufficiently developed to provide the opportunity to finance entrepreneurs. The same approach can be applied to Poland, where small and medium-sized businesses are developed, but there are still obstacles that prevent more people from engaging.

The conclusion can be drawn that the presence of SMEs, the level of their development is an indicator of the development of the whole country and the economy as a whole. The mechanism of stimulation, promotion of small and medium-sized businesses reflects the general tendencies towards the awareness of the need for SMEs development and the cultivation of a distinctive business culture, which is the basis for the innovative and progressive development of the country's economy.

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DEVELOPMENT OF METHODOLOGY
FOR THE CALCULATION OF THE PROJECT INNOVATION
INDICATOR AND ITS CRITERIA COMPONENTS

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Abstract. Two main components of the problem studied in the article are revealed. At the practical level, the provision of the convenient tools allowing a comprehensive evaluation the proposed innovative project in terms of its possibilities for inclusion in the portfolio or development program, and on the level of science – the need for improvement and complementing the existing methodology of assessment of innovative projects attractiveness in the context of their properties and a specific set of components. The research is scientifically applied since the problem solution involves the science-based development of a set of techniques, allowing the practical use of knowledge gained from large information arrays at the initialization stage. *The purpose of the study is* the formation of an integrated indicator of the project innovation, with a substantive justification of the calculation method, as a tool for the evaluation and selection of projects to be included in the portfolio of projects and programs. *The theoretical and methodological basis* of the research is the conceptual provisions and scientific developments of experts on project management issues, published in monographs, periodicals, materials of scientific and practical conferences on the topic of research. The tasks were solved using the general scientific and special methods, mathematical modelling methods based on the system approach. *Results*. A balanced system of parametric single indicators of innovation is presented – the risks, personnel, quality, innovation, resources, and performers, which allows getting a comprehensive idea of any project already in the initial stages. The choice of a risk tolerance as a key criterion of the "risks" element and the reference characteristics is substantiated, in relation to which it can be argued that the potential project holds promise. A tool for calculating the risk tolerance based on the use of matrices and vector analysis is proposed. Based on the fuzzy sets theory, a calculation of the "personnel" component is suggested on the basis of the analysis of the conformity factor of execution of potential project operations to the required competencies of the project manager. The suggested technology assessment as a part of a comprehensive indicator of the project innovation, unlike other technologies, considers the compliance of the project product characteristics with the consumers' requirements and the options of a specific project. On the basis of ideal and matrix modelling, a mathematical model is obtained for determining the prospects of realizing consumer's expectations regarding the project product. *Practical implications*. As a result of applying the suggested indicator of innovation, it is possible to obtain the information on the degree of the project innovativeness and risk tolerance, if the available resources are sufficient, whether the set of competencies of a project manager is in compliance with the project works, and whether the project product meets the requirements of the consumers. It is found that the innovation of projects can be considered as necessary and sufficient information for making optimal decisions. Simplicity, ease of use, efficiency, measurability, adaptability of innovation indicator extend its effectiveness in the field of the project management and provide the organization with a new tool for making appropriate management decisions. Application of the integrated project innovation indicator complements the classical methods of analysis of options, increases the effectiveness of the application of project management tools, especially at the stage of project selection to portfolio or program. The results of the research can be used for further development of scientific and methodological foundations to form a balanced system of indicators of innovative projects. The results implementation is a methodological and organizational basis for creating effective systems and technologies for managing the project programs and portfolios.

Key words: project innovation indicator, personnel assessment, quality assessment, risk assessment, project selection criteria

JEL Classification: H43, O22, M59, M110, D81, C65

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1. Introduction

In management and project management, a special attention is given to the problem of effective mechanisms of selecting the projects to portfolios or development programs. After all, despite the heterogeneous nature of projects, the choice of a variety of possible options is not accidental. At the same time, the requirements for portfolios (programs) are reflected in managerial decisions as to which of the projects should be involved in a portfolio or a program.

Thus, the selection and optimal use of innovative projects are one of the key aspects of creating an effective management system. This requires the appropriate methodological and organisational support.

The problem solved by the authors in the study is relevant and significant for the project management. In fact, the challenging issues of determining the content of programs and the composition of portfolios require the creation of appropriate quality mechanisms for effective selection of projects. Under conditions of the inconstancy of the business environment, the availability of numerous risks, limited time, financial, and material resources, tools for selecting the projects on the basis of an integrated indicator, suggested in the study, becomes especially important.

2. The analysis of recent scientific researches and articulation of the problem

Nowadays, there is a large number of approaches to projects selection, both on the basis of qualitative and quantitative indicators (Ohara, 2010), as well as by various integral and multi-criteria indicators, like in the study by Boock and Chau (2013, pp. 76-86). Where a transparent, easy-to-use for all project stakeholders, selection model based on a system of evaluation and cost criteria is represented. At the same time, the researches by Chang and Ishii (2013, pp. 935-948), as well as the study by Kuo, Chang and Chen (2013, p. 335-349) suggest to use the hybrid MCDM model – a multicriteria decision making model based on the combination of DEMATEL technology with ANP and VICOR methods. Katayev in his study (2014, pp. 55-63) considers the integration of critical chain, critical path, and simulation methods with the use of a matrix model of project management, however with regard to labour resources only. Within the research (Morozov and Osetrin, 2009), the approaches to the formation of a projects portfolio are based on integrated indicators in the field of safety. An interesting "prism" model of the filtering process for new projects, taking into account the influence of the criteria for selecting the necessary projects for a particular portfolio is given by Zachko, Rak Y. and Rak T. (2008, pp. 54-61). The authors – Rach, Koliada, and Antonian (2009, pp. 90-101) – suggested a method of evaluation for selecting the projects for a portfolio based on the analytical and hierarchical model.

The subject of the study was later researched by Koliada (2010), who represented an effective tool for selecting the projects for a portfolio based on the concept of strategic unity. At the same time, sensitivity of integral index to changes in the incoming indices values. The authors Semko and Oleinikova (2010) suggest the analysis of indicators to form a projects portfolio, taking into account the synergism effect.

In the conditions of information overload and huge supply in the project market, it becomes increasingly difficult to form projects portfolios and programs from a variety of possible options. In connection with the adoption and implementation of an innovative strategy for the development of social and economic relations, this trend will be retained. As the number of projects grows, the development of an effective project selection tool will definitely remain relevant in the coming years.

In view of the above, it is suggested to use the tool for solving the identified problems based on the use of integrated comprehensive indicators of the project innovation. In contrast to the available indicators, it allows making a comprehensive assessment of risk tolerance, the effect of innovations, the degree of compliance of managing personnel's competencies with the work, and the project product quality with the consumers' expectations at the initial stages. Therefore, it will make it possible to reduce the number of redundant projects and simplify the procedure for rejecting the projects that do not meet the requirements.

3. Goal and objectives of the study

The purpose of the study is the formation of an integrated indicator of the project innovation, with a substantive justification of the calculation method, as a tool for the assessment and selection of the projects to be included in the projects portfolio and programs.

To achieve this goal, the following tasks shall be addressed:
– to design and define the methodology for calculating the integrated indicator of the project's innovation and the balanced system of its criteria components;
– to present a methodology for calculating the criteria component – "risks";
– to describe the method of calculation of the criteria component – "managing personnel";
– to determine the methodology for calculating the criteria component – "quality".

4. Materials and methods of research of the project assessment system

The problem under study includes two main components. At the practical level, the provision of the convenient tools allowing a comprehensive evaluation the proposed innovative project in terms of its possibilities for inclusion in the portfolio or development program. At the level of science, there is

a need for improving and complementing the existing methodology of assessment of innovative projects attractiveness in the context of their properties and a specific set of components. The research is scientifically applied since the problem solution involves the development of a set of techniques, allowing the practical use of knowledge gained from large information arrays at the initialization stage.

One of the problem's solutions has been suggested in the study (Malyi, Antonenko, Mazurkevych, 2008), where the innovation of the project is regarded as the amount of information necessary and sufficient to obtain the optimal solution in the course of the project implementation. According to the source (Kutsekon, 2009), the resulting effect of any innovative activity is the production of a competitive product, strengthening of the position of an enterprise in the market and of the financial state of a company. With such an approach, choosing the best variant of the innovative project to be included in a portfolio involves getting great results at minimum cost.

By its essence, economic indicators are resultant, other groups' indicators are indicative, they help to identify the causes of problems and prevent the consequences. There are a number of general rules for using alternative projects selection criteria; however, each enterprise has its own system of priorities. For example, the project's compliance with the chosen strategy, completion time, social significance, market potential of the product, impact on the company's image, level of risk, etc.

As the choice of any set of projects in the future provides a balance or imbalance of the entire portfolio or program, the creation of an effective system of projects assessment is of great importance and involves the use of a number of indicators. Therefore, it seems advisable to use the project innovation indicator, which is formed on the basis of a comprehensive system of indicators (criteria).

5. Calculation of the integrated project innovation indicator and its criterion components

Integrated (group) factorial indicator of the project innovation (w) is defined as the sum of the products of parametric single (in some cases – expert) assessments (d_i) and weight coefficients of the indicators being analysed (g_i) using the formula:

$$w = \sum_{i=1}^{n} d_i * g_i, \qquad (1)$$

where d_i is the value of i indicator of the assessment;
g_i is the weight coefficient of i indicator;
p is the number of assessment indicators.
Based on the results of previous studies, the components of the index of innovativeness of the project include the following criteria: risks, managing personnel, quality, innovation, resources and performers

(subcontractors). In the limited volume of this work, consider in detail the methodology for calculating the first three of the six specified components.

World experience and business practices show the business entities management's awareness of the importance of taking into account the risks as the elements of management strategies for a capital increase in the total value of the enterprise (Arseniev, Davydova, 2017). This, according to Martin and William (2000), is an assessment of the performance and criterion of prospects for the economic growth and owners' welfare. So, let us consider the first criteria component of creating the indicator of project innovation – "Risks".

Quantitative assessment of potential risks is an integral part of the project selection stage. It provides a determination of the probability of risks occurrence and the possible impact of their consequences on the project. In this case, the measures chosen on the basis of risk assessment can be aimed at the risk mitigation directly, the elimination of risk factors or at the control of the economic consequences (Fig. 1).

In practice, risk assessments are often based on a simplified model – several or one main indicator, representing the most important characteristics inherent in this project.

As a key criterion, we suggest a choice of project tolerance for possible risks. In particular, the risk tolerance (ability to withstand the business destabilization processes due to certain characteristics) will be assessed using matrices and vector analysis.

Suppose we have m projects described by n categories of risk. Then each of considered projects m can be interpreted as a point of a n-dimensional risk space with coordinates equal to the value of n risk categories for the selected project. Below are the acceptable risk assessments (value X_{ij} where i is the index of the project, and j is the index of the project risk category).

Projects	Risk Assessments						
	Risk 1	Risk 2	Risk 3	…..	Risk j	….	Risk N
Project 1	X_{11}	X_{12}	X_{13}	…	X_{1j}	…	X_{1n}
Project 2	X_{21}	X_{22}	X_{23}	…	X_{2j}	…	X_{2n}
Project 3	X_{31}	X_{32}	X_{33}	…	X_{3j}	…	X_{3n}
… …	…	….	….	…	…	…	…
Project i	X_{i1}	X_{i2}	X_{i3}	…	X_{ij}	…	X_{in}
… …	…	…	…	…	…	…	…
Project m	X_{m1}	X_{m2}	X_{m3}	…	X_{mi}	…	X_{mn}

Assessments of the risk category may be heterogeneous due to the fact that the risk factors are manifested differently in projects of different types. Therefore, in order to eliminate the perversion in the further analysis that may be caused by this, it is necessary to carry out a preliminary procedure for standardizing risk assessments. This procedure involves the replacement of assessments of X_{ij}, with Z_{ij} assessments, calculated using the formula:
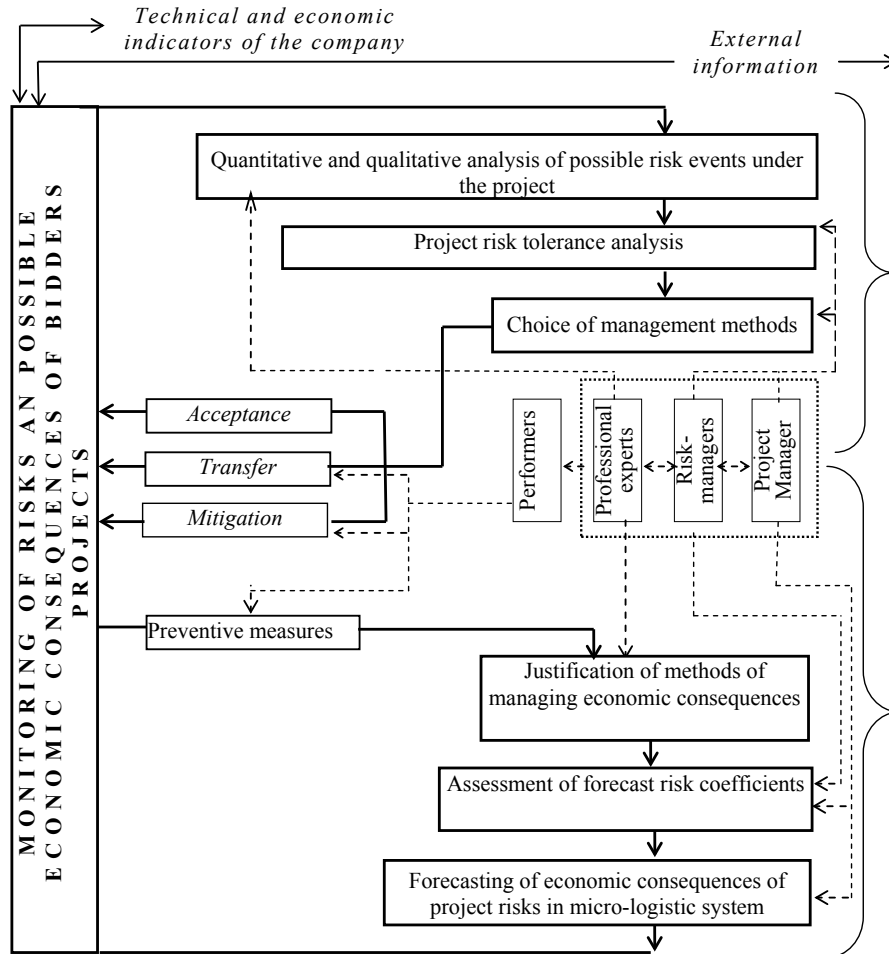
Fig. 1. Bidder projects risk monitoring system

$$Z_{ij} = \frac{X_{ij} - \overline{X_j}}{\sigma_j}, \qquad (2)$$

where

$$\overline{X_j} = \frac{1}{m} \sum_{i=1}^{n} X_{ij}, \qquad (3)$$

and

$$\sigma_j = \left[\frac{1}{m} \sum_{i=1}^{n} (X_{ij} - \overline{X}_j)^2 \right]^{\frac{1}{2}}, \qquad (4)$$

where $j = 1,2,3 ..., n$; $i = 1,2,3 ..., m$; X_{ij} are the values of the risk category j for the project i; $\overline{X}_j$ is the arithmetic mean of the risk category j; σ_j is the standard deviation of the risk category j; Z_{ij} is the standardized value of the risk category j for the project i.

In order to make an appropriate management decision regarding the selection of a project, it is necessary to select its reference characteristic, regarding which it can be argued that this project holds promise. Also, the project with a minimal risk can be chosen as a reference. Then Z_{0j} is a standardized value of the risk category j for the project 0 will be defined as the minimum among all values for this category of risk:

$$Z_{0j} = \min_i Z_{ij}. \qquad (5)$$

The distance between individual projects and the reference project in the area of standardized risk assessments will be determined as follows:

$$C_{i0} = \left[\sum_{j=1}^{n} (Z_{ij} - \overline{Z_{0j}})^2 \right]^{\frac{1}{2}} (i = 1, 2, 3, ...m). \qquad (6)$$

Upon the calculation of the distances between all the projects and the reference project in space, a vector of distances is obtained, which can be represented as follows:

$$C = \begin{pmatrix} C_{10} \\ C_{20} \\ \\ C_{i0} \\ \\ C_{m0} \end{pmatrix}. \qquad (7)$$

The resulting distances are the initial values for calculating the risk tolerance index D_i for each i-th project:

$$D_i = 1 - \frac{C_{i0}}{C_0}, \qquad (8)$$

$$C_0 = \overline{C_0} + 2S_0, \qquad (9)$$

$$\overline{C}_0 = \frac{1}{m} \sum_{i=1}^{m} C_{i0} \, , \tag{10}$$

$$S_0 = \left[\frac{1}{m} \sum_{i=1}^{m} (C_{i0} - \overline{C}_0)^2 \right]^{\frac{1}{2}} , \tag{11}$$

where $i = 1,2,3 ..., m$; D_i is the risk tolerance index; C_0 is the vector of distances of i project; $\overline{C}_0$ is the arithmetic mean of the vector of distances of i project; C_{i0} is the distance between individual projects and the reference project; S_0 is the standard deviation of the vector of distances of i project; m is the number of projects to be assessed.

The closer the value of the risk tolerance indicator of the project to 1, the more promising the project. The limit value at the stage of making a decision on the selection of projects by the risk indicator is the arithmetic mean of the risk tolerance level:

$$\overline{D} = \frac{1}{m} \sum_{i=1}^{m} D_i \, . \tag{12}$$

Thus, with an assessment by different risk categories for each potential project, using taxonomic analysis of the set of estimates, it is possible to divide the projects into 2 subsets – the promising ones and those showing no promise.

Consider the following criteria component of creating the project innovation indicator – "personnel". In particular, using the theory of fuzzy sets, an analysis of the coefficient of compliance of the potential project operations performance with the required competence of the project manager is suggested.

Suppose that $X = \{x_1, x_2, x_3\}$ is a set of project operations, $Y = \{y_1, y_2, y_3\}$ is a set of functions performed due to a certain competence, $Z = \{z_1, z_2, ..., z_m\}$ - is the set of competencies of the project manager required for the project implementation.

$\Phi R:: X \times Y \rightarrow [0,1]$ is the membership function of the fuzzy binary relation R.

For all $x \in X$ and all $y \in Y$ function FR (x, y) is the degree of significance of a certain function execution (functional significance) for the performance of the relevant work when selecting the key competencies of the project.

Relation R in matrix form:

	y_1	y_2	...	y_p
x_1	$\Phi_R(x_1, y_1)$	$\Phi_R(x_1, y_2)$	...	$\Phi_R(x_1, y_p)$
$R = x_2$	$\Phi_R(x_2, y_1)$	$\Phi_R(x_2, y_2)$	...	$\Phi_R(x_2, y_p)$
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
x_n	$\Phi_R(x_n, y_1)$	$\Phi_R(x_n, y_2)$	...	$\Phi_R(x_n, y_p)$

Suppose that $\pi: Y \times Z \rightarrow [0,1]$ is a membership function of the fuzzy binary relation S.

For all $y \in Y$ and all $z \in Z$ π_s (y, z) is the degree of membership or the degree of compatibility of the key competency with functional significance. Then in the matrix form, this relation is as follows:

	z_1	z_2	...	z_m
y_1	$\pi s(y_1, z_1)$	$\pi s(y_1, z_2)$	...	$\pi s(y_1, z_m)$
$S = y_2$	$\pi s(y_2, z_1)$	$\pi s(y_2, z_2)$	...	$\pi s(y_2, z_m)$
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
y_p	$\pi s(y_p, z_1)$	$\pi s(y_p, z_2)$	...	$\pi s(y_p, z_m)$

The relation $T: x \times Z \rightarrow [0,1]$ is obtained, the elements of which are defined by the following membership function:

$$\mu_{Ai}(x, z_i) = \frac{\sum_y \Phi_R(x, y) \cdot \pi s(y, z_i)}{\sum_y \Phi_R(x, y)}$$

for all $x \in X, y \in Y, z \in Z$. \hfill (13)

The relation T in the matrix form:

	z_1	z_2	...	z_m
x_1	$\mu_{A1}(x_1, z_1)$	$\mu_{A2}(x_1, z_2)$	...	$\mu_{Am}(x_1, z_m)$
$T = x_2$	$\mu_{A1}(x_2, z_1)$	$\mu_{A2}(x_2, z_2)$	...	$\mu_{Am}(x_2, z_m)$
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
x_n	$\mu_{A1}(x_n, z_1)$	$\mu_{A2}(x_n, z_2)$	...	$\mu_{Am}(x_n, z_m)$

The sum $\sum_y \Phi_R(x, y)$ is equal to the degree of a fuzzy subset of functional significance y, indicating the level x, which is used in the study to assess key competencies z, $\mu_{Ai}(x, z_i)$. The function z_i can be interpreted as a weighted degree of necessity of availability of a competence to perform the work x. For all x_1 and x_2 of all $z \in Z$ and all $\lambda \in [0.1]$, this function meets the condition:

$$\mu_{Ai} \left[\lambda (x_1, z_i) + (1 - \lambda (x_2, z_i)) \right] \geq$$
$$\geq \min \left[\mu_{Ai}(x_1, z_i), \mu_{Ai}(x_2, z_i) \right], \tag{14}$$

where λ is the size of the class interval, which will be calculated as follows:

$$\lambda = \frac{z_{max} - z_{min}}{K} , \tag{15}$$

where K is the number of classes, into which the variation of a sign should be split.

For example, the number of competencies is 5-20 – the number of classes is 5, or the number of competencies is 20-35 – the number of classes is 7.

	z_1, z_2	z_1, z_3	...	z_{m-1}, z_m
x_1	$\mu_{A1}(x_1, z_1) \wedge \mu_{A2}(x_1, z_2)$	$\mu_{A1}(x_1, z_1) \wedge \mu_{A2}(x_1, z_3)$	...	$\mu_{Am}(x_1, z_{m-1}) \wedge \mu_{Am}(x_1, z_m)$
$W = x_2$	$\mu_{A1}(x_2, z_1) \wedge \mu_{A2}(x_2, z_2)$	$\mu_{A1}(x_2, z_1) \wedge \mu_{A2}(x_2, z_3)$	...	$\mu_{Am}(x_2, z_{m-1}) \wedge \mu_{Am}(x_2, z_m)$
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
x_n	$\mu_{A1}(x_n, z_1) \wedge \mu_{A2}(x_n, z_2)$	$\mu_{A1}(x_n, z_1) \wedge \mu_{A2}(x_n, z_3)$	...	$\mu_{Am}(x_n, z_{m-1}) \wedge \mu_{Am}(x_n, z_m)$

At the same time, it should be noted that all $\mu_{Ai}(x, z_i)$ are convex. And hence their overlap is convex functions as well.

Let us determine the condition, by which the threshold for the distribution of project operations will be limited, taking into account the key competencies of the project manager

$$l < \min_{i,j} \max_x \min \left[\mu_{Ai}(x, z_i), \mu_{Ai}(x, z_j) \right]. \qquad (16)$$

Then

$$M_i = \left\{ x \,\middle|\, \mu_{Ai}(x) \geq \min_{i,j} \max_x \min \left[\mu_{Ai}(x, z_i), \mu_{Ai}(x, z_j) \right] \right\}$$

for all $x \in M_i$. $\qquad (17)$

In this way, we obtain a level set that describes operations, focused on a certain key competence.

Subsequently, if the project is classified as a low or inappropriate level of competence of a project manager, a decision is made to review the composition of the team – in particular, the selection of a project manager, experienced in the field of the project issues. In case the replacement is not possible, the decision to reject the project may be made. However, provided that analytical data on other components of the project innovation indicator are taken into account.

Let us turn to the next component of the suggested indicator – "quality". In a market economy, the level of production performance can be considered as a measure of satisfaction of consumers' needs at the minimum cost. At the same time, the key characteristic that shapes the needs of consumers in a competitive environment is the quality of projects product or products. The assessment of the quality of carrying out the processes of the project activity and production is possible using various methods – differential, generalization, comprehensive, instrumental, statistical, etc. Each of them has certain advantages and disadvantages.

The calculation of the "quality" indicator according to the ideal matrix modelling (Mazurkevich, 2009) is suggested on the basis of assessing the quality level of the project product in relation to the consumer's requirements for the product.

This interconnection is illustrated in Fig. 2

Suppose, $X = \{x_1, x_2 \ldots, x_n\}$ is the set of project operations (the technological capabilities of the organisation used to obtain the product);

$Y = \{y_1, y_2, \ldots y_p\}$ – a set of project product characteristics;

$Z = \{z_1, z_2, \ldots z_m\}$ – a set of consumer requirements for the product.

$\Phi_R : X \times Y \to [0,1]$ – a membership function of a fuzzy binary relation R (in matrix form – $\|\Phi_R(x, y)\|$). For all $x \in X$ and all $y \in Y$ function $FR(x, y)$ is the degree of significance of carrying out a specific operation to implement the relevant characteristic of the project product.

$\pi : Y \times Z \to [0,1]$ is the membership function of the fuzzy binary relation S. For all $y \in Y$ and all $z \in Z$ $\pi s(y, z)$ is the degree of membership or the degree of compatibility of product characteristics with the consumer requirements for this product. Then in the matrix form this relation is as follows: $\|\pi_S(y, z)\|$.

The relation $T : X \times Z \to [0,1]$ is obtained, the elements of which are defined by the following membership function
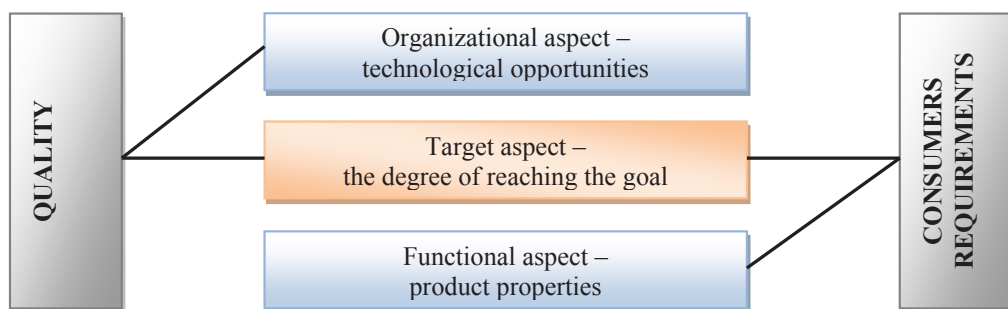
Fig. 2. Interconnection of quality with consumer requirements for the project product

$$\mu_{Ai}(x, z_i) = \frac{\sum_y \Phi_R(x, y) \cdot \pi s(y, z_i)}{\sum_y \Phi_R(x, y)}$$

for all $x \in X, y \in Y, z \in Z$. $\qquad(18)$

Then in the matrix form, this relation is as follows: $\|\mu_A(x, z)\|$.

Thus,

$$\frac{\sum \mu_A(x, z)}{\sum \mu_A(x, z)_{Emaлoн}} \times 100\%, \qquad(19)$$

determines the organization's ability to implement the expectations of consumers about this product, that is, determines the quality of the product for a particular consumer.

$\sum \mu_{A_i}(x, z)_{Emaлoн}$ It is calculated using the formula:

$$\sum \mu_{Ai}(x, z_i)_{Emaлoн} = \sum \left(\frac{\sum_y \Phi_R(x, y)_{Emaлoн} \cdot \pi_S(y, z_i)_{Emaлoн}}{\sum_y \Phi_R(x, y)_{Emaлoн}} \right)$$

for all $x \in X, y \in Y, z \in Z$, $\qquad(20)$

$$\left(\sum \mu_{Ai}(x, z_i) \middle/ \sum \left(\frac{\sum_y \Phi_R(x, y)_{Emaлoн} \cdot \pi_S(y, z_i)}{\sum_y \Phi_R(x, y)_{Emaлoн}} \right) \right) \times 100\%$$

for all $x \in X, y \in Y, z \in Z$ $\qquad(21)$

The second relation is matching the needs:

$$\left(\sum \mu_{Ai}(x, z_i) \middle/ \sum \left(\frac{\sum_y \Phi_R(x, y) \cdot \pi_S(y, z_i)_{Emaлoн}}{\sum_y \Phi_R(x, y)} \right) \right) \times 100\%$$

for all $x \in X, y \in Y, z \in Z$ $\qquad(22)$

The suggested technology of quality assessment as a part of a comprehensive indicator of the project innovation, unlike other technologies, considers the compliance of the project product characteristics with the consumers' requirements and the options of a particular project. Such information is extremely important for the manager at the stage of making a decision on the inclusion of a potential project in a projects portfolio or a program.

In the next steps, the project manager calculates the data of three other components of the integrated project
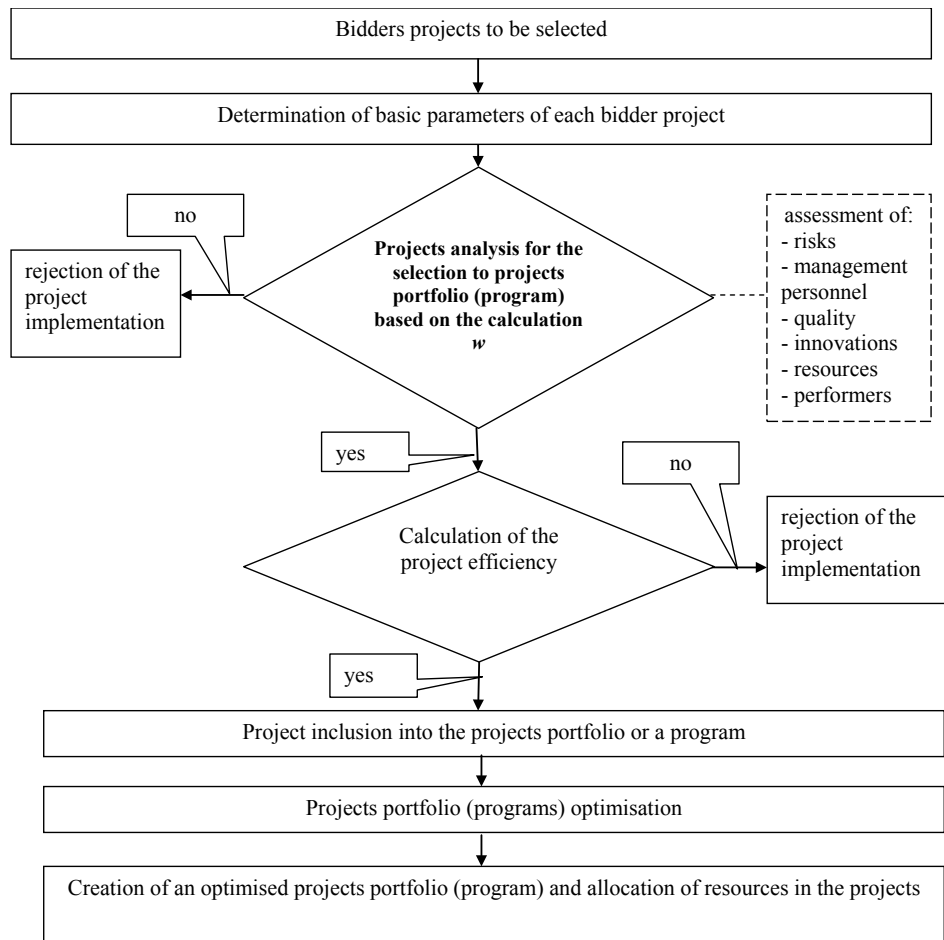
Fig. 3. The place of the integrated indicator of the project innovation in the algorithm of the projects portfolio or program creation

innovation indicator – "resources", "innovations" and "performers". As a result, the matrix consisting of numbers from 0 to 1 is obtained. Since the value of the ideal matrix should be 0, then this is a priority option, while the matrix with the value of 1 is the inadmissible option. Further using the given formula (1), the project innovation indicator is directly defined.

Fig. 3 shows the place of the developed indicator of projects innovation in the general algorithm of the project portfolio (program) creation.

The developed methods for project selection based on the innovation indicator considers the project portfolio and the program as a system of ordered elements and allows for simplification of the screening procedure and the reduction of the number of "redundant" projects, and thus provides the organization with an entirely new tool for making appropriate management decisions on the issue of assessment and choices.

It can be argued that the use of a project innovation indicator will complement the classical project selection tools to project portfolios or development programs. However, at the same time, all the criteria must be defined and approved by senior management, the limitations should be established by the appropriate departments, all analytical project data shall be recorded in the relevant documents, potential conflicts between projects must be timely discovered and eliminated. The created projects portfolio/program in the future should be checked for sensibility and go through the process of optimization. For example, using the recurrence relation of Richard Bellman.

However, it should be noted that some of its components can be calculated on the initial stages using the expert method only, which slightly reduces the accuracy of results. This method of individual expert estimations is based on the expression of expert opinions independently of each other and on the use of these opinions as the final result of the expert evaluation. However, this disadvantage may be neutralized or minimized. In order to do this, in the course of processing the results of the expert survey, the expert opinions consistency analysis is required using a concordance coefficient. The confidence estimation of the expert survey results must also be carried out using a Delphi method.

7. Conclusions

To date, there are numerous approaches to the selection of projects both on the basis of qualitative and quantitative indicators. Methods for project financing analysis, scenario methods, optimization, cost-benefit method, and other methods can be used for the assessment and option selection. Summarizing the results, it is worth noting that the use of the project innovation indicator for this purpose is feasible as it has certain advantages. Among them are: simplicity, ease

of use, performance, measurability, and adaptability. All of its components are available to the manager or the project manager at an early stage, and they allow getting a comprehensive overview of the project. The above complements the classical methods of alternative analysis, increases the efficiency of the application of the project management tools, especially at the stage of project selection to a portfolio or a program.

According to the tasks, the following conclusions are obtained:

1. An integrated factorial projects innovation indicator is created, which is defined as the sum of the results of parametric single estimates and weight coefficients of the factors under analysis. Based on the review conducted by the existing indicators of project selection and the results of previous studies, suggested the following composition of criteria for defining the projects innovation indicator: risks, personnel, quality, innovation, resources and performers. According to the authors, these components are optimal in terms of the completeness of the scope of potential projects analysis for the involvement in a particular program or projects portfolio. After all, as a result of the application of the suggested innovation indicator, it is possible to obtain information on the degree of innovation and risk tolerance of the project. And whether there are sufficient resources available, if the project manager's set of competencies meets requirements of the project operations, and whether the project product is in compliance with requirements of customers. It is found that the innovation of projects can be considered as necessary and sufficient information for making optimal decisions. And since this value is non-dimensional, there is the possibility of comparing different projects to each other and making appropriate managerial decisions, based on a particular, measurable characteristic.

2. Risk tolerance is selected as the key criterion for the "risks" component and the reference characteristic, in relation to which it can be argued that this project holds promise. After all, the ability to withstand the current destabilization processes of a business environment due to particular characteristics is one of the most important qualities. A tool for calculating the risk tolerance based on the use of matrices and vector analysis is suggested. It is found that since the risk category estimates may be heterogeneous, in order to eliminate the perversion, it is necessary to carry out a procedure for their standardization. The limit value at the stage of making a decision on the selection of projects by the risk indicator is the arithmetic mean of the risk tolerance level. Thus, the closer the value of the indicator of the project risk tolerance to 1, the more promising the project will be considered.

3. The calculation of the "personnel" component is presented based on the analysis of the coefficient of compliance of potential project operations with the required competencies of the project manager, employing

the theory of fuzzy sets. An algorithm for determining the conditions, limiting the threshold of the project works distribution, considering the key competencies of the project manager, is provided. An equation for describing the work focused on a certain key competence is obtained. The criterion for making a positive decision on the selection of projects by the "personnel" indicator will be the maximum correspondence of a set of competencies of the project manager to a set of certain project operations, or vice versa.

4. The calculation of "quality" component on the basis of ideal-matrix simulation is proposed. A mathematical model for determining the prospects of implementing consumers' expectations regarding the project product is obtained. Therefore, the suggested technology of quality assessment as a part of a comprehensive project innovation indicator, unlike other technologies, considers the compliance of the project product characteristics with the consumers' requirements and the options of a particular project. The best project will be the one with the maximum degree of significance of a particular work to implement the appropriate characteristics of the project product and the maximum degree of compatibility of product characteristics with the consumer requirements for this product.

The results of the research can be used for further development of scientific and methodological foundations to form a balanced system of indicators of innovative projects. The implementation of the results obtained represents a methodological and organizational basis for creating effective systems and technologies for managing the programs and project portfolios both at the level of individual enterprises and at the regional level.

The next step in this study may be the application of the suggested innovation indicator, as one of the components of the mathematical model for calculation of projects clusters, because the need to activate the innovation factor under conditions of significant regional inequality stimulates interest in the theory of innovative regional clusters. Thus, with the availability of a certain cluster of projects that may be included in the program, it is necessary to conduct the qualitative and quantitative selection of projects. At the same time, qualitative selection can be started by constructing a matrix of combined criteria and project distribution within this matrix. Such a matrix can be created for a combination of such criteria as: "the project innovation indicator – profit" or "the project innovation indicator – profitability".

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THE RESEARCH OF THE LEADING POSITION OF A SMALL ENTERPRISE IN THE FIELD OF MARKET RELATIONS IN THE SPHERE OF IT SERVICES CONSIDERING THE FREELANCE RESOURCE

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Abstract. *The subject of research.* IT enterprise activities and methods of staff quantity optimization under the terms of freelance resources attracting with the aim of taking leadership positions in the market for IT services. *Methodology*: during the research, the following scientific methods are used – the methods of analysis, synthesis, and comparative analysis (studying demand and supply of freelance-resource of small IT enterprises), the economic-statistical method (statistical analysis of empirical data, analysis of variation series of demand and supply distribution of freelance applications for a small IT enterprise). *The purpose of scientific research*: the purpose of the article is to provide theoretical justification for using freelance-resource within a small IT enterprise under the terms of freelance services demand and supply studying, which allows taking leading positions in the field of market relations in the sphere of IT services. *The conclusion of the research*: the calculation of the full-time employees' optimal quantity of small IT-company is made, which is the most important task of determining the reasonable need for staff to ensure the company's leading position in the field of market relations of IT services. *The purpose of the paper* is to the research the competitive advantages and a leading position of a small company in the dimension of global market relations in the field of services, which is determined the use of online freelance-resource by small IT enterprises. This approach belongs to the strategic management of expenditures of a small enterprise, which is the basis of the effective resources using a small enterprise and there is a prerequisite for establishing its leading position. The scientific achievements, which consider freelance-resource in the context of the export-oriented sphere of services as a new vector of the economic growth of Ukraine, are systematized; the author's approach to the definition of the category of "freelancers" and the consideration of the essence of freelance activity special features are presented. To determine the minimization of expenditures, the activity of a small IT enterprise is analysed, within which full-time employees are working, whose employment depends on the number of freelance-applications for jobs, which are receiving over a period of time for the IT enterprise needs. The statistical analysis of demand and supply within a small IT enterprise is proposed, which determines the optimal quantity of full-time employees who complete the technical tasks based on the freelance-resource, which enables a small IT enterprise to take a leading position in the field of market relations among similar small enterprises. Today, in the new concepts of the network economy and the global reputation economy, there are trends that represent an objective reflection of modern transformational changes in the economy, which are associated with the use of freelance-resource, which is an essential factor in establishing the leading positions of enterprises in competitive markets.

Key words: freelance resource, leading position, IT enterprise, variation distribution, demand, supply.

JEL Classification: M210, C20, L230

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1. Introduction

Rapid globalization encourages new perspectives and, at the same time, creates new challenges in today's market conditions, both at the level of the individual, and on the micro, macro, meso, and global levels, covering all spheres of society's life, including the avant-garde and perspective sphere of IT technologies. In this context, a significant objective dynamic of technological and social innovations significantly changes parameters and the ratio of demand and supply in global markets. In the conditions of the development of globalization processes, the tendency of virtualization, innovation and informatisation of the economy, in particular, those activities that require a wide audience, is increasingly using electronic resources not only for information provision but also for realization of actual operations. In today's market conditions, global demand requires the most affordable international price, and the global offer seeks to ensure the formation of the price of such a format and its compliance with the global market situation. This mechanism ensures the functioning of all types of markets for goods and services, intellectual property objects, as well as identifies the latest trends in the labour market.

Dynamic development of the market of freelance-services encourages the study of this phenomenon, because such a form of entrepreneurship is relatively new both in Ukraine and globally, and also corresponds to the current development of market relations. The freelance market of services is in demand and is currently being presented on a large scale and high rates of development in the United States and in a number of economically developed European countries. By adapting the best practices of doing business, the market of the freelance services of Ukraine and the CIS countries is rapidly developing, attracting more and more new members both from the side of the providers offering their services and from individuals and organizations willing to cooperate on a remote basis. In the freelance-market format, it is worth noting that the peculiarities of expenditures of a small enterprise as an object of management are their diversity, constant review and making changes under the influence of the external and internal environment, with varying intensity and dynamics. There is an actual issue of precise quantification of the level of expenditures, their magnitude and dynamics, the determination of the impact of expenditures on the economic performance of a small enterprise and the finding of new methods for their optimization. It should be noted that the effectiveness of planning and controlling the level of expenditures also depends on the timely provision of information on all levels of management by the expenditures of the enterprise. In this context, a research that combines the theory of the effective use of human resources and statistical analysis to interpret the process of implementing freelance-based services for IT operations in a small business is relevant.

2. Literature review

Advanced enterprises with leading positions in the global market use their own unique strategies based on innovative technological resources and business practices. The stated format of enterprise strategies creates global competitive advantages through the implementation of a proactive rather than a reactive vector of development, anticipating global challenges and forecasting, global change, generating fundamentally new market opportunities, occupying new segments of the market that competitors have not paid attention to.

According to O. Gudzinsky, S Sudomir, T. Gurenko (2010) the ability to upgrade, the realization of the way of modernization of production processes, search for new sources of competitive advantages allow enterprises to be competitive, to be leaders in their markets. At the same time, according to O. Maslyayeva (2011), competitors can take leading positions if the company ceases to improve and innovate. Consequently, the competitiveness of the company depends on the latest efficient resources, both own and borrowed, the implementation of effective business strategies, success in innovation activities, global openness.

It is interesting to study the scientists Katarzyna Sieradzka, Radosław Luft (2015), concerning the latest potential of the enterprise, which includes the following components: study and analysis of market conditions; demand and supply analysis; analysis of prospects of market development; analysis of economic activity and competitiveness of the enterprise; assessment of potential competitive opportunities of the enterprise; studying and evaluating the activities of competitor companies.

It should be noted that the research of the company's leading position in today's market conditions is realized both by domestic and foreign scientists. In this context, in order to achieve the strategic goals of the enterprise, it is necessary to distinguish freelance activity, which in the narrow sense implies the transfer of a part of the functions of the enterprise to the third persons. Today, "freelancer" is the most common and often used worldwide term that identifies independent IT professionals and is particularly common in such areas as computer programming and design in all its manifestations (advertising, web design, interior design etc.), translation from foreign languages, multi-sectoral consulting activities.

Note that in 2016, 34% of the working population of the United States was engaged in freelance activities. According to the forecasts of scientists by 2020, the number of freelancers will reach 50%. According to a study by the European Forum of Independent

Professionals (EFIP), since 2000, the number of freelancers in Europe has increased by 82%. At the same time, the number of small IT enterprises is increasing in Ukraine and, as a result, the number of freelancers increases, with Ukraine ranked fourth in the world by their number after the USA, Russia, and India, according to O. Grishnova, O. Savchenko (2016).

Burke A. (2012) noted that "freelancers are employees who supply their services for potential projects or time-limited remuneration tasks that are directly proportional to the outcome of the work. They assume all or most of the expenditures and risks of their own idle time, as well as the risks of low expectations of performance within the projects. Freelancers assume all the costs and risks of economic inactivity between projects." According to H. Yoganarasimhan (2013), a freelancer is a person performing work without a long-term contract with the employer; that is, a freelance employee hired only to perform a certain list of works. Also, a freelancer is an employee who is invited to perform work during outstaffing. It is emphasized that being outside the permanent staff of any company, the freelancer can simultaneously execute orders for different clients.

Researchers T. Malone and J. Laubacher (1998) believe that freelancers are independent professionals who carry out their work remotely using information and communication technologies. S. Christopherson (2002) believes that the term "freelance" reflects the form of work on a contractual basis, self-organized work, which does not provide for a formally stable and continuous relationship with a single firm or employer.

J. Sapsed, R. Camerani, M. Masucci (2008) and others also point out that freelancers are a visible labour force, called differently as freelancers, contractors, consultants: self-employed agents of creative and digital growth. D. Gefen, E. Carmel (2012) suggest an expanded interpretation of the category of freelance in the information economy, as self-employment, labour autonomy, and the professional work of skilled professionals in the creative, managerial, scientific or technical spheres.

Since the late 1990s, the markets of remote work that operate in the online space are dynamically developing and connect freelancers and customers from all over the world, therefore, the phenomenon of "electronic self-employment" of professionals who are explored in the papers by H. Aguinis, T.V. Bludova, E.M. Galakhov (2017), S. Lawal, (2013). M. Leung (2014), J. Horton (2010), deserves special attention.

When engaging freelance resource, you need to study the supply and demand in the market. In the work by Q. Yao (2012), this research is explored in the logistics outsourcing network, in which small and medium-sized enterprises began to work actively, which became possible with the development of innovations.

N. Roshchina (2014) conducts a theoretical study of peculiarities of the formation of demand and supply in the market of resources, which, depending on the conditions, have individual features that determine the principles of its functioning. In Ukraine, more and more small businesses use outsourcing when support functions of business infrastructures are provided to external companies. Among the benefits of this approach is reducing IT costs, increasing the availability of IT services, and improving the quality of support.

Thus, an overview of scientific studies of domestic and foreign scientists allows suggesting that freelance-activity is not sufficiently investigated in the context of modelling the effective use of freelance-resource at the enterprise from the standpoint of studying supply and demand, which will give a possibility to analyse the ability of a small IT enterprise to occupy a leading position in the field of market relations of IT services.

3. The use of IT freelance to attract professionals

Let us consider the activities of a small IT enterprise that specializes in developing and implementing software products for business automation, building integrated systems of information security, protecting consumer rights, electronic paperless document circulation, IT consulting and IT outsourcing, as well as system integration and infrastructure (see Gryshova I. Yu., Strielkowski W., Shcherbata M., 2017).

The use of IT freelance to attract professionals to develop and maintain software and computer technology of the enterprise is becoming a widespread phenomenon. When applying for freelance, the IT company expects that the delegated work is carried out not only on weekends but also at the hours outside the working hours.

Let us consider the IT company, which employs 14 full-time employees who are looking for and applying for freelance-resource for the needs of the company. The employment of these employees depends on the number of freelance applications for jobs received over a period of time (per year) for the needs of the IT enterprise.

It is necessary to calculate the optimal number of staff of IT enterprises so that the cost of organizing freelance-resource applications was minimal. Through the study of the number of hours required for a staff member of the company to search and register, the proposed freelance applications, statistics were obtained.

Thus, statistical data on the demand for work (the number of search and registration for freelance-applications), required for IT company for 100 hours, as well as the frequency – the number of hours, during which the need for a staff member of the company to search and register freelance-applications, was recorded in the form of the following statistics:

Table 1

Variation in the distribution of the demand for freelance applications

Demand for freelance-applications	4	5	6	7	8	9	10	11	12	13	14	15	16	130
Frequency	2	4	4	8	10	12	12	12	10	10	8	6	2	100

Source: Built by the authors on http://qvp.ua/uk/

Table 2

Calculation of indicators for the distribution of demand for freelance applications

xi	Frequency, fi	xi * fi	Accumulated frequency, S	|x - xcp|*fi	(x - xcp)2*fi	Frequency, fi/f
4	2	8	2	12.64	79.885	0.02
5	4	20	6	21.28	113.21	0.04
6	4	24	10	17.28	74.65	0.04
7	8	56	18	26.56	88.179	0.08
8	10	80	28	23.2	53.824	0.1
9	12	108	40	15.84	20.909	0.12
10	12	120	52	3.84	1.229	0.12
11	12	132	64	8.16	5.549	0.12
12	10	120	74	16.8	28.224	0.1
13	10	130	84	26.8	71.824	0.1
14	8	112	92	29.44	108.339	0.08
15	6	90	98	28.08	131.414	0.06
16	2	32	100	11.36	64.525	0.02
Total	100	1032		241.28	841.76	1

Source: calculated by the authors

- 4 freelance-applications for the design of web-design were completed within 2 hours;
- 5 applications for the layout of web pages and 6 applications for graphic design – 4 hours,
- 7 applications for the ergonomics (usability) of the site – for 8 hours;
- 8 applications for adaptive web design – 10 hours;
- 9 applications for the use of flexible images (flexible images),
- 10 applications for creating a flexible layout, a grid-based layout.
- 11 applications of visual communications including orientation system – 12 hours;
- 12 applications of visiting sites and 13 applications of sites-quests – for 10 hours;
- 14 applications for creating promo sites – 8 hours;
- 15 applications for blog services – for 6 hours;
- 16 applications for the creation of product catalogues – for 2 hours.

Thus, a variation in the distribution of the demand for freelance applications for a small IT enterprise was compiled (Table 1).

Table 2 presents the calculation of indicators for estimating a number of demand-sharing requests for freelance applications for a small IT enterprise.

Using the data in Table 2, we find the basic numerical characteristics: the sample mean (10,32); the median (10), the range of the variation (12), the average linear deviation (2.41); dispersion (8.42), average square deviation (2.92).

4. Calculating the relative variables of the variation

Let us calculate the relative variables of the variation: the coefficient of variation (28.11%), the linear coefficient of variation (23.35%), the coefficient of oscillation (116.28%), as well as the indicators of distribution: the central point of the third order (-2.51) the coefficient of asymmetry (-0,1 – the presence of the left-hand side of the essential asymmetry), the excess (-0,73 – flat-panel distribution), the average square error of the coefficient of excess (0,78 – deviation from the normal distribution is not significant), the structural coefficient of the Pearson asymmetry (0,11).

Table 3 shows the calculation of central moments. We find the confidence interval for the general average. Determine the value of tkp by the Student Distribution Table: Table (n-1; α / 2) = Ttabl (99; 0.025) = 1.984. A standard sample error for the average (0.2916), marginal sample error (0.579). Then the confidence interval has the form:

(10.32 - 0.579; 10.32 + 0.579) = (9.74; 10.9).

Thus, it can be argued that, with a probability of 0.95, the average value for larger volumes will not exceed the range found.

Let us calculate the confidence interval for the dispersion. The probability of going beyond the lower bound is: P (χ2n-1 <hH) = (1-γ) / 2 = (1-0.99) / 2 = 0.005. For the number of degrees of freedom k = 99, we find from the distribution table χ2: χ2 (99; 0.005) = 140.1695.

Table 3
Calculation of the central moments for the distribution of demand for freelance applications

x_i	$(x - x_{cp})3*ff_i$	$(x - x_{cp})4*ff_i$
4	-504.872	3190.791
5	-602.275	3204.103
6	-322.486	1393.141
7	-292.755	971.946
8	-124.872	289.702
9	-27.6	36.431
10	-0.393	0.126
11	3.773	2.566
12	47.416	79.659
13	192.488	515.869
14	398.688	1467.173
15	615.019	2878.291
16	366.501	2081.725
Total	-251.366	16111.523

Source: calculated by the authors

We have a random error of the dispersion of the lower bound (6.01); the probability of exceeding the upper limit is 0.995. For the number of degrees of freedom k = 99, we find the following distribution table χ2: χ2 (99; 0.995) = 67.32756. We have a random error of the dispersion of the upper limit (12.5).

Consequently, the interval (6.01; 12.5) covers the parameter S2 with reliability γ = 0.99.

We find the confidence interval for the average-square deviation (S(1-q)<σ<S(1 + q)) with the reliability γ = 0 and the sample size n = 100.

According to the table q = q (γ; n) we define the parameter q (0; 100) = 0:

2.92 (1-0) <σ <2.92 (1 + 0), 2.92 <σ <2.92.

Thus, the interval (2.92; 2.92) covers the parameter σ with reliability γ = 0. The interval estimation of the general quotient (probability of the event).

We find the confidence interval for the general

quotient ((p * - ε; p * + ε)). In this case, 2F (tkp) = γ, F (tkp) = γ / 2 = 0.954 / 2 = 0.477. According to the Laplace function table, we find that tkp is the value of F (tkp) = 0.477:

tkp (γ) = (0.477) = 2. With a probability of 0.954, with a larger sample size, these quotients will be in the given intervals.

5. Test hypothesis about the normal distribution

Let us check the hypothesis that X is distributed in the normal law by means of the Pearson consistency criterion. To test the hypotheses about the type of distribution, we calculate the empirical frequencies given in Table 4.

Therefore, the critical area for this statistic is always right-handed: [Kkp; + ∞). Its limit Kkp = χ2 (k-r-1; α) is found according to the distribution tables χ2 and the given value σ, k = 13, r = 2 (the parameters xcp and σ are estimated by the sample): Kkp (0.05; 10) = 18.30704; Ksost = 4.14.

The observed value of Pearson's statistics does not fall into the critical area: Ksost <Kkp, so there is no reason to reject the main hypothesis. Thus, it is fair to assume that the sample data for a number of requests for freelance demand for the IT business have a normal distribution.

6. The distribution proposals of the suggested freelance applications by the IT enterprise

Let us consider the statistical data of a number of distribution proposals of the suggested freelance-applications by the IT enterprise, which were obtained by examining the number of hours during which the IT company forms proposals for the suggested freelance applications. Thus, the statistical data on the offer of freelance-claims generated by the company for 100 hours and the frequency or the member of hours, during

Table 4
Finding empirical frequencies and calculating values for the observed criterion of value

i	u_i	φ_i	n_i	n_i^*	$n_i - n_i^*$	$(n_i - n_i^*)^2$	$(n_i - n_i^*)^2 / n_i^*$
1	-2.1783	0,0371	2	1.2787	-0.7213	0.5202	0.407
2	-1.8337	0,0734	4	2.5299	-1.4701	2.1612	0.854
3	-1.489	0,1315	4	4.5324	0.5324	0.2835	0.0625
4	-1.1443	0,2059	8	7.0968	-0.9032	0.8158	0.115
5	-0.7996	0,2897	10	9.9851	-0.01486	0.000221	2.2E-5
6	-0.455	0,3589	12	12.3703	0.3703	0.1371	0.0111
7	-0.1103	0,3961	12	13.6525	1.6525	2.7306	0.2
8	0.2344	0,3876	12	13.3595	1.3595	1.8482	0.138
9	0.579	0,3372	10	11.6223	1.6223	2.632	0.226
10	0.9237	0,2589	10	8.9236	-1.0764	1.1587	0.13
11	1.2684	0,1781	8	6.1386	-1.8614	3.4648	0.564
12	1.6131	0,1074	6	3.7018	-2.2982	5.2818	1.427
13	1.9577	0,0584	2	2.0129	0.01288	0.000166	8.2E-5
Σ			100	100			4.136

Source: calculated by the authors

which the IT company forms the offer of freelance applications, are as follows:
- 5 freelance-applications for the Web Design construction that an IT Enterprise has formed within 1 hour;
- 6 applications for the layout of web pages – 3 hours;
- 7 applications for graphic design – 4 hours,
- 8 applications for ergonomics (usability) of the site – 7 hours;
- 9 applications for adaptive web design – 11 years;
- 10 applications for the use of flexible images – 12 hours;
- 11 applications for the creation of a grid-based layout, 11 applications for visual communications including

the orientation system – 12 hours;
- 13 applications for visiting sites – 12 hours;
- 14 applications of quest sites – 11 years;
- 14 applications for the creation of promo sites – 7 hours; 16 applications for a blog service – 5 hours;
- 16 applications for the creation of production catalogues – 3 hours.

Thus, a variation of the distribution of the offer of freelance applications for a small IT enterprise was compiled (Table 5)

Table 6 presents the calculation of indicators for estimating the distribution of the offer of freelance applications for a small IT enterprise.

Table 5
Variation in the distribution of the offer of freelance applications

Freelance Proposal	5	6	7	8	9	10	11	11	13	14	14	16	16	140
Frequency	1	3	4	7	11	12	12	12	12	11	7	5	3	100

Source: Built by the authors on http://qvp.ua/uk/

Table 6
Calculation of indicators for the distribution of the offer of freelance applications

x_i	Frequency, f_i	$x_i * f_i$	Accumulated frequency, S	$|x - x_{cp}|*f_i$	$(x - x_{cp})2*f_i$	Frequency, f_i/f
5	1	5	1	6.26	39.188	0.01
6	3	18	4	15.78	83.003	0.03
7	4	28	8	17.04	72.59	0.04
8	7	56	15	22.82	74.393	0.07
9	11	99	26	24.86	56.184	0.11
10	12	120	38	15.12	19.051	0.12
11	12	132	50	3.12	0.811	0.12
11	12	132	62	3.12	0.811	0.12
13	12	156	74	20.88	36.331	0.12
14	11	154	85	30.14	82.584	0.11
14	7	98	92	19.18	52.553	0.07
16	5	80	97	23.7	112.338	0.05
16	3	48	100	14.22	67.403	0.03
Total	100	1126		216.24	697.24	1

Source: calculated by the authors

Using the data in Table 6, we find the basic numerical characteristics: selective average (11.26); the median (11), the variation (11), the average linear deviation (2,162), the variance (6,972), the average square deviation (2,641).

Let us calculate the relative variables: the coefficient of variation (23.45%), the linear coefficient of variation (19.2%), the coefficient of oscillation (97.69%), as well as the indicators of the distribution form: the central point of the third order (-1), the coefficient of asymmetry (-0,0541 – the presence of left-sided non-essential asymmetry), excess (-0.73 – flat-panel distribution), excess (-0.65), structural coefficient of Pearson's asymmetry (0.0985).

Table 7 shows the calculation of the central moments. We find the confidence interval for the general average. We determine the value of tkp by the

Student Distribution Table: Table (n-1; α / 2) = Ttabl (99; 0.025) = 1.984. The standard error sample for the average (0.2654), the marginal error of the sample (0.527). Then the confidence interval has the form:
(11.26 - 0.527; 11.26 + 0.527) = (10.73; 11.79)

Thus, it can be affirmed that, with a probability of 0.95, the average value for larger volumes will not exceed the found range.

Let us calculate the confidence interval for the dispersion. The probability of going beyond the lower bound is: P ($\chi 2n-1$ <hH) = $(1-\gamma)$ / 2 = (1-0.99) / 2 = 0.005. For the number of degrees of freedom k = 99, we find from the distribution table $\chi 2$:

$\chi 2$ (99; 0.005) = 140.1695.

We have a random error of the dispersion of the lower bound (6.01); the probability of exceeding the upper

Table 7
Calculation of the central moments for the distribution of the offer of freelance applications

x_i	$(x - x_cp)3*ff_i$	$(x - x_{cp})4*ff_i$
5	-245.314	1535.668
6	-436.595	2296.488
7	-309.235	1317.342
8	-242.522	790.621
9	-126.975	286.963
10	-24.005	30.246
11	-0.211	0.0548
11	-0.211	0.0548
13	63.216	109.996
14	226.279	620.005
14	143.996	394.548
16	532.482	2523.965
16	319.489	1514.379
Total	-99.605	11420.331

Source: calculated by the authors

limit is 0.995. For the number of degrees of freedom k = 99, we find the following by the distribution table $\chi2$: $\chi2$ (99; 0.995) = 67.32756. We have a random error of the dispersion of the upper limit (10,36).

Consequently, the interval (4.97; 10.36) covers the parameter S2 with reliability γ = 0.99.

We find the confidence interval for the average square deviation (S (1-q) <σ <S (1 + q)) with the reliability γ = 0 and the sample size n = 100.

According to the table q = q (γ; n) we define the parameter q (0; 100) = 0:

2.654 (1-0) <σ <2.654 (1 + 0) 2.654 <σ <2.654.

Thus, the interval (2.654; 2.654) covers the parameter σ with reliability γ = 0. For the interval estimation of the general quotient (probability of the event), we find the confidence interval for the general quotient ((p * - ε; p * + ε)). In this case, 2F (tkp) = γ, F (tkp) = γ / 2 = 0.954 / 2 = 0.477. According to the Laplace function

table, we find that tkp is the value of F (tkp) = 0.477: tkp (γ) = (0.477) = 2. With a probability of 0.954, with a larger sample size, these quotients will be in the given intervals.

Let us check the hypothesis that X is distributed in the normal law by means of the Pearson consistency criterion. To test hypotheses about the type of distribution, we calculate the empirical frequencies given in Table 8.

6. Findings

Therefore, the critical area for this statistic is always right-handed: [Kkp; + ∞). Its limit Kkp = $\chi2$ (k-r-1; α) is found according to the distribution tables $\chi2$ and the given value σ, k = 13, r = 2 (the parameters xcp and σ are estimated by the sample): Kkp (0.05; 10) = 18.30704; Ksost = 4.14. The observed value of Pearson's statistics does not fall into the critical area: Ksost <Kkp, so there is no reason to reject the main hypothesis. Thus, it is fair to assume that the sample data of a number of requests of freelance demand for the IT business have a normal distribution.

Taking into consideration that the demand and supply of freelance applications have normal distribution laws, we choose the maximum value from the average sample: Max (10,32; 11,23) = 11, which is lower than the existing three units.

Thus, by analysing demand and supply, the calculation of the optimal number of full-time employees of a small IT enterprise is made, which is the most important task of determining the reasonable need for staff to ensure the company's leading position in the field of market relations of IT services.

7. Conclusions

The rapid development of globalization encourages new perspectives and, at the same time, creates new

Table 8
Finding empirical frequencies and calculating values for the observed value of criterion

i	u_i	φ_i	n_i	n^*_i	n_i-n^*_i	$(n_i$-$n^*_i)^2$	$(n_i$-$n^*_i)^2/n^*_i$
1	-2.3707	0,0235	0.89	1.2787	-0.11	0.01211	0.0136
2	-1.992	0,054	2.045	2.5299	-0.955	0.9119	0.446
3	-1.6133	0,1074	4.067	4.5324	0.06736	0.00454	0.00112
4	-1.2346	0,1849	7.002	7.0968	0.00238	6.0E-6	1.0E-6
5	-0.8559	0,2756	10.437	9.9851	-0.5627	0.3166	0.0303
6	-0.4772	0,3555	13.463	12.3703	1.4632	2.141	0.159
7	-0.09847	0,397	15.035	13.6525	3.0349	9.2104	0.613
8	-0.09847	0,397	15.035	13.3595	3.0349	9.2104	0.613
9	0.659	0,3209	12.153	11.6223	0.1529	0.02337	0.00192
10	1.0377	0,2323	8.797	8.9236	-2.2025	4.8511	0.551
11	1.0377	0,2323	8.797	6.1386	1.7975	3.2309	0.367
12	1.7951	0,079	2.992	3.7018	-2.0082	4.0328	1.348
13	1.7951	0,079	2.992	2.0129	-0.00818	6.7E-5	2.2E-5
Σ			100	100			4.144

Source: calculated by the authors

challenges in today's market conditions, covering all levels and areas of the society. With the approval of trends of virtualization, innovation, and informatisation of the economy, the parameters and the ratio of demand and supply on the global markets are radically changing, demanding the most affordable international price and opportunities to ensure the formation of the price of such a format and its compliance with the global market situation. Today, the freelance market as the newest global market, the advanced form of entrepreneurship, the modern format of relations between market subjects, is represented by large-scale and high rates of development not only in the United States and economically developed countries of Europe but also within Ukraine and CIS countries. In the freelance-market format, the peculiarities of expenditures of a small enterprise as an object of management are their diversity, constant review and making changes under the influence of the external and internal environment, with varying intensity and dynamics. Therefore, the relevant question of precise quantification of the level of expenditures, their magnitudes and dynamics, determination of the impact of expenditures on the economic results of a small business and finding new methods for their optimization appears (see Gryshova, Zamlynskyi, Shestakovska, 2017). The presented methodology involves the calculation of the optimal number of the staff of IT enterprises so that the expenditures for organizing applications of freelance-resource were minimal. The presented study combines the theory of the effective use of human resources and statistical analysis for interpreting the process of implementing freelance services for IT operations in a small business. Thus, by analysing demand and supply, the calculation of the optimal number of full-time employees of a small IT enterprise is made, which is the most important task of determining the reasonable need for the staff in order to ensure the company's leading position in the field of market relations of IT services.

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THE USE OF ECONOMIC RETRO RESEARCH FOR THE METHODOLOGICAL PROVISION OF CAPITALIZATION OF ENTERPRISES

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Abstract. The purpose of the article is to determine indicators that objectively allow attracting own or debt sources for capital expansion of enterprises. Dynamic development of the agro-processing sector of the economy of Ukraine is considered on the basis of interaction of agricultural and processing complexes of Mykolaiv region of Ukraine. *Methodology*. Determining indicators of formation and use of capital of enterprises is carried out after studying analytical support for the factor evaluation of market trends in the production of processing enterprises of AIC (agro-industrial complex) of Mykolaiv region that has developed processing industry and is based on studies of the period from 2005 to 2009 when a situation regarding the provision of processing enterprises significantly improved but, much as today, the state of business in relation to animal products was ambiguous. *Results* of the research show that it was expedient to conduct a trend analysis, which purpose is comparison of the volume of agricultural products sold to processing enterprises and the production of core products by processing enterprises, determination of the main trend of dynamics of selected indicators by means of comparing each of positions in the period of 2005–2009. This allowed finding indicators for determining the requisite capital of enterprises. *Practical implications*. Substantiation of the financial restructuring of the capital of enterprises of AIC enables their further development in terms of European integration and will ensure the attractiveness of investing in the agricultural complex of Ukraine. *Value/originality*. The authors formed an approach to identifying a need for a capital of processing enterprises based on developed economic models and analytical support for the factor evaluation of production market trends that made provisions for prerequisites for adequate determination of the potential of processing enterprises of AIC.

Key words: processing enterprises of agro-industrial complex, factor evaluation of production market trends, financial restructuring of capital.

JEL Classification: Q12, O21, G32

1. Introduction

Capital formation process is one of the prerequisites of functioning and conducting production activity, creating attractive investment image, ensuring firmness of modern domestic enterprises and successful realization of possibilities of their development in the long run, which defines necessity of identifying indicators of activity that determine the formation and rational use of enterprise capital. Limiting possibilities of enterprises in relation to production, capital due to its mobility contributes to solving such economic tasks as: a combination of production and product demand; innovative development of production activity; reducing and cheapening costs of production and services.

In 2017, Ukraine sold agricultural products in the amount of 17.9 billion USD (2016 – 15.5 billion). In a total volume of foreign trade in agricultural and food products, the share of export is 79.4%. The most exported are grain crops – 36.2%, vegetable oil – 25.1%, and oil seeds – 11.3%. Supplies of Ukrainian processed and food products considerably increased for the 2017 year. However, the export of crop production (mainly raw materials) increased by 2.1 billion USD and was 16.7 billion USD. More important for the economy export of animal products grew by 371.4 million USD and reached about 1.3 billion USD [/zn.ua/ECONOMICS/6]. Thus, the need for capital is growing and requires using developed and proven methodological approaches to its formation and use.

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2. The modern use of economic retro research

Processing chain of the agro-industrial sector has the most efficient ties with agricultural enterprises, which are based on the organizational-economic unity of production, storage, and processing of products.

Analytical support for the factor evaluation of production market trends of processing enterprises of AIC of Mykolaiv region characterised by developed processing industry is

based on research of the period from 2005 to 2009 when a situation regarding the provision of processing enterprises significantly improved but, much as today, the state of business in relation to animal products was ambiguous since the volume of sales of cattle and poultry increased but of milk and eggs – decreased.

Analysing production volumes of core products of processing enterprises of AIC of Mykolaiv region for

Table 1

Production of core products by processing enterprises of AIC of Mykolaiv region for 2005–2009, tons

Production	2005	2006	2007	2008	2009
Fresh (fresh-killed) or chilled beef and veal	789	1001	659	421	391
Fresh (fresh-killed) or chilled pork	730	786	1030	774	945
Fresh or chilled meat and edible offal of poultry	86	58	31	13	6
Dried, salt or smoked pork	183	447	606	641	381
Salt, in brine, dried or smoked poultry meat	37	141	201	235	190
Sausage products	2620	3066	3142	3542	2607
Semi-finished meat products (including poultry meat)	65	146	641	6139	540
Smoked fish, including fillets	130	132	136	140	53
Dried or salt fish except for fish fillets	225	213	154	120	81
Fruit and vegetable juice, nectars	240648	289566	489781	463205	348625
Juice for children	61308	74408	5947	4013	4288
Natural canned vegetables	15861	19865	12637	19265	28678
Unrefined sunflower oil	29822	59748	59618	25421	69094
Processed fluid milk	15681	15053	15406	14856	9760
Cream with fat content more than 8%	22	99	152	150	63
Butter	3541	3658	3752	3931	2599
Fat blends and spread products	2623	1813	3280	3460	3156
Fresh unfermented cheese and sour milk cheese	16487	17616	18212	16784	15509
Fat cheeses	10038	8760	10410	12286	11644
Milk and cream condensed with sugar or without sugar or other sweetening matter	13735	9781	12150	10152	13381
Fermented milk products	24365	25812	27947	27794	20983
Flour	84257	81049	93681	83576	71332
Groats	6061	2704	1385	1181	1686
Prepared feed for cattle and poultry	49638	33479	31673	26388	30240
Bakery products	51948	47208	44755	42690	37801
Viennoiseries	1273	1103	1069	774	789
Pryaniki and related products, sweet cookies; waffles	2100	2330	2877	2227	1221
Noodles, not stuffed, not heat-treated or prepared in any other way	1140	886	610	599	515
Grape wine, ths. dal	2213	2581	3059	3493	2822,8
Natural non-carbonated mineral waters, ths. dal	11,4	43,3	95,2	71,7	96,4
Natural carbonated mineral waters, ths. dal	839,1	837,9	1333	1360,5	1337,1
Soft drinks, ths. dal	1763,4	1320,8	1851,3	2414,2	2994

Table 2

Indicators of primary production for processing enterprises of AIC of Mykolaiv region for 2005–2009, thousand tons

Indicator	2005	2006	2007	2008	2009
Gross collection of grain and leguminous crops in all types of households (in weight after completion)	1763,4	1950,6	640,9	2385,9	2465,1
Gross collection of sugar beets (industrial) in all types of households	145,5	283,0	53,1	14,3	12,67
Gross collection of sunflower seeds in all types of households (in weight after completion)	426,8	499,2	259,7	517,3	553,1
Gross collection of vegetables in all types of households	266,7	297,2	151,6	274,4	334,2
Meat production in all types of households (live weight)	44,8	44,4	50,7	46,0	39,9
Milk production in all types of households	432,3	413,1	379,2	368,8	367,7
Egg production in all types of households, mln. pcs	313,7	327,0	336,7	386,3	473,9

2005–2009, decline of production of meat packing factories and fish canneries should be noted, which is caused by lack of raw materials in the sector, high credit interest rates for considerable raw material base recovery, low demand for products over the non-creditworthiness of the population and high price for products.

Indicators of primary production for processing enterprises of AIC of Mykolaiv region for 2005–2009 are presented in Table 2.

During 2005–2009, volumes of a gross collection of grain crops by all categories of farms of Mykolaiv region are increasing that is also peculiar to the present time, however, reduction of cattle and cow population in all types of households is also observed.

3. A methodological approach to determining indicators of the enterprise capital formation

In order to find results of the analysis of supply of processing enterprises of Mykolaiv region, a trend analysis is conducted, which purpose is to compare volumes of agricultural products sold to processing enterprises and production of core products by processing enterprises, determine the main trend of dynamics of selected indicators by means of comparing each of positions in the period of 2005–2009.

Table 3
Data on dynamics of volumes of agricultural products sold to processing enterprises of Mykolaiv region for 2005–2009

Year	Volume of agricultural products sold to processing enterprises of Mykolaiv region, million UAH
2005	2,24
2006	2,44
2007	1,45
2008	3,26
2009	2,65

During the analysed period, there is observed a tendency for increasing volumes of agricultural products sold to processing enterprises of Mykolaiv region. The exception is a decrease in the indicator in 2007; the value was 1.45 million UAH, which is determined, on the one hand, by general decline in production under the economic crisis, on the other, by low level of capital concentration, which makes it impossible to increase the volume of purchases of raw materials from manufacturing enterprises. Similar problems are also taking place in processing enterprises of AIC today. Thus, directions obtained that point at a need for enterprises' capital expansion can be used in modern practice.

Adjustment of time series is carried out by a right line described by a trend equation as a function:

$$Y_t = a_0 + a_1 t \qquad (1)$$

where a_0, a_1 – parameters of trend equation; t – sequence number of time periods.

Table 4
Data on dynamics of production of core products by processing enterprises of AIC in Mykolaiv region for 2005–2009

Year	Production of core products by processing enterprises of AIC in Mykolaiv region, million UAH
2005	2,16
2006	2,67
2007	3,51
2008	4,35
2009	4,37

We determine trend equation parameters a_0 and a_1 from the system of equations:

$$\begin{cases} a_o n + a_1 \sum_{i=1}^{n} t_i = \sum_{i=1}^{n} y_i \\ a_o \sum_{i=1}^{n} t_i + a_1 \sum_{i=1}^{n} t_i^2 = \sum_{i=1}^{n} y_i t_i \end{cases} \qquad (2)$$

Estimated data for analytical adjustment of time series of production of core products by processing enterprises of AIC in Mykolaiv region, we determined by the linear trend (Table 5).

Table 5
Estimated data for analytical adjustment of time series of volumes of agricultural products sold to processing enterprises of Mykolaiv region

Year	Volumes of agricultural products sold to processing enterprises of Mykolaiv region, y	Conditional sign of time, t	t^2	y^t	$y = a_o + a_1 t$
2005	2,24	1	1	2,24	3,09
2006	2,44	2	4	4,88	6,18
2007	1,45	3	9	4,35	9,27
2008	3,26	4	16	13,04	12,36
2009	2,65	5	25	13,25	15,45
Σ	12,04	15	55	37,76	46,35

We obtain the following trend equation parameters for volumes of agricultural products sold to processing enterprises of Mykolaiv region:

$$a_o = \frac{\sum_{i=1}^{n} y_i}{n} = \frac{46,3}{5} = 9,27 \qquad (3)$$

$$a_1 = \frac{\sum_{i=1}^{n} y_i t_i}{\sum_{i=1}^{n} t_i^2} = \frac{37,76}{55} = 0,69 \qquad (4)$$

For the indicator of volumes of agricultural products sold to processing enterprises of Mykolaiv region, trend equation is the following:

$$y = 9,27 + 0,69t$$

According to the computational table, the sum of time series is equal to the sum of time series calculated on the

basis of analytical adjustment, which indicates that the smoothing of a time series is performed correctly.

Table 6

Estimated data for analytical adjustment of time series of production of core products by processing enterprises of AIC in Mykolaiv region

Year	Production of core products by processing enterprises of AIC in Mykolaiv region, y	Conditional sign of time, t	t^2	y^t	$y = a_o + a_1 t$
2005	2,16	1	1	2,2	4,45
2006	2,67	2	4	5,3	8,90
2007	3,51	3	9	10,5	13,35
2008	4,35	4	16	17,4	17,80
2009	4,37	5	25	21,9	22,25
Σ	17,06	15	55	57,3	66,75

According to formula 3 and 4, we obtain the following parameters of trend equation for the indicator of production of core products by processing enterprises of AIC in Mykolaiv region:

$$a_o = \frac{17,06}{5} = 3,41$$

$$a_1 = \frac{57,3}{55} = 1,04$$

The trend equation for the production of core products by processing enterprises of AIC in Mykolaiv region is as follows:

$$y = 3,41 + 1,04t$$

We present obtained results in graphic form in Fig. 1.

According to findings, the forecast of volumes of
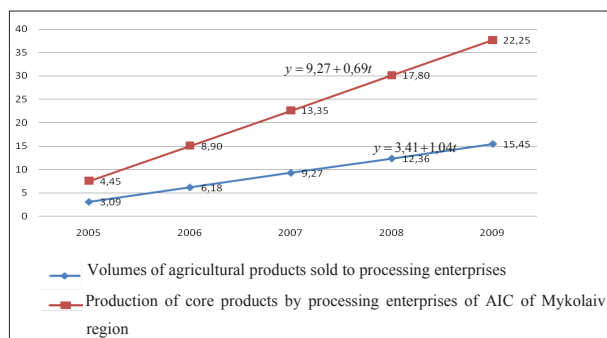
Fig. 1. Results of trend analysis of volumes of agricultural products sold to processing enterprises and production of core products by processing enterprises of Mykolaiv region for 2005–2009

agricultural products sold to processing enterprises and production of core products by processing enterprises of Mykolaiv region for 2010–2019 is made, which will allow grounding on the dynamics of dependence between these indicators.

According to the obtained trend equation for the volumes of agricultural products sold to processing enterprises, the forecast value of the indicator in 2010–2019 will be $Y_{2010=9,27+0,69x6=18,54;}$

$Y_{2011=9,27+0,69x7=21,63;}$ $Y_{2012=9,27+0,69x8=24,72;}$ $Y_{2013=9,27+0,69x9=27,81;}$ $Y_{2014=9,27+0,69x10=30,9;}$ $Y_{2015=9,27+0,69x11=33,99;}$ $Y_{2016=9,27+0,69x12=38,07;}$ $Y_{2017=9,27+0,69x13=40,14;}$ $Y_{2018=9,27+0,69x14=43,26;}$ $Y_{2019=9,27+0,69x15=46,35}$

For the production of core products by processing enterprises of AIC –

$Y_{2010=3,41+1,04x6=26,7;}$ $Y_{2011=3,41+1,04x7=31,15;}$ $Y_{2012=3,41+1,04x8=35,6;}$ $Y_{2013=3,41+1,04x9=40,05;}$ $Y_{2014=3,41+1,04x10=44,5;}$ $Y_{2015=3,41+1,04x11=48,95;}$ $Y_{2016=3,41+1,04x12=53,4;}$ $Y_{2017=3,41+1,04x13=57,85;}$ $Y_{2018=3,41+1,04x14=62,3;}$ $Y_{2019=3,41+1,04x15=66,75.}$
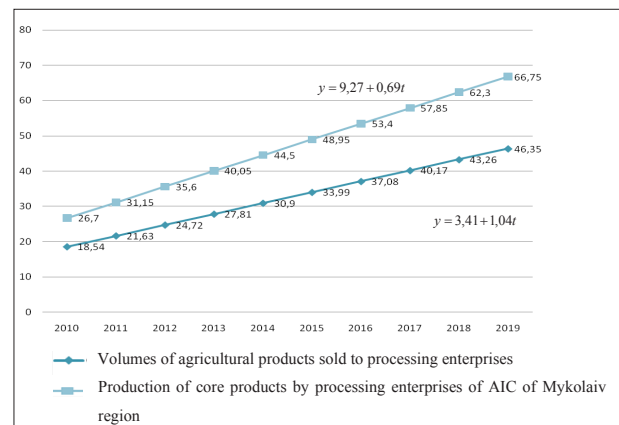
Fig. 2. Forecasted data on volumes of agricultural products sold to processing enterprises and production of core products by processing enterprises of Mykolaiv region for 2010–2019

4. Conclusions

The obtained forecast data allowed asserting about the possibility of growth of production of core products by processing enterprises of AIC of Mykolaiv region during 2010–2019, which took place for 2010–2017 and provides for the possibility of their growth for 2018–2019. The determined benchmarks justify the necessity of financial restructuring of the capital of processing enterprises of AIC of Mykolaiv region for the purpose of its stable growth.

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CHALLENGES AND STRATEGIC PRIORITIES FOR THE DEVELOPMENT OF INVESTMENT INSURANCE IN UKRAINE

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Abstract. The *purpose* of the paper is to substantiate the feasibility of expanding the scope of investment insurance in Ukraine, taking into account its advantages over other types of insurance services as well as the possibility of minimizing the possible disadvantages. *Methodology*. The list of the research methods of the subject under consideration includes the monographic method, analysis, techniques of the abstract-logical method, etc. *Results*. The urgency of the article is that the disclosure of the internal potential of the insurance market in Ukraine should take place with the introduction or activation of modern insurance products capable of meeting several financial needs at once, not only of their consumers but of the state as a whole. The development of voluntary life insurance plays an important investment role in the country's economy, therefore, at the moment, the need to develop new financial products aimed at increasing voluntary insurance is urgent. The share of life insurance services in the insurance market of Ukraine in dynamic is analysed. The purpose and positive consequences of expanding the segment of investment insurance are substantiated. Investment insurance as a financial product has both advantages and disadvantages. The benefits include the transparent structure of the insurance product, the choice of investment strategy, the possibility of obtaining increased investment returns while preserving the benefits of the insurance contract, preferential taxation of investment income, the existence of a guaranteed amount of payment in the contract, etc.; to the drawbacks – the lack of the possibility of early termination of the contract with the receipt of all the insurance premiums paid, the absence of a guarantee fund, guaranteed income, long-term contracts, limited range of people who can be insured. To enhance the use of investment insurance in Ukraine and to minimize these shortcomings, the prospects for the development of the investment insurance market are identified. Investment insurance in Ukraine has a high potential for active use and transformation into a popular insurance product. It is necessary to carry out further adaptation of products unit-linked to the structure and specifics of the domestic insurance market. The growth of the volume of investment insurance and, as a consequence, the expansion of the life insurance market as a whole, could become one of the most important factors in the development of the insurance industry in Ukraine in the near future. *Practical implications*. The main idea of the article was to justify the expediency of providing and using the investment insurance service in Ukraine, subject to minimize the shortcomings of this type of insurance and taking into account the prospects for its further development in the domestic financial market. *Value/originality*. The conducted research allowed getting some results, such as promising directions for the development of this type of financial product in the domestic insurance market.

Key words: investment, insurance, investment insurance, life insurance, unit-linked insurance, insurance products, insurance services.

JEL Classification: G22, F36, G11

1. Introduction

The current period of the domestic economic development is characterized by numerous discussions on the financial crisis, political and social instability and negative predictions about the destabilization of the financial system of Ukraine, primarily due to the negative tendencies of the functioning of the financial market and numerous bank failures of its professional participants. The insurance segment of the financial market is also actively debated, as it is directly dependent on the state of the economy and is closely connected with the level of state financial and economic security. In the modern world, insurance plays a very important role in the economy of any country, especially where the risks

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to the physical condition and entrepreneurial activity of citizens and legal entities are constantly growing. Given this, the importance of insurance, and the scope of insurance coverage of various aspects of private and economic life is constantly increasing. This is a positive trend, as it indicates a rise in the overall financial culture of the population, as well as in the level of participation awareness in insurance. In such circumstances, it should be remembered that the decline in demand for financial services, which is currently observed in Ukraine, is also an opportunity for the development of new areas of financial services. Therefore, at the moment, insurers carry out "brainstorming" among their own senior staff and representatives of the scientific elite in order to find ways to update insurance products; show lawmaking initiative, develop digital technologies for the promotion of insurance services.

The disclosure of the internal potential of the insurance market in Ukraine should take place with the introduction or activation of modern insurance products to meet several financial needs at the same time, not only of their consumers but of the state as a whole. For example, an increase in the number of voluntary insurance contracts can reduce social tensions in the range of persons covered by insurance, and also reduce the financial burden on the country's budget. The development of the voluntary life insurance is of great investment value in the economy of any country. Thus, it is necessary nowadays to develop financial products, which will increase voluntary insurance. The insurance companies are in active search for this job, widening insurance services. On the other hand, the majority of Ukrainians do their best to improve their finances and make it stable in order to form a firm future. Hence it is important to discuss investment and insurance products that are becoming extremely popular among the population of the developed countries.

2. Results of previous researches

The problem of insurance was investigated by domestic and foreign scholars. Thus it proves the topicality of the research. Kreidych I.M. (Kreidych, 2009) studies the particularities of the investment insurance in Ukraine, Feschenko V. (Feshchenko, 2013) specifies particularities of unit-linked investment insurance and preconditions for its implementation. Due to the analysis of the mentioned above works including the author's works (Honcharenko, 2014, 2015; Honcharenko & Berezina, 2016; Berezina, 2017), it is possible to make a conclusion. The insurance services used in Ukraine known as an investment insurance abroad has the name a unit-linked insurance. Domestic scholars quiet often combine these concepts to adjust the experience of the developed countries to the domestic situation. The research done by Stasevsky A. (Stasevskyi, 2012) "Investment life unit-linked insurance is a new

perspective for the Ukrainians" is a vivid example. The future development of the unit-linked insurance in Ukraine is also studied by Honta O.I. (Honta, 2014).

Foreign scientists (Rajagopalan & Pai 2006; Ciumaş Cristina &Chiş Diana-Maria, 2014; Straub Martin, 2011; Hochreiter Ronald, Pflug Georg & Paulsen Volkert, 2005; Preda Ana & Monea Mirela, 2011; Anant Gupta, 2015; Frantz Christophe, Chenut Xavier &Walhin Jean-François, 2003; Moller Thomas, 1998) were interested in issues of expansion of the sphere of provision and use of investment-related insurance services unit-linked. However, the issues of maximizing the benefits and minimizing the deficiencies of investment insurance in Ukraine, defining the prospects for its development in the domestic financial market are still of great scientific interest.

3. Theoretical and law bases of investment insurance

Investment insurance is a form of cumulative insurance, which is done by investing in profitable financial instruments. At present, many insurance companies active in the domestic insurance market manifest their willingness to work in this direction. Investment insurance is a new financial instrument for the practice of insurance in Ukraine, due to which an insured person not only pays insurance premiums but also influences the investment process. The size of the investment income is not fixed and depends on the results of investing reserves. The benefit to the client of the freedom of action is obvious: in addition to the mandatory minimum guaranteed sum insured, investment insurance will also be able to receive additional profits.

However, in domestic legislation, there is currently no clear definition of the concept of investment insurance, which complicates its formation and development in Ukraine. This financial product is not standardized, which prevents it from active using.

There appeared a question of the need to introduce investment insurance in the insurance markets of post-soviet countries back in 2007 when the European system of life insurance was gradually introduced into several types. At that time, these changes were seen as a progressive legislative provision for expanding life insurance companies, and it was believed that this new financial instrument could develop a new idea to joint investments for the Ukrainian insurance market. As a result of the first stage of the modernization of the laws of Ukraine on insurance, investment insurance was defined as a type of insurance in the field of life insurance, which provides for the insurer's duty in case of death of the insured person before the expiration of the contract and/or the survival of the insured person termination of the contract, and/or occurrence of an event in the life of the insured person provided for in

the insurance contract, make an insurance payment or insurance payments, the size of which depends on the results of the size the cost of technical reserves under investment insurance contracts. The terms of the investment insurance contract stipulated the insurer's obligation to make an insurance payment in case of death of the insured person in the amount not less than the sum of insurance premiums (contributions, payments) under such agreement (Draft Law of Ukraine "On Amendments to the Law of Ukraine "On Insurance", 2009).

Nowadays, in the period of post-crisis recovery of the global economic system, investment insurance is a modern civilized insurance product that is actively developing in the financial markets of many developed countries of the world – Switzerland, Germany, Hungary, Poland, Czech Republic.

4. Scopes and dynamics of investment life insurance in Ukraine

Investment life insurance in Ukraine compared to Western countries, where it plays an important role in the financial system and forms a significant part of the insurance market, is not developed enough. The share of life insurance in the total amount of the domestic insurance market ranges from 4-8% on the indicator of insurance payments (Table 1), which shows the limited market opportunities for the development of investment insurance. This situation arose as a result of unfavourable economic and political conditions in the country – life insurance is, in essence, a long-term financial product (on average, it lasts 10-20 years), but insurers cannot be sure of the effectiveness of their investments because of the instability of the domestic economy. The potential of the life insurance market in Ukraine is high, given the fact of the aging of the nation and the inability of the pension system to ensure a decent life level for the abandoned people; however, there are many factors that hinder its development. For example, the narrowness of the product line, in particular, the impossibility of introducing all unit-linked products in the domestic market over the limited investment opportunities in the financial market, insufficient level of financial literacy of citizens, for the

most part, life-saving life insurance remains difficult to understand the product, etc.

The current state of the life insurance segment in the financial market of Ukraine is characterized by the following data. Gross insurance payments (premiums, contributions) for life insurance in 2016 amounted to 2756.1 million UAH, which is 26.0% more than in 2015 (as of December 31, 2015 – 2186.6 million UAH). The volume of gross insurance premiums from life insurance in 2016 (Information on the state and development of the insurance market of Ukraine, 2017) amounted to 418.3 million UAH, which is by 14.9% less than in 2015 (491.6 million UAH). The bulk of the amount of changes in life insurance reserves has been formed under other accrued insurance contracts, namely 997.2 million UAH. According to other life insurance contracts, the value of changes in life insurance reserves is 18.9 million UAH. According to the results of 2016, 13 insurance companies "Life" received a negative value of an increase in life insurance reserves for a total amount of 37.2 million, UAH which is caused by pre-term cancellation of insurance contracts (by the end of 2015, the negative value was declared 13 insurance companies "Life" for the total amount of 11.8 million UAH). Thus, currently, there exist unfavourable grounds for the development of investment insurance but, on the other hand, a new insurance product can become a rescue mechanism that will allow the insurance market to gain new positive dynamics of its development, and the life insurance segment to take a worthy place in its structure.

The pace of the dynamics of the life insurance market in our country has an unstable tendency, which is directly related to cyclical changes in the economic situation. As we see from the statistics provided by the state regulator, the National Commission, which carries out state regulation in the field of financial services markets, the information concerning the investment insurance within the life insurance segment is not allocated to a separate analytical category, yet does not allow to make a reliable conclusion on the state of its development in Ukraine. However, this type of insurance has its own specificity, which does not allow to put a sign "=" between investment insurance and life insurance in general. Investment life insurance is the insurance protection of the life of the insured

Table 1
Scopes of life insurance in Ukraine

Indices	Years									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Portion of insurance companies "Life" in the total number of companies, %	14,6	15,3	16,0	14,7	14,5	15,0	15,2	14,9	13,5	12,6
Portion of the gross insurance premiums in the overall life insurance, %	4,4	4,6	4,0	3,9	5,9	8,4	8,6	8,1	7,4	7,8
Portion of the gross insurance payments for overall life insurance, %	0,6	0,6	0,9	0,9	1,5	1,6	3,2	4,7	6,1	4,7

Resource: Compiled by the authors according to the data obtained from Information on the state and development of the insurance market of Ukraine, 2017

person plus an investment instrument (investing money in order to generate profits) with the possibility of obtaining investment income. In investment life insurance programs, the amount of cash is divided into two funds: guarantee and risk (investment). The Guarantee Fund provides for the return of the paid-in capital in any situation on the stock market. Purpose of the investment fund is to ensure the profitability of this financial product (Zhegalova E. V., 2014, p. 37).

5. Purpose, specific features, and directions for the development of the investment insurance in Ukraine

The purpose and tasks of activating the introduction of investment insurance in Ukraine are presented in Table 2.

However, one should not forget that the global experience of investment insurance generates both the benefits of this financial product and its disadvantages. Therefore, both clients and insurance companies need to study this type of insurance, find out its hidden negatives and consult with professionals to obtain maximum returns upon termination of the transaction. Only a competent approach to understanding the contract and strict adherence to its norms and regulations can provide expected income and prevent damage.

Consider the specific features of investment life insurance. Each insurance premium paid by an insurance company client is drawn up in accordance with the specifics of this type of insurance product in two parts: one part is used for the formation of a fund that is directly related to life insurance, the second is the accumulation or investment component invested in stock and money market instruments.

Prior to the introduction of investment insurance, insurers in the life insurance segment offered only risky contracts and accumulative life insurance. In the first of these insurance products, there is no accumulation of assets at all, the second – the profitability is very low. Therefore, customers were looking for more profitable financial instruments, and insurers – an opportunity to offer consumers more profitable insurance products and services. So the idea of creating an investment tool in an insurance cover, which was called "investment life insurance", was born. From the title, it becomes clear that in the first place – an investment product, which aims to provide customers with significant investment income.

However, it is evident that the higher the level of return on investment, the higher its risk. At the same time, insurance companies do not have the right to transfer the risk of investing to their clients. Therefore, having received a large initial down payment from the client, the insurance company divides it into two unequal parts. The guarantee portion is designed so that its investment in risk-free financial instruments allows the client to receive the amount of the down payment before the contract is completed. Thus, the client is guaranteed to preserve the money he invests in investment life insurance. Less, the investment part – is directed to assets that potentially can bring high profitability but also carry a significant risk. If assets significantly increase in price prior to the termination of the contract, the client may receive high investment returns. If sharply depreciates – the client will not get profit but, at the same time, will definitely save the capital invested in the beginning.

Unlike accumulative life insurance, where the technical interest rate is guaranteed, profits are not guaranteed for investment life insurance. It entirely depends on the success of funds that the client chooses in the insurance contract. Each investment life insurance contract has an individual account

Table 2
Purpose and tasks to activate the investment insurance in Ukraine

Purpose	Tasks, positive consequences
Demographic potential support	Decrease in the financial burden of the state budget of Ukraine due to the compensation of a portion of the pension payments; partial solution of the pension fund deficit, connected with the life expectancy and population aging, the possibility to rise the state pension at the expense of the voluntary donations in the investment pension programs.
Increase in demand for the financial services	Offer of a new financial product for consumers of all ages, sex, and professions; offering a product with the active participation of the client in making financial decisions (investment component); incentive to use of maintenance costs through a transparent structure; flexible decision-making system for the transformation of individual product parameters; provision of insurance coverage for the main types of risk; improvement of service by constant communication with the client.
Increase of insurance products	Expansion of distribution network of insurance services due to the emergence of a new product line, unit-linked, flexible system of motivation to distribute the product, which is possible through an advance payment of commission.
Increase in the financial stability level of the insurance market participants	Obtaining of long-term financial resources; more efficient use of equity by insurers; the possibility of increasing the quality of the risk management system and economic security; improvement of the mechanism for assuring the quality of warranties and risks assessment at the expense of a long period of service provision.

Resource: Compiled by the authors

specifying the actual number and type of purchased investment financial instruments, their prices and accrued payments and risk insurance premiums. Customers, as a rule, are notified once a year in writing in the form of a statement on the status of their accounts (Kreidych I. M., 2009).

Thus, it is possible to systematize advantages and disadvantages of investment insurance (Table 3).

To minimize shortcomings of investment insurance, it is advisable to propose some promising directions for the development of this type of financial product in the domestic insurance market. Among them are:

1. Formation of the industry standard of investment insurance.

2. Development of the legislative framework for the regulation of investment insurance relations.

3. Increasing the level of transparency of the insurance product for the client.

4. Implementation of standards for the calculation and distribution of additional investment income among clients.

5. Optimization of insurance protection programs.

6. Extension of the list of persons who can use the service.

7. Expanding the spectrum of investment strategies and investment tools (portfolio insurance strategies, option strategies, macro strategies, domestic and foreign promotions, precious metals and commodities, real estate, art objects, currencies, etc.).

The prospects for the development of the unit-linked investment insurance market in Ukraine are due to a combination of the following factors.

1. Overcoming legislative barriers, including improving the legal framework in the financial market.

2. Formation of the preferential income-tax regime unit-linked policies.

3. Reforming the pension system. Unit-linked policies can be a potential guarantee of a higher level of profitability, unlike other products of life insurance.

4. Increase financial literacy of the population. First of all, at the expense of citizens' awareness of possibilities of investing savings in the financial market.

5. Increase in transparency, capacity and stabilization of insurance, stock, and other segments of the financial market.

6. Further expansion of the range of banking insurance products, which has become widespread in recent times. Realization of the existing ability to sell unit-linked products through banks.

Thus, investment insurance in Ukraine has a high potential for active use and transformation into a popular insurance product. It is necessary to carry out further adaptation of products unit-linked to the structure and specifics of the domestic insurance market. The growth of the volume of investment insurance and, as a consequence, the expansion of the life insurance market as a whole, could become one of the most important factors in the development of the insurance industry in Ukraine in the near future.

Table 3
Advantages and disadvantages of the investment insurance

Advantages	Disadvantages
Transparent structure of the insurance product (allocation of investment, insurance and expense component).	Lack of early termination of the contract with receipt of all paid insurance premiums.
Ability to choose an investment strategy, not limited to conservative investment instruments.	The absence of a guarantee fund that would be able to provide payment to the client in cases of withdrawal of a license or insolvency of an insurance company.
Correspondence of the structure of investment assets and the principles of distribution of investment income.	Not every fatal case is recognized as an insurance event.
Possibility to obtain higher investment returns while maintaining the benefits of the insurance contract.	Lack of guaranteed income. In case of negative development of the investment strategy, the client after the expiration of the contract will receive only a guaranteed payment of the contract.
Preferential taxation of investment income.	Only a small part of the one-time contribution is invested in investment instruments with a potentially high income. Major investments are risk-free, low-income financial assets.
Taking into account the principle of complex interest, according to which the accounting of profit is made, the final amount grows at times.	In order to prove the occurrence of an insured event, the insured person or the beneficiary must provide the insurance company with a wide range of documents.
Insurance terms may vary throughout the term. You can change the term, conditions, monthly amount, type of insurance, investment fund, number of heirs, etc., which allows you to control the investment.	The complexity of the insurance contract is that the more insurance risks are included in the insurance coverage of the product, the more various restrictions in terms of time, on additional terms, on the amounts of payments.
The existence of a guaranteed payment amount in the contract.	Agreements are concluded for a long time, and it is not known what can happen to insurance companies during this time.
Investment insurance keeps the money more secure than bank deposits since the priority of saving is in the first place.	Some groups of people are not accepted for insurance, for example, people with a disability, or are in an outpatient treatment.

Resource: compiled by the authors

6. Conclusions

The study of features, problems, and prospects of investment insurance in Ukraine made it possible to draw the following conclusions.

1. Investment insurance is a new financial instrument for the practice of insurance in Ukraine, which will enable the insured person not only to pay insurance premiums but also to influence the investment process. This type of insurance comes from the field of life insurance and provides for the insurer's duty in case of death of the insured person before the expiration of the contract and/or the survival of the insured person before the expiration of the contract, and/or the occurrence of an event in the life of the insured person provided in insurance contract, insurance payment, the size of which depends on the results of placement of technical reserves under investment insurance contracts.

2. The development of investment insurance in Ukraine is restrained by the low popularity of life insurance among citizens, proving indicators of the dynamics of shares of insurance premiums, payments and companies providing such services in the insurance market in a ten-year retrospective. The current state of the life insurance segment in the domestic financial market is characterized by a drop in the level of profitability and loss-making activity of insurance companies in the life sector. At the same time, official statistics released by the National Commission for the regulation of financial services markets do not foresee the identification of information relating to investment life insurance, so instead of concluding its use in Ukraine, we can only conclude that there is a weak basis for its formation and development.

3. Investment insurance as a financial product has both advantages and disadvantages. The benefits include the transparent structure of the insurance product, the choice of investment strategy, the possibility of obtaining increased investment returns while preserving benefits of the insurance contract, preferential taxation of investment income, the existence of a guaranteed amount of payment in the contract, etc.; to the drawbacks – the lack of the possibility of early termination of the contract with the receipt of all the insurance premiums paid, the absence of a guarantee fund, guaranteed income, long-term contracts, limited range of people who can be insured. To enhance the use of investment insurance in Ukraine and to minimize these shortcomings, prospects for the development of the investment insurance market are identified. Among them, the main ones are: legislative regulation and regulation of investment insurance services, its standardization, raising the level of financial literacy of the population, and increasing transparency of activities of insurance companies.

Prospects for further research in the chosen research area are the formation of a mechanism for protecting users of investment insurance services from all kinds of risks associated with the use of various types of investment strategies and instruments, as well as traditional risks that accompany all types of insurance services without exception.

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THE CONCEPTUAL BASIS FOR THE DEVELOPMENT OF SMALL BUSINESS POTENTIAL IN THE REGION

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Abstract. The article deals with the study of conceptual foundations of the development of the potential of small business in the region. *The purpose of the article* is to study the essence and features of small business potential and to form conceptual foundations of its development at the regional level. *The subject of the research* is theoretical, methodological, and practical aspects of the potential of small business in providing a sustainable economic growth. In the course of the research, the following general scientific and special methods are used: dialectical, system analysis, graphical analysis, matrix, mathematical modelling in economics, and logical generalization of results. The essence of the category "small business potential of the region" is studied; it should be understood as a complex system of balanced and mutually related elements in the form of conditions, resources, and opportunities for small business enterprises in the region to conduct production, economic, commercial, and other activities in order to ensure public needs in terms of sustainable economic growth. Methodological principles for forming a conceptual model for the development of small business potential and the scheme of generalized stages of its implementation (preparatory, analytical, operational stages and stage of introduction and implementation) are determined, the implementation of which will help to determine the preconditions for the formation of strategic potential, assess its modern quantitative and qualitative composition, and make a forecast of prospects of the use in ensuring sustainable economic growth. It is proposed to use economic and mathematical models, by means of which it is possible to quantitatively describe the connection between the input indicators of the economic system and the performance indicator. In order to substantiate directions of development of the potential of small business in the region in view of its role in creating new jobs and increasing employment as one of the important indicators of sustainable economic growth, it is proposed to build an economic-mathematical model, the main parameters of which are generalized indicators of the level of labour potential, material-technical potential, financial potential, innovation and infrastructure potential. The use of the proposed methodological approach to the substantiation of directions for developing small business potential will determine possibility and probability of selecting necessary measures to improve certain of its structural elements and their consideration in the development of small business development programs, the selection of sources of its financing, which should facilitate the intensification of business activity as an important factor of flexibility of the regional economy, ensuring competitive activities, capable of becoming a foundation for the renovation of economic growth.

Key words: potential, small business, region, strategic growth priorities.

JEL Classification: M2, R11, L21

1. Introduction

Among the main strategic priorities of ensuring socio-economic development of Ukraine, a shift in emphasis to the fulfilment of inner potential of regions, introduction of effective mechanisms and tools for local and regional development incentives, intensification of business activities are identified. Thus, the determination of directions to develop and increase the efficiency of the use of small business potential as an important element of the economic system is one of the prerequisites for the provision of sustainable economic growth. Formation of strategic directions of development of small business potential requires developing corresponding conceptual

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foundations. The purpose of the article is to study the essence and features of small business potential and to form conceptual foundations of its development at the regional level. The subject of the research is theoretical, methodological, and practical aspects of the potential of small business in providing a sustainable economic growth. Research methods are: dialectical – to find regularities, principles, and factors of promoting the development of small business potential; system analysis – to reveal the essence of elements of small business potential; graphical analysis – for a schematic presentation of theoretical and practical provisions of the study; matrix, mathematical modelling in economics, logical generalization of results – to develop recommendations on the formation of conceptual foundations for the development of small business potential of the region.

2. Analysis of recent research and publications

World economic science pays considerable attention to studying small business as one of the regular factors of socio-economic advance of countries. A fundamental contribution in the theory of entrepreneurship is made by M. Weber, P. Drucker, W. Sombart, R. Cantillon, B. Karloff, A. Marshall, F. Knight, J.B. Say, B. Szanto, A. Smith, J. Thünen. Among domestic scholars and researchers of aspects of small business development, Yu. Bazhal, H. Bilous, Z. Varnalii, A. Halchynskyi, V. Herasymchuk, A. Danylenko, Ya. Zhalilo, S. Zlupko, I. Komarnytskyi, M. Krupka, V. Kuznietsov, I. Lemeshevskyi, V. Onyshchenko, V. Pyla, S. Reverchuk, M. Syzonenko, D. Stechenko, O. Tymchenko, S. Chernenko, and others should be mentioned. To the study of the potential of the small business, in particular, at the regional level, determination of methodological foundations for its evaluation and mechanisms for improving the efficiency of the use, scientific works of domestic scholars such as A.I. Butenko, H.V. Karpinska, Ye.V. Lazarieva, V.I. Liashenko, I.M. Saraieva, N.L. Shlafman and others (2014) are devoted. They note that business potential of the region is a complex phenomenon that reflects "a set of framework conditions of entrepreneurial activity, availability of resources and possibilities to carry out this activity, a region's disposition toward this activity, and the population's business activity implemented in certain period" (A.I. Butenko, N.L. Shlafman, Ye.V. Lazarieva, 2012). The same thought is also observed in studies of O.V. Likhanos (2010), who consider that business potential is determined by its socio-economic structure and conditions created for its formation and implementation. However, in justice to results achieved, one can distinguish a number of insufficiently elaborated issues of formation and development of small business potential (SBP) as a strategic factor of socio-economic changes in the economic growth.

3. The essence and structure of small business potential of the region

Ukrainian choice of the European way of development and an intention to become an associated member of the EU forms new vectors of development and implementation of regional policy. Determination of a new role of state regional policy as the main instrument for providing complex development of territories, activation of small and medium business, and job creation in regions serve the main ways of Ukraine's formation as a modern democratic state (Derzhavna stratehiia rehionalnoho rozvytku na period do 2020 roku, 2014). These priorities are also mentioned in updated State Strategy of Regional Development for the period until 2020 (2014), which fulfilment will contribute to the acceleration of reformation of certain spheres of regional development, resource mobilization and optimization of their use, increase in the economic initiative and business activity.

It should be noted that regional development programs for small and medium business also emphasize on the achievement of these objectives. However, evaluation of the state and problems of functioning of the small business, analysis of the implementation of appropriate Development Programs of previous periods indicate a low level of their fulfilment, the main cause of which was an insufficient level of financing, law quality of their implementation, weak infrastructure support, etc. (Ofitsiinyi sait Derzhavnoho komitetu z pytan rehuliatornoi polityky ta pidpryiemnytstva (2006-2013); Ofitsiinyi sait Ukrainskoho fondu pidtrymky pidpryiemnytstva).

It is worth noting that small business potential as an economic category can be considered from different points of view, highlighting herewith features, regularities, principles, and factors of its formation and use. The main features and regularities of business potential formation include:

- interrelation and balance of elements of potential that has to function simultaneously and together;
- alternative nature of potential elements that may in one or another way replace each other;
- the dynamism of the formation of the potential, which makes it impossible to determine it by mechanical addition of the constituent elements;
- entrepreneurial potential can be independently transformed with the emergence of new constituent elements;
- flexibility, adaptability, and sustainability of the potential, which will promote the preservation of its integrity when implementing external influences; etc.

In our opinion, the concept of "potential of small business" should be considered in the broad sense as an integrated category, which includes entrepreneurial potentials of different levels (entrepreneurial potential of a person, enterprise, region, country). At the same

time, business potential of each next level includes in its composition as the corresponding potentials of lower levels, so the necessary conditions for their formation and implementation. In addition, each of the components of the multi-level structure of the SBP is in a relationship and interaction with the elements of both higher and lower levels. Consequently, business potential of a higher level is not the result of a simple summing of potentials of lower levels but has emergent properties, when the effect of these potentials increases, which causes its increase and development. After studying different points of view of domestic and foreign scholars in determining the category of "business potential" and taking into account the basic properties and regularities of its formation, we propose to understand "the potential of small business in the region" as a comprehensive system of balanced and mutually related elements in the form of conditions, resources, and opportunities for carrying out production and economic, commercial, and other activities by small business enterprises in order to provide public needs in conditions of sustainable economic growth.

4. Formation of conceptual foundations for the development of SBP of the region

Therefore, taking into account all of the above, one should emphasize the need to formulate conceptual foundations for the development of SBP as one of the effective ways for ensuring the economic and social development of both individual regions and the country as a whole. This requires the development of an appropriate Concept, which should contain methodological and constructive provisions, identify its main components (the main purpose, priority directions, goals), as well as implementation mechanisms. Thus, among the main methodological principles for the formation of such a model, the following should be noted:
- the principle of recognition of the priority of entrepreneurial activity and its subordination to solving problems of sustainable development, implementation of an innovative model of economic development;
- the principle of ensuring an integrated system approach, according to which the system of support for SBP development should be an appropriate socio-economic system of goals, tasks, means, and rules for their achievement, conditions of implementation, etc.;
- the principle of using the general theory of management, which will allow regulating the sequence of actions and performers of tasks defined for the formation and implementation of the strategy for the development of SBP in the medium and long term;
- the principle of flexibility, which involves taking into account multivariate forecasts of the development of individual components of business potential under

the influence of changes in the external and internal environment;
- the principle of reconciling goals of the state and small business in the direction of intensifying innovation and investment processes, reducing costs, and using resource-saving technologies, focusing on the intensive type of development of large, medium, and small businesses;
- the principle of marketing direction of the model for segmentation of the business sector, which will facilitate the effective implementation of measures to support and regulate entrepreneurship.

In our opinion, the formation of a model for the development of small business potential involves the implementation of four generalized stages (preparatory, analytical, operational stages, and the stage of introduction and implementation), the implementation of which will help to identify the prerequisites for the formation of strategic potential, assess its current quantitative and qualitative composition, and make a prediction about prospects of using it in ensuring sustainable economic growth (Fig. 1).

It should be noted that one of the important prerequisites for the formation of a qualitative model for the development of small business potential is the choice of right methods for its development, the main of which, depending on the nature of the information used, are factual, expert, and also mathematical modelling in economics (Bondar, 2006; Egorova, 1999). According to the authors, for making scientifically grounded decisions, it is expedient to use economic and mathematical models, by means of which it is possible to quantify the connection between the input indicators of the economic system and the effective indicator. In this study, we use the method of correlation-regression analysis, the stages of which are the definition of the objects under study, the analysis of relations between individual variables, the selection of the rational type of econometric model. To construct a model for the formation of strategic directions for the development of small business potential, data are formed in the form of spatial and temporal sampling. In particular, these data are determined as a result of the survey of small business potential in Mykolaiv region using the system of indicators presented in Table 1.

In order to substantiate directions of the development of small business potential in view of its role in creating new jobs and increasing employment as one of the important indicators of sustainable economic growth, it is proposed to build an economic and mathematical model, the main parameters of which are generalized indicators of the level of labour potential $(K_{\text{тп}})$, material and technical potential $(K_{\text{мтп}})$, financial potential $(K_{\text{фп}})$, innovation and infrastructure potential $(K_{\text{iiп}})$. To find out the effect of each of them on the number of working population (Y), the definition
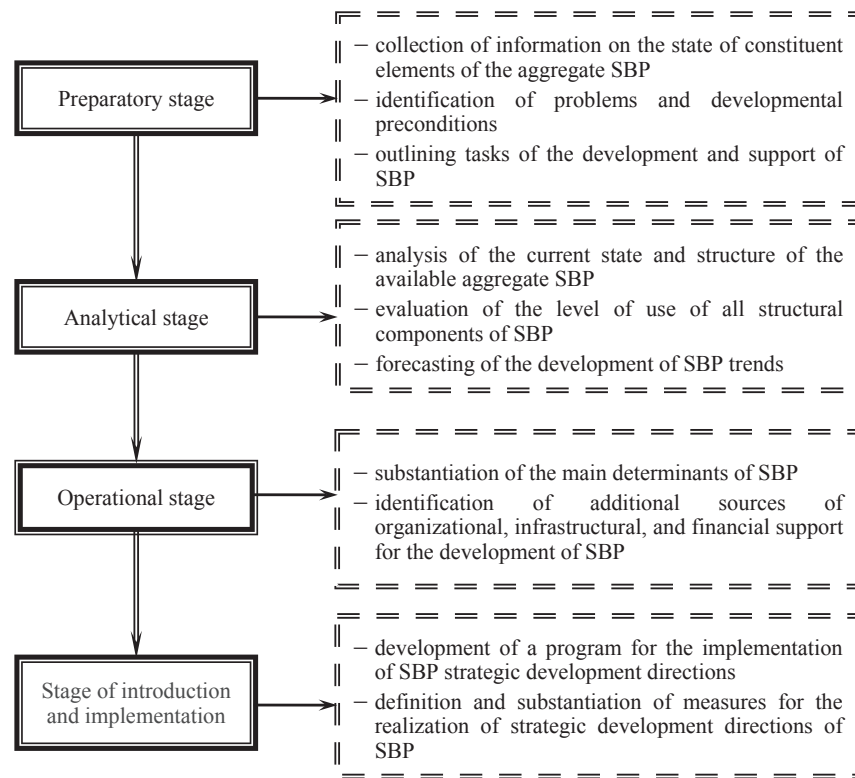
Fig. 1. Generalized chart of the process of formation and realization of strategic directions for the development of small business potential

Table 1
The system of individual and generalized indicators of the level of SBP use for the formation of strategic directions of its development

Block	Individual indicators of the i-th block	Generalized indicators
Block 1 Labour potential $(K_{тп})$	1.1. Number of SBs per 10000 population (x_1)	$K_{mn}=f_1(x_1, x_2, x_3)$
	1.2. Number of employees in the SB sector (x_2)	
	1.3. Average salary in the SB sector (x_3)	
Block 2 Material and technical potential $(K_{мтп})$	2.1. The share of FA (fixed assets) in the SB sector in the volume of FA of the region's economy (x_4)	$K_{mmn}=f_2(x_4, x_5, x_6)$
	2.2. The share of CA (current assets) in the SB sector in the volume of CA of the region's economy (x_5)	
	2.3. The volume of investments in FA of entities of SB (x_6)	
Block 3 Financial potential $(K_{фп})$	3.1. The share of SB in the total volume of sales of products (works, services) in the region (x_7)	$K_{фn}=f_3(x7, x_8, x_9)$
	3.2. The share of profitable SBs in the total volume of profitable enterprises of the region (x_8)	
	3.3. Operating expenses of entities of SB from sales of products (works, services) (x_9)	
	3.4. Receipt of tax payments and other revenues to the budget from SB entities (x_{10})	
Block 4 Innovation and infrastructure potential (K_{iin})	4.1. Infrastructure development costs per capita (x_{11})	$K_{in}=f_4(x11, x_{12}, x_{13})$
	4.2. The level of security of SBs by infrastructure objects (x_{12})	
	4.3. Level of business activity (x_{13})	

of the relationship between them, an econometric model is constructed:

$Y = f(K_{ТП}; K_{МП}; K_{ФП}; K_{ІП}; u)$,

where u – stochastic component of the model.

According to the data of the observation, the use of potential of small business in certain raions of Mykolaiv region, generalized indicators of the level of labour potential $(K_{тп})$, material and technical potential $(K_{мтп})$, financial potential $(K_{фп})$, innovation and infrastructure potential (K_{iin}) (Hryshyna, 2016) are determined. In determining the parameters of the econometric model, the method of least squares (1MNK) was used (Bondar,

2006; Ostrovskyi, Hostryk, Dobrunik, Radova, 2012). In order to select the best specification, we will analyse the constructed models (Table 2).

Table 2
Econometric characteristics of the model

Indicators	Characteristics of the model	
	Linear	Exponential
Determination coefficient	0,904	0,927
Adjusted coefficient of determination	0,892	0,917
The value of Fisher's criterion	71,18	95,68
Critical values of Fisher's criterion	2,69	

Consequently, the proposed models are adequate, and the criterion for choosing the best of them is the adjusted coefficient of determination, which determined the choice of the exponential model. That is, the relationship between the number of employed population and the generalized indicators of the potential of small business in the region ($K_{TП}$; $K_{MП}$; $K_{ФП}$; $K_{IП}$) will describe the exponential function of this type:

$$\hat{y} = 7,97 \cdot K_{TП}^{0,55} \cdot K_{MП}^{-0,78} \cdot K_{ФП}^{0,15} \cdot K_{IП}^{0,45}$$

It is worth noting that the calculated values of the determination coefficient $R^2 = 0,927$, Fischer criterion $F_{розр} = 71,18$ ($F_{табл} = 2,69$) and the adjusted coefficient of 0,917 indicate sufficient compliance with the empirical data of the proposed econometric model.

In the process of forming strategic directions of the development of SBP, it is necessary to have an information base, which is created at the stage of strategic analysis. Conducting a strategic analysis of the status of SBP should meet the requirements of purposefulness, objectivity, timeliness, systemacity. In the market conditions of management at the stage of strategic analysis, the factors of the external environment and the internal environment are systematically analysed in order to determine the current state of the PMP and to identify conditions for its further development.

5. Conclusions

In order to identify strategic directions of the development of small business potential, a methodical approach based on the use of a multifactorial dynamic model, the implementation of which allows determining the degree of influence of the effectiveness of using its constituent elements (labour, material, technical, financial, innovation and infrastructure potential) on the main indicators of economic growth, is developed. Since ensuring such a growth requires the fulfilment of key conditions, among which are: decent living standards, education, equality, long and healthy life, favourable economic and environmental conditions, the very creation of new jobs is a priority in identifying strategic guidelines for the development of small businesses potential. The use of the proposed methodological approach to the substantiation of directions for developing small business potential will determine possibility and probability of selecting necessary measures to improve certain of its structural elements and their consideration in the development of small business development programs, the selection of sources of its financing, which should facilitate the intensification of business activity as an important factor of flexibility of the regional economy, ensuring competitive activities, capable of becoming a foundation for the renovation of economic growth.

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FEATURES OF SOCIO-ECONOMIC DEVELOPMENT OF THE BALTIC STATES AND UKRAINE

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Abstract. It is proved that ensuring stable economic growth is now an important task for the governments of all countries. *The purpose* of the study is to compare socio-economic conditions of the Baltic states and Ukraine in the period of 2006–2016. The subject of the study is peculiarities of social development identified as a result of the analysis of the main components – real GDP, general government spending, and minimum wages. *Methodology*. It is based on views of recognized Western economists, as well as works of scholars from the Baltic countries and Ukraine. The main method of research is systemic, which allows analysing complex open unbalanced socio-economic systems. In the process of research, such methods also used – comparison, historical, analysis and synthesis, correlation and regression. The views of scholars on the processes of social development are generalized, the dynamics of real GDP are compared, and the correlation-regression analysis of the influence of general government spending and minimum wages on real GDP is performed. In the course of the study, some features of this development are identified by indicators of real GDP, general government spending, minimum wages, and also individual countries. *Results*. It is proved that peculiarities of socio-economic development of the Baltic countries and Ukraine are an important basis for ensuring the dynamics of this development; they allow forming strategic and current vectors of the development of economies of these countries and, therefore, are socially significant theoretical content. The GDP rates of all countries for the period of 2010–2016 were lower than those that were in 2006–2008, and in relation to Ukraine, these rates were significantly lower for the period of 2006–2016, which confirms the presence of significant social problems. The dynamics of real GDP per person demonstrated the weakness of the financial system of Ukraine to counteract negative factors, where this figure is less than in the Baltic states roughly three times. The indicator of General Government Spending, % of GDP, showed that after the financial crisis, any of the countries failed to reach the pre-crisis level, and this indicator in the Baltic states for 2010–2016 ranged from 35% to 40%, and in Ukraine – from 32% up to 35%. According to the index of minimum wages, it is determined that in the Baltic States it increased more than three times during the analysed period, and in Ukraine it decreased, which was caused both by the global financial crisis and the depreciation of the domestic currency for the period of 2014–2016 more than three times. *Practical implications*. Ukraine, in order to increase GDP, is recommended to implement measures of the strategic direction, in particular: to summarize documents of strategic content; form a new strategy of social development for up to 20 years; develop appropriate development programs in view of industry and region; provide priority to an innovation vector of development with a focus on universal values. *Value/originality*. The revealed features of the socio-economic development of the Baltic countries and Ukraine reflect their national specificity and will contribute to a better understanding of the essence of these processes.

Key words: socio-economic development, GDP, general government spending, minimum wages.

JEL Classification: A13, B26, G01, G28

1. Introduction

Socio-economic development of any country is formed taking into account its potential opportunities. In the realities of the beginning of the XXI century, some countries have achieved significant success and have provided a high standard of living for the population, while others are in difficult conditions and the welfare of most of the population is negligible. It should be noted that issues of social development were permanently relevant in the research of scholars. So, in 2010, D. Arthur for the contribution to macroeconomic research, and A. Deaton in 2015 for the analysis of consumption, poverty, and well-being processes were awarded the Nobel Prize in Economics. In the context of identifying

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features of socio-economic development, it is relevant to compare the main indicators of this development on the example of the Baltic countries – Estonia, Lithuania, Latvia, and Ukraine. After the collapse of the Soviet Union, these countries chose different vectors of development. Estonia, Lithuania, Latvia in 2004 became members of the EU and NATO and at the end of the second decade of the XXI century were able to ensure a stable development and a reasonable standard of living for the population, but Ukraine is behind these indicators in recent places in Europe. That is why the purpose of the study is to identify peculiarities of socio-economic development of the Baltic states and Ukraine, and the tasks: to compare the basic indicators of development of these countries; reveal differences in the dynamics of development; determine the effect of minimum wages and general government spending on real GDP in view of these four countries; develop recommendations for a strategic plan for Ukraine to increase the rate of real GDP. To carry out the research, an appropriate methodology based on the works of leading economists of the world, scholars of the Baltic states and Ukraine using a systematic approach is formed. The research stages are developed in a logical sequence, which include searching for statistical data, analysing them, performing analytical calculations, identifying differences in the dynamics of development between countries, developing relevant recommendations for Ukraine.

2. Review of theory and literature

Given the peculiarity of the problem, only in the last 100 years, a considerable amount of work has been published in the relevant research areas. Of particular significance are works of the classics of economics – J. R. Hicks (1937, 1965), J. Scumpeter (1939), P. Samuelson (1948), E. Domar (1952, 1989), R. Solow (1956), R. Harrod (1959), E. Denison (1962), M. Alle (1989). In their papers, they laid the foundations for the theory of economic growth, substantiated the corresponding mechanisms. At the beginning of the XXI century, globalization processes have caused new challenges; taking them into account, the dynamics of development in certain countries acquired certain features. The inability of the entire world community to resist chaotic development was over the global financial crisis of 2007–2009. In the report of The Clube of Rome prepared by E. Weizsaecker and A. Wijkman "Come ON! Capitalism, Short-termism, Population and the Destruction of the Planet" (2018), it is noted that the current crisis is not cyclical but intensifies. It is not limited to the nature around us but includes social, political, cultural, and moral aspects; besides this, there is a crisis of democracy, ideologies, and the capitalist system. Ninety-eight percent of financial transactions are now speculative. In offshore areas, it is hidden

from twenty-one to thirty-two trillion dollars. There is a surplus of capital in fictitious but profitable areas, while the directions, on which the future of the planet depends, feel the lack of funds. Economists are not able to see the problem because they are still inclined to consider ecological, financial, and industrial capital as equivalents: "while financial capital is increasing – everything is good."

Taking into account new features of development in the XXI century, works of scientists, which highlights national specifics, are published. E. S. Reinert (2007) made a meaningful analysis of the causes and conditions of poverty and wealth of different countries; R. Gordon (2012) and J. Fernald (2014) studied the peculiarities of USA development; P. Petrakis, P. Kostis, D. Valsamis (2013) – EU; J. Heller, J. Kluge, R. Lehmann (2014) – Germany. Clear scientific interest is caused by the works of scholars from the Baltic states and Ukraine. Thus, some issues of growth dynamics were investigated by: M. Kitsing (2016), Estonia; J. Ramanauskas (2011), Lithuania; I. Vaidere (2011), Latvia; N. Davydenko (2015), O. Kyrylenko (2013), E. Libanova (2012, 2015), Y. Pasichnyk (2016), Y. Schedrin (2017), O. Shevchuk (2015), Ukraine. The scholars in these countries analyse processes associated with the policy of governments to ensure the pace of socio-economic development, the efficiency of the use of financial resources, especially in the public sector, the response of business structures to the factors of the impact of internal and external environment, and suggest appropriate measures.

3. Analysis of the main indicators of socio-economic development

The problem of development in modern realities is sufficiently cleared both in theoretical and practical dimensions, but unpredictable globalization challenges make their adjustments to the specifics of both a country and the entire world community, as evidenced by the financial crisis of a decade ago. Taking into account that now all the experience accumulated during the evolution of mankind is being put into the concept "socio-economic development", and now there are ongoing discussions about the present essence, purpose, components, criteria, mechanisms of realization, strategic guidelines, etc. Such discrepancies can be explained by the fact that each individual country is at an appropriate stage of social development, forms its own tasks and strategy, and defines concrete mechanisms of implementation. However, it is clear now that socio-economic development must ensure qualitative changes in society as a whole, both in the production sector and in the spiritual, with the adequate formation of the country's power and welfare of the population. A set of indicators is used to estimate the level of this development. In this study, to compare development levels, we choose real GDP, general government

spending, and minimum wages. The choice of such indicators is conditioned by traditional approaches, the possibility of obtaining statistical data, the use in the practice of international organizations. Regarding real GDP as one of the main indicators, we note that not all scholars consider it the best criterion; however, it is used by all the official statistical services of countries. As a criterion, real GDP is determined in several dimensions: in absolute terms relative to national or other currencies; in relative value to the relevant period; in a comparison in a specified currency per one average resident. In addition, real GDP can be determined according to a certain methodology and also at the level of the administrative unit of a particular country. In this study, we will select real GDP, % to the previous period. The data are given in (Fig. 1).
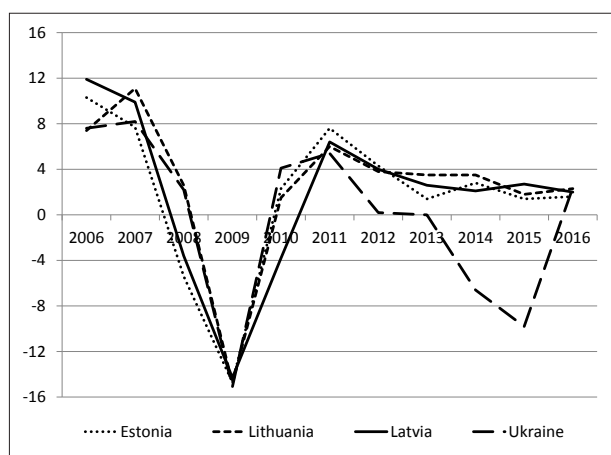
**Fig. 1. Comparative dynamics of real GDP, %
to the previous period**

Source: compiled by the authors according to the statistical services of Estonia, Lithuania, Latvia and Ukraine

The comparison of these indicators determines the real possibilities of each country to provide the corresponding rates of economic growth. A characteristic feature of all countries was a significant drop in real GDP during the financial crisis of 2008–2009. It should be noted that, in the post-crisis period, none of them succeeded in achieving the economic growth rates that countries had before the crisis. The difference in this dynamics is that the Baltic states have been relatively stable in ensuring annual development, with the exception of 2008–2009, but Ukraine had significant periods of decline, in particular, in 2009 and 2014–2015. This situation in Ukraine is explained by complex social processes that were caused by the reorientation of the priority of the European vector of development, the tense relations with Russia, the loss of a part of the territory, and the significant depreciation of the national currency – from 8 UAH for 1 USD at the end of 2013 to 27 UAH for 1 USD at the end of 2016 or more than 3 times. At the same time, these difficulties with the real GDP dynamics were overcome

in 2016, and since then Ukraine has demonstrated positive growth rates that are in line with the dynamics of the Baltic states. For a more consistent definition of the level of economic development of countries, let us compare the gross domestic product in market prices per 1 person in US dollars (Fig. 2).
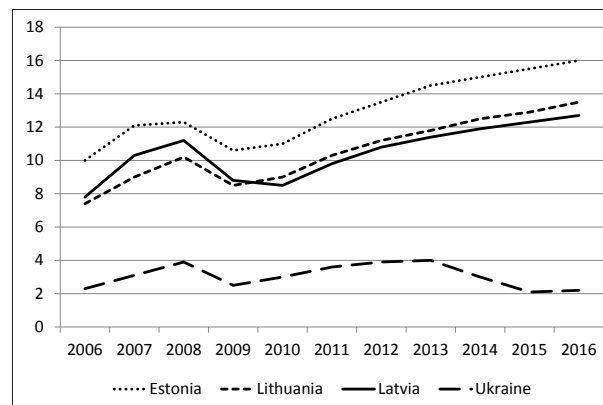
Fig. 2. Comparative dynamics of real GDP (per person, USD)

Source: compiled by the authors according to the statistical services of Estonia, Lithuania, Latvia and Ukraine

The specificity of this indicator is that it reflects real possibilities of the government of the country to provide economic growth, taking into account the population size. As for the Baltic countries, there is a tendency of the permanent growth of this indicator, except for 2009. Among all countries, Estonia leads, the last place belongs to Ukraine. It is worth pointing out that the backlog of Ukraine from other Baltic states continues to increase. The reason for this is the ineffective implementation of reforms. It is worth pointing out that the backlog of Ukraine from other Baltic states continues to increase. The reason for this is the ineffective implementation of reforms. A significant obstacle to reform in Ukraine is a series of social problems in the political, demographic, and legal spheres, which are difficult to overcome. According to provisions of the theory of economic development, the dynamics of this development is formed under the influence of many components – external and internal factors, defined government policy, investments from different sources of financing, the international situation of financial and commodity markets, etc. The Baltic states have the opportunity to use certain advantages of EU membership, which Ukraine cannot realize, even taking into account the existence of relevant economic agreements with the EU.

From the components that shape the dynamics of economic growth, we choose general government spending, which can be considered as a conditional value of the resource of social development. In total, general government expenditures consist of certain financial resources of central, state and local government bodies, as well as special social insurance funds. This indicator can have different methods of definition, which determines the diversity of approaches of individual

countries to the provision of public goods and services, as well as certain types of social assistance. According to international practice, it can be measured in USD in percent of GDP or per capita. In this study, we make an estimate in % of GDP. Data are given in (Fig. 3).
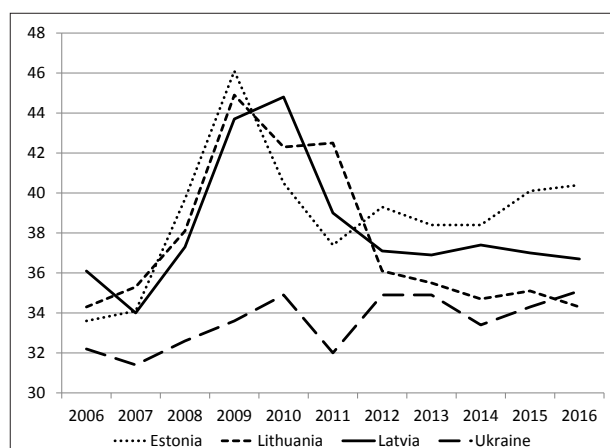
Fig. 3. General government spending, % of GDP

Source: compiled by the authors according to the statistical services of Estonia, Lithuania, Latvia and Ukraine

Analysing the level of these expenditures, we conclude that they have a wide range of fluctuations – both by years and by country. In the period of the financial crisis, all countries experienced their growth, which was the consequence of government actions in support of the poor, in particular on social benefits. Ukraine had the lowest level of these expenditures for almost all of the year, despite annual external and internal borrowings of 2-3 billion USD. In this context, we put forward the opinion of B. Danylyshyn (2018), who noted that Ukraine could gain a lot in terms of state stimulation of economic growth from the works of J.M. Keynes and his contemporaries devoted to the events of the Great Depression. But instead, the so-called "agents model", especially the model of "rational agents", became very popular. This type of modelling suggests that government intervention can be both a cause of the crisis and a reason for a slow post-crisis recovery of the economy. Following this popular logic in Ukraine, budget stimulation of the economy is also a form of state policy that cannot bring anything good. But everything is not as clear as the supporters of this point present, who on its rationale give a whole list of arguments with links to popular scholars. Here is the borrowed idea of the famous economist D. Ricardo, according to whom the public, knowing that additional budgetary spending will lead to higher taxes in the future, is already beginning to reduce its costs, saving money for the future. Here is also the opinion of contemporary American economists K. Rogoff and K. Reinhart that the growth of the economy begins to slow down in the country, which public debt is 90% of GDP and above.

Also, an important indicator of development is minimum wages. The role of this criterion lies in the ability of the state to establish the most acceptable lower pay limit for work. Let us match these limits (Fig. 4).
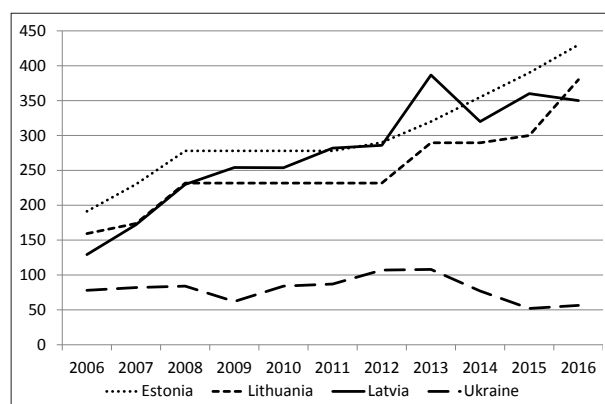
Fig. 4. Minimum wages, EUR/month

Source: compiled by the authors according to the statistical services of Estonia, Lithuania, Latvia and Ukraine

Comparison of these levels revealed significant differences in the real financial capacity of each country to ensure minimum social standards. So, if the Baltic states significantly increased this level for the analysed period more than twice, then in Ukraine it even decreased. As for Ukraine, it is worth taking into account the depreciation of the national currency in 2014–2016 more than twice.

Comparison of the analysed indicators revealed the corresponding differences in the dynamics of the basic criteria of socio-economic development.

4. Detection of the impact of minimum wages and general government spending on real GDP in view of four countries

To determine the impact of minimum wages and general government spending on real GDP in these four countries, let us perform a correlation-regression analysis based on data for 2006–2016. The period of time – eleven years – is sufficient to obtain reliable results of the study. The calculations will be performed using the Excel software. The influence of minimum wages and general government spending on the rate of formation of real GDP will be determined by means of correlation-regression analysis using data from Fig. 1, 3-4. The results are shown in Fig. 5.

It is found that the greatest influence of minimum wages on real GDP is recorded in Ukraine (the determination coefficient – 0.1862); in the Baltic countries, this effect is almost not felt. Changes in public spending have the largest impact on GDP dynamics in Estonia (79.55% of cases), and the smallest – in Ukraine (12.9%). The results of this part of the study confirm the well-known multiplier effect of J. Keynes. As for Ukraine, the share of general government spending directed to economic
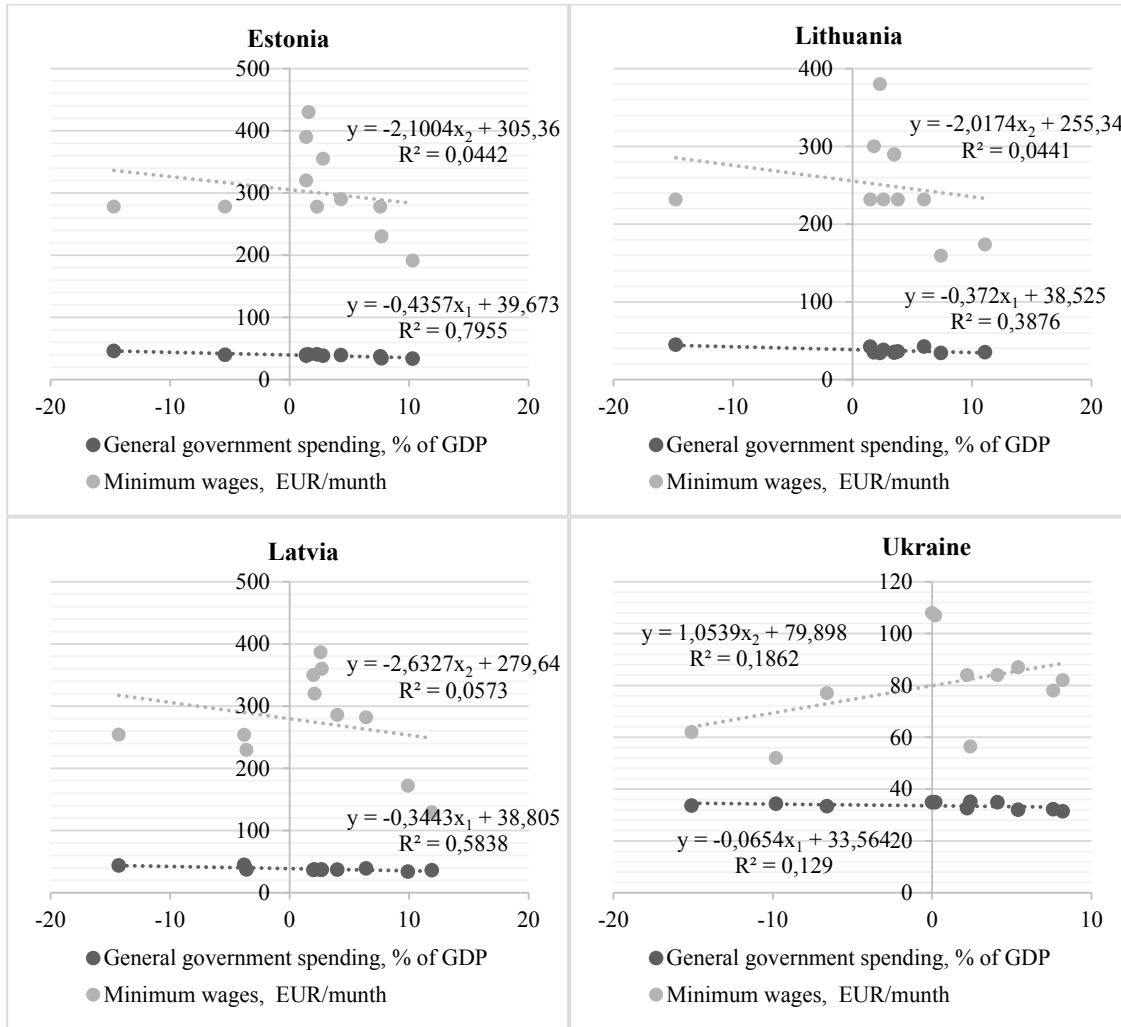
Fig. 5. The influence of general government spending and minimum wages on real GDP

Source: calculations by the authors according to the statistical services of Estonia, Lithuania, Latvia and Ukraine

development, in particular, economic programs, does not exceed 10%, which is insufficient and thus does not contribute to economic growth.

The coefficient of multiple correlation (R), which characterizes the tightness of the relationship between real GDP and general government and minimum wages, will be calculated according to the formula:

$$R = \sqrt{1 - \frac{{}^{\Delta}r}{{}^{\Delta}r_{11}}} \qquad (1)$$

where: Δr – determinant of the matrix of pair correlation coefficients;

$\Delta r11$ – determinant of inter-factor correlation matrix

After completing the calculations, we get the following values for each country:

Estonia: $R = \sqrt{1 - \frac{0.136}{0.814}} = 0.9126$ (2)

Lithuania: $R = \sqrt{1 - \frac{0.449}{0.943}} = 0.724$ (3)

Latvia: $R = \sqrt{1 - \frac{0.374}{0.998}} = 0.7907$ (4)

Ukraine: $R = \sqrt{1 - \frac{0.677}{1}} = 0.5677$ (5)

Analysing these values, we conclude that the relationship between real GDP and general government and minimum wages is the tightest in Estonia and the least tight one – in Ukraine.

5. Conclusions

The identification of the peculiarities of socio-economic development in the Baltic states and Ukraine allows forming strategic and current vectors of the development of economies of these countries. Analysis of the dynamics of development according to the criteria of real GDP, general government spending, and minimum wages contributed to the identification

of significant differences between these countries. The use of economic and analytical apparatus on the dynamics of real GDP demonstrated the impact of relevant indicators on GDP. As a result of the study, peculiarities of this development are identified in terms of countries and specific indicators. The following main results are obtained: according to the GDP dynamics – during the period of the financial crisis, namely in 2009, all countries had a significant decline in GDP – up to 15% compared to 2008, which in general testifies insufficient sustainability to globalization challenges. In addition, the GDP rates of all countries for the period of 2010–2016 are much lower than those that were in 2006–2008. For Ukraine in the period of 2006–2016, these rates were significantly lower, which is evidence of problems in the field of public finance security. The comparative dynamics of real GDP per capita confirmed the least stability of the financial system of Ukraine to external challenges, where this indicator is smaller than that of the Baltic countries, approximately three times. According to the indicator of General Government Spending, % of GDP per capita, it is revealed that the Baltic states had comparable criteria before the world financial crisis, which were determined within the limits of 32-46%, and in Ukraine it was within the range of 31-35%. After the financial crisis, none of these countries reached the pre-crisis level, and this indicator in the Baltic states for 2010–2016 ranged from 35 to 40%, and in Ukraine – from 32 to 35%. The revealed dynamics is evidence of the influence of negative external and internal factors that were failed to properly neutralize.

Concerning minimum wages, it is concluded that economically developed countries of the world attach significant importance to the permanent increase of this indicator, which has an important social significance, and all countries are trying to increase it. Thus, in the Baltic countries, for the analysed period, it has increased more than three times. In Ukraine, this figure has decreased, which was determined both by the global financial crisis and the depreciation of the domestic currency in the period of 2014–2016 more than three times.

In view of the significant decrease in the indicators of socio-economic development of Ukraine in comparison with the Baltic states, it is recommended to implement the following measures of the strategic direction: to generalize the existing normative legal documents of strategic content and to form a new strategy of social development for a period of up to 20 years based on a scientifically grounded paradigm; within the framework of the developed strategy, to formulate appropriate development programs in view of sectors and regions for the short-term; as a basis for development, choose an innovative vector focusing on universal human values. The implementation of these measures will contribute to raising the pace of social development, which is now a topical national task for Ukraine. Identifying the features of development, both for the Baltic states and for Ukraine, is an urgent socially important task, therefore, it is expedient to continue scientific research in this direction.

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EVALUATION METHODS OF INVESTMENT ATTRACTIVENESS OF UKRAINIAN AGRICULTURAL ENTERPRISES

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Abstract. The purpose of the article is to reveal scientific approaches to determining investment attractiveness of enterprises. Evaluation methods of investment attractiveness of enterprises, which are based on various expert assessments, on statistical information, and also combined methodologies based on expert and statistical calculations are investigated. Decision-making criteria on the appropriateness of investment are determined. *Methodology*. To determine investment attractiveness of agrarian enterprise on the basis of rating and analytical assessment, it is necessary to use an integrated approach and take into account certain set of indicators. During developing and organizing rating restrictions, we conducted an analysis of groups of indicators, which combined characterize investment attractiveness in a complex way, taking into account specifics of the industry. *Results*. Application of this approach allows quickly evaluating perspectives of funds investing and the reliability of the investment object. At the same time, the investment potential of company and investment risk are expressed by one general indicator, which allows applying rating comparisons. In order to approbate research results, seven agrarian enterprises with positive profitability and appropriate level of financial autonomy are selected. Based on financial statements, we determined their investment attractiveness and rating. *Practical implications*. Proposed calculation methodology covers all major processes occurring in different functional sectors of the internal environment of agrarian enterprise, which ensures a systematic view of the subject of management, which enables to identify all the strengths and weaknesses, as well as to create a strategy for prospective development on this basis. Presented methodology for the evaluation of investment attractiveness of enterprises can be successfully applied in agrarian enterprises as during the choice of priority directions of investment investments, as well as for operating current costs, technologies, etc. Applying in practice the abovementioned recommendations will increase the objectivity of evaluation of investment attractiveness, will increase the flow of necessary funds to the company.

Key words: investment attractiveness, methods of analysis, rating and analytical valuation, agrarian enterprises.

JEL Classification: Q14, M21, R30

1. Introduction

In conditions of investment resources deficit and further high risk of investment activity in the agricultural production of Ukraine, information on the level of investment attractiveness of potential consumer of investments is important for potential investors. The necessity to study investment attractiveness, create conditions for its growth, and develop a mechanism for attracting investment into enterprises of agricultural sector determines the relevance of our research.

A detailed analysis of literary sources suggests that the overwhelming majority of key theoretical considerations for the evaluation of investment attractiveness have been developed quite thoroughly. However, traditionally, investment attractiveness of enterprise is considered as a function of its financial condition. Insufficient attention is paid to factors such as investment and innovation potential, economic growth, and competitive positions in the market. Calculations are mainly limited to retrospective analysis, which highlights the situation that occurred in the previous period.

Investment attractiveness plays an important role in activating investment processes. Its role lies in the fact that potential investors need to be convinced in the expediency of investments with help of concrete indicators.

Today, the issue of developing a methodology and improving methods of evaluating investment attractiveness of agrarian enterprise becomes relevant. Investment attractiveness of agrarian enterprise is multilevel integrated characteristic.

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At the present stage in economic literature, notion of essence and analysis of the main approaches to the valuation of investment attractiveness were considered in a number of works by well-known domestic and foreign researchers, in particular, I. O. Blank, F.V. Bandurin, S. A. Butkevych, I. M. Vahovych, F. P. Gayduksky, T. V. Majorova, S. S. Chernysh, T. A. Cherniavska, O. M. Yastremska.

However, it should be noted that, despite numerous publications, there is still no single point of view on methodological approaches to analysis and evaluation of investment attractiveness, which indicates the need for further research in this direction.

2. Problem statement

Nowadays one of the important issues is an improvement of methodological approaches to determining investment attractiveness of agrarian enterprises taking into account sectoral features and developing an active mechanism for attractiveness evaluation of investment object. The relevance of this issue is conditioned, first of all, to the fact that in modern conditions of management, the majority of agrarian enterprises need to attract additional investment resources for pursuing activities. And investor, in turn, should identify the potential object for investing resources and focus on investment attractiveness of enterprise.

The purpose of the paper is to open up and develop methodological approaches to improve evaluation of investment attractiveness of agrarian enterprises on the basis of rating approach, taking into account sectoral peculiarities.

3. Methods of analysis of investment attractiveness of enterprise

Estimation of investment attractiveness of enterprise is carried out directly in a number of methods developed by ministries (departments), National Bank of Ukraine and commercial banks. The basis of such methodological approaches has been laid since 1998 by Agency for Prevention of Bankruptcy of Enterprises and State Tax Administration of Ukraine.

At the legislative level, on the initiative of Agency for Prevention of Bankruptcy of Enterprises and Organizations, Methodology for Integral Assessment of the Investment Attractiveness of Enterprises and Organizations has been developed. This Methodology is developed in accordance with the Law of Ukraine "On Investment Activity", Decree of President of Ukraine "On Establishment of Agency for Prevention of Bankruptcy of Enterprises and Organizations" and Regulation on Register of Insolvent Enterprises and Organizations with view to defining integral indicator of investment attractiveness of enterprises and organizations, accelerating implementation of

investment projects, promotion of domestic and foreign entrepreneurs' investments, provision of methodical assistance to specialists involved in creation measures for sanitation of production sector.

According to Methodology, investment attractiveness of enterprise is level of satisfaction of financial, industrial, organizational and other requirements or interests of an investor with respect to a particular enterprise, which can be determined or evaluated by values of relevant indicators, including integral assessment (Methodology, 1998).

At the stage of enterprise creation, investment attractiveness affects model of future work of enterprise, on basis of which it is possible to predict advantages and opportunities of strategic investment management in the long run, as well as to insure against risks both at decision-making level about profitability or unprofitability of investment, and risk inadequate reaction of subjects of investment planning and their expectations (Ponomarenko and others, 2003).

O.M. Yastremskaya claims that investment attractiveness is determined by using methods of multi-factor analysis to identify explicit and implicit tendencies in their use in the first stage, and regression analysis based on the genetic algorithm in the second stage (Yastremskaya, 2004).

Investment attractiveness of enterprise is set of characteristics of its financial, economic and managerial activity, prospects of development and possibility of investment resources attracting. Evaluation of investment attractiveness of enterprise is integral characteristic of its internal environment (Borsch, Gerasimova, 2007).

The essence of the methodology of integrated assessment of investment attractiveness is carried out in analysis conducting at following stages:
1) assessment of the financial condition of investment object;
2) determining the importance of group and individual indicators based on expert assessments;
3) determination of the fraction of the scale of variation set;
4) definition of ranked value for each indicator;
5) investment attractiveness integral indicator calculation (Methodology, 1998).

It should be noted that this methodology has its disadvantages; in particular, it does not take into account inter-industry specifics enterprises activity. Also, a financial analysis of investment attractiveness of an enterprise according to this methodology is rather cumbersome since it involves the calculation of more than forty indicators in terms of business activities of the enterprise. Obtained results require the processing and synthesis to determine more significant indicators, which involves experts (which entails additional costs).

However, I. Bakhovych notes that definition of integral indicator and assessment of investment

attractiveness of enterprise should be carried out at the level of a separate region in order to identify the most investment-attractive enterprises of the region. This, in turn, will allow the attraction of foreign investors and stimulate domestic investment in the designation of enterprise (Vakhovych, 2014).

Theory of financial analysis uses a large number of techniques to determine investment attractiveness of enterprises. All developed in domestic and world practice methods of evaluation of investment attractiveness in relation to the source of information can be divided into three broad groups:
1) methods based on various expert assessments;
2) methods based on the statistical information;
3) combined methods based on expert and statistical calculations (Pylypenko, 2010).

In the economic literature, I. O. Blank considers investment attractiveness from the point of view of financial position of company as "integral characteristic of individual firms – objects of possible investment from the perspective of development, volumes and prospects of product sales, efficiency of asset utilization, their liquidity, solvency and financial sustainability" (Blank, 2001).

In turn, A. Gaiducky proposes to use the method of comparisons, which should cover the following main components of investment process: comparison between investment objects, between subjects of investment (investors), and between investment conditions (factors of investment attractiveness) (Gaiduckiy, 2004).

Objective, expedient, and competitive system of appraisal indicators of investment attractiveness, as noted by S. S. Chernysh, should take into account the following conditions:
1) a limited number of indicative indicators directly affecting investment decision-making;
2) use in calculation of indicators of public accounting and statistical reporting data, minimizing the use of internal information;
3) the possibility of carrying out a rating assessment of company's activities in relation to other economic entities, as well as in time (Chernysh, 2013).

Consequently, existing methods of determining the level of investment attractiveness not always meet investor's objective and sufficient for decision-making information. Therefore, there arises issue towards the creation of a unified system of evaluation indicators, which would allow conducting an objective and comprehensive analysis of enterprises' investment attractiveness in the framework of the chosen mathematical toolkit.

In our opinion, in order to fully assess investment attractiveness of enterprise, quantitative and qualitative assessment of characteristics of enterprise should be taken into account: capital structure, liquidity and solvency of the enterprise, transparency of senior management's activities, and level of liability to investors, the nature of conflicts of corporate interests, and enterprise's business reputation.

4. Research methodology

For Ukraine in the difficult period of crisis state of the economic system, solution to the question of increasing the investment potential means creating mutually beneficial conditions for the placement of financial resources of investment entities that form a comprehensive basis for recreating the economic and social spheres of region's life.

One of the methods for assessing investment attractiveness is a rating of the issuer. This methodology is based on analysis of financial reporting data. This method involves assessing company's financial condition by calculating such indicators: liquidity, solvency, financial stability, business activity, insolvency and probability of bankruptcy (Gotra, 2017). After calculation, these indicators of the enterprise are compared with each other and investor chooses the most optimal one from his point of view for investing.

In turn, Y. V. Skrypnyk, in order to determine investment attractiveness of agrarian enterprise on the basis of scoring, uses an integrated approach, takes into account certain set of indicators. In developing and organizing rating constraints, the author analysed four groups of indicators, which combined characterize investment attractiveness in a complex way, taking into account the specifics of the industry (Skrypnyk, 2016). According to this points' method, we will analyse 7 agrarian enterprises (Table 1) where is investment attractiveness of a number of points evaluated as follows: 4 – attractive zone, 3 – satisfactory, 2 – acceptable, 1 – risky, 0 – absolutely risky.

Analysing the indicators of Table 1, we note that of seven companies, four are located in an attractive zone. Two enterprises – PAE "Avangard" and ALLC "Luchansk-2" are in the satisfactory zone and only one enterprise – LLC "Urozhaina Ukraina" – in acceptable zone.

Thus, a proposed list of indicators makes it possible to take into account such important components of investment attractiveness of agrarian enterprise as resource productivity and business activity, quality of labour force, financial stability, opportunities for the economic growth and efficiency of economic activity. In addition, the lack of value measures makes this technique independent from the impact of inflation, which allows using it for the analysis of time trends.

The next step is rating assessment of the financial condition of agrarian enterprises for investment attractiveness (Table 2).

According to the calculations, APC "Labunsky" is identified as the most investment-attractive enterprise and the least attractive for investments – LLC "Luchanske-2". The most significant indicators are considered such as profitability and efficiency of assets

Table 1
Investment attractiveness points evaluation of agrarian enterprises of Ukraine, 2016

Indicator	Attractive zone	Enterprise						
		APC "Labunsky"	LLC "Agro-Leader-Ukraine"	LLC "Maslivske"	LLC "Urozhaina Ukraina"	LLC "TAK-AGRO"	PAE "Avangard"	ALLC "Lychanske – 2"
Coefficient of fixed assets depreciation	<20%	0,55	0,39	0,34	0,20	0,26	0,32	0,63
Return on capital of main funds	> 0,8	24,1	1,69	13,2	27,5	1,14	2,52	1,09
Return on equity	>0,4	0,7	0,94	1,91	0,90	1,36	1,53	2,07
Turnover of current assets	>2	0,6	0,81	1,53	0,56	0,80	1,21	0,79
Absolute liquidity ratio	>0,2	0,15	0,65	2,2	0,005	0,001	0,12	0,21
Current liquidity ratio (coverage)	>2	17,42	17,43	6,9	1,96	2,18	2,90	1,46
Coefficient of financial independence (autonomy)	>0,6	0,97	0,92	0,86	0,55	0,63	0,84	0,34
Return on basic activity	>25%	14,2	24,06	37,7	0,4	28,79	20,76	21,8
Return on assets	>15%	22,6	26,24	55,8	0,7	48,90	26,41	38,65
Return on sales	>20%	23,9	32,08	29,2	0,4	35,98	17,22	18,60
Points		4	4	4	2	4	3	3

Calculated by the authors on the basis of financial statements of enterprises

Table 2
Rating estimation of investment attractiveness of agrarian enterprises of Ukraine, 2016

Indicator	Enterprise						
	APC "Labunsky"	LLC "Agro-Leader-Ukraine"	LLC "Maslivske"	LLC "Urozhaina Ukraina"	LLC "TAK-AGRO"	PAE "Avangard"	ALLC "Lychanske-2"
Financial dependence	1,03	1,09	1,16	0,45	1,59	1,19	2,9
Current liquidity	17,42	17,43	6,9	1,96	2,18	2,9	1,46
Liquid ratio	3,67	18,39	6,4	1,08	1,54	1,27	0,6
Absolute liquid ratio	0,149	0,65	2,2	0,005	0,001	0,12	0,21
Return on assets	14,2	0,24	0,37	0,4	0,29	0,21	0,2
Return on equity	12, 0	0,26	0,55	0,7	0,49	0,26	0,39
Efficiency of assets utilization for production (revenue/assets)	0,6	0,75	1,3	1,2	0,67	1,21	0,6
Place in the ranking	1	2	3	4	5	6	7

Calculated by the authors on the basis of financial statements of enterprises

utilization, which determine how quickly invested funds will return to investor and what income he will receive. Abovementioned calculations indicate that financial condition of the majority of agrarian enterprises is satisfactory, since the bigger part of business activities is financed by own working capital, and these enterprises have satisfactory profitability indicators.

5. Findings

In order to determine real investment attractiveness of agrarian enterprise, it is necessary to evaluate its complexity taking into account production and financial potential, as well as the potential of business activity and production efficiency. Such approach can be fully implemented in both inflationary and stable economy.

Investment attractiveness plays an important role in activation of investment processes. In the conditions of limited resources and intense competition between enterprises for obtaining financial resources, arises the issue regarding creation in investors of the idea of enterprise as attractive investment object – formation of investment attractiveness. The role of determining investment attractiveness of enterprises lies in the fact that potential investors need to convince expediency of investments with specific indicators.

6. Conclusions

Methodological approaches of different authors have some disadvantages, especially they do not take into account industry specifics of enterprise, are based

on cumbersome multifactorial models, narrowing the range of analytical assessment. Hence, there is a need to develop rating generalization indicator that would enable to quickly and objectively evaluate investment attractiveness of enterprise and to select from its certain number of most reliable potential investment objects.

Proposed calculation methods cover all the major processes occurring in different functional sectors of the internal environment of agrarian enterprise, which ensures a systematic view of the enterprise, which enables to identify all the strengths and weaknesses, as well as to create a strategy for the prospective development on this basis.

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NET STRUCTURE OF SUBJECT-TO-SUBJECT RELATIONS IN THE MANAGEMENT OF THE SYSTEM OF ADMINISTRATIVE SERVICES PROVISION

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Abstract. The *purpose* of the work is to form the net structure of management of the system of administrative services provision on the basis of implementation of subject-to-subject interactions between state sector and civil society. *Methodology*. The methodology basis for the investigation is the abstract-logical analysis of theoretical and methodological backgrounds for management of relations and interactions. For the theoretical generalization and formation of net structure, there are used scientific recommendations of Ukrainian scientists regarding the necessity to implement subject-to-subject relations in the system of administrative services provision. *Results*. The investigations allowed confirming that the hierarchical structure of the state governance system does not give an opportunity to implement equal interaction between a subject of provision and a subject of an appeal as these relations have one – way communication and the feedback channel has a formal character. Moreover, the civil society is not considered by state sector to be a source of methods and ways to develop the system of state governance, in particular, the management system of administrative services provision. *Practical meaning*. The net structure of management will allow implementing the subject-subject relations in the system, under which the actions of the subject of provision – that means state sector – will be directed to the realization of rights and interests of the subjects of appeal. In their turn, apart from the performance of all legislative responsibilities that they should perform, they can carry out activities directed to the development of management activity in the system of administrative services provision and the whole system of state governance as an integral system of management. *Meaning/Distinction*. The provided model of the net structure will allow involving citizens in the processes of state governance and increasing the impact of the civil sector during the making of state and management decisions and, as a result, to confirm subject-to-subject positions in the relations.

Key words: management, system, net management, hierarchical management, subject of provision, subject of appeal.

JEL Classification: H70, H73, H79

1. Introduction

During the last twenty years, Ukrainian independent state is trying to form high-quality, clear, effective, decentralized management of the system of providing administrative services. However, the necessity of building powerful interrelations between the civilian sector and the state sector stipulates the search for such a management model that would, on the one hand, correspond with the spirit of modernity, on the other hand – would not destroy the unity of three principles of the native system of state administration – permanence, anonymousness, and neutrality (Mohov,

Oujen, 2000). Therefore, we consider that an attempt to interpret, sift, and analyse the specificity of the network structure of the management of the system of providing administrative services and the process of interaction between the "subject of applying" and the "subject of providing" through the category "subject-subject relations" is relevant and has a certain potential of scientific novelty and innovative recommendations for their improvement. The necessity of the above is reflected in domestic studies of the mechanisms of state administration (Nyzhnyk, Lelikov, Mosov, 2001), in which it is emphasized that this is "... the relationship

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between two interconnected processes, when the first of them is a general one, and the second is specific, intended to realize the first…"

2. The hierarchical structure of subject-object relations

The existence of systems with different patterns of construction, functioning and developing under different conditions, varying in the degree of structure ordering and depth of cognition (Nechiporenko, 1977) led to an impressive number of definitions of the term "system".

In the encyclopaedia of state administration (Surmin, Nadolishnii, 2011) "system" is considered as a set of elements, characterized by the structure, connections and functions that ensure its intentional development as a whole. System is the opposite of chaos, disorder, disorganization; is characterized by such features as aggregate, plural number, integrity, orderliness, organization, hierarchy; is a combined set of elements (subsystems), which are expectedly connected with each other and with the objects of the environment; has different scales (micro-, macro-, meta-, mega-system), degree of complexity (simple, complex), nature (social, technical, physical, biological, chemical), openness form (open, closed), origin (artificial, natural), organization and adaptability; it is a complex of megasystems, subsystems, elements, components and their properties, the interaction between which predetermines the appearance of a qualitatively new integrity (Mochernyi, 2006).

Summarizing the abovementioned definitions, should be noted the lack of a universally recognized scientific approach to the definition of the term "system" and the presence in the existing interpretations of similarities, the main features in its definition, which must be taken into account in the course of the research, namely: system is a process of interaction of its interconnected components between each other and with the environment; system has a certain goal – the achievement of a qualitatively new state, level of integrity, and so on; system is characterized by structural elements (public institutions, people, subsystems, etc.) and management processes that are aimed at increasing the level of orderliness, organization of these elements and interaction with socio-economic, political, and other systems.

Considering the dichotomous nature of the concept of the term "system", on the one hand, as an indicator of the reality of existing phenomena, on the other hand, as a method of studying and objectifying of phenomena, that is, as a subjective model of reality (Korikov, Pavlov, 2008), in our study the most decentish is the approach of N. Buslenko (1978), which lies in identifying the main characteristics that define a certain component as a system. To such characteristics, in particular, refer:

– presence of a certain amount of interconnected subsystems, functions that they realize, and directions for achieving specified goals of functioning;
– permissibility of system dismembering into subsystems, functioning of which is aimed at the realization of the system goal;
– obligatory presence of: management, extensive information network, dynamic information flows;
– interaction with the environment under all conditions.

The system of providing administrative services consists of the state sector, which includes the providers of administrative services, those are, as a rule, executive authorities, and non-state sector – the recipients of administrative service, those are individuals and legal entities. Taking into account the provisions of the Law (Pro administratyvni poslugy, 2012), regulating the sphere of providing administrative services, which determinates the provider as a "subject of providing" and the recipient – as a "subject of applying", thereby puts in the structure of the system of providing administrative services "subject-subject relations".

Supporters of the integration of the "feedback" defend the reasonability of organization of such relations between the elements of the socio-economic system (Petrenko, Dzvinchuk, Nemchuk, 2012), however, studies of this phenomenon in the system of providing administrative services are limited to subject-object relations, that is, on a unilateral basis, in which: the subject of management or the management system is the subject of providing, that is, the state administrative authority, the subdivision of administrative authority or the designated person, suggesting and accepting state and administrative decisions concerning the implementation of the controlled impact on subordinate objects of management or regulation of certain processes and relationships. And the object of management or a managed system is the subject of applying, that is, a society as a whole, processes, relations in various fields, spheres of activity, branches of public life, organizations, associations on which the activities of the relevant subjects of management are directed; a set of connections of a system of management relations in their interaction.

According to the Constitution of Ukraine (2016), there are three types of authorities, directly providing state administration and state-management activity aimed at providing administrative services:
- central – Verkhovna Rada of Ukraine, Cabinet of Ministers of Ukraine, ministries and institutions, the status of which is considered to be state;
- zonal – regional, district, city state administrations of Kyiv and Sevastopol, Autonomous Republic of Crimea, and territorial bodies of central executive authorities;
- local – rural, settlement, city, district councils, including Kyiv and Sevastopol, Autonomous Republic of Crimea councils.

The interaction of these authorities is directed, first of all, to the realization of interaction in the system of providing administrative services of Ukraine as an activity on ensuring the realization of the rights and freedoms of citizens.

In our study, we rely on the simultaneous use of terms of state and public administration authorities depending on the subject-matter of the represented context.

The structure of the state administration of the system has a pronounced hierarchy (Figure 1), where a higher hierarchical level affects the lower level, despite the partial delegation of management functions. Relations between levels are dependent on the laws of subordination; levels are unequal and interact with each other according to the principle of "power-subordination" (Oslavskyi, 2009).

It also should be pointed out that, despite the generally widespread understanding that the process of improving the system of providing administrative services is closely connected with the opinion and attitude of subjects of applying to the activity processes of the subjects of the providing, most theoretical models, practical recommendations, and methodological developments on the formation and improvement of the system is exclusively on the subject-objective positions, and the feedback in these relations is considered exclusively as a channel for complaints and negative reviews by citizens concerning the functioning and performance of their duties by subjects.

As a rule, goals, tasks, functions, methods, levers, tools, incentives, motives, structures, and so on are chosen as a topic for the research, improvement and modernization. Thus, in writing of scientists I. Koliushko (2009) and V. Tymoshchuk (2015), the organizational and legal grounds of administrative services during the period of administrative reform are examined. The authors believe that the system of providing administrative services in Ukraine is non-clear, irrational, and is one that does not fully take into account the interests of Ukrainian society.

Scientists emphasize the need for creating an effective and high-quality procedure for providing administrative services to citizens because exactly for the quality of the provided services each person assesses the state's concern for him.

V. Bakumenko, Yu. Kalnish, S. Kravchenko, and other scientists are convinced (2005) that the main tasks of administrative reform are the formation of an effective system of public administration; the providing of quality services to citizens at a level corresponding to European standards; optimal usage of public funds and the ability to react to socio-economic and foreign policy provocation timely and adequately.

A. Obolenskyi (2005) considers as one of the main tasks of the Ukrainian state the providing quality administrative services to civil society. The scientist focuses on the need for detailed study of the statutory and legal regulating of the mechanism of state administration of the system of providing administrative services, their list, cost, criteria for assessing the quality of their providing, etc.

Researchers A. Lipentsev and Yu. Zhuk assert that the system of providing administrative services in Ukraine requires further improvement and legal response, because, first of all, it depends on the effectiveness of state administration authorities, state servants, and officials who are directly involved in the providing of administrative services (2015).

During the developing of the formation concept of the system of providing administrative services by state administration authorities in Ukraine, T. Burenko (2011) defines such principles for further improvement:
– measuring the effectiveness of the state administration authorities activity, based on the results of the developed correspondent criteria of resulting quality for each state service;
– the work of state administration authority for the needs of the subjects of applying;
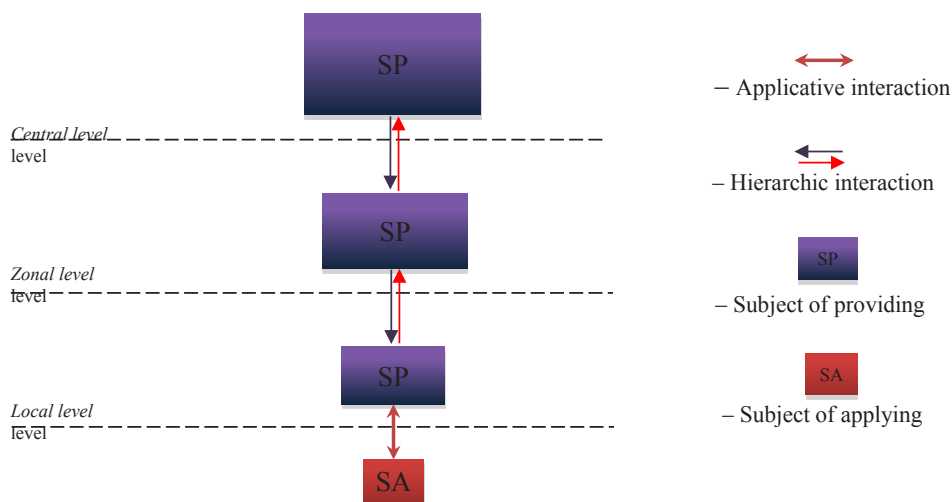

Fig. 1. The hierarchical structure of management of subject-object relations

– maximum satisfaction with legal requirements of recipients of subjects of applying at minimum costs;
– application of audit elements of activity of the state administration authorities;
– activation and consolidation of state, private and public sectors in the development and realization of policies on providing of administrative services by state administration authority.

Existing scientific researches in Ukraine reflect the content of the system of providing administrative services as a complex socio-economic system consisting of a set of elements and relationships of subject-object relations that are regulated by statutory and legal acts in the state-administration activity of the subjects of management, activity of which is aimed at satisfying the public interest in reviewing the application of an individual or legal entity and issuing an administrative act to ensure the rights and legal interests and/or to implement certain statutory duties.

3. The network structure of subject-object relations

It is quite obvious that a symmetrical model is also up for consideration, in which the subject of applying acts as a subject of management and the management system, and the subject of providing – as the object of management and the controlled system, the essence of which is to be thoroughly studied in order to identify opportunities for improving and modernizing processes of state administration, by the participation of the subject of applying in the processes of state administration and influence on the adoption of managerial decisions.

A network structure is a set of interrelated subjects, the specific content of which depends on the nature of the system. The network form allows adapting quickly to external dynamic conditions. According to the opinion of M. Castells, the society is in the dissemination of the network organizational culture, which up to now has not claimed to be the dominant role but in terms of efficiency is higher than the hierarchical one. "The networks constitute a new social morphology of our societies and the spread of "networked" logic largely affects the course and outcome of the processes associated with production, everyday life, culture, and power" (Stanovlenie obshhestva setevyh struktur).

Under this approach, not only state structures but also civil society should have a right to receive and analyse information on state-management activity, participate in the adoption of relevant decisions, and not only control their implementation and monitor the quality of administrative services but also introduce and realize proposals for improving administration activity.

Represented information demonstrates obvious that in order to have the state administration system, which corresponds to an adequate state in relation to the modern international tendencies of the information society, it is necessary to promote the rise and construction of civil society institutions that adequately ensure the clearness of the activity of state administration authorities, protect public interests and would be able to realize their rights and freedoms.

Despite its importance, the Constitution of Ukraine does not contain the definition of this term; only some of its elements are reflected, such as private property, market economy, human rights, political pluralism, freedom of speech, multiplicity of parties, etc., however, the Constitution (2016) contains the fundamental principles of "civil society", for example, Art. 8 enshrined the rule of law.

The construction of a civil society in Ukraine will allow the relationship between the subject of applying and the subject of providing to reach a new level, primarily characterized by the quality of the providing of administrative services by state administration authorities. Prominent Ukrainian scientist B. Kistiakovskyi long before the beginning of the state administration reform in Ukraine noted that "the basic component of the system of human rights and freedoms is the individual's right to positive services from the state" (1998). However, only in 2009–2010 this assertion acquires significance and becomes the fundamental principle of the modern system of state administration in Ukraine.

The paradigm of modern state administration being under reform is perfectly considered by the native scientist V. Averianov, representing it as an "integral set of coordinated measures aimed at significantly increasing the level of controllability of vital processes in society through scientifically based creation of an effective mechanism of state administration, development of administrative legislation, improvement personnel, informational-technical and financial-economic support of organization of executive government and local self-administration" (Averjanov, 2004).

From modern approaches to the content of the term "civil society" interesting are the following:
– the society of self-expression of free active citizens and on the voluntary basis of formed associations and organizations that do not pursue commercial goals, which are not dependent on direct intervention and regulation by the state sector and the business sector, as well as other external factors (Easton, 1965);
– one of the guarantors of observance of human rights, the totality of public relations of an integral state but beyond the power-state and commercial structures (Barenbojm, 2010).

Under this approach, the system of providing administrative services remains a complex socio-economic system, but consists of a set of elements and interconnections of subject-object relations, in which the activity of subjects of applying, civil society, and just interested individuals is aimed at searching for methods and ways to improve the system of state administration.

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4. Hierarchic and network structure of subject-subject relations

A quite difficult problem is the connection of elements → subsystem → system into an integrated model that would adequately describe the system functioning taking into account the interaction of its various subsystems. This is connected both with the complexity of the state administration system, system of providing administrative services and with the incomplete study of all the laws of their functioning.

The management of the system of providing administrative services, which is, on the one hand, connected by the communication channels with many other systems and is a subsystem of the state administration system, on the other hand – is itself a complex system characterized by heterogeneous infrastructure and requires a rethinking of the ways of improvement, the transformation of which leads to significant transformations in social and economic relations, which naturally affects its structure, which becomes more complex, because the network is superimposed on the hierarchical structure, forming a complex hierarchical-network structure (Fig. 2).

The complexity of the system is determined by the number of levels of system partitioning into subsystems, the uniqueness of the elements that form them, the set of functions performed by them, the number of interactions with other, multiplicity, and heterogeneity

of reactions to the influence of external and internal factors, all this indicates the relativity of the concept of complexity and blurring of the "complexity limit" (Barabási, 2007).

In this way, under a hierarchic network structure, we mean a system, in which each subsystem at a certain level is a system, in other words, a network subnet. However, the above level, except influencing the underlying level, interacts with it, by acquiring new properties from the network subnet, which they did not have in the isolated state, the possession of which allows the system to be endowed with new, significant qualities (Volkova, Denisov, 2014).

Management of the system of providing administrative services, which has a hierarchical-network structure, we consider as more difficult than hierarchical. However, such a structure is temporary, because it is considered by us, exclusively as a transitional form to the network structure of the system of providing administrative services, which assumes a simpler form than a hierarchical.

5. The network structure of subject-subject relations

The key factor in the availability of subject-subject relations in management (Figure 3) is the receipt from civil society of not only the quality requirements of

Fig. 2. Hierarchic and network structure of subject-subject relations

Central level
level

SP — Subject of providing

SA — Subject of applying

C — Citizen

CS — Civil society

◄┄┄► — Network interinstitutional interaction

◄·► — Collaborative interaction

◄——► — Applicative interaction

◄---► — Network interaction of citizens

◄·⇒ — Stakeholders interaction

Fig. 3. The network structure of subject-subject relations in the management of the system of providing administrative services

management processes, the quality of providing administrative services, information as responses to subjects of treatment, participation in voting, but also knowledge and opportunities to implement ways to improve the management of the system of providing administrative services.

An attempt to reveal the content of the process of interrelations between the "subject of applying" and the "subject of providing" was made by D. Sukhinin. However, the proposed scheme interpretation of "... the process of ensuring the quality of activity for the providing of municipal services", which took into account the requirements of the "methodology for describing processes IDEFO" (Popov, 2011), despite the importance and general character, does not reveal the essence of the process itself. The scheme of the researcher, like in most domestic studies of various possibilities and aspects of improving public administration, "subject-subject relations" uses a theoretical axiom as a defined givenness.

Taking into account that subject-subject relations will allow the system to determine "... deviations of the system from a certain state for the formation of a control action" (Hlushkov, 1973), but "... the existence of channels for the receiving by the authorities information about the assessment of certain aspects of its activities by the population, public organizations, business circles, other government structures" (Kovalevich, 2008), makes it possible to assert that the participation of citizens in

the processes of state administration and the influence on the adoption of managerial decisions will allow the processes of self-organization, self-regulation, and self-management in social systems to become possible.

Exactly in this regard, the formation of the network structure of subject-subject relations in management is the priority task of any participant and subjects of the system of providing administrative services. After all, "... the system of state administration is integral, consisting of certain interconnected subsystems, a set of elements that form a certain unity, integrity, and function in the interrelations and interconnections among themselves" (Bakumenko, Beznosenko, Varzar, Knjazev, Kravchenko, Shtyk, 2002).

6. Conclusions

The current state of management of the system of providing administrative services is analysed and it is determined that most of the domestic scientific research is devoted to the study of subject-object relations, despite the fact that the system of providing administrative services has a subject-subject structure, and management can be viewed in a symmetrical direction. Taking into consideration that the system of state administration is a coherent system, it is proposed to implement the network structure of subject-subject relations, in which the result of interaction, on the one hand, will be activity aimed directly at the providing

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administrative services and all the processes associated with this activity, namely, ensuring quality, transparency etc., on the other hand – activity aimed at improving the system of state administration. It is quite obvious and logical that the further direction of our research should be the tasks of developing recommendations and their practical implementation in state and management activities.

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ADAPTATION OF DOMESTIC STATE GOVERNANCE
TO INTERNATIONAL GOVERNANCE MODELS

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Abstract. *The purpose* of the article is to provide the evolving international trends of modern management models and authorial vision of model of state governance system in Ukraine, its subsystems, in particular, the system of provision of administrative services that is appropriate for the contemporary times. *Methodology*. On the basis of scientific and theoretical approaches to the definitions of terms "state governance" and "public governance", there was an explanation of considerable difference between them and, taking into consideration, the mentality of Ukrainian society and peculiar weak side in self-organization, the authors offered to form authorial model of governance on the basis of historically traditional for Ukraine model of state governance and to add some elements of management concepts that proved their significance, efficiency and priority in practice. *Results*. The authors emphasized the following two prevailing modern management models in the international practice: "new state management" and "good governance". The first concept offered for consideration served as a basis for the semantic content of state activity that reflects more the state of administrative reformation. *Practical meaning*. A practical introduction of management to the domestic model of governance creates the range of contradictions that do not allow implementing herein concept. Pursuant to authors, the second one allows in considerable measure to reform state governance, considering historically developed peculiarities of this model. Moreover, the involvement of concept herein into introduction of informational and communicational technologies in the process of governance eliminates the necessity of power decentralization, it allows to form real net structure and, at the same, to keep vertical power structure, to involve citizens for formation and taking of management decisions, to form electronic communicational channel of feedback, to provide citizens with electronic administrative services. All indicated advantages of the concept certify about the necessity to reform state governance exactly in this field. *Meaning/Distinction*. This article raises a question about the significance of formation and sequence of state policy in Ukraine aimed at creating an information-oriented society, space, as well as informational and technological infrastructure.

Key words: public management, state governance, state management, model of governance, model of management, domestic state.

JEL Classification: H70, H79

1. Introduction

The process of European integration of Ukraine causes the necessity to conduct scientific researches directed to the studying of issues connected with the reformation of state governance, adaptation to the specific European state governance trends, and bringing to conformity a domestic model of governance to the requirements and standards of European Union. Thus, it is obvious that there is a necessity to conduct researches in order to define ways of state governance reformation in Ukraine under the modern conditions of development.

The issues of theory, practice and challenging issues of reformation of governance in Ukraine within the framework of European integration have been studied by such national scientists as V. Averianov, V. Bakumenko, S. Varnalii, V. Vorotin, V. Holub, S. Dubenko, V. Kniazev, B. Kravchenko, H. Nemyria, N. Nizhnik, V. Oluiko, Y. Surmin, A. Tkachuk, A. Chemeris.

Despite a significant quantity of works under this topic, the problematic of following notions and terms interpretation, such as state governance, public governance and management in the state governance is still not enough analysed and they are still of vital

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importance. There is also a challenging issue of governance model formation that corresponds to the modern times, taking into consideration the possibilities of information-oriented society.

The modern state of domestic state governance requires analysis of international trends of development and reformation of the state governance, a comprehension of subject-matter, and peculiarities of dominant models of governance.

During last decades, the broad audience of Ukrainian scientists and researchers hold fierce discussions regarding the bureaucratic model of "state governance" that is considered to be inappropriate to the modern times due to the opinion of the overwhelming majority. One of the modern conceptions of the state governance is a "new public management", which supporters fight their corner of changing the state governance with a state management as its domestic state is being associated only with excessive concentration of power, hierarchical pattern, standard overregulation that is now improper within the framework of conduction of administrative reforms aimed at the implementation of the model of public governance and restriction of the role of state sector (Bovaird, Loffler, 2003). The second modern conception of the state governance is "good governance" that dominates the first one and represents a more modern variety of streams for development due to the opinion of the authors.

Taking into consideration the abovementioned, the issue of formation of te model of the state governance that corresponds to international standards assumes a significant importance. The unsettled abovementioned issue makes actual a necessity to conduct researches within the framework of the article.

The purpose of this research is a formation of the authorial model of state governance on the basis of two modern management concepts. In order to achieve this purpose, there were set the following tasks: 1) to analyse the available theoretical approaches in the scientific literature to the determination of definitions of "state governance", "public governance" and management in "state governance"; 2) to create an authorial model of state governance on the basis of positive aspects of modern management concepts and to offer the ways for the development of national model of state governance.

2. Theoretical approaches to the determination of definitions of state and public governance

During the last seven centuries, from the moment of writing system origin and till the appearance of the information-oriented society, the history of the development of the state governance passed several management revolutions.

Ukraine, like many other ex-USSR countries, proclaimed a course to create the information-oriented society and infrastructure, protecting it from the cyber-threats and integrating it into the European society.

A new reference point connected with a formation of information-oriented society makes actual a range of social and economic issues that correspond to the transformations in all spheres of public life, for example: the processes of preparation and taking the decisions, the subjects and forms of education, structure of labour market, notion of human rights and liberties, national and private security, evaluation of strategic resources and appearance of new forms of multinational relations.

The set forth causes the necessity to reform a subject-matter of the domestic state governance. According to the speech of the President of Ukraine, "the insufficient effectiveness of the system of state governance is still one of the biggest problems of Ukraine that prevents proper development of our state" (Pro vnutrishnie ta zovnishnie stanovyshche Ukrainy v 2012 rotsi: Shchorichne Poslannia Prezydenta Ukrainy do Verkhovnoi Rady Ukrainy, 2012), accentuating that "during the implementation of ambitious administrative reform, it is necessary to remember its main purpose – the enforcement of rights of the human being and a citizen. A solution to this important problem, in particular, involves the settlement of social relations appeared during the process of administrative services provision to the legal entities and sole proprietors, the improvement of the quality of their provision" (Pro vnutrishnie ta zovnishnie... , 2012).

It is worth noting that there is a certain dichotomy due to the ambiguity of the translation of the term "public" into the Russian language that may be perceived as "state governance" and "public governance". As a result, all scientific practices connected with a practical application of the term "public" are rather controversial, taking into account the non-conformity of the available interpretation in the national scientific literature to the real conception of their essence, meaning, and integral features of the concept of public governance.

It is also worth to pay attention to the notion "management" in itself that is much narrower than state governance and management in itself.

Taking into account the abovementioned, we offer to carry out the differentiation of terms – state governance, public governance, and management in order to provide the correct semantic meaning of the practical activity of the system administrative services provision in Ukraine (Fig. 1).

Nowadays, there is no agreed-upon definition for the term of public governance in Ukrainian scientific society (Bakumenko, 2002) and, as a result, its meaning is being interpreted in different ways. Thus, the encyclopaedia (Bevir, 2007) interprets the term "state governance" as activity and concerted actions of government. Thus, the notion "activity" may be defined as an activity of authorities of state governance and way of their collaboration through the development and implementation of state policy.
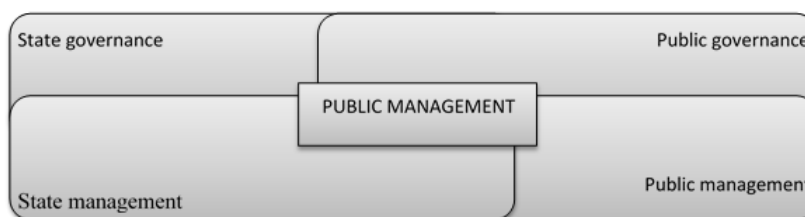
Fig. 1. The ambivalence of translation of the term "public management"

Source: own development

According, to I. Rozputenko, the state policy means actions of authorities of state governance in conformity with specific purposes, directions, foundations in order to settle the aggregate amount of the interdependent issues in the specific area of public activity (Rozputenko, 2010).

The state policy was defined by V. Rudik and T. Brus as "relatively stable, organized, and purposeful activity of government regarding the certain matter or subject of consideration that is being fulfilled by it directly or indirectly through the authorized agents and it influences the life of society" (Romanov, Rudik, Brus, 2003).

A. Karpenko (2013) considers the state governance as a series of steps defined by bodies of government in order to settle social issues. The scientist grounds his opinion on the following facts: the first thing is that a policy is a sphere of cooperation of civil society with the usage of bodies of state governance to implement socially significant interests and own necessities; the second thing is that policy is certain tactics of action that are being accepted and followed by authorities pursuant to the chosen direction.

A clarification of the main point of the state policy and public policy has a crucial meaning for the further understanding of their essence in the state and public sectors, as a consequence.

We offer to define a state policy as a complex of branch of governmental activities in order to create, to strengthen, and to contribute to the legislative, methodological environment, scientific and technical support, organizational, financial and material-and-technical, protective environment and to establish priorities of national scale of development of information-oriented environment and to create conditions for switching to the information-oriented society.

In accordance with the Law of Ukraine "On Administrative Services", the state policy in the system of administrative services provision is based upon the following ideas: supremacy, stability, equality, disclosure, and transparency, operational flexibility and effectiveness, availability, safety, justice, etc. (Pro administratyvni posluhy, 2012). The basis for abovementioned fundamentals means legal regulations of the Constitution of Ukraine (Konstytutsiia Ukrainy,

2016). They stipulate the key rules of government activity.

If we return to the term "state governance" and its definition as "cooperation of the government", national scientists O. Amosov and N. Gavkalova (2013) offer the definition as "mutual influence of management entity with a sovereign on the public processes and relationship pursuant to the socially significant functions and powers." This approach is being supported by T. Bovaird and he offers the following interpretation: "a way of cooperation of all engaged parties in order to influence the results of state policy" (Bovaird, 2003).

A national scientist V. Bakumenko considers the state governance to be the practical, organizational, and regulatory influence of the state on the social life of people, for which its power is a basis for its regulation, safety, and its transformation (2002). N. Nizhnik defines state governance as an activity that is restricted with legislative acts of public authorities and aimed at the practical implementation of social life and assurance of personal security of citizens, a creation of conditions for their financial, cultural, and spiritual development (1997) and "activity that has a character of executive control, the main direction of which is implementation of legislation and subordinate legislation" (1995).

All issues of interaction of public governance bodies, participation in legislative and regulatory development processes and in the formation and implementation of state policy were always called as state governance. No doubt, that is why the state governance in the mind of society is associated with bureaucratic hierarchy, dishonest activity, and absence of entrepreneurial spirit (Nyzhnyk, 1995).

Thus, we would like to pay attention to the opinion of scientist T. Zheliuk (2012) and the description of public governance in the White Paper of European Administration. Pursuant to them, public governance guarantees the realization of public policy that is a source of transformation from the policy of civil servants' responsibility directly to the participation of structures of civil society and citizens, where the obligations rest on the politically active part of society and, as a result, there is an individualization of public policy. It is impossible to say the same about a state policy that is a priori the power expression through the interests of

the nation, social classes, separate groups of population and, consequently, its efficiency implies rather extensive support of all active bodies, which activity is connected with such policy.

Thus, taking into consideration the abovementioned, it is fair to say that state and public governance do not possess definite similarities, as the second one has a much more extensive spectrum of activity that covers interests of the whole Ukrainian society.

So, in our research, we offer to understand the state governance as governance connected with the professional activity of the civil servants' activity that is directed to the implementation of decisions of the control bodies. Moreover, according to the Law of Ukraine "On State Service" (Pro derzhavnu sluzhbu, 2016) and "On Service in the Local Government Bodies" (Pro sluzhbu v orhanakh mistsevoho samovriaduvannia, 2001), the purpose of the professional activity is a quality provision of public services to citizens at the European level. Public governance is an activity that covers the implementation of functions of control bodies and is directed to the serving of interests of the whole society.

3. Management in the state governance

Scientists T. Boverd and Y. Loffler (2003) consider management in the state governance as an approach, where management methods are applied in order to use funds efficiently for the provision of public services. In return, this notion covers the implemented types of activity by civil servants in two rather different areas: in the organizations of state sector; in the organizations that provide state services (state, non-commercial and private).

The analysis of the range of foreign scientific works allow to acknowledge that state governance and public governance are being interpreted in different ways, moreover, state management possesses the traits, which are unusual for the state governance.

Background for the promotion of the term "management" in state governance was a book publication named "In Search of Good Governance". Pursuant to the results of conducted analysis of activity organization in the business sector, the researchers defined it as "height of perfection" and they defined general particularities that, in the opinion of many scientists, could be borrowed for reformation of state governance, for example (Dyakova, 1986):
– the employees of business sector incline to the fast decision-making, but in the bodies of public governance, decisions are always analysed, amended and made after the situation of the enforced solution. Bodies of public governance should be more flexible, they should stand away from the traditional patterns of formal reactions, from solid and non-movable organized structures that just make their activity more complicated and, as a result, make it worse;

– in order to achieve efficient results in the business sector, it is necessary not only to listen to the requirements of clients but quickly to respond to inquiries. Thus, bodies of public governance, as a rule, are monopolists in the provision of certain services that gives them an opportunity to perform negligently their duties, which are aimed at customization of citizens;
– it is necessary to support all civil servants to manifest responsibility;
– in the business sector, employees are being encouraged to express innovativeness and creativity that may serve to the improvement and development of their activity and performance in general. Of course, there is a competitive environment in the organization that is based on the overclaiming among employees. In the area of public governance, the first important thing is the decrease of expenses, not the improvement of the quality of the provided services, thus, there is an atmosphere of innovations that makes people depressed.
– in the business sector, the unified system of values prevails for all employees and their motivation is only purposes of the organization. In the state sector, the dynamics of values that are followed by supporters of one party do not allow them to perform their duties efficiently if another party possesses the power. In order to fix this kind of situations, it is necessary to have a basis of professionalism and ability to concentrate on the certain requirements of citizens or local community;
– in order to achieve the effectiveness of the organization, it is important to fill own "niche" in the market, thus, the ability to get right direction in that kind of activity, for which it is suitable is the first step. But, the area of activity of bodies of the public governance that was fixed with legislation before cannot be restructured.
– business sector has a structure with several hierarchical levels. Such an approach contradicts the traditional hierarchic bureaucracy structure with many levels;
– the achievement of the main purposes in business sector is controlled vertically, but the choice of tools and methods of achievement of stipulated goals belongs to the lower levels;

The reforms that were carried out on the basis of such traits were directed to the enhancement of system efficiency of the state governance and efficient use of state funds through the creation of "small in sizes and competitiveness state sector, increase in the quality of services provided to the population and quick reactions of the state in order to satisfy needs of citizens" (Organization for Economic Cooperation and Development, 1993). Later, in order to "structurize scientific discussion about the modern changes in the organization and governance by the executive power" (Hood, 1991), the scientists started to nominate a concept of "new state management".

Despite the term "state management" has been used since 60-70th years of XX century, in accordance with

the conducted analysis by the British researchers S. Douson and S. Darhi, the word combination "New Public Management" (NPM) was firstly mentioned at the beginning of 90th.

Almost alongside with the concept of NPM, the model "Good Governance" has been gathering momentum. Its main idea supposes a creation of an environment for the stable development of human resources.

Firstly, it was mentioned at the beginning of 90th on the Annual World Bank Conference in the area of economic development (World Bank, 1992). In 97th the program of development of the United Nations Organization "Governance" for the stable development of human resources has been a basis for the creation of separate concept, in terms of which there is understanding of "involvement, transparency, efficiency, equality of rights and supremacy of statute law."

The creation of model "Good Governance" was influenced with disadvantages of management approach to the state governance that is "one way commitment towards effectiveness" (Kolodii, 2008).

In other words, all set forth above information may be expressed with principles that characterize these conceptions:

– "New State Management" – decentralization; transfer of set of functions in the area of state services provision; the introduction of budgeting system directed to the result; democratization; optimization; competitiveness; efficiency; adaptation of the state apparatus to inquires of business sector and civil society, protection of interests of individuals;

– "Good Governance" – involvement in the process of state decision-making; consensus during the taking of decisions; long-term vision; feedback; efficiency during the conduction of state policy; responsibility of all participants of this process; transparency; equality of rights; supremacy of statute law.

4. The adaptation of domestic state governance to international governance models

Taking into consideration the relatively developed problematic of governance, as well as world trends in the management and possibilities of information-oriented society, for example, involvement of civil society in the management area, there is an actualization of usefulness of the authorial model of management that has been formed on the basis of borrowed positive traits of concepts "New Public Management" and "New Governance".

As a basis for the formation of the authorial model of management (picture), there were used criteria of comparison emphasized by a famous researcher of administrative reforms M. Barzelay (2002):

Thus, the first criterion is a focus of the attention. The conducted analyses by the experts of World Bank allowed forming the main purposes of conducted administrative reforms (Menning, 2003), for which implementation the bodies of state governance have to make the process of management more economical, energetic, and efficient (Peters, 2003).

But, the essence of the state sector, firstly, supposes the focus on the observation of laws and order, solution of social issues, increase of welfare level. The activity of state apparatus is directed to the tax liability processes, not to the levy of payment for the provision of administrative services, it is not under the laws of competitiveness, and thus, there are no any factors for a decrease of expenses and optimization. Ukrainian government corresponds to the support facilities where there is paternalism more towards than a competitiveness that is an integral part of the sphere.

Admitting the opinion of A. Zadoja and Y. Petrunja (2013), who consider competitiveness as a "rivalry of economic entities for the best realization of their economic interests" and without taking into consideration normal state of market system, where the producers are involved in competitiveness, it may be researched among consumers (stakeholders) as a method of mutual coordination of personal actions of entities without state interference in the process of their activity. But, it is likely that such process will have a meaning of rivalry.

Supporting the opinion of some scientists, we should note that the concept of state management towards government may be implemented in full extent only in countries, where the executive power before the introduction into the activity of management approaches was behind the structure and ideology of limitation in rights and responsibilities.

The second criterion is a type of structure and relations. Such methods of public governance as privatization of state services and decentralization of state governance lay the groundwork for the transition from bureaucracy to cooperation in mutual work. Thus, such a composition supposes the formation of unique team atmosphere only within the framework of one body of state governance that means a subsystem of state governance. Much more interesting and perspective is a direction of model GG – the involvement of society into management, like a forming of unique stakeholders' atmosphere that prevails over management approach to a great extent.

The third criterion is the estimation of own activity. The desire to rationalize management activity causes its estimation that was going pursuant to the volume of implemented resources and quantity of fulfilled works (Lyubliyner). The domestic model of state governance is characterized with management decision-making on the basis of the idea "now and for all time" to the stipulated procedure that can be considered as a sign of stability, permanency, and efficiency. The offer of the supporters of management concept to put the economic meaning of efficiency is seen by authors as a misplaced
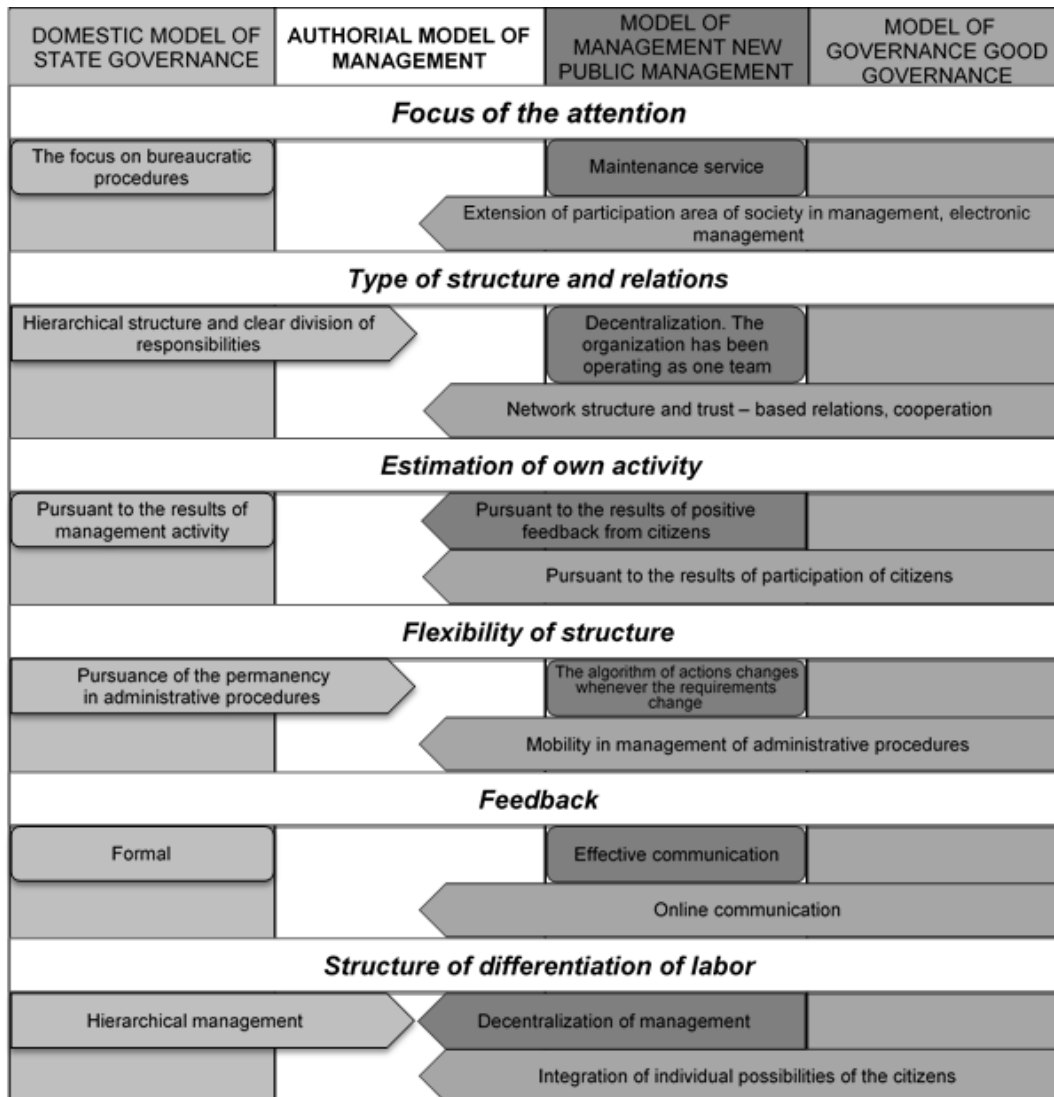
DOMESTIC MODEL OF STATE GOVERNANCE	AUTHORIAL MODEL OF MANAGEMENT	MODEL OF MANAGEMENT NEW PUBLIC MANAGEMENT	MODEL OF GOVERNANCE GOOD GOVERNANCE
Focus of the attention			
The focus on bureaucratic procedures		Maintenance service	
	Extension of participation area of society in management, electronic management		
Type of structure and relations			
Hierarchical structure and clear division of responsibilities		Decentralization. The organization has been operating as one team	
	Network structure and trust – based relations, cooperation		
Estimation of own activity			
Pursuant to the results of management activity		Pursuant to the results of positive feedback from citizens	
	Pursuant to the results of participation of citizens		
Flexibility of structure			
Pursuance of the permanency in administrative procedures		The algorithm of actions changes whenever the requirements change	
	Mobility in management of administrative procedures		
Feedback			
Formal		Effective communication	
	Online communication		
Structure of differentiation of labor			
Hierarchical management		Decentralization of management	
	Integration of individual possibilities of the citizens		

Fig. 2. The authorial model of management

Source: formed by the author on the basis of (Barzelay, 2002)

belief due to the fact that state governance is not aimed at profit maximization.

We suppose that it is rather appropriate to estimate the activity of state sector "aimed at result", where the result should be considered as a process of services provision for the citizens and business after which they are satisfied with the functioning of state apparatus (Piters, 1986; Osborne, 1992).

The fourth criterion is the flexibility of the structure. Pursuant to the world practice, the concept of management is directed to the displacement of the traditionally administrative state governance created on the principles of bureaucracy, hierarchy, centralization, stability of state service organization.

The NPM ideas served as a basis for the formation of social-political nets, where the basis of resources integration witnesses cooperation of state and private institutions in the area of provision of administrative services for the achievement of consensus during the solving of issues, in which both parties are interested. Thus, the case is a governance, which idea is "governance without government". It means the provision of more freedom in the coordination of actions to the public institutions with minimum interference of the centralized government (Bezverkhniuk, Sakhanenko, Topalova, 2008).

But, it is necessary to take into consideration that Ukrainian community possesses rather a low level of public self-awareness and self-control, thus the refusal in vertical power structure and formation of management horizontal with the provision of absolute rights and freedoms to the communities cannot be implemented. Moreover, domestic differentiation, the imperfection of regulatory and legal framework, and low supervision level of execution of the law aggravate formation of the efficient mechanism of public governance.

The fifth criterion is a feedback. A feedback with consumers was marked as a key idea of GG concept that allows speaking about its particular significance in this model of governance. A special effectuality and efficiency of its usage provide the involvement of communication technologies (Internet, electronic mail) during its process. The priority direction of GG is the informatisation of administrative-management activity and transition to the fully electronic documentation flow. It is impossible to say the same in case of management approach to the state governance, where the electronic communication channel was considered only as a supplement to the administrative processes. The authors support the position to full extent (Dunleavy, Margetts, Bastow, Tinkler, 2006) that provides an idea about "transformation of agencies into websites" that provides state electronic services. It is clear that integration of informational and technological resources into the governance activity requires the reformation of social norms.

The sixth criterion is differentiation of labour. Herein criterion reveals the issue of extremely big quantity of state servants in the bodies of state governance that leads to the improper execution of their functional responsibilities and buck-passing because of the duplication of professional duties.

The model of governance NPM limited the role of the state sector and assigned a responsibility for the development of extension strategy, execution of monitoring and regulating functions. The conceptual approach of "Good Governance" to the government, contrariwise, opens possibilities in front of it and abilities to form "net structure" of the governance system. Within its framework, the state sector together with citizens generates and actualizes the effective, mutually agreed and task-oriented management. Many types of research emphasize that three parties of the model GG serve in the capacity of an equal partner and participant in the formation, acceptance, and implementation of the governance decisions.

5. Directions in order to develop a domestic model of state governance

The positive trends of evolution of management models, in particular, GG and processes of informatisation allowed electronic management to become an independent concept and it is able to mitigate disadvantages of management approach to the state governance. Through the integration of electronic management technologies, the process of provision of administrative services should become more transparent for parties who need them and all departmental barriers that prevent this process are neutralized.

In order to form and implement a high technology system of state governance, the Ukrainian government has to achieve enough economic, educational, scientific and technological opportunities.

The ability of the country to perform such transformations of state governance through the maximum usage of advantages of informational and communicational technologies should be defined pursuant to many parameters, for example:
– formation and sequence of state policy implementation regarding the processes of globalization, informatisation, and net creation;
– the available system of monitoring and analysis of electronic management development in the system of provision of administrative services;
– contribution to the promotion of literacy in the area of informational technologies in society and bodies of public governance that will allow the system to operate under the conditions of developed information-oriented society;
– correspondence with European standards of regulatory and legislative affairs of the latest forms of informational and communicational relations in the system;
– proper level of material-and-technical maintenance of the informational process in the bodies of state governance;
– level of investments in the priority directions of scientific, technical and economic development of the society, social norms of adaptation to changes;
– availability of the developed structures of the society – financial, management, investment, educational, trade, etc., which require a relevant informational and technological infrastructure.

6. Conclusions

Thus, the process of evolution of the modern management revolution experienced a range of transformations that is certified with simultaneous co-existence of several management models.

In general, in spite of authors' scepticism towards the introduction of management model, it contributed to the conversion of state governance system, it structured bureaucratic structure and contributed to their response to the requirements of society. In the authors' opinion, a management approach to the state governance within a framework of the mentality of Ukrainian society allowed increasing in a great measure an independence of regional bodies of public governance in the formation of the strategy of social and economic development, during the choice of mechanisms and tools of the regional budget formation.

Thus, taking into consideration a peculiarity of paradigm of the state governance in Ukraine, we offer to supplement a traditional model of management with a model "Good Governance" that at the present point of time is considered to be dominant on the market as it corresponds to the highest level of development of social and economic systems. Especially, it is necessary to concentrate on the model of the derived matter of the concept "electronic management" that firstly, will

most likely allow implementing a customer-focused management, defining its foundations, and involve citizens in the management process and, secondly, making the process of management transparent to the social supervision and regulated.

The further directions of modern scientific research are rather advisable to be concentrated on the directions specifications of observation and development of electronic channels of communication and cooperation among the state, business sphere, and citizens.

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ADVANCED VOCATIONAL TRAINING OF ENVIRONMENTAL PROFESSIONALS FOR PROVIDING SUSTAINABLE DEVELOPMENT OF RAILWAYS OF UKRAINE ON THE WAY TO EUROPEAN INTEGRATION

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Abstract. *The subject of the research* is to study the state of issue of advanced training of environmental professionals and specialists on six railways of Ukrzaliznytsia PJSC: Donetsk, Lviv, Odesa, Pivdenna (Southern), Pivdenno-Zakhidna (Southwestern) and Pridniprovska Railways. *The purpose* of the article is to study the issue of providing the necessary qualification level of postgraduate education (advanced training) of environmental professionals and specialists at six Ukrainian railways. *The methodology of the research*: In order to achieve the goal, the following methods are used in the article: 1) statistical methods and methods of comparative analysis; 2) questionnaires and expert surveys of environmental professionals and specialists; 3) taxonomic methods. *The novelty of the research*. The state of the issue of ensuring the necessary level of professional development of environmental professionals and specialists at six railways of Ukrzaliznytsia PJSC is investigated. Namely: 1. the state of the level of professional development of environmental professionals and specialists of 6 railways of Ukrzaliznytsia PJSC for the period from 2012 to 2016 is researched and evaluated; its structural and dynamic analysis is carried out; 2. calculations of taxonomic indicators of the level of development of career development system for environmental professionals and specialists as distribution of expenses for advanced training for 6 railways for 2012–2016 are made; 3. carried out a questionnaire of environmental professionals and specialists, whose list of functional responsibilities, in accordance with the job description (both staffed and part-time workers), includes issues of the use of natural resources and environmental protection – in order to clarify the availability of environmental education, the length of work in the railway, the length of work in positions associated with environmental activities, the level of satisfaction with the content of their work. *Conclusions*. To ensure the sustainable development of Ukrainian railways on the way to European integration, it is necessary to take into account the requirements and standards of the EU both in the reform of rail transport in general and in the management of its impact on the natural environment. The training of modern skilled personnel is an important part of the strategy of sustainable economic and ecological development of rail transport; therefore, a special attention should be paid to the training of environmental professionals and specialists working in positions related to the use of natural resources and environmental protection. The European direction of the railways of Ukraine requires new approaches to the education and professional development of such specialists. Summing up the results of the conducted researches, the authors of the article substantiated that both the structure of the number of environmental professionals and specialists who have increased the qualification, as well as the structure of costs for the advanced training of environmental professionals and specialists of six studied railways, which are parts of Ukrzaliznytsia PJSC, for the period from 2012 to 2016 are very volatile. Thus, they concluded that, during the period under review, such significant structural shifts do not comply with the principles and provisions of the sustainable development of railway transport enterprises.

Key words: advanced vocational training, environmental professionals, natural environment, railway transport enterprises, railways, advanced training costs.

JEL Classification: J44, L84, L92, F64, I21

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1. Introduction

The relevance of the research. The Strategy for Development of PJSC "Ukrzaliznytsia" (hereinafter – Ukrzaliznytsia) for 2017–2021 determines Ukrzaliznytsia's mission as ensuring sustainable development of Ukraine by providing high-quality and affordable transport and logistics services based on the principles of social and environmental responsibility, as well as an effective model of company management that will meet the challenges of the present, taking into account the future needs of the economy and the population (Key aspects of the Strategy for Development of PJSC "Ukrzaliznytsia" for the 2017–2021 years, 2017).

Ukrzaliznytsia provides 82% of freight and almost 50% of passenger traffic carried by all modes of transport. In terms of freight traffic, it ranks fourth in the Eurasian continent, second only to the railways of China, Russia, and India (Ukrzaliznytsia PJSC, 2018), and provides work to 285 500 people (data as of 30.06.2017) (Statistical data on Ukrainian railways, 2018). Railways – enterprises of railway transport of general use, which ensure the formation and implementation of state policy in the field of transport (Verkhovna Rada of Ukraine, 2012a).

The Concept of Sustainable Development was recognized by the UN World Conference on the Environment as the dominant ideology of civilization in the XXI century. The balance of ecological and economic interests is a valuable and cultural component of the model of sustainable development in countries of the European Union (hereinafter – the EU). Therefore, since European integration is the main foreign policy priority of Ukraine, and the EU sets high environmental standards, the sooner their implementation in Ukraine will be the key to further European integration in the field of environmental protection. This requires bringing the parameters of the functioning of railways in line with European environmental norms and standards.

In pursuance of the State Target Program for Rail Transport Reform for 2010–2019, which set one of the tasks of accelerating the integration of domestic rail transport into European and world transport systems, a number of measures are identified, in particular: improvement of environmental safety system is envisaged in order to improve the level of safety of passenger and cargo transportation; moreover, it is also envisaged to improve the quality of training of industry specialists (Cabinet of Ministers of Ukraine, 2009).

The strategic goals of the state environmental policy of Ukraine are recognized development of the Strategy for Environmental Education for the Purpose of Sustainable Development of Ukrainian Society and Economy of Ukraine by 2015; as well as the creation by 2015 of a system of environmental education and professional development of civil servants whose competence includes environmental protection (Verkhovna Rada of Ukraine, 2010). However, such an Environmental Education Strategy has not yet been developed, which has its negative consequences, as will be discussed below.

The EU sets standards and requirements for advanced training. Thus, the Recommendation of the European Parliament and the Council (2008/C 111/01) has defined general principles for ensuring quality higher education and vocational education and training in the context of European qualifications (European Parliament and Council, 2008). Directive 2001/16/EC of the European Parliament and the Council on 19.03.2001 on the interoperability of the conventional rail system contains conditions, in particular regarding the skill level of the personnel who operate and maintain it (Dvulit, 2015). Directive 95/18/EC stipulates the requirements for the skill level of safety staff (European Council, 1995). Directive 2004/49/EC sets requirements for the responsibility of each railway undertaking and each infrastructure manager for the level of training (including exams and certificates) and the qualifications of their personnel performing security-related work (European Parliament and Council, 2004).

As a result, the level of education, including professional development, of Ukrzaliznytsia employees becomes even more important in terms of the European direction of the Ukrainian railways on the basis of sustainable development.

The railway transport of Ukraine has a powerful and extensive system of professional development of workers, which includes training complexes directly at enterprises of the branch and own educational establishments – personnel professional development centres (centres of professional education). In general, 11 branch vocational and technical educational institutions operate at the railways, which carry out training, retraining, and professional development of the workforce. In accordance with requirements of the current legislation, the training, retraining and advanced training of workers for the needs of the industry are carried out at the expense of employer companies (Verkhovna Rada of Ukraine, 1996).

Nevertheless, one should note a negative tendency during 2012–2016 regarding the reduction in the number of workers trained in new professions that have undergone retraining or advanced training. This trend was observed in general both in the Ukrainian economy, in the transport sector, and in rail transport in particular. In addition, it should be pointed out that from 2015, in the static annual data provided by the State Statistics Service of Ukraine, there is no section "Professional Training and Professional Development of Employees", and hence official statistical information (State Statistics Service of Ukraine, 2018).

According to Article 7 of the Law of Ukraine "On Environmental Protection", ecological knowledge is a mandatory qualification requirement for all officials

whose activities relate to the use of natural resources and which has an impact on the state of the environment (Verkhovna Rada of Ukraine, 1991). However, for today, in most structural subdivisions of Ukrzaliznytsia environmental specialists are not specialized specialists, but engineers of technical departments, metrology engineers, health and safety engineers, energy, mechanic engineers, masters and other specialists, who are only assigned duties of ecologists in addition to other duties. These workers are overwhelmed by their main place of work with completely different issues that are not related to the environmental protection. Only about 9% of full-time employees are in positions of environmental professionals and specialists: in 2012 – 9.34%, in 2013 – 9.22%, in 2014 – 9.17%, in 2015 – 8.87%, in 2016 – 8.87%; and there is a tendency for an annual gradual decrease of this percentage. In addition, in some structural subdivisions, ecological responsibilities are generally separated by certain natural factors, namely air, waste, water, and assigned to different workers.

The actual neglect of mentioned in Article 7 of the Law of Ukraine "On Environmental Protection" at railway undertakings and, therefore, the lack of environmental professionals and specialists on the railways of Ukraine, as well as the inadequate level of their education and qualifications lead to a large number of environmental fines and claims and, consequently, the considerable expenses of Ukrzaliznytsia for the payment of these penalties and claims. Thus, according to the annual reports of the railways of Ukrzaliznytsia in 2016, 169 decisions to impose an administrative penalty for violating the requirements of environmental legislation on officials of production units are issued and, accordingly, these fines are paid – in the amount of 40.324 thousand UAH, And 10 claims in the amount of 3 902.834 thousand UAH are presented, of which actually 2 claims were reimbursed in the amount of 191 884.96 UAH (Kravets, 2017).

The main violations detected during inspections of Ukrzaliznytsia's production departments: waste management (55.5% of all fines), air protection (29%), land protection (3%), water resources protection (6.5%), in the field of protection, protection, use, and reproduction of forests (6%). There are also penal sanctions for organizational reasons that do not require material costs but only increased control over: the implementation of requirements of the legislation in the field of waste management, rules of technical operation of gas treatment plants. In addition, there has recently been a tendency to charge penalties for exceeding the permissible standards for discharging sewage into urban sewage networks. The main grounds for filing claims for damages for the harm caused to the environment are the lack or untimely receipt of permits and the unauthorized felling of trees (Reference, 2016).

All these negative phenomena testify to the ineffective management system for raising the skills of environmental professionals and specialists. Therefore, it is considered necessary to increase the number of competent, skilled specialists in the field of environmental protection and use of natural resources on the railways. In addition, environmentalists need to constantly improve their knowledge, skills, abilities, competencies and, therefore, to systematically improve their qualifications and confirm their level with relevant certificates. And the management of railways of Ukraine should, taking into account the European direction of the railways of Ukraine, make managerial decisions regarding the proper financing and distribution of funds for the training of environmental professionals and specialists responsible for environmental resources management sphere.

The subject of the research is to study the state of the issue of advanced vocational training of environmental professionals and specialists at six railway undertakings of Ukraine (hereinafter – the railways (Cabinet of Ministers of Ukraine, 2014)): State Enterprise "Donetsk Railways" (hereinafter – Donetsk Railways), State Territorial Branch Association "Lviv Railways" (hereinafter – Lviv Railways), Odesa Railways, State Enterprise "Pivdenna Railways" ("Southern Railway", hereinafter – Pivdenna Railways), State Territorial Branch Association "Pivdenno-Zakhidna Railways" (hereinafter – Pivdenno-Zakhidna Railways), State Enterprise "Prydniprovska Railways" (hereinafter – Prydniprovska Railways).

The purpose of the article is to study the problem of providing the necessary skill level of postgraduate education (advanced training) of environmental professionals and specialists on six railways of Ukrzaliznytsia. The following tasks are set for the achievement of the set goal: 1. to study and evaluate the state of the level of professional development of environmental specialists and specialists of 6 railways of Ukrzaliznytsia for the period from 2012 to 2016 and to carry out its structural and dynamic analysis; 2. to conduct calculations of taxonomic indicators of the level of development of career development system for environmental professionals and specialists as distribution of expenses for advanced training for 6 railways for 2012–2016; 3. to carry out a questionnaire of environmental professionals and specialists, whose list of functional responsibilities, in accordance with the job description (both staffed and part-time workers), includes issues of the use of natural resources and environmental protection – in order to clarify the availability of environmental education, the length of work on the railway, the length of work in positions associated with environmental activities, the level of satisfaction with the content of their work.

Research methodology: in order to achieve the target goal and solve the set tasks, the following methods are used in the article: 1) statistical methods and methods of comparative analysis – for structurally-dynamic

analysis of the number of environmental professionals and specialists working in positions related to the environmental protection; the number of those who passed the advanced training; costs of advanced training by railways of Ukraine; 2) questionnaires and expert surveys of environmental professionals and specialists, whose list of functional responsibilities includes issues of the use of natural resources and environmental protection, – to study and evaluate the availability of environmental education, the length of work on the railway, the length of work in positions associated with environmental activities, the level of satisfaction with the content of their work; 3) taxonomic methods – to assess the development of a system for allocating costs for the training of environmental professionals and specialists for each of these six railways for each of the 5 years studied (2012, 2013, 2014, 2015, 2016).

The scientific-theoretical and methodological basis of the research consisted of scientific works and publications of scholars, materials of scientific conferences in the field of development of enterprises of the transport industry in general and railways in particular, the study of issues of professional development of employees.

The information base for the study consists of: statistical data of the Ministry of Infrastructure of Ukraine and PJSC "Ukrzaliznytsia", the State Statistics Service of Ukraine, statistical reporting and initial documentation of the railways of Ukrzaliznytsia; Internet resources, results of questionnaires and polls of environmental professionals (Reference on the use of results and individual proposals of Dvulit Z. P., presented in the thesis for the degree of Doctor of Economics on the topic: "Economic and Environmental Management of the Sustainable Development of Rail Transport Enterprises" № 1/21-16 on 19.10.2016) etc. Economic calculations are made using modern methods and computer technologies for the processing of statistical materials.

The novelty of the research. The state of the issue of ensuring the necessary level of professional development of environmental professionals and specialists on six railways of Ukrzaliznytsia is investigated. Namely: 1. the state of the level of professional development of environmental professionals and specialists of 6 railways of Ukrzaliznytsia for the period from 2012 to 2016 is researched and evaluated; its structural and dynamic analysis is carried out; 2. calculations of taxonomic indicators of the level of development of career development system for environmental professionals and specialists as distribution of expenses for advanced training for 6 railways for 2012–2016 are made; 3. carried out a questionnaire of environmental professionals and specialists, whose list of functional responsibilities, in accordance with the job description (both staffed and part-time workers), includes issues of the use of natural resources and environmental protection – in order to clarify the availability of environmental education, the

length of work on the railway, the length of work in positions associated with environmental activities, the level of satisfaction with the content of their work.

2. Professional development of environmentalists and railway specialists

Education is the basis of the intellectual, spiritual, physical, and cultural development of the individual, its successful socialization, economic prosperity, the key to the development of society, united by common values and culture, and the state. The purpose of education is the comprehensive development of human being as a person and the highest value of society, its talents, intellectual, creative, and physical abilities, formation of values and competencies necessary for the successful self-realization, education of responsible citizens who are capable of conscious social choice and directing their activities in favour of other people and society, enriching on this basis the intellectual, economic, creative, and cultural potential of the Ukrainian people, raising the educational level of citizens for the sustainable development of Ukraine and its European choice. Postgraduate education includes professional development – acquiring new and/or improving previously acquired competencies by a person within the framework of professional activity or field of knowledge (Verkhovna Rada of Ukraine, 2017).

According to the Law of Ukraine "On Professional Development of Employees" (Verkhovna Rada of Ukraine, 2012b), the main areas of work of employers in the field of professional development of employees are, in particular: organization of professional training of employees; stimulating them for professional growth; provision of advanced training directly by the employer or educational institutions usually not less than once every five years. Advanced training of the employer's employees is continuous and carried out during their work in order to gradually expand and deepen their knowledge, skills, and abilities in accordance with the requirements of production. To this end, the employer periodically arranges for the employees professional training, retraining, and advanced training through a collective contract and agreements.

In its turn, the Law of Ukraine "On Environmental Protection" (Verkhovna Rada of Ukraine, 1991) states that raising the ecological culture of society and professional training of specialists are provided by the general obligatory complex education in the field of environmental protection, including in the system of vocational and higher education, advanced training and retraining.

In order to meet the needs of the railway industry in the retraining and professional development of managers and specialists, there is a Postgraduate Training Centre at the State University of Infrastructure and Technology, which provides education services, where managers and

specialists of different structural divisions of railways of Ukraine, whose duties include the use of natural resources and environmental protection, improve their qualification. During training, environmental professionals improve their qualification in the direction "Efficiency of introducing environmentally sound technologies in railway transport".

3. Structural and dynamic analysis of advanced training by environmentalists and specialists of Ukrzaliznytsia

The number of specialists dealing with the use of natural resources and environmental protection, in total on 6 railways in 2012 amounted to 846 people, of which only 79 people work full-time (9.34%), while 767 people work on a part-time basis (90.66%); in 2013 – 835 people, among them work full-time – 77 people (9.22%), work part-time – 758 people (90.78%); in 2014 – 807 people, among them full-time – 74 people (9.17%), part-time – 733 people (90.83%); in 2015 – 778 people, among them full-time – 69 people (8.87%), part-time – 709 people (91.13%); in 2016 – 778 people, among them full-time – 69 people (8.87%), part-time – 709 people (91.13%). As we can see, over five years the total number of specialists has decreased by 68 people or 8.04%, including there was a decrease in 2016 compared to 2012 in staff employees for 10 people or 12.66%, and part-time workers – 58 people (7.56%). Based on annual reports from railway undertakings on environmental protection, in Fig. 1, we presented this dynamics of the number of specialists dealing with the use of natural resources and environmental protection – in total for 6 railways for 2012–2016.
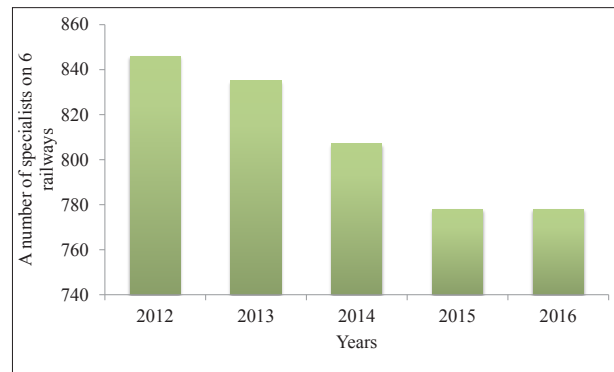

Fig. 1. Dynamics of the number of specialists on the railways that deal with issues of environmental protection in general on 6 railways in 2012–2016

Let us track the dynamics of the number of specialists involved in the use of natural resources and environmental protection, who have undergone advanced training in 2012–2016, for each of 6 railways, as shown in Fig. 2. Moreover, on 6 railways in general, in 2012, from 846 people – 67 people have passed the advanced training, that is, 37%; in 2013, from 835 people – 25 people (14%); in 2014, from 807 people – 30 people (17%); in 2015, from 778 people – 25 people (14%); in 2016 from 778 people – 33 people (18%). This testifies to the uneven tendency over these 5 years as to the number of specialists who have passed the advanced training in the environmental field. Thus, compared to 2012, when 37% of specialists have undergone advanced training, there has been a significant decline in their number since 2013 and, in the following years, their number was approximately uniform: 14% in 2013, 17% in 2014, 14% in 2015, and 18% in 2016. Altogether, for the period of
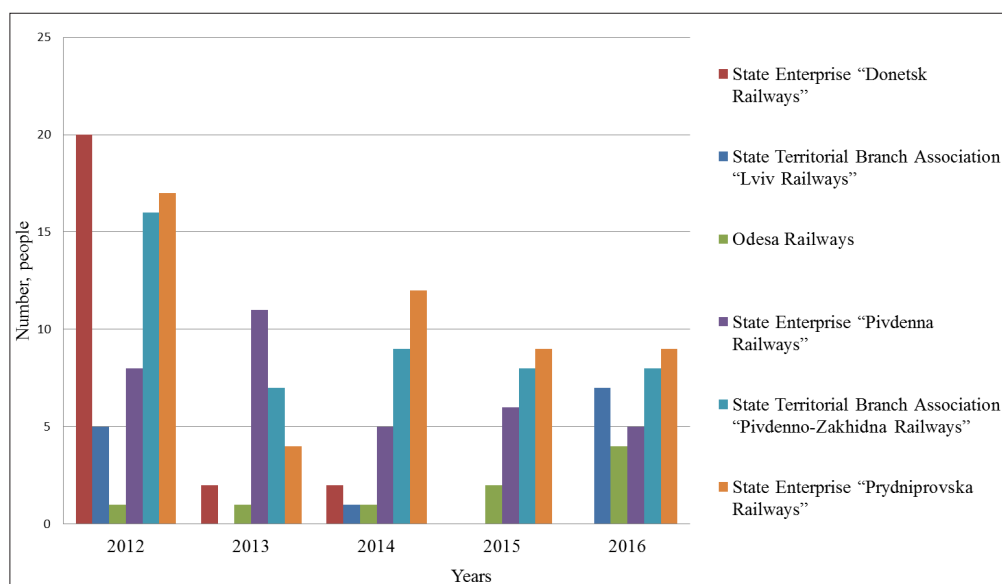

Fig. 2. Dynamics of the number of specialists on 6 railways that deal with the use of natural resources and environmental protection, who have passed the advanced training in 2012–2016

5 years in total for 6 railways, 180 people have passed the advanced training, including: on the Prydniprovska Railways – 51 people, Pivdenno-Zakhidna Railways – 48 people, Pivdenna Railways – 35 people, Donetsk Railways – 24 people, Lviv Railways – 13 people, Odesa Railways – 9 people.

Fig. 3-8 reflect the ratio of the total number of specialists dealing with issues of the use of natural resources and environmental protection, and the number of environmental professionals who have improved their qualifications – for each of 6 railways for 2012–2016.

The highest level of advanced training is on the Prydniprovska Railways, where, in total, for the last five years it was passed by 51 environmental professionals, and the lowest – Odesa Railways, where only 9 people have passed it. Among 6 studied railways, no environmental professional has upgraded his qualification on the Donetsk Railways in 2015 and 2016 and on the Lviv Railways in 2013 and 2015. It should be noted that there is a very uneven structure of the number of environmental professionals who have improved their qualifications, both in the section of railways and by year.
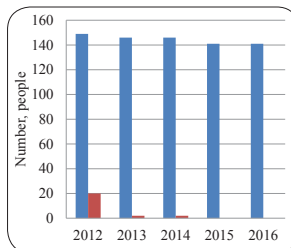
The highest percentage of environmental professionals who have improved their qualifications to the total number of specialists dealing with the use of natural resources and natural environment protection was on three railways in 2012: Donetsk Railways – 13.42%, Prydniprovska Railways – 11.81%, Pivdenno-Zakhidna Railways – 11.43%, however, there was a downturn in subsequent years. The other three railways had the highest figures for the number of ecologists who improved their qualifications to the total number of specialists involved in the use of natural resources and environmental protection, as follows: Pivdenna Railways – 7.86% in 2013, Lviv Railways – 4.83% in 2016, Odesa Railways – 3.39% in 2016. The lowest percentage of the number of environmental professionals who have improved their qualification to the total number of specialists dealing with the use of natural resources and environmental protection on the Odesa Railways for all 5 years (2012–2016) – below 1% in 2012–2014 (0.75% in 2012, 0.84% in 2013, and 0.85% in 2014), 1.7% in 2015, and 3.39% in 2016. In addition, on each of five other railways, it was the lowest in some years: Donetsk Railways – 0.00% in 2015 and 2016, Lviv Railways – 0.00% in 2013 and 2015, Prydniprovska Railways – 2.76% in 2013, Pivdenna Railways – 3.68% in 2016, Pivdenno-Zakhidna Railways – 5.11% in 2013.

Thus, the ratio of the number of environmental professionals who have improved their qualification to the total number of specialists dealing with the use of natural resources and natural environment protection has changed during 5 years under study on 6 railways as follows: Donetsk Railways – from 0.00% to 13.42%, Lviv Railways – from 0.00% to 4.83%, Pivdenno-Zakhidna Railways – from 5.11% to 11.43%, Prydniprovska Railways – from 2.76% to 11.81%, Odesa Railways – from 0.75% to 3.39%, Pivdenna Railways – from 3.68% to 7.86%.

Moreover, it should be noted that the total number of environmental professionals and specialists on each railway in the last 5 years has changed somewhat unevenly, however, in five railroads (except Lviv) in 2016 compared with 2012 there was a decrease in the total number of these workers, and this reduction was observed gradually every year from 2012 to 2016 on most railways. The divergence in the total number of environmental professionals and specialists fluctuated by railways as follows: Donetsk Railways – 5.37%; Lviv Railways – 4.73%; Pivdenno-Zakhidna Railways – 15.00%; Prydniprovska Railways – 17.93%; Odesa Railways – 8.52%; Pivdenna Railways – 6.2%.

Fig. 3. State Enterprise "Donetsk Railways"
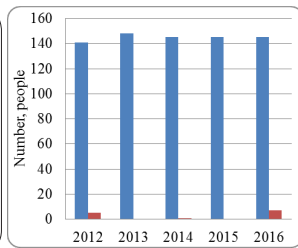

Fig. 4. State Territorial Branch Association "Lviv Railways"
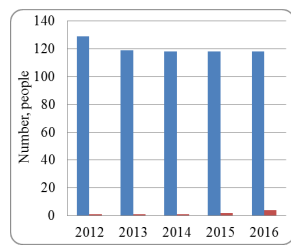
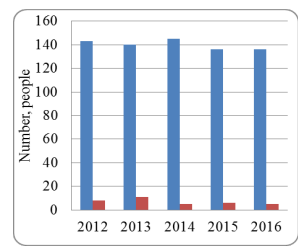

Fig. 5. Odesa Railways

Fig. 6. State Enterprise "Pivdenna Railways"
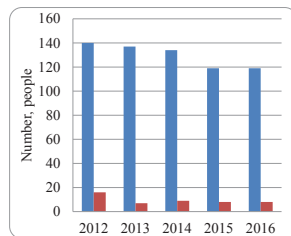

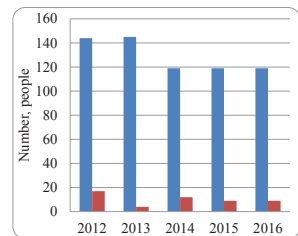**Fig. 7. State Territorial Branch Association "Pivdenno-Zakhidna Railways"**

Fig. 8. State Enterprise "Prydniprovska Railways"

Note: ▮ *– the total number of specialists, dealing with the use of natural resources and natural environment protection,* ▮ *– number of environmental professionals who have improved their qualifications.*

4. Dynamics of expenses of railways for advanced training

Let us track the dynamics of costs for the training of environmental professionals in total for 6 railways during 2012–2016, which is shown in Fig. 9.
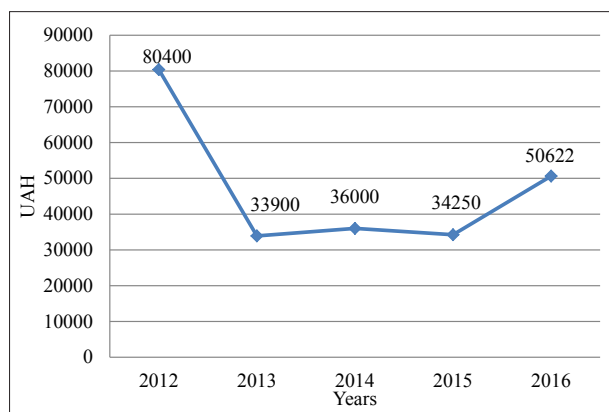
Fig. 9. Dynamics of costs for the advanced training of environmental professionals in total for 6 railways during 2012–2016, UAH

As we can see, there was a sharp decline in costs in 2013, compared to 2012, more than doubled (which correlates with 37% of environmentalists who have completed advanced training in 2012 – compared with 14% in 2013); this tendency for minor expenses was maintained during 2014–2015 (which also correlates with 17% of environmentalists who have undergone advanced training in 2014, and 14% in 2015), and in 2016 there was an increase in costs by almost half, which, however, was only about 60% of the amount of costs in 2012 (with the fact that in 2016 only 18% of environmentalists have completed advanced training – almost as much as in previous years of 2013–2015).

Let us analyse the costs incurred by Ukrzaliznytsia for advanced training of environmental professionals during 2012–2016 in the percentage for each of 6 railways. The structure of distribution of costs for training was uneven and unstable. As none of the environmental professionals improved qualification on the Donetsk Railways in 2015–2016 and on the Lviv Railways in 2013 and 2015, therefore, there were no corresponding costs for these railways in the specified years. A more or less stable structure of the distribution of costs for advanced training during this period was peculiar for the Pivdenno-Zakhidna Railways, the cost of which in the structure of total cost of 6 railways ranged from 23.88% to 32%. In the remaining 5 railways, this structure was leap-shaped and uneven. The largest fluctuations in the structure of distribution of costs for advanced training were on the Pivdenna Railways: from 11.94% to 44%. The lowest costs for the professional development of environmental professionals in total for the 5 years studied were on the Odesa Railways, even lower than in Lviv and Donetsk, where there were no such expenses for two years at all. And the highest costs in total for 5 years were on the Prydniprovska Railways – five times more than in Odesa; on the Pivdenno-Zakhidna Railways – almost five times as much, as well as on the Pivdenna Railways – where it was almost four times more costs than on the Odesa Railways.

For the study of the state of the level of professional development of environmental professionals on 6 railways, the definition of the structure of the distribution of costs for their postgraduate education in the context of 2012–2016, it is expedient to involve methods of multidimensional comparative analysis. This is determined by the multiplicity of objects and processes that are characterized by the versatility and ambiguity of Ukrainian railways as complex dynamic systems.

Thus, let us calculate taxonomic indicators of the development level of the system of distribution of costs for the training of environmentalists on 6 railways of Ukrzaliznytsia on the algorithm of taxonomic analysis (Syrvetnyk-Tsarii V.V. and Duliaba N.I., 2016; Iliash O.I., 2012; Pliuta V., 1980): formation of the matrix of observations, standardization of values of elements of the matrix of observations, identification of the vector-standard, determination of the distance between individual observations and the vector-standard, calculation of the taxonomic coefficient of development. The taxonomic index can reach the value in the interval [0;1] and has the following interpretation: the closer the value of the generalization indicator to one, the more developed the individual object (process) in this period. With its help, it is possible to estimate the "average" level of values of characteristics characterizing a phenomenon or a process reached in a certain period or a time point.

The calculations of the taxonomic indicator of the level of development of the system for allocating costs for the improvement of the qualification of environmental professionals in total for 6 railways in 2012–2016 calculated by us showed the following values ranging from 0.3608 to 0.4742: $K2012=0.3608$, $K2013=0.3921$, $K2014=0.4485$, $K2015=0.4742$, $K2016=0.4356$. Thus, by gradation of values of the indicator, it is established that all 5 surveyed years were characterized by an indicator below the average, which is evidence of an ineffective allocation of funds for advanced training in total for 6 railways per study year. True, the level of development of the system for allocating costs for the training of environmental professionals in total for 6 railways has shown a tendency for annual gradual growth over 2012–2015: from 0.3608 in 2012 to 0.4742 in 2015, however, slightly decreased to 0.4356 in 2016.

Moreover, the value of the taxonomic indicator for 2012 by individual railways was in the range from 0.2 to 0.39, which corresponds to the low level of development of the system for allocating costs for the training of environmental professionals. And over the next four years, the value of this indicator on individual railways ranged from 0.4 to 0.59, which, while indicating its rise to the average level of development of the system of cost allocation, however, had little leaping tendency: during three years from 2013 to 2015, there was an increase in the value of taxonomy indicators, and in 2016 it decreased by 8.14%.

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4. Questioning of environmental professionals and specialists of Ukrzaliznytsia

Given the uneven tendency on 6 railways in relation to decreasing in 2013–2016 compared to 2012 in the number of environmental professionals who have undergone an advanced training, let us investigate this problem in more detail. For the purpose of this study, we conducted a questionnaire survey of managers and specialists of various structural divisions of 6 Ukrainian railways in advanced training courses at Postgraduate Training Centre of the State University of Infrastructure and Technology in the period from September 12 to 23, 2016 (Reference, 2016).

The choice of the form of an expert survey is determined by the purpose of sociological research, available resources, processing possibilities of the received data. Therefore, we used a polling form, such as a one-time individual survey (questionnaire).

The questionnaire consisted of 6 questions, forms for filling in the personal data of the respondent and provided for self-esteem results. The questions were of open and closed formats. In the form of filling in the respondent's personal data, it was foreseen to find out the education in the environmental specialty; work experience in positions related to environmental activities; the work experience in Ukrzaliznytsia in general and in the positions, the list of functional responsibilities, in accordance with the job description (both staffed and part-time workers), includes issues of the use of natural resources and environmental protection; as well as satisfaction with the content of activities in positions held. The experts conducted a self-assessment on a point scale. Such additional information made it possible to set the level of the expert group as a whole. Principles of small samples and the sufficiency of information were chosen to form the volume of the sample population.

The list of respondents who formed the sample population covered 31 environmental professionals and specialists (managers, chiefs, deputy chiefs, specialists, engineers on the ecology of services, departments, sectors, directorates, structural units, stations, railways, and other enterprises of railway transport). The questionnaire included the following questions: 1. age of the employee; 2. work experience in Ukrzaliznytsia; 3. work experience in positions related to environmental activities; 4. work experience in Ukrzaliznytsia in positions, which list of functional responsibilities, in accordance with the job description (both staffed and part-time workers), includes issues of the use of natural resources and environmental protection; 5. availability of higher education in an environmental specialty; 6. satisfaction with the content of work in a position.

As a result of the processing and systematization of data obtained during the survey, we have set the following. The average age of the respondents was 39 years, the youngest employee was 24 years old, and the oldest – 59 years old. The work experience of the respondents in Ukrzaliznytsia varied from 2 to 40 years, and on average it was 16 years. The average work experience in positions related to environmental activities was 8 years, that is, half of the length of work on Ukrzaliznytsia, 2 of respondents had such experience only up to 1 year, 20 people had 10 years of work experience, and 9 persons – more than 10 years, one of whom has been working for such a post for 27 years. The average length of work in Ukrzaliznytsia in the posts, which list of functional responsibilities, in accordance with the job description (both staffed and part-time workers), includes issues of the use of natural resources and environmental protection, was 7 years. A particular attention is paid to the fact that only 5 employees or 16.13% of the total number of respondents have professional environmental education, that is, the rest 83.87% have no such education. 16 persons or 51.61% are satisfied with the content of work performed on a position, unsatisfied – 7 people or 22.58%, partially satisfied – 8 people or 25.81%.

Consequently, we can draw the following conclusions from our survey of environmental professionals and specialists of Ukrzaliznytsia:
1) a very low percentage of employees who have higher education in an environmental specialty;
2) for the most part, they are employees who have sufficient work experience in positions related to environmental activities, but a half of them are actually dissatisfied with the content of the work performed and, therefore, it has a significant impact on the quality of their functional responsibilities and productivity and thus not promotes their acquisition of new and/or improved competences previously acquired within the framework of their professional activities in the field of environmental protection.

5. Research conclusions

In order to ensure the sustainable development of Ukraine's railways on the way to European integration, EU requirements and standards must be taken into account both in the reform of rail transport in general and in the management of its impact on the natural environment. The training of modern skilled personnel is an important part of the strategy of sustainable economic and ecological development of rail transport; therefore, a special attention should be paid to the training of environmental professionals and specialists working in positions related to the use of natural resources and natural environment protection. The European direction of the railways of Ukraine requires new approaches to the education and professional development of such specialists.

Summing up the results of our research, we are convinced that both the structure of the number of

environmental professionals and specialists who have increased the qualification, as well as the structure of costs for the training of environmental professionals and specialists of six studied railways, which are a part of Ukrzaliznytsia, in the period from 2012 to 2016 is very volatile. Thus, we arrive at the conclusion that during the analysed period, such significant structural changes do not correspond to the principles and provisions of the sustainable development of rail transport enterprises.

And therefore, this structure needs to be improved and optimized to ensure the stability and predictability of costs of advanced training of environmental professionals and specialists in order to reduce costs of violating environmental legislation, minimizing the amount of fines and claims, rational use of nature and environmental measures, as well as to meet the requirements of the European legislation in the field of environmental protection and quality of postgraduate education in terms of qualification improvement of environmental professionals and specialists of railway transport enterprises.

The results of the carried out research made it possible to conclude that there is no complete information array regarding the current state of the issue of professional development of environmental professionals and specialists, including assessment of the availability of environmental education, work experience, and satisfaction with the content of functional responsibilities in positions occupied. Thus, first of all, it is necessary to recognize the existence of this problem and, therefore, it is necessary to adopt appropriate managerial decisions in the direction of solving the identified problem, which in the future will make it possible to reduce, and subsequently, prevent the occurrence of environmental penal sanctions and claims against Ukrzaliznytsia, and other unpredictable costs.

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STRATEGIC IMPERATIVES ENSURING POPULATION WELFARE UNDER TRANSFORMATION EXCLUSION CONDITIONS

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Abstract. *The purpose* of the research is to substantiate strategic imperatives that should be taken into account in developing algorithms for improving the welfare of the population in the conditions of socio-economic transformation and the emergence of exclusion impulses. *The subject* of the research is the theoretical and applied aspects of the development of strategic imperatives for the transformation of socio-economic relations in different regions of Ukraine. *The methodology* of the research is based on methods of correlation-regression analysis – to assess the standard of living of the population, taking into account regional specifics; logical-heuristic, economic-mathematical analysis – to identify the relationship between the needs of the population of different regions and their priority; spatial vector modelling – to predict the level of average wages of the population; as well as for diagnosing the welfare of the population, taking into account the influence of factors of socio-economic transformation and emerging rejection; inverse method – the adequacy of the obtained models and forecasts with the help of verification of predictive values is checked. *Results.* The research confirmed that the effectiveness of achieving the welfare of the population depends on the degree of restrictions within the framework of socio-economic transformations, the emergence of impulses of social and economic exclusion. The authors developed an algorithm for estimating and modelling the living standards of the urban population. The implementation of the algorithm occurs by: determining the result indicator of the living standards of the population of the city to select the priority factors of influence on the result indicator; detection of the dependence between the result indicator and the factors of influence; the choice of the optimal predictive function for the forecast of the development of the main components (factors) of the result indicator; forecast of the level of the result indicator. At the stages of implementation of the algorithm, a multivariate econometric model for forecasting the living standards of the urban population is constructed. The model proposed by the author is adequate, its statistical quality, significance, and reliability are sufficient for use in forecasting socio-economic processes of city development. The practical significance of the study is to provide methodological and applied tools for finding compromise solutions to neutralize the negative effects of socioeconomic rejection and to promote the welfare of the population in different regions of Ukraine, which unites the entire Ukrainian nation to address the priority tasks that provide the maximum socio-economic effect. *Value/originality.* The conducted research allowed confirming the obtained results: the implementation of a phased algorithm for forecasting the standard of living of the population depends on a set of strategic and alternative transformational decisions; prolongation of studies of processes of socio-economic transformation and emerging rejection is ensured by the influence of factors of increasing or decreasing welfare of the population; the level of wages, as an indicator of the quality of life of the population, contributes to the formation of a strategy for improving the welfare of the population. Such a complex of actions aimed at solving the problems of finding alternative solutions, adopting, implementing and monitoring the concerted actions of the population and governmental organizations will strategically ensure the achievement of high quality and standard of living of people, giving them the opportunity to realize their own development goals.

Key words: strategic imperatives, welfare, population, socio-economic transformation, exclusion impulses.

JEL Classification: A13, C02, R11

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1. Introduction

The main purpose of the activity of state and local authorities is to increase the welfare of the population both at the state, regional, and local levels. In order to accelerate the integration processes in the European economic and social space, it is necessary to ensure sustainable social and economic development of the population throughout the territory of Ukraine. Qualitative diagnostics of the welfare of the population, taking into account a large number of socio-economic factors affecting it, is an important tool in the development and implementation of state social policy. The peculiarity of socio-economic development of the population of Ukraine to date is the presence of highly polarized types of levels and quality of life, which requires the use of various evaluation techniques and forecasting (Belyaeva, 2009).

2. Results of previous researches

Scientific developments of many foreign and domestic authors are devoted to issues of estimating the welfare of the population using the system of indicators. Among the scholars who suggested ways to measure welfare and poverty, examined the relationship between the dynamics of indicators that characterize them and the economic growth at the national and regional levels, one should distinguish the work of scientists from the Institute of Demography and Social Studies E. Libanova (Libanova, 2007), O. Makarova (Makarova & Hladun, 2012), V. Pryimak (Pryimak, 2011), A. Ihnatiuk (Ihnatiuk, 2010), V. Druzhynina (Druzhynina & Zalunina, 2017), and others.

Theoretical and methodological aspects of living standards of the population are investigated in the works of A.G. Smith (Smith, 1997), A.C. Pigou (Pigou, 1932), A. Sen (Sen, 1987), V. Mandybura (Mandybura, 1998), V. Zherebin and A. Romanov (Zherebin & Romanov, 2015), I. Kholodok (Kholodok. & Lysenko, 2011). The problems of assessing the standard of living of the population were revealed in writings by the following researchers: T. Popova (Popova, 2011), O. Omelchenko (Omelchenko, 2010), V. Druzhynina (Druzhynina & Chornous, 2011), H. Likhonosova (Likhonosova, 2012). A significant contribution to the research of practical aspects of the application of statistical methods and models of diagnosis of living standards and social modelling was made by K. de Green (Green, 1987), H. Verbytska (Verbytska, 2010).

However, despite a number of scientific works, the question of a qualitative assessment of the welfare of the population at the local level, due to a large number of factors influencing it, remains rather controversial. That is why the question of estimating and forecasting the welfare of the urban population is raised by the prism of its basic indicator of living standards. After all, raising the living standards of the population at the local level will contribute to the improvement of the socio-economic situation of the population at all administrative-territorial levels.

3. Empirical studies of the impact of socio-economic transformations on the welfare of the population

The priority direction of development for Ukraine and its territorial-administrative units, in particular, is raising the level of welfare of the population. The system of modern state administration in the country is rather imperfect and ineffective, which leads to a decrease in the welfare of Ukrainians in general and its material component – the standard of living – in particular. In this regard, a large number of scientists and researchers investigate current problems of the present, namely, the standard of living of the population.

The standard of living of the population is a socio-economic category that helps describe the material welfare not only of the individual but also defines the general result of economic development in the country over a certain period of time. This is quite a dynamic category, which depends on the specific conditions of development of the country and society, therefore, according to the objectives of the research, its content is also determined, which greatly influenced on the differences in methods of evaluation. Hence, it can be concluded that the standard of living is quite complex and multifaceted concept, which combines in itself a number of socio-economic relations, which are connected with the state and the conditions of life of people in society (Verbytska, 2010). It should be noted that the effectiveness of social policies of local authorities determined the living standards of its people because their main aim is to ensure economic growth and social stability on the local level, improving the material welfare and protection of its vulnerable strata, the material and spiritual needs of people, etc. The spatial research base is city Kremenchuk, assessment of living standards, which should begin by multivariate modelling in system integrated assessment through the algorithm, which consists of certain phases (Fig. 1).

On the first phase of the study, it is advisable to choose the resulting index for assessing the level of life of the city population. The average wage in the city Kremenchuk was such the resulting index (Y).

On the second stage of the study, it is necessary to choose the key indicators of socio-economic development (factor values) for assessing the impact of the factors; it is listed in Table 1 (The Main Statistical Office in Poltava region).

To assess the standard of living, on the third stage, there was chosen a method of correlation and regression analysis through a number of advantages of it: firstly it is available for PC users; secondly it helps to identify and
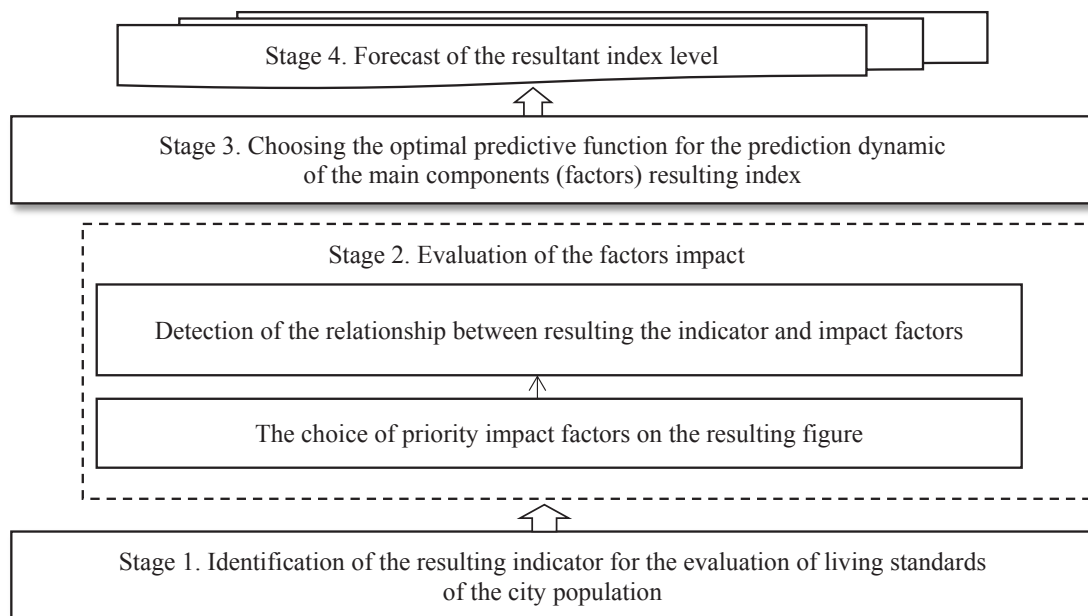
Fig. 1. Stages of forecasting of urban population life level

Source: compiled by the authors

Table 1

Summary indicators for the assessment of living standards of the population in Kremenchuk

Name of indicator	Value index by years							
	2008	2009	2010	2011	2012	2013	2014	2015
Average salary, UAH (Y)	2079	1960	2445	3036	3321	3522	3398	4043
Gross value added, million UAH (X_1)	15603,6	10142,4	10345,2	14190,3	1527,5	13350,8	4957,4	4902,3
The number of small businesses per 10 thousand people, units (X_2)	73	73	74	75	78	138	152	149
The size of the subsistence minimum per person per month, UAH (X_3)	601	664	849	923	1050,6	1147	1218	1330
The number of industrial personnel, persons (X_4)	2270	2188	2057	2082	2219	2128	1582	1386
Productivity, thousand UAH (X_5)	249,47	181,36	191,28	198,3	217,63	160,32	119,19	101
The migration balance, people (X_6)	536	75	392	389	249	669	223	-441
Nominal wages, UAH (X_7)	2080	1960	2609	3036	3386	3350	3398	4044
The inflation index, % (X_8)	122,3	112,3	109,1	104,6	99,8	100,5	124,9	143,3
Minimum wage in Ukraine, UAH (X_9)	605	744	922	1004	1134	1147	1301	1378
Arrears of wages, UAH (X_{10})	7707,2	6870,4	2452,7	997,7	1253	1240,9	2161,8	3681,5

Source: Compiled by the authors using data from http://pl.ukrstat.gov.ua

quantify measure the level of influence of individual factors on the object of research; thirdly, on the basis of actual data of model, it is possible to realize forward-looking assessment of the investigated object (Pidhornyi & Vitkovska, 2012).

To detect the relationship between the resulting index and the factors that influence it using linear equations multivariable regression type:

$$Y = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + \cdots + \alpha_n x_n, \qquad (1)$$

where Y – the resulting figure; $x_1, x_2, ..., x_n$ – factors of influence; $\alpha_0, \alpha_1, ..., \alpha_n$ – parameters of the model, which need to be estimated (regression coefficients).

To identify the link between the resulting index (average salary) and the factors that influence it, it is necessary to build matrix coefficients of correlation of factors that influence the resulting index (Table 2).

In the process of analysing the data of Table 2, under the conditions of eliminating multicollinearity, as factors of impacts on the resulting figure are elected as follows: the number of small enterprises (X_2); cost of minimum living standards (X_3); productivity (X_5); nominal wages (X_7); minimum wage (X_9).

Generated results of regression analysis between average wages and selected indicators that affect it are given in Tables 3–5.

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Table 2

Matrix interconnection of paired correlation coefficients of factors that impact on resulting index

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	Y
X_1	1										
X_2	-0,346	1									
X_3	-0,595	0,851	1								
X_4	0,492	-0,798	-0,766	1							
X_5	0,446	-0,873	-0,803	0,901	1						
X_6	0,609	-0,334	-0,416	0,721	0,616	1					
X_7	-0,581	0,741	0,972	-0,703	-0,682	-0,421	1				
X_8	-0,229	0,510	0,303	-0,787	-0,564	-0,726	0,275	1			
X_9	-0,657	0,806	0,991	-0,774	-0,808	-0,459	0,961	0,284	1		
X_{10}	0,317	-0,306	-0,666	0,194	0,290	-0,144	-0,691	0,411	-0,692	1	
Y	-0,522	0,780	0,972	-0,681	-0,689	-0,378	0,993	0,258	0,952	-0,674	1

Source: the authors' calculations based on statistics (The Main Statistical Office in Poltava region)

Table 3

Regression statistics

Multiple regression coefficient R	0,996360245
The coefficient of determination R^2	0,992733738
Normalized coefficient of determination R^2	0,974568082
Standard error	118,3632328

Source: the authors' calculations based on statistics (The Main Statistical Office in Poltava region)

Multiple regression coefficient R = 0,996 indicates a very tight relationship between the resulting indicator and factor values. The concern of the value of the coefficient of determination R^2 in obtained correlation-regression model R^2 = 0,993, so, the dependence of the average wage to 99.3% due to selected factor values.

This dependence is quite legitimate with considering high coefficients of multiple regression and determination. An indicator of significance F indicates that the evaluation results are sufficiently reliable. It makes sense to look at variance and F-statistics, so their higher value indicates a variation of the dependent and independent variable, so the regression equation is significant.

Thus, the regression equation, which is based on Table 5, would look like this:

$$Y = -125,85 + 1,133\,X_2 + 1,553\,X_3 + 0,429\,X_5 +$$
$$+ 0,911\,X_7 - 1,282\,X_9. \qquad (2)$$

Through analyzing the regression equation may be made the following conclusions: as the number of small businesses per 10 thousand of present population grow on one unit, the average wage in Kremenchuk increase by 1,13 UAH; by increasing the subsistence minimum on 1 UAH, the average salary will increase by

Table 5

**Estimates coefficients
of the five-factors regression model**

Indicators	Coefficients	Standard error	t- criteria of Student	P-value
Y	-125,855	904,328	-0,139	0,902
X2	1,133	6,230	0,182	0,872
X3	1,553	3,921	0,396	0,730
X5	0,429	2,686	0,160	0,888
X7	0,911	0,497	1,834	0,208
X9	-1,282	2,467	-0,520	0,655

Source: the authors' calculations based on statistics (The Main Statistical Office in Poltava region)

1,55 UAH; while increasing productivity for 1 UAH the average salary increase almost by 0,43 UAH; by increase in nominal wages on 1 UAH, the average salary will increase by 0,91 UAH; by increasing the minimum wage on 1 UAH, the average wages reduced on 1,28 UAH.

Thus, the data of made correlation-regression analysis indicate that the selected factors have a significant impact on the average wage in the city Kremenchug and it requires more careful analysis. At the local level for improving the living standards, it is necessary to ensure the stable development of the small and middle business. Increasing the number of small businesses will provide more job places and will contribute to increased productivity in enterprises of the city. However, despite the increase in productivity, raising the minimum wage would reduce the average wage. This is because in times of crisis, companies do not fully use their potential as productive and skilled, what is displayed on the average wage. The minimum wage, in turn, should be reviewed depending on changes in the subsistence minimum

Table 4

Indicators, which describe the reliability of regression model

	Df	SS	MS	F	Significance F
Regression	5	3828118,29	765623,6581	54,64893569	0,018066778
Remainder	2	28019,70975	14009,85487		
Total	7	3856138			

Source: the authors' calculations based on statistics (The Main Statistical Office in Poltava region)

value of which is the social standard of the state. This index serves both such a factor influence on living standards of the population and an indicator of living in the country. Therefore, increasing the living wage at the national level will contribute to social security and growth of standards of social and medical services for the population.

In order to provide the effectiveness of developed regional and local socio-economic strategies of development, it is necessary to predict the level of life of the urban population. On the third stage, the forecast of the average wage was done by using the least squares method, which is used for predicting socio-economic processes (Druzhynina, 2014). To confirm the accuracy of the constructed econometric model and obtain predictive values, there was carried out a verification of predicted values by invert method and by graphs of dynamics of actual and estimated levels of the average wage (Fig. 2).

Through the results of the verification made, calculation error does not exceed 5%, confirming the adequacy of the model and derived predictions.

In order to obtain accurate and reliable data forecast, a period from 2016 to 2019 was chosen, as making a forecast for a longer period is not appropriate taking into account the instability of the economic, social, and political situation in Ukraine. By using the method of least squares obtained the following results of forecast factor indicators: the number of small businesses from 2016 to 2019 increased by 24.8%; the subsistence minimum per person per month 21.9%; productivity will decrease in 2019 to 50.3% compared to the year 2016; nominal and minimum wage from 2016–2019 will increase by 19,8% and 21,3 % respectively.

On the fourth stage, there are made forecasts on the average wage in Kremenchuk, which are based on forecast data and regression equation (Fig. 3).

Despite the crisis phenomenon in the economy of the country, this forecast suggests a gradual increase of the average wage in Kremenchuk, for forecast period it is nearly 20.3%, due to an increase in the number of small businesses; increase in subsistence level; growth of productivity and nominal and minimum wages. Thus, the standard of living in Kremenchuk tends to improve.

So, as a result of the research, the following conclusions can be reached: firstly, developed and implemented step-by-step algorithm for the prediction of urban population level of life; secondly, by using correlation

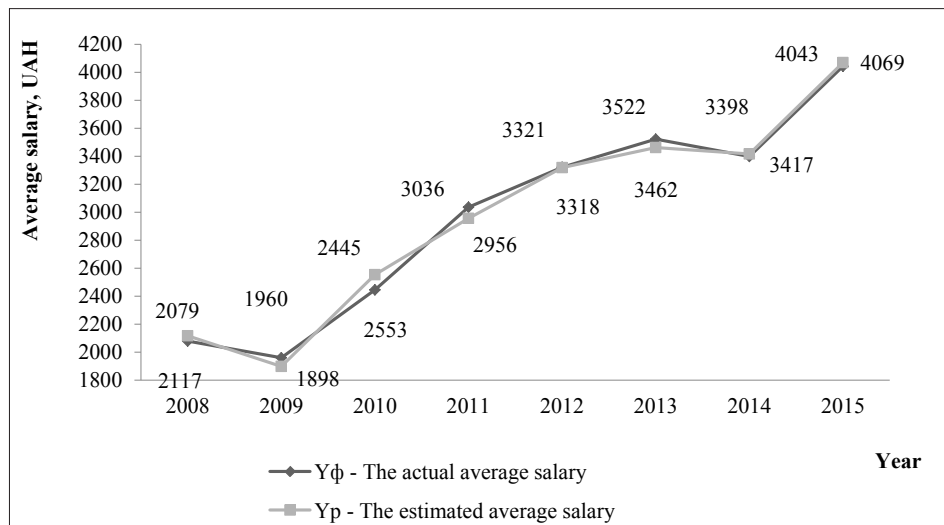**Fig. 2. Trend changes of actual and estimated levels of the average wage in Kremenchuk**

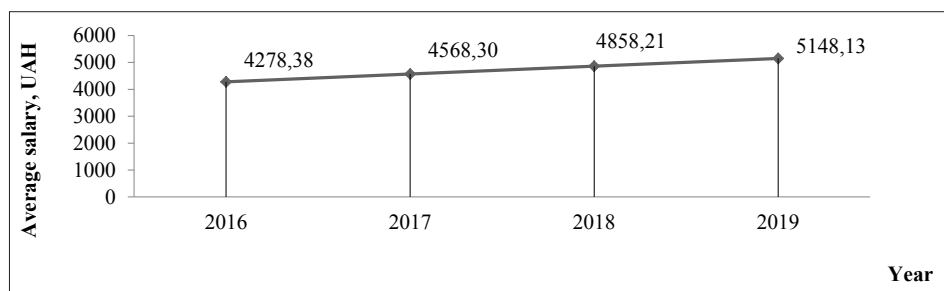*Source: built by the authors' calculations*

Fig. 3. Forecasting the level of the average wage in Kremenchuk

Source: built by the authors' calculations

and regression analysis, there are found factors that influence the city development, which will allow for the extending studies of socio-economic processes; thirdly, foundation of the average wage as an indicator for measuring living standards will promote a forming strategy for the socio-economic development city which is aimed at solving issues and finding alternative solutions, adopting, implementing, and monitoring that will be scientific base for the further studies.

4. Strategic imperatives to increase the welfare of the population at the city level

In recent years, Kremenchuk has demonstrated a reduction in the economic growth due to the situational adaptation of the pre-crisis model of development. The positive changes in the local labour market of Kremenchuk are developed for 2003–2015. It took place in the environment of controversial tendencies of development of labour markets areas (Hlobynskyi, Dykanskyi, Kotelevskyi) and with consideration of negative trends in the development of local labour markets (PC "Kryukov Railway Car Building Works", JSC "Kremenchuk Steel Works", JSC "Poltava Fan Factory"), which forms the imperatives of structural changes and development of the total of the local labour market.

Taking into account the results of comparing the characteristics of the main components of the balance of labour markets of foreign countries and Ukraine, it is proved that, given the complexity of problems in the labour market in Kremenchuk, we should not focus on ensuring the equilibrium state of the local labour market but on bringing the unbalanced local labour market today to the condition, in which the interests and needs of participants will be taken into account as much as it is possible. It is found that the increase in the imbalance of supply and demand in the local labour market of Kremenchuk is due through, firstly, skill-imbalance of demand and supply of labour, and secondly, increased dual structural imbalance of supply and demand of job places by level of education and in professional qualification segmentation, which makes the need to solve the problem of imbalance on the basis of coordination of industrial, educational, demographic, and migration policy, strategic and tactical approaches to labour market regulation, inter-sectorial cooperation, the integration of efforts of government, business, and educational system.

Based on the assessment of the city's resource potential, trends of socio-economic development in the city of Kremenchuk, changes in the legal framework and certain vectors of the movement, existing problems and possible risks, it is necessary to determine the priorities, objectives, tasks, and measures of the economic and social policy of the city community, which are aimed at increasing the welfare of the population on the basis

of taking into account all endogenous and exogenous factors, providing a high-quality and safe environment for the life of the population of Kremenchuk.

In order to increase the welfare of the population, to increase the socio-economic efficiency of the city of Kremenchug, it is necessary to strengthen the coherence of state programs and work of local authorities in improving the economic conditions of the population and its social protection. The main conditions for improving the welfare of the urban population are appropriate approaches.

In forming the strategic imperatives for increasing the welfare of the population of Kremenchuk, the following approaches are used, such as the validity of the methodology for solving the problem: systemic, process, integration, dynamic, optimization, complex, strategic. The number of approaches used depends on the complexity of the system, therefore, the basic approach to solving the problem is a systematic approach, the use of which is due to the complexity of the problem and the need for its study in the unity of legal, economic, social, organizational, managerial, and other aspects; the globalization of competition, production, etc.; strengthening the role of the human factor. Since welfare is seen as a natural system (climate and resource); economic (production, distribution, exchange, consumer, profit, business, property, and financial); institutional (components of security, intellectual, environmental, medical, demographic, psychological, social, educational, cultural, permissive, infrastructure, informational and communicative) components (Druzhynina, 2014), consisting of an internal structure, in which input elements are transformed at weekends in accordance with the stated purpose, and the external environment, the above proves the need for a systematic approach. The economic essence of welfare is determined through its functions, which are in close connection with each other, which necessitates the application of a functional approach.

The achievement of the stated goal of increasing the welfare of the urban population is established as a chain of interconnecting actions, which substantiates the choice of the process approach. When applying a dynamic approach welfare is considered in causal relationships, an analysis of the dynamics of its components in previous years and developed a medium-term forecast. The integration approach is aimed at studying the relationship between vertical management levels, forming a multi-level system of indicators of population welfare and horizontal, exploring the welfare trends of the population at the same level, for example, at the city level. It is determined that interaction in all directions is carried out, first of all, on the basis of information technologies. The optimization approach is realized by identifying links between the resulting welfare indicators of the population, for example, the standard of living or quality of life, and the economic-

ecological and social indicators through the methods of analysis, forecasting, and optimization, on the basis of which the imperatives and their directions form the concept of strategic welfare improvement and also the local population, which determines the use of principles of systemic and program-targeted approach.

The program-targeted approach involves the selection of priority goals of economic and social development, the development of interrelated measures for their achievement at the specified time with the maximum efficiency with the necessary resources.

Strategic imperatives should be aimed at mobilizing and concentrating all possible resources for the implementation of tasks of reforming the city economy, developing the economic potential of cities, and achieving European standards of living (Figure 4). The main vectors for improving the welfare of the population at the local level are the following:
- to increase the standard of living of the city's population, strategic costs can be considered as an increase in the labour cost; reducing the proportion of low-income and low-wage workers; poverty reduction; settlement of interqualification relations in wages; elimination of arrears of wages and preventing them in the future; increasing the share of wages in the structure of production costs; observance of state guarantees in wages by all economic entities;
- to improve the quality of life of the population at the local level, it is necessary to ensure the stimulation of competitiveness, innovation processes and productions, the formation of a favourable climate for attracting investments; development of small and medium business; development of transport and road transport infrastructure. The main tasks for the development of transport infrastructure are increasing transport network capacity; introduction of high-speed passenger trains, primarily daily; development of a network of highways, first of all, high-speed and roundabouts of settlements. Transport should ensure the availability and quality of transport services for all segments of the population in accordance with social standards. Taking into account the steady trend towards urbanization and particularly intensive urban development, general purpose transport should become an alternative to individual motor transport. Priorities in the development of public passenger transport are: long-term planning of urban, urban and suburban transport network development through the development of long-term general schemes for urban development, long-term development and transport links; the application of architectural and planning solutions to increase the throughput of the street network; forecasting the demand for passenger urban transportation and its satisfaction with various modes of transport; the optimization of the network of public routes and the structure of the park on the basis of periodic monitoring of passenger traffic; improvement of the city transport management system, including the

creation of centres for the regulation of urban traffic; introduction of intelligent traffic control systems in urban areas, modernization of the system of automatic traffic control (traffic lights);
- development of traffic safety improvement programs in cities; implementation of projects to reduce the negative impact of urban passenger transport on the environment; providing population with high-quality public passenger transport services in cities, suburban, and rural areas by: developing and implementing state social standards and standards for passenger transport; development of highways; improving the service of people with disabilities; the introduction of a system of mandatory sale of tickets for travel and control over the implementation of such sales; the transfer of functions for the sale of tickets and the collection of revenues during the carriage of passengers in city traffic to customers; development and introduction of a system of cashless payments with the help of SMART-cards for passenger transportation on public bus routes;
- reforming housing and communal services by creating social amenities for the city's territorial community in providing high-quality housing and communal services, repairing the modernization of the housing stock reconstruction, ensuring the reliability of life support systems, comfort and safety of living conditions of the population;
- improving the accessibility, quality, and competitiveness of education through expanding the network of educational institutions for children, taking into account demographic indicators; creation of conditions in educational establishments that meet the modern requirements of educational development and ensure qualitative conducting of educational process; formation of students' skills in the use of information and communication technologies for solving practical problems, research work, self-education, effective communication and cooperation, organization of effective access to them via the Internet;
- implementation of the principle of continuity between pre-primary preparation of primary school pupils and profile education at a senior school; the introduction of inclusive education to support children with special educational needs and the formation of a positive attitude towards people with disabilities in the school environment; ensuring conditions for the development, adaptation in society and preparation for the work of children who need correction of physical and mental development; improvement of areas of work with gifted and talented children and young people, development of effective systems for the identification, training, education, and professional orientation of gifted and talented children and young people; raising the level of scientific and methodological support for pedagogical workers, disseminating advanced pedagogical experience in the city; updating modern computer equipment, technological equipment of
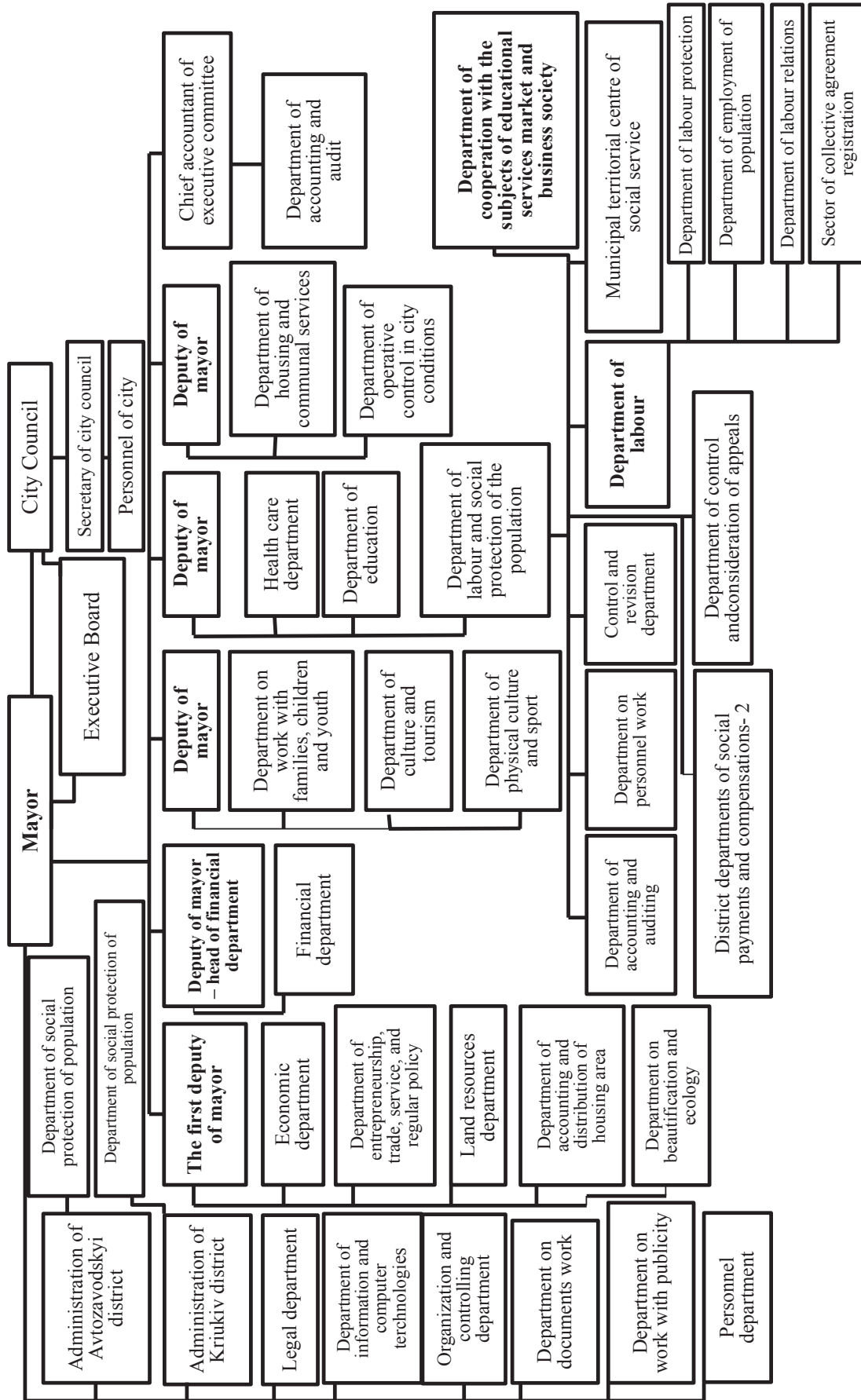
Fig. 4. The developed organizational structure of bodies of local self-government in Kremenchuk

Source: compiled by the authors

canteens and strengthening material and technical base of educational institutions; provision of full financing of rational and dietary nutrition of schoolchildren; providing for the development of a network of camps for rest with day-care for children on the basis of educational institutions of the city; conducting preventive, health and ecological and valeological educational activities; increasing the autonomy of educational institutions at the disposal of financial resources; stimulating parents' interest in changes in the modern educational space, creating an atmosphere of common interest among teachers and parents;

- reforming the health care system, improving the quality and availability of health care, modernizing primary care, strengthening the material and technical base (equipping/re-equipping) consultative and diagnostic centres through the provision of development of centres for primary medical (health and sanitary) assistance by improving material and technical bases for meeting the needs of the population in primary health care; reorganization of the bad fund of health care institutions providing secondary (specialized) medical care according to the need for its provision to the population; carrying out preparatory work for the organization of hospital districts, which should provide conditions for the provision of secondary (specialized) medical care to the population; redistribution of resources of the city budget between health care institutions providing primary and secondary (specialized) medical care; financing of health care institutions by types of medical care on the basis of contracts on medical care of the population, which are concluded by the main administrators of budget funds of the corresponding level; application of elements of the program-target method of compilation and execution of local budgets in the part of health care expenditures for the corresponding types of medical aid;

- increasing the level of social security of the city's residents, accessibility and quality of social services in the spheres of social protection, culture, physical culture and sports, creating conditions for solving urgent problems of migrants, as well as preserving existing ones and creating new workplaces with proper conditions and decent wages, the growth of the real wage, its transformation into a reliable source of income and timeliness of its payment, which will provide a decent standard of living for the workers and their families;

- ensuring the safety of life and improving the ecological situation in the city through the rational use of the natural resource potential of the city, introduction of eco-safety standards, improvement of the quality of the air basin, preservation of biological and landscape diversity, improvement of the state of green economy (green zone development, parks reconstruction) and improvement of cities, implementation of constant ecological and sanitary control over the activity of industrial enterprises.

To implement the priority tasks, it is necessary to ensure the unity of the subject interaction in the process of strategic maintenance of the growth of the welfare level of the urban population. Taking into account the unity of the subject-object nature of this interaction, the necessity for improving the organizational infrastructure of the local self-government bodies of Kremenchuk (Official website of Kremenchuk town council; Official website of Kriukiv district council) has been substantiated in the part concerning creation of the Office of cooperation with subjects of the market of educational services and business structures, principles (social partnership principle, network principle of organization of the city system of continuous education, the principle of collective access to resources, the principle of self-development, the principle of transparency of financial activities); functions (coordination, uniting, controlling, informational, analytical, forecasting, regulatory, inter-sectoral, innovation, quality management) (Fig. 4).

Thus, on the basis of the study, the following conclusions can be drawn: firstly, the imperatives of increasing the welfare of an industrial city that are strategic in nature are identified and should be embedded in the system of strategic development of the socio-economic sphere of the state and the region, which will be the scientific basis for the future research; secondly, in order to increase the welfare of the urban population, orientation towards long-term and mutually beneficial relations with the actors involved in the process should be ensured, which recognize the common tasks and are ready to work together to implement strategic imperatives. In order to ensure the unity of the subjects, improvement of the organizational structure of the local self-government bodies of Kremenchuk in the part of the creation of the Office of cooperation with the subjects of the market of educational services and business units, the principles and functions are defined.

5. Conclusions

As a result of the research, it is proved that since the problem of the low welfare of the local population is complex, ensuring the increase of the level and quality of life should be based on a scenario analysis using the synthesis of theoretical and empirical methods.

The factors influencing the material welfare of the population are identified, a system of criteria (economic, social, environmental, institutional) is proposed, the use of which allows consistently determining the dominant external influences on the living standards of the population and identifying the most powerful of them; An algorithm for forecasting the living standards of the local population is developed.

As a result of computer processing of the relationship of factors and on the basis of the analysis of the corresponding dependencies, the direct dependence function is selected, which was used to determine

that the number of small businesses per 10,000 of the present population grows by one unit, the average wage in the city Kremenchuk increase is 1.13 UAH; by increasing the subsistence minimum of 1 UAH, the average salary will increase by 1.55 UAH; while increasing productivity for 1 UAH, the average salary increase is almost 0.43 UAH; by increase in nominal wages is UAH 1, the average salary will increase by UAH 0.91; by increasing the minimum wage of 1 UAH, the average wage reduced by 1.28 UAH. On the basis of this, with the use of the programs Statistica 6.0 and Microsoft Excel received predictive values of the material welfare of the local population. The adequacy of the models and forecasts received is verified by means of verification of the predicted values by the inverse method (with a comparison of statistical and verification values).

In the conditions of growing requirements for the continuous modernization of the economy, there is a need for the formation of new paradigmatic principles for increasing the welfare of the urban population,

owing to the fragmentation of existing approaches to the latter phenomenon. It is substantiated that the imperatives of raising the level of welfare of the urban population should have a strategic character and be embedded in the system of strategic development of the social sphere of the state and the region through the implementation of the following directions: elimination of social imbalances; raising standards of living; creation of a comfortable environment for the population; creation of more favourable conditions for business development and improvement of the city's business climate; development and modernization of high-tech production; creation of favourable conditions for entering the city of domestic and foreign investments; development of municipal infrastructure; providing the city's population with affordable, high-quality, and comfortable accommodation; ensuring the filling of budgets of all levels, etc. Based on the foregoing, the concept of strategic provision of urban welfare growth will be formed in subsequent scientific studies.

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RELEVANT PROBLEMS OF UKRAINE'S INTEGRATION INTO GLOBAL ECONOMY

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Abstract. *The purpose of this research is* to study the main problems that prevent Ukraine from integrating into the global economy and to determine correct focuses of the foreign economic policy of Ukraine against the background of strengthening of globalization tendencies throughout the world. *The bases of this research* are bases of business development of the foreign economic policy of Ukraine and improvement of Ukrainian economy against the background of international integration. *At the heart of the research methodology* is a dialectical method of scientific knowledge and, besides, special methods of research based on modern scientific bases of economic, management and related to them knowledge: economic and statistic method – for the assessment of the modern state of foreign trade and investment activity of Ukraine; method of analysis and synthesis – for the determination of tendencies of development of integration processed in Ukraine; comparative analysis – for comparison of information concerning development of specific indicators of foreign economic activities in Ukraine. *Results*. As a result of research, the main blocks of problems, which impede the integration of Ukraine into the global economy, and requirements for their complex solution are determined. Besides, interdependence and interdetermination of problems, which impede the integration of Ukraine into the global economy, and requirements for their complex solution are explained. Political and legal, economic, sociocultural, and infrastructural preconditions that are necessary for effective integration of Ukraine into the global economy are highlighted. *Practical implications*. Analysis of the existing problems related to the actual economy, investments, innovation processes gives the possibility to determine the vector of development of Ukraine's economy taking to account recommendations concerning its improvement for the purposes of integration into global economy. *Value/Originality*. Conducted research has provided the possibility to confirm the obtained results: integration of Ukraine into the global economy is impossible without the development of the main strategic directions of integration, without carrying out reforms that would be helpful in improving Ukraine's reputation on the international stage. It is confirmed that without correct, scientifically well-grounded, carefully well-reasoned and gradually implemented policy in Ukraine, any national strategy of economic and social development that makes provision for integration of our country into global economy cannot be successfully realized.

Key words: foreign economic activity, integration, global economy, economy of Ukraine, globalization.

JEL Classification: O19, O33, O52

1. Introduction

The modern stage of law and state formation in Ukraine can be referred to transformational one that is connected with solution of socio-political and economic problems concerning formation of completely new model of state management, development of civil society that could meet world standards relative to human rights, especially taking into account obligations undertaken by Ukraine according to the Contract of Association concluded between Ukraine, on the one hand, and European Union, European Atomic Energy Community and their member countries, on the other hand. Together with the gradual integration of Ukraine into world legal terrain, need for improvement of national and international mechanisms of confirmation and enforcement of constitutional rights and human liberties also increases.

There can be no doubt that protection of vital interests of a person or a citizen, of society and state, assurance of the stable development of society depends to the certain

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extent on the financial condition of the state and on its economic development.

Today it is quite obvious that Ukraine is a state with a free market economy, however, further expansion of its participation in global economic integration and building its international market strength require determination of specific legal mechanisms of promotion in the global economy, determination of approaches to improving the competitiveness of the national economy.

2. Results of previous researches

As it is obvious from the results of analysis of scientific literature, the number of research papers dedicated to the investigation of the phenomenon of international regional integration of countries is rather small. World doctrine has a number of scientists-fundamentalists, who have laid the basis for terms, phenomena, and ties. We can find the main economic theories of international experience highlighted in works of: classicists – A. Smith, D. Ricardo, neo-classicists – E. Hecksher, B. Ohlin, E. Mundell, R. Johnson, J. R. Hicks, representatives of modern scientific concepts – S. Robocc, K. Simmonds, J. M. Siroen, K. J. Lancaster, S. Linder, J. Lafaille, F. Perroux, I. Kreivis, P. Samuelson. Besides, it is worth mentioning our Ukrainian researchers, in particular, O. Bilorus, I. Burkovskyi, A. Halchynskyi, Yu. Kozak, who have actually studied modern processes of the world economic globalization and range of problems concerning Ukraine as a part of it.

However, against the background of the realities of modern life, the problem of Ukraine integration into global market is complicated because of difficulties in the political and economic situation inside the country. During last years, the development of Ukraine's economy has been significantly influenced by external and internal imbalances and by long-lasting military conflict in Eastern Ukraine. Due to the financial and economic situation in Ukraine, necessary measures have been taken in order to prevent financial downturn and to provide preconditions for the economic growth, increase of budget revenues, and realization of actions concerning rational use of public funds, exclusion of loss of revenues and social protection of citizens according to the economic possibilities of the country.

In addition to the aforesaid, it should be mentioned that the ongoing issue of lack or insufficiency of funds in state budget results in the necessity of looking for new ways to solve this issue by using the international experience of overcoming the economic crisis and providing economic security of the country.

International cooperation is one of the actual directions of cooperation between countries that is caused by strengthening the role of the latter in providing the global law and order by means of international law. Economic, political, cultural or any other coexistence of our country with the European community and

with other countries throughout the world foresee the obligatory implementation of international standards in different fields of social interactions, which also includes economic field. Today's political and legal realities give strong arguments for the necessity of creation of practical legal mechanisms for such international cooperation.

3. Results of previous researches

Today the processes of international economic integration are dominant in the world economy's development. They come together with significant dynamic globalization processes.

In juridical science and in practice globalization is defined as a system, multi-faceted and multi-levelled integration of different existing all over the world state-legal, economic and financial, civil and political institutions, ideas, principles, moral and political, material assets, and variable relationships.

Under the influence of current globalization factors, such components of the Ukrainian state-legal institutions as a form of state and law; methods of state activity; principles of enjoyment of rights; area of public authority extension; state and law sovereignty undergo evolutional changes.

Therefore, global processes have a great influence modifying the following functions of Ukrainian state:
1) under today's economic and socio-political conditions of functioning of the national state, some of its outdated functions, which have spent themselves, disappear and fall down (for example, commercial and organizational function, function of control over consumption area, cultural and educational function, etc.);
2) new functions appear or those functions, which have been secondary ones, develop and improve, – defence function, ecological function, demographical function, the social function of the state;
3) traditional functions of the state significantly change. This is primarily subject to economic function of the state. The state cannot be fully apart from the economic field and economic regulation; however, its influence has to be limited. The excessive interference of the state and overregulation of economic processes also have an injurious effect. For that reason, it is important to keep a balance between state interests and interests of business units, to determine rational legal boundaries of state interference into economic processes. Thus, in order to solve the problem of state and economy cooperation, there should be such an approach created that would give the possibility for the state to combine organically administrative methods of economic management and pure market methods of management (financial leverages of the state over economy, state budget, credit and financial, taxation, customs policy, state orders and national loans, direct financial support for subjects of business relationships, export and import policy,

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etc.). Whereas, state control over natural resources and main economic fields, protection of domestic market and interests of domestic goods producers in the domestic market, prevention of financial speculations and the similar have to become those methods of implementation of the economic function under the conditions of globalization.

A particular attention has to be paid to the fact that an active development of globalization processes and international economic integration and, as a result, constant increase of the scope of international trade leads to the appearance of external threats to the national economy. The modern stage of development of the world economy is characterized by increasing influence of economic globalization, which is primarily characterized by a certain levelling of the meaning of state boundaries due to the fact that all international economic subjects perform their activity in the common open economic space.

As it is known, one of the main directions of the national policy of Ukraine is a support for the state integration into European political, economic, legal space with the aim to obtain membership in the European Union. Such a complicated social and economic process of building a close cooperation causes greater overall dependence of Ukraine, first of all, in the economic area, on other countries-members of the European Union.

Thus, under current conditions, integration of Ukraine into global economic space is performed in two ways: 1) by its belonging to existing international (global) organizations and 2) by building bi- and multilateral relations with separate countries and also with neighbouring regions.

Social and political changes in Ukrainian society and political and legal actions extensively performed by the state have determined the main vectors of development of the abovementioned integration processes.

Today Ukraine is a member of the International Monetary Fund, of the World Bank, of the European Bank for Reconstruction and Development, and of the World Trade Organization. Ukraine takes an active part in activities of the UN Economic Commission for Europe that encourages common European economic integration and cooperation of member states, provides sustainable development and economic prosperity. By performing its activity the UN Economic Commission for Europe initiates measures aimed at easing concerted actions for the economic development of European integration, increasing the level of economic activity in Europe, supporting and strengthening of economic relationships both between European counties and between other countries all over the world. Taking into consideration the fact that the UN Economic Commission for Europe sets regulations, standards and conventions to promote international cooperation in Europe and outside, Ukraine directs its activity to strengthen cooperation in respect of integration of

energy, transport, ecology, and economy. These actions are performed by means of political dialog, negotiations concerning international legal documents, drafting of laws and regulations, exchange and application of the best European experience (UNECE, 2018).

It is worth mentioning that the European Union works close with Ukraine in order to reach the greatest possible political association and the greatest possible economic integration according to the Global Strategy of foreign policy and security policy of the European Union.

In view of the abovementioned, it should be indicated that Ukraine takes an inconsiderable part in the economic activity of other countries because our country is beyond the international flow of investment costs and international currency relations. In the report about global competitiveness for 2017–2018, which provides a unique understanding of factors of their productivity and prosperity, Ukraine is on the 81st position among 137 countries (World Economic Outlook, 2017). Due to this, it can be stated with certainty that Ukraine is only on the initial stage of integration of national economy to the world structures and cannot become an equal partner in the global economy. Only having increased the competitiveness of the national economy, and having created favourable conditions in order to get foreign investments into the economy and to win strong positions in the international market, one can speak about the integration of Ukraine into global economic space.

It has to be separately noted that European experience convincingly shows that constant increase and improvement of living standards of any country's population can be achieved only by increasing productivity and by applying new better products and services that successfully compete in the marketplace. Taking into consideration all this, innovations, which are the basis for sustainable development and economic growth, are of great importance for modern competitiveness.

The situation in Ukraine shall be characterized taking into account these circumstances. In today's Ukrainian realities, one can observe decrease of investment and innovation activities, weakening of the system of state regulation and control in economic sector, instability of legal regulatory activity in economic relations, critical state in core industries of the state, "shadowing" of the national economy that lead to importance of development and fulfilment of the national programs for the economic, scientific and technical development of the state.

Thus, it is obvious that Ukrainian society has to deal with such main problems of deterioration of the economic growth:

1) exacerbation of the internal crisis,
2) critical slowdown of Ukrainian economic growth,
3) degradation of the main macroeconomic performance,

4) cutbacks in industrial production,

5) decline in economic activity, first of all, in investment activity,

6) loss of export revenues because of worsening of a conjecture of traditional raw materials and commodity markets,

7) shortfalls to the state budget and need for additional borrowings,

8) insufficient availability of investment resources,

9) deterioration of human well-being (households) and increase in the level of unemployment,

10) increase on the debt pressure, mainly in the public sector,

11) increase in shadowing of economic activity,

12) high level of corruption and its entrenchment in all spheres of the state management.

The fourth IMF credit tranche gave Ukraine a possibility to implement necessary reforms, to enlarge gold and currency reserves, to postpone a default, to stabilize a macroeconomic situation by strengthening the confidence of partners, investors, and donors in the country. Relative business deregulation in 2017, especially in building industry, and optimization of state fiscal policy together with the improvement of service delivery for tax payers, in particular by implementing an electronic system for VAT return, have significantly increased a taxation base providing a surplus of state and local budgets and have encouraged reduction of shadowing economy share. As a result, information about improvement had a positive effect on the investment climate and has brought Ukraine to 76th Doing Business-2018 rating position (Doing Business, 2018).

Due to the existence of many problems, which restrain the economic growth of the country, the desire of Ukraine to build partner relationships and to cooperate with the European Union, and to get afterward a full membership in this organization come to nothing. This is because of the fact that according to the Maastricht Treaty the EU candidate countries have to adhere to the following accession conditions in order to eliminate differences and to bring together national economies of member countries:

1) price stability – the inflation rate in the candidate country should not exceed the average inflation rate of three EU countries with the lowest inflation rates by more than 1.5%;

2) public finances stability – the annual national budget deficit cannot exceed 3% of the gross domestic product. The level of the state debt cannot exceed 60% of the annual GDP;

3) the level of interest rates for long-term credits should not exceed 2% of the level that exists in three EU countries with the best results;

4) currency exchange rate should not exceed the margins of the defined in the EU fluctuation range for exchange rates. The devaluations are prohibited during minimum two years (Treaty on European Union, 1992).

Thus, taking into account these criteria, it should be mentioned that, being unassisted, Ukraine is not able to perform all necessary changes and, as a result of this, the integration of Ukraine into global economic space is slowed down because of the existence of negative factors for the realization of global trade. According to the information given by the International Monetary Fund the most problematic factors are: taxation rates (21.7%), corruption (16.4%), access to financing (10.3%), tax regulations (9.3%), ineffective government bureaucracy (7.2%), inflation (5.5%), political instability (5.2%), and crime rate (4%) (Global Competitiveness Index, 2017).

Moreover, stimulation of innovation activity in the country, increase in its innovative capacity, and increase in general effectiveness of the national economy are possible only by overcoming corruption that is the main barrier for the economic growth of many countries and essentially impedes the fulfilment of UN Programme for sustained development for 2030.

According to results of the research performed by international non-profit organization Transparency International acting against corruption and providing the analysis of the corruption in the world, Ukraine has taken the 131st position among 176 countries due to the level of corruption. At the same time, the EU candidate countries have taken the following positions according to the level of corruption: Montenegro – 64th, Turkey – 75th, Albania – 83rd, Macedonia – 90th (Transparency International, 2016).

It should be stated that the effective integration of Ukraine into the global economy requires certain political and legal, economic, sociocultural, and infrastructural preconditions.

Political and legal preconditions of integration consist of: the political certainty of Ukraine, assurance of territorial integrity and creation of an adequate system of national security, fulfilment of international obligations, formation of correspondent legal system and preparation of effective mechanisms and instruments for its fulfilment.

Economic preconditions for the integration are the following: development and realization of the well-founded programme of transfer to market relations by tending to denationalization and privatization, social protection of the population; assessment of the export capacity, development of the export-import mechanism for the regulation of foreign economic activities; solution to the problem concerning external debts.

The main social and cultural preconditions for the integration are: revival and upbringing of the self-respect, creation of conditions for the social and cultural life of Ukraine's population.

Formation of the infrastructural preconditions is associated with the development of transport communications (see, ground, air); development of modern information and communication systems and

their connection to the international systems of cross-border cooperation.

Parameters of the state budget have a great influence on the development of economic processes in Ukraine. By setting up incomes and expenses, the state budget influences a wide range of economic processes in our country and also serves as a guide mark for all subjects of the economy, affects their correspondent decision-making and their business behaviour. During the last years, the state budget of Ukraine has been estimated on the basis of the main macroeconomic indicators that have been approved by the International Monetary Fund.

Thus, for modern Ukraine that undergoes serious transformational processes, it is quite important to place special emphasis on the problematics of its integration into the global economy as the investigation of these issues is relevant not only for science but also is an urgent practical issue.

4. Conclusions

Summarizing the results of the conducted research, it should be mentioned that a range of burning issues, which appear during the process of Ukraine integration into the global economy, is not certainly limited only to those mentioned in the article. These and other problems are to be studied by scientists in order to develop effective political and legal mechanisms for this specified direction.

To provide further integration into the global economy, reforms should be performed in Ukraine, which would promote the improvement of the reputation on the international stage. It seems that integration of Ukraine into the global economy in the near future is unreal. Ukraine can become an equal partner of foreign economic relations and can take a rightful place in the global economy only after realization of a set of actions aimed at improving the competitiveness of the economy in the world market. Among these urgent measures, the following actions can be highlighted: reduction of the excessive budget deficit, decrease of the national debt; promotion of competition in the labour market by providing the conformity between salary level and labour productivity, on the one hand, and price stability, on the other hand, realization of the actions intended for the economic recovery suitable for price stability, improvement of the control mechanisms for the functioning of the competitive environment, development of the public-private partnership, stimulation of innovations by developing services concerning support for the innovative projects, creation of the innovation networks, increase in the state purchases of innovative goods and services, improvement of access to domestic and foreign financial resources, acceleration of the implementation of directives on the domestic market, and improvement of mechanisms for the implementation of the EU acts of legislation.

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EVALUATION OF SMALL BUSINESS INFLUENCE
ON THE ECONOMIC DEVELOPMENT OF THE REGION

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Abstract. *The purpose of the paper* is to study the role and assess the small business development influence on the economic development of the region. *Methods.* Theoretical and methodological foundations of the research draw up the scientists' works on the problems of economic development of the regions. During the scientific research, a complex of such methods was used: generalization and scientific abstraction – in order to specify the conceptual-categorical instrument and identify characteristics of the small business; monographic – in case of highlighting the scientists' views on the investigated problems; comparative analysis – when identifying features of small business influence on the economic development of the region; mathematical modelling in economics – to develop the methodology for the evaluation of small business development influence on the economic development of the region. *Results.* Special aspects of small business functioning as a factor of the economic development of the region that accommodates economic growth, the improvement of the product quality and social indicators of development, formation of the middle class, decrease of the unemployment rate, increase of the population living standards are researched. The ambiguity of approaches to the small business definition is established, the characteristic feature of which, in most cases, is the number of employees. However, the small business is distinguished for industrial enterprises and service-oriented companies, based on the structure of management, and also taking into account the self-regulation of small enterprises or their relations to the large enterprises or industrial group of companies. It is established that criteria for the evaluation of the efficiency of small business enterprises can be: increase in the entrepreneurship development rates, minimization of material and social losses of the society, increasing the share of small business in GDP formation, raising the level of social protection of the employee. Method of the evaluation of small business development influence on the economic development of the region is proposed, which provides: the allocation of the priority areas of activity of small business entities that have a positive effect on the correspond territory; formation of the aggregate indices representing each of these areas; establishment of connection between the researched areas of the small business influence with the economic development of the region; building-up the compound integrated index based on the results of the correlation analysis parameters that have an effect on the economic development of regions; evaluation of the contribution extent of the small business to the economic development level of each region. *Practical meaning.* It is established that the functioning of small businesses significantly influences the sectoral structure of the territory and the level of the population employment, while the influence on the infrastructure and the ecological state of the region is not so considerable. Factors, that determine the efficiency level of the small business functioning and also have a significant influence on the economic development level of the region are singled out, namely: the number of small enterprises; products sold turnover; the number of employed and the proportion of employees in the small businesses. Taking into account the specifics of small business, its strong influence on the economic condition of the local territories is substantiated, which in its turn determines the necessity for conducting the complementary measurements involving a local survey of the statistical information, particularly in large cities, mountainous areas, zones of ecological disaster. The methodology for the evaluation of the small businesses functioning at the local level allows us to specify actual reasons that stem the tide of small business in existing locations and to formulate the measures for their elimination. *Value/originality.* On the ground of the conducted research, the conceptual principles of the small business influence assessment on the economic development of the region are proposed, which took the basis of the scientific research on formation effective model sustainable development region.

Key words: small business, economic development, region.

JEL Classification: D22, R10, O10

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1. Introduction

Small business (SB) is one of the economic development factors and the social welfare improvement. It contributes to the gross domestic product growth, the improvement of product quality, the formation of the middle class, the reduction of unemployment, etc. However, if in the European countries the SB provides up to 60% of the budget revenues, then in Ukraine this figure is only 0.18% (Britchenko, 2010).

As an integral sector of the market economy, the entrepreneurship has the pronounced regional orientation, because the small business enterprises plan their activities primarily based on the needs of the local markets, capacity and structure of the local demand, and the local authority within their power form the business climate. It is obvious that small business should be the factor of the regional level development, influence the economic development of the region.

Problems of the small business development in the economy of the regions of Ukraine are considered in the aspect of the small business development by the specifics of the cities (Babkina, 2010), the strategic key factors of the regional economic development (Verkhohliadova, Cherednichenko, Stenicheva 2010); adaptation of small and medium-sized businesses to the economic management under the conditions of a crisis (Humanetska, 2010), development of small business in different forms of state financial support (Piskunova, 2010). Economic growth of the region is also investigated on the basis of the business activities (Kovalov, 2014). However, in these works, the support tools by the regional authorities of the small business development are most often studied. While the small businesses influence on the development of the region remains, commonly, out of attention.

Therefore, the ***purpose of the study*** is to research the role and assessment of the small business development influence on the economic development of the region.

2. Characteristics of the small business

The small businesses operation is usually considered at the regional level, since SB often use resources of the local market and sell their products, mainly, on the territory of their placement. The small business orientation to the local labour market closely connects it with the socio-economic conditions available in the region.

There is no official or generally accepted definition of SB. More or less recognized is the definition of the European Commission, depending on the number of employees, annual balance and turnover (Table 1). However, enterprises are not considered SB, if other companies, not belonging to the specified category, own more than 25% of the capital.

Table 1

Small business characteristics as defined by the European Commission

Type of enterprise	Number of employees		Annual turnover, million euros		Annual balance sheet, million euros
Very small business	< 10	and	≤ 2	or	≤ 2
Small business	< 50	and	≤ 10	or	≤ 10

Definitions are used variously in different countries, but in most cases, the allocation of a particular type of enterprise occurs depending on the number of employees. As a rule, it is considered that a small enterprise should employ less than 50 people, although in some countries this figure is less. In some countries, the conditions are different for industrial enterprises and service-oriented companies; in this case, service enterprises tend to be smaller than industrial enterprises. In some countries, there is a distinction between autonomous Small Enterprises and those associated with a large enterprise or industrial group, or also Small Businesses are distinguished on the basis of the management structure (for example, the owner is personally engaged in the work of the firm or the enterprise is a family business). Finally, the statistical definition of a SB often differs from the definitions, developed for economic policy conducting; for example, although a company with a staff of 60 people may not be related to the SB for statistical purposes, it may have the right to participate in social SB support programs. The main characteristic of the Small Business is "small" in the sense that the enterprise does not belong to 10 or 20 percent of the largest firms in the market or in the industrial sector.

In Ukrainian legislation, this issue is regulated by the Commercial Code of Ukraine. The subjects of the small business are (Commercial Code of Ukraine):
– individuals registered in the manner prescribed by law as sole proprietors with the average number of employees for the reporting period (calendar year) does not exceed 50 persons and the annual income from any activity does not overgrow the equivalent of 10 million euros, determined by the average annual rate of the National Bank of Ukraine;
– legal entities – economic agents of any organizational form and form of ownership, in which the average number of employees for the reporting period (calendar year) does not exceed 50 persons and the annual income from any activity does not overgrow the equivalent of 10 million euros, determined by the average annual rate of the National Bank of Ukraine (Table 2).

Small business is a form of business organization that meets certain criteria. This form is legally fixed (Commercial Code of Ukraine), and the characteristic feature of the entrepreneurship is the innovative principles.

Table 2

**Small business characteristics according
to the Commercial Code of Ukraine**

	Small business	
	Micro	Small
Number of employees	≤ 10 persons	≤ 50 persons
Annual income	≤ 2 million euros	≤ 10 million euros

3. The methodology of evaluation of small business development influence on the economic development of the region

The main criteria of the effectiveness evaluation of the small business enterprises at present time are (Kovalov, 2014):

– increasing the entrepreneurship development growth rate as one of the factors of the economic development of the region;

– minimization of material and social losses of society;

– increasing the share of small business in GDP formation;

– raising the level of social protection of employees, etc.

To provide them, we suggest using the methodology of the SB development influence evaluation on the economic development of the region (Fig. 1).

At the first stage of the given methodology, at the regional level, we highlight the priority areas of the small business entities activity, which have a positive effect on the relevant territory. Such approaches can be determined by each self-government individually depending on the characteristics of the territory development and the security level of the different approaches to services.

At the second stage, in order to quantify the SB influence on the regional development, it is necessary to select the whole complex of indexes that would represent each of these approaches. The State Statistics Service of Ukraine provides a number of statistical indicators that in one way or another characterize this phenomenon and can be used as resultant, or factorial features. By the logical analysis of the state statistics materials, the following relative parameters characterizing the development of small business in the region for each of the priority guidelines were selected:

1. Sectoral structure of the territory – the concentration factor; the number of small businesses per unit employed in the SB in the region; the share of turnover of SB in the total turnover of enterprises of the region.

2. Local budget – local budget revenues per person; the share of carrying-out of works/services for the public funds by the SB to the total quantity of such orders in the territories.

3. Innovative potential of the territory – the share of SB that use innovations in the total number of SB.

4. The infrastructure of the territory – the share of SB providing services to the subjects of the territory in the total number of SB; the share of entrepreneurs involved in the construction and repair of roads and landscaping territory in the total number of entrepreneurs.

5. Attractiveness of the territory – the share of goods and services exported (imported) by the SB, in the total amount of foreign trade turnover of the region; the share of investments in the SB in the total volume of investments in the region.

6. Policy of the region – the share of SB in the total number of enterprises taking part in the political life of the region; the share of public associations of SB entities

1 • Determination of the priority guidelines of the small business influence on the region's development

2 • Formation of the aggregate indicators that represent each of these areas

3 • Establishment of the connection between the investigated areas of the small business influence and economic development of the region on the basis of the coefficients indicators of the pair correlation

4 • Construction of a consolidated integral index based on the results of a correlation analysis of parameters that affect the economic development of regions

5 • The assay of the small business contribution degree to the economic development level of each region
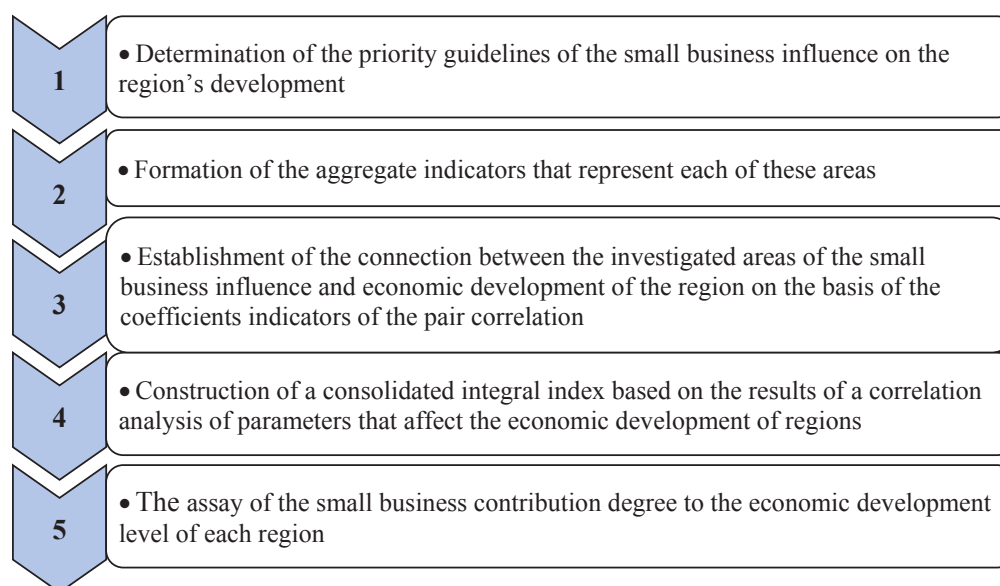
Fig. 1. Stages of implementation of the methodology for small business development influence evaluation on the economic development of the region

in the infrastructure of regional small business support.

7. Ecology of the region – the share of SB involved in environmental protection activities in the total number of enterprises. The amount of SB financing in measures of environmental protection.

8. Living standards of the population of the region – the share of employed in SB in the total number of the employed population of the region; the average monthly salary of the SB employee in comparison with the average monthly wage in the region; the share of hired SB employees to the total number of employees in the region.

In order to identify the link between the investigated areas of influence of SB with the economic development of the region, it is necessary to calculate the coefficient of the pair correlation of indicators, which characterize the functioning of small business and the level of economic development of the region – this is the third stage of the methodology.

To evaluate the extent of the SB contribution to the level of economic development of the region, it is necessary to construct a consolidated integral index based on the results of the parameters correlation analysis, influencing economic development of regions (fourth stage).

The calculation of the integral indicator of the SB influence on the economic development of the region involves the implementation of the several successive stages:

1. Parameters normalization influencing the economic development of the regions to their specific average value:

$$P_{ir} = \frac{x_{ir}}{x_{io}},$$

where P_{ir} – normalization coefficient; x_{ir} – the value of the i-th parameter for r-th region; x_{io} – the value of the i-th parameter for the country as a whole.

2. Calculation of the integral index of the SB influence on the economic development of the region as the average geometric normalized parameters:

$$D_r = \left(\prod_{i=1}^{n} P_{ir} \right)^{1/n},$$

where D_r – an integral indicator of the influence of the level of SB development on the economic development r-th region; n – the number of normalized coefficients.

The presented integral index is a dimensionless value whose level is not limited by a certain interval. The reason for this is the calculation of the index on the basis of relative indicators, the value of which can many times exceed or be many times smaller than the value of a certain average level. The larger the value of the integral indicator, the greater the extent of the SB development influence level on the economic development of the region.

Thus, the SB functioning evaluation, conducted with the help of selective relative indicators, will characterize the extent of the SB contribution to the level of economic development for each region separately – the fifth stage.

The Empirical research base is presented by statistical materials of the State Statistics Service of Ukraine characterizing the development of small business and economic development of regions of Ukraine for 2010–2016.

As a result of correlation analysis as the key indicators influencing the economic development of the region, for the calculation of the integral indicator were selected:
– the number of small enterprises per unit employed in SB in the region;
– the share of the products sales volume by the small business in the total amount of the products sold in the region;
– the share of the works/services execution for the public funds by the small business to the total number of such orders in the region;
– the share of the non-governmental associations of SB entities in the infrastructure of regional support for small business;
– the share of employed in SB in the total number of the employed population of the region;
– the share of the SB employee to the total number of employees of the corresponding region.

4. Applied aspects

The results of calculations of the consolidated integral index in the context of the regions of Ukraine for the period from 2010 to 2016 showed that the largest values of the small business development are achieved in Kherson, Chernivtsi regions – the value is higher on the average over 1,5 (Table 3). Moderate indicators of small business development – from 1,0 to 1,5 – are received for such regions as Kirovohrad, Ivano-Frankivsk, Odesa, Ternopil, Chernihiv, Zhytomyr, Rivne, Khmelnytskyi, Mykolaiv, Sumy, Cherkasy, Volyn, Zakarpattia, Sevastopol city, AR of Crimea (for the period of 2010–2013). All other regions have a low potential for small business development. This is due to the inadequate use of the small business development factors.

The obtained calculations allow us to conclude that the greatest influence of small business on the economic development of the region is observed in Rivne region and Sevastopol city. The weak influence of small business on the economic development of the region is inherent to Zakarpattia, Khmelnytskyi, Ternopil, Donetsk, Zhytomyr, and Cherkasy regions. The insignificant contribution of the SB to the economic development of the country in the whole. To determine the specific reasons for the existing differentiation of the indicators of regions of Ukraine, it is necessary to conduct a more in-depth study aimed at identifying the additional factors influencing the development of small business.

It should be noted separately that the impact of small business on the level of economic development of Ukrainian regions remains practically unchangeable. For the period from 2010 to 2016, the investigated

Table 3
**Consolidated Integrated Index of the Small Business Development Influence Assessment
on the Economic Development of the Region**

Region	2010	2011	2012	2013	2014	2015	2016
Autonomous Republic of Crimea	1,28	1,27	1,25	1,26	-	-	-
Vinnytsia	0,89	0,92	0,94	0,95	1,00	0,97	1,09
Volyn*	0,96	0,99	0,96	0,98	1,08	1,07	1,05
Dnipropetrovsk*	0,96	0,96	0,95	0,92	0,65	0,69	0,72
Donetsk	0,64	0,62	0,64	0,64	0,62	0,62	0,68
Zhytomyr	1,03	1,03	1,03	1,02	1,27	1,11	1,05
Zakarpattia	1,04	1,02	1,03	1,00	1,01	1,01	1,06
Zaporizhzhia	0,76	0,78	0,77	0,77	0,64	0,65	0,64
Ivano-Frankivsk*	1,37	1,37	1,35	1,29	1,50	1,52	1,51
Kyiv	1,00	1,02	1,01	0,99	0,84	0,86	0,86
Kirovohrad	1,24	1,28	1,27	1,24	1,41	1,50	1,56
Luhansk	0,91	0,90	0,92	0,93	0,90	1,02	1,02
Lviv*	1,02	1,00	1,00	1,00	0,89	0,73	0,80
Mykolaiv	1,02	1,00	1,03	1,01	1,10	1,12	1,07
Odesa*	1,34	1,36	1,39	1,39	1,14	1,17	1,21
Poltava*	0,80	0,81	0,81	0,80	0,93	0,93	0,92
Rivne	1,11	1,11	1,14	1,12	1,20	1,26	1,25
Sumy	1,09	1,09	1,10	1,09	1,05	1,07	1,06
Ternopil	1,28	1,20	1,14	1,14	1,14	1,18	1,36
Kharkiv*	0,87	0,89	0,88	0,87	0,61	0,62	0,65
Kherson*	1,28	1,32	1,39	1,39	1,72	1,78	1,67
Khmelnytskyi	1,23	1,24	1,23	1,22	1,23	1,23	1,23
Cherkasy	1,06	1,06	1,08	1,08	1,05	1,05	1,06
Chernivtsi	1,47	1,42	1,43	1,41	1,58	1,63	1,64
Chernihiv*	1,29	1,30	1,33	1,33	1,16	1,19	1,15
Kyiv city*	0,72	0,73	0,71	0,72	0,41	0,41	0,38
Sevastopol city**	1,35	1,44	1,51	1,59	-	-	-

* – without the indicator: "the share of the products sales volume by the small business in the total amount of the products sold in the region"
** – without the indicators: "the share of the products sales volume by the small business in the total amount of the products sold in the region"
and "the share of the works/services execution for the public funds by the small business to the total number of such orders in the region"

influence on the average in Ukraine remained on the same level.

5. Conclusions

Thus, during the research, it is revealed that the functioning of SB has a different influence on the economic development of the region. The small business has the greatest influence on the sectoral structure of the territory and on the employment level of the population, and the smallest – on the infrastructure and the ecological state of the region.

As factors determining the efficiency level of the SB operation, as well as those that have the greatest influence on the economic development level of the region, the number of small enterprises is allocated; the sold products turnover; the number of employed and the proportion of employees in SB.

It should be noted that taking into account the specifics of small business, the strongest influence it has on the economic climate of the local territories. In this regard, for a more in-depth study of the ties between the degree of the small business development and the economic development level of the territories, it is necessary to carry out the additional measurements using the local survey of statistical information (for example, separate large cities – regional centres, mountain territories, zones of ecological disaster, etc.). For this, it is necessary to determine the specifics of the small businesses functioning at the local level and to develop appropriate methodological tools for its evaluation. The development of this methodology allows us to define specific reasons that stem the tide of small business in existing locations and to work out the actions for the resolution of the existing problems in this sphere.

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ADMINISTRATIVE EXPENDITURES
OF SOCIAL SECURITY FUNDS IN UKRAINE

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Abstract. Along with the expenditures for social protection, social security funds finance administrative direction, which should correspond to the amount of functions performed by a particular fund. The *purpose* of the paper is to determine ways to reduce administrative expenditures of state social security funds in the conditions of reforming Ukrainian economy. For this purpose, the authors investigate distribution of the expenditures between social security funds, analyse dynamics and structure of assignments for fund administration, and suggest possible ways to rationalize maintenance cost for these institutions. *Methodology*. Administrative expenditures are an integral part of the cost of social security funds and include particular items of expenses in the budget of these institutions. Applying a systematic approach to calculating the administrative costs of social security funds of Ukraine the authors have taken into account the expenditures related to funding management, support for information systems, and organization of work with insured people. *Results* of the survey showed that in 2007–2016 Pension Fund of Ukraine incurred the largest part of social expenditures (more than 90%) compared with other social insurance funds (less than 10%). At the same time, the administrative expenses were divided approximately into two halves between Pension Fund and other social security funds. In 2015, the government launched a reform of social insurance funds that aimed to reduce funds to three institutions but a decrease in the total amount of administrative expenditures has not been achieved yet. In addition, Pension Fund of Ukraine was least burdened with administrative expenses, while other social security funds with a relatively small share of social expenditures were burdened with administrative expenditures much more. *Practical implications*. Research showed that nowadays the existence of several social security funds in Ukraine is economically inexpedient and it is essential to concentrate functions of social protection in one institution. In particular, it may be appropriate to keep Pension Fund, which should concentrate all current social functions of social security funds naming it Single Social Fund of Ukraine. *Value/originality*. The assessment of administrative expenditures of social security funds in Ukraine is a systematic survey that allows making a comprehensive analysis of expenditures for the maintenance of mentioned institutions compared with the volume of functions assigned to these establishments.

Key words: social security funds, administrative expenditures, merger of social security funds, Pension Fund of Ukraine, Disability Insurance Fund of Ukraine, Unemployment Insurance Fund of Ukraine, Accident Insurance Fund of Ukraine, Social Security Fund of Ukraine.

JEL Classification: H50, G23, J28, J65

1. Introduction

State social security funds are influential in ensuring social protection of the population in Ukraine. Under the conditions of modern economic reform, the financing of these institutions is an urgent issue. In general, the problem of the deficit is particularly relevant for Pension Fund, which increasingly burdens the State budget every year. In 2007, an excess of expenditures over own revenues of Pension Fund reached to 24.4 billion UAH, while in 2016 this figure increased to 141.7 billion UAH or more than five times. At the same time, in 2016, the deficit exceeded the amount of fund's own income and was almost completely covered by the State budget financing.

Along with the expenditures for social functions, social security funds spend a certain amount of money on administrative direction, which should be expedient. Administrative expenditures should correspond to the amount of functions performed by a particular fund.

Scientists have repeatedly investigated the issue of reforming social insurance funds in Ukraine. Results of recent studies in the context of administration

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suggest to ensure the effectiveness of management of social insurance funds (Kovalevych, 2015; Rozhko, 2013), to reduce the number of social insurance funds to two institutions – Pension Fund and Social Security Fund (Servatynska, 2016; Berezina, 2015), unify the structure and competence distribution of social security fund management (Koval, 2014). Scientists also have noted that established Social Insurance Fund does not function properly and the reform of the system of social insurance funds, which started in 2015, was not complete. (Ivashchenko & Maziarchuk, 2017). This proves the urgency of solving problems in the management of social security funds to achieve optimization of maintenance cost for these institutions. In this case, it is necessary to carry out a systematic survey that allows a comprehensive analysis of expenditures for the maintenance of mentioned institutions compared with the volume of functions assigned to these establishments.

The purpose of the paper is to determine ways to reduce the administrative expenditures of state social security funds in the conditions of reforming Ukrainian economy. Therefore, it is necessary to perform such scientific tasks as investigating expenditures distribution between social security funds, analysing dynamics and structure of assignments for fund administration, and suggesting ways to rationalize the maintenance cost for these institutions.

2. Survey methodology

Administrative expenditures are an integral part of the cost of social security funds and include particular items of expenses in the budget of these institutions. Applying a systematic approach to calculating the administrative costs of social security funds of Ukraine, the authors have taken into account expenditures related to funding management, support for information systems, and organization of work with insured people, in particular:

1. for Pension Fund of Ukraine:
– charges for cash services and a cash payment of pensions and benefits;
– management of pension system;
– compulsory state social insurance certificates and pension cards;
– forms, registers for the appointment and payment of pensions;

– creation of programmatic and technical support for the information and analytical system of Pension Fund of Ukraine;
– creation and introduction of the automated system for the Accumulation Fund of compulsory state pension insurance;
– implementation of measures related to the targeted delivery of notifications about the simplified procedure for the provision of housing subsidies to families with pensioners;

2. for Disability Insurance Fund of Ukraine:
– organizational and management activity;
– duties of the insurer fulfilment;

3. for Unemployment Insurance Fund of Ukraine:
– banking services;
– support for the information-reference system of the unemployed;
– maintenance of the executive directorate, its jurisdictions, State Employment Service Training Institute and fund management;
– creation of conditions for the reception, provision of social services and development of the material base;

4. for Accident Insurance Fund of Ukraine:
– measures to coordinate work with insured people;
– performance of other work related to the coordination of insurance activity;
– ensuring the work of the administrative board and supervisory board of the fund;
– fund activity organization;
– expenses for money transfer;
– court costs and enforcement fee.

3. Distribution of expenditures between funds

Pension Fund of Ukraine was established in 1990, Accident Insurance Fund of Ukraine and Unemployment Insurance Fund of Ukraine were created in 2000, and Disability Insurance Fund of Ukraine began its activity in 2001.

In 2001–2010, economic entities paid four different types of social taxes from payroll, and each fund administered its social tax separately.

From January 1, 2011, these social taxes were consolidated into a single social contribution and Pension Fund of Ukraine started its administration. At the same time, the other three social funds continued to perform other functions remained. From October 1,

Table 1

Structure of expenditures of social security funds in Ukraine during 2007–2016

Funds	Years									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Share of Pension Fund expenditures, %	89.4	90.6	90.7	90.9	91.2	91.3	90.6	91.2	92.4	91.8
Share of other social funds expenditures, %	10.6	9.4	9.3	9.1	8.8	8.7	9.4	8.8	7.6	8.2

Source: the results were calculated on the basic of budget implementation reports of social security funds and of data from State Statistics Service of Ukraine

2013, the administration of single social contribution joined Ministry of Income and Fees, and from May 21, 2014, State Fiscal Service of Ukraine started to administer the mentioned contribution.

During 2007–2016, total expenditures of social security funds increased from 111.8 billion UAH to 276.1 billion UAH (in 2.5 times) (Table 1).

As a social fund with the most difficult financial situation, Pension Fund of Ukraine made the largest share of expenditures, compared with other social insurance funds. In general structure of expenditures of social funds, the share of Pension Fund in 2007 reached 89.4%, and in 2016 – 91.8%. At the same time, the share of other funds decreased from 10.6 to 8.2%.

In 2015, the government launched a reform of social insurance funds that aimed to reduce administrative expenses to 600 million UAH. In particular, Social Security Fund of Ukraine was created through the merger of Accident Insurance Fund of Ukraine and Disability Insurance Fund of Ukraine. However, today the activity of the newly established institution is still under construction.

4. Administrative expenditures formation

During observable period in Unemployment Insurance Fund of Ukraine, the main item of administrative expenditures was maintenance of the executive directorate, its jurisdictions, State Employment Service Training Institute and fund management (in 2007 the share of this item was 72%, and in 2016 it reached 91.3% of the administrative expenses of the fund).

Accident Insurance Fund of Ukraine had a predominance of costs for fund activity organization (more than 90%).

Disability Insurance Fund of Ukraine appropriated the largest share of administrative expenditures to the organizational and managerial direction (more than 90%).

Pension Fund of Ukraine spent the greatest amount of money on the management of pension system and creation of programmatic and technical support for the information and analytical system (97.2% in 2016 from the total value of fund administrative expenses).

The survey of social funds administrative expenditures dynamics showed that, in Ukraine, there was a tendency for their growth, in particular, in 2016 they increased by 2.1 billion UAH or 77.8% in comparison with 2007 and reached 4.8 billion UAH (Table 2).

As a criterion of administrative expenditures growth rate expediency, we have chosen the dynamics of real GDP. From provided data, it can be seen that the increase in administrative expenditures of social funds was often excessive because it outstripped the growth of real GDP. Thus, we can estimate the dynamics of these expenditures positively only in 2011 and during 2014–2015.

The structure of administrative expenditures of social security funds of Ukraine shows that the mentioned expenses were divided approximately into two halves between Pension Fund and other social security funds (Table 3).

In 2007, the share of administrative expenditures of Pension Fund amounted to 49.4%, and in 2016 it reached 51.7%, while the share of other three funds decreased from 50.6% to 48.3%. This indicates a non-rational structure of administrative expenditures, because during 2007–2016 Pension Fund spent over 90% of the total expenditures of social security funds, while the other three funds financed less than 10%.

Table 2

Dynamics of administrative expenditures of Ukrainian social security funds and GDP during 2007–2016

Indicators	Years									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nominal administrative expenditures of social funds, billion UAH	2.7	4.0	3.8	4.6	4.8	4.9	5.2	4.6	4.7	4.8
Growth rate of real expenditures of social funds, billion UAH	–	141.0	108.8	119.9	103.9	107.9	109.9	79.6	85.3	121.1
Real GDP growth rate, %	–	102.2	84.9	104.1	105.4	100.2	100	93.4	90.2	102.4

Source: the results were calculated on the basic of budget implementation reports of social security funds and of data from State Statistics Service of Ukraine

Table 3

Structure of administrative expenditures of social security funds in Ukraine during 2007–2016

Indicators	Years									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Share of Pension Fund administrative expenditures, %	49.4	49.3	51.7	47.1	46.9	50.4	49.6	50.1	51.3	51.7
Share of other social funds administrative expenditures, %	50.6	50.7	48.3	52.9	53.1	49.6	50.4	49.9	48.7	48.3

Source: the results were calculated on the basic of budget implementation reports of social security funds

Table 4

The share of administrative expenditures in expenses of social security funds in Ukraine during 2007–2016

Indicators	Years									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
In expenses of Disability Insurance Fund, %	5.0	6.3	5.5	5.1	5.6	5.4	5.7	5.2	7.1	6.5
In expenses of Unemployment Insurance Fund, %	23.2	25.0	17.2	24.1	20.1	19.9	19.0	19.8	17.5	16.4
In expenses of Accident Insurance Fund, %	9.6	10.6	9.8	8.6	10.4	8.7	7.3	6.5	6.2	6.6
In expenses of Pension Fund, %	1.9	1.9	1.9	1.8	1.6	1.6	1.6	1.4	1.4	2.3

Source: the results were calculated on the basic of budget implementation reports of social security funds

At the same time, the administrative expenses of Pension Fund reached 50% of all expenditures for the maintenance of social funds. This calls into question the expediency of several off-budget institutions that perform social protection functions in Ukraine.

In 2015, the merger of two institutions into Social Security Fund of Ukraine has been initiated and the intention was to reduce administrative expenditures by 600 million UAH. However, according to the statistics (Table 2), the decrease in the total amount of administrative expenditures has not been achieved yet and, on the contrary, they grew from 4.7 billion UAH to 4.8 billion UAH during 2015–2016.

If to consider the structure of administrative expenditures in detail, it should be noted that the largest share belonged to Unemployment Insurance Fund of Ukraine – approximately 30%. The shares of Disability Insurance Fund of Ukraine and Accident Insurance Fund of Ukraine were within 10% in the structure of administrative expenditures.

If to analyse the burden of social security funds with their administrative expenditures, it can be seen that the largest share of these expenditures belonged to Unemployment Insurance Fund of Ukraine (Table 4).

At the same time, in 2015 the reform of social security funds aimed to merger Disability Insurance Fund of Ukraine and Accident Insurance Fund of Ukraine, which had much smaller shares of administrative expenditures in their expenses.

With the largest share of social spending, Pension Fund of Ukraine was least burdened with administrative costs, while the other three social funds were much more burdened by administrative expenditures financing a relatively small share of social protection.

5. Conclusions

Nowadays the existence of several social security funds in Ukraine is economically inexpedient and it is essential to concentrate functions of social protection in one institution.

Liquidation of all social funds is a difficult task because it requires including a large number of additional items in the expenditure of State Budget. That is why it may be appropriate to keep Pension Fund, which should concentrate all current social functions of social security funds naming it Single Social Fund of Ukraine. At the same time, it is necessary to ensure proper transfer of all payments into cashless forms through applying banking system. In addition, it may be essential to put the functions of abolished social funds on the administrative apparatus of Pension Fund because a significant part of its control function, related to administration of the single social contribution, was subsequently delegated to State Fiscal Service of Ukraine.

It is also advisable to entrust the management of Single Social Fund only to state representatives because the state provides a social function mainly through the system of social security.

At the same time, the Cabinet of Ministers of Ukraine should appoint the entire composition of administrative and supervisory boards of Single Social Fund after presenting it by the Minister of Social Policy. The Ministry of Social Policy of Ukraine should keep control over the fund activity. We suggest including single social contribution and other proceeds of social security funds in State Budget revenues as a tax source and also applying budget financing of Single Social Fund.

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INVESTMENT CLIMATE EVALUATION AS AN EFFECTIVE DETECTION METHOD FOR NEGATIVE IMPACTS ON COUNTRY'S DEVELOPMENT

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Abstract. The *purpose* of the paper is to determine the procedure for calculating the investment climate favourableness and, based on its findings, study the nature of the investment climate in Ukraine. *Methodology*. In the paper, there were used the following methods: the dialectical method (understanding the investment process and its characteristics as the investment climate components); scientific abstraction, theoretical and empirical analysis (characteristics of the investment climate components and definition of their interconnection based on the corresponding scheme); method of modelling (guiding the formulas for calculating the main investment climate components based on generalizing the theoretical research studies of Ukrainian and foreign researchers); method of system analysis (defining issues of the investment climate favourableness in the country as an integral economic system on the example of Ukraine); statistical methods (grouping, comparison, dynamic series), used in the study of dynamics of main indicators of economic and social development of Ukraine, on the basis of which the dynamics of the calculated ratio of the investment climate favourableness in Ukraine was analysed. *Results* of the research study showed that the investment climate is determined on the basis of the ratio of the investment supply and investment demand. The supply of investment resources is an attractive factor for both national and foreign investors in one or another branch of economy, determining the level of investment risks, on which depends the socio-political and economic security of investors. At the same time, the investment demand characterizes the investment intensity level, which reflects the growth rate of investment inflows into one or another branch of the country's economy. An excess of the investment demand over investment supply in the country reflects the unfavourable investment climate of the country due to the lack of incentives for investment recipients to implement investment projects, and also unregulated interests between the subjects of investment process (state, potential investors, and recipients of investments). In Ukraine during the period from 2012 to 2016, the investment climate was unfavourable, as the ratio of the investment climate favourableness was significantly lower than the threshold. *Practical implications*. The calculation of the country's investment climate favourableness is necessary to be made in order to reflect the effective use of indicators of economic and social development by the state. It is to say the efficient allocation and distribution of the gross domestic product, based on indicators of the amount of wages of hired workers and amount of net taxes on production and imports. According to the appropriate situation, the state should develop a budget plan for the next year with the benchmark for allocating budget expenditures in some sector and providing investment support. In Ukraine, the improvement of the investment climate requires the introduction of changes in tax legislation regarding the privileges for certain types of investors and innovation-active enterprises, and also provisions defining the transparency of the investment process. *Value/originality*. The ratio of the investment climate favourableness (R_{IC}) should be at least 0.1, where $R_{IC} \geq 0.1$ means that the investment climate is favourable, $R_{IC} \geq 0.1$ – neutral, $R_{IC} \leq 0.1$ – unfavourable, considering that the threshold of the investment attractiveness level (L_{IA}) is 10%, investment intensity level (L_{II}) – 100%.

Key words: investment climate, investment process, investment attractiveness, investment intensity, tax burden, economic and social development.

JEL Classification: E22, H21, O11

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1. Introduction

In recent years, the economic crisis in Ukraine has had a fairly negative impact on the investment potential of the national economy and almost halted the activities of innovation-active business entities. Despite the fact that in Ukraine the amount of invested funds in the certain branches of the economy is constantly increased, the innovation infrastructure remains undeveloped, the process of job losses is accelerated, and standard of living is decreased. It means that the environment of the investment process of the country has a number of negative factors creating risks for potential investors to incur losses from investing in the implementation of investment projects, especially with long-term and innovation character. Due to the factors slowing down the pace of the implementation of investment projects, in particular, a high level of budget deficit, high tax burden, absence of tax privileges, which also cause enterprises to be unable to effectively carry out innovation activities by slowing down the process of acquiring new fixed assets, the attractiveness of Ukrainian economy for potential investors is still at a low level. All of this creates a situation where the subjects of investment process have a disagreement on the execution of investment contracts, resulting in a conflict of interests between them, which complicates the process of investment projects implementation and causes unfavourable climate for both investors and recipients of investments. Some Ukrainian and foreign researchers, in particular, A. Damodaran (2012)

proving the interconnection between the investment attractiveness and investment intensity, B. Erlen and A.J. Isaak (2015), studying the investment intensity as one of the key factors in the efficiency of investment, Y.V. Nefyodova (2010), studying the direct relationship between the investment process and investment climate, L.S. Valinurova, O.B. Kazakova, and E.I. Iskhakova (2012), considering the components of investment attractiveness and some others did not leave aside the issue of improving the investment climate. However, the question of resolving conflicts of interests between the subjects of the investment process in order to improve the investment climate in Ukraine remained open. Thus, the issue related to the investment climate remains relevant and requires further research.

2. Characteristics of investment process elements forming investment climate

The investment climate is a complex of objective economic, social, political, and legal conditions for implementing the investment process at all levels of management on the principles of effectiveness to raise the investment attractiveness of the economic system, processes and economic life's phenomena of which can take place both within a separate region, industry and/ or enterprise, and country as a whole (Fig. 1).

So, depending on the internal (development of the competitive environment of entrepreneurship; level of involvement of the population in the investment process; relations between the state and regional
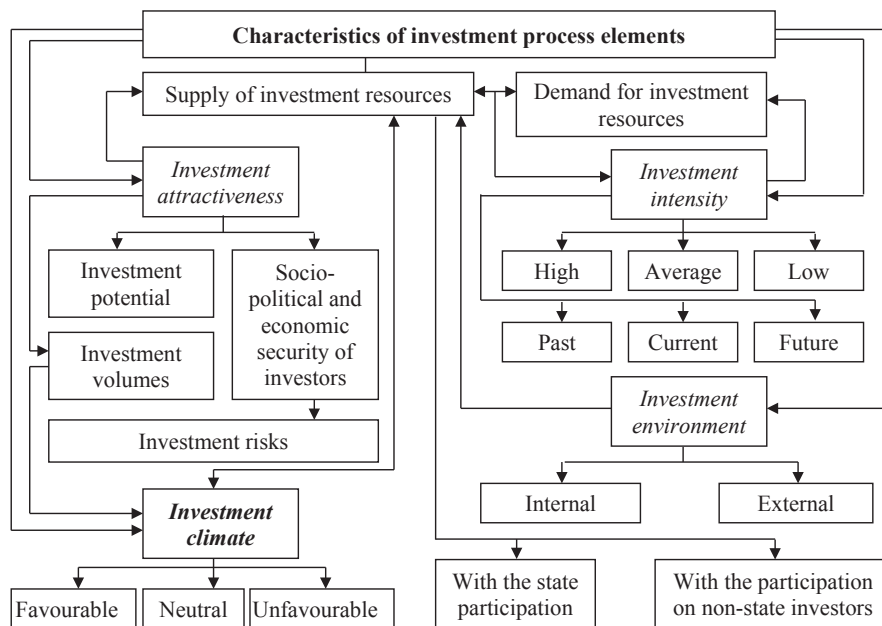

Fig. 1. Interconnection of content elements of investment process as the investment climate components

Source: the author's research on the basis of (Grynyova, Koyuda, Lepeyko & Koyuda, 2008; Gulyaeva & Ryabchenko, 2012, p. 23; Nefyodova, 2010; Valinurova, Kazakova & Iskhakova, 2012, p. 16)

authorities; attitude of authorities to foreign investors; access to foreign currency loan and so on) and external (wars, bioclimatic conditions, fires, accidents, building collapses and so on) factors of influence on the investment process, the investment climate forms the investment environment, which is divided into internal, dependent on the state and can be changed by it, and external, independent of the state.

Depending on the situation in the investment environment, the investment climate is divided into: favourable, characterized by a low level of risks of the losses from investment activities (investment risks); neutral, when the level of investment risks is moderate, and unfavourable because of the high level of investment risks.

In turn, the investment environment forms the investment attractiveness, which is determined by the supply of investment resources for potential investors and includes a number of indicators of the economic and social development of the country, namely: gross domestic product and its components, consolidated budget deficit, capital investments, including investments at the expense of the state and local budgets.

So, the investment attractiveness is a collection of objective features, properties, facilities, and economic opportunities that determine the effective demand for investments in it, i.e. investment intensity. Substantially impacting on the investment intensity, which also depends on the state's regulation of investment environment, the investment attractiveness reflects the assessment of subjects of the investment process, on which depend the socio-political and economic security of investors, and level of their capacity, i.e. investment potential.

The investment potential is a material basis for ensuring the economic growth and social development, indicators of which reflect the sufficient level of available investment resources provided for both investment in high-yield objects and covering unforeseen losses from investment activities, the probability of occurrence of which is determined by the level of investment risks. Under such conditions, the investment potential is characterized by the economic possibility to provide maximum yield or minimum risk level for a given period of investment (Damodaran, 2012; Gulyaeva & Ryabchenko, 2012; Nefyodova, 2010).

The investment intensity determines the demand for investment resources and is characterized by the intensity of investments for a certain period, which depends on the investment volumes and its efficiency. As a rule, it is divided into three levels: high level, when the growth rate of investments is higher than normal; average level, which reflects the unchangeable growth rate of investments in two periods, and low level, which is identified as a decrease of investments (Grynyova, Koyuda, Lepeyko & Koyuda, 2008; Mayo, 2014; Nefyodova, 2010). Also, the investment intensity is graded in three components, namely: past intensity, which characterizes the intensity of previously implemented investments; current intensity, which defines the pace of economic development and provides an opportunity to predict additional volumes of investments; future intensity orienting the planning of the whole investment process (Valinurova, Kazakova & Iskhakova, 2012).

3. A mathematical formalization of the investment climate components

Considering the research study of A. Damodaran (2012) that the investment climate is reflected by the ratio of the investment supply to investment demand,

Table 1
Formulas of calculation of investment climate indicators

Component	Formula of calculation
Investment attractiveness (investment supply)	$$L_{IA} = \sqrt{\left(\frac{GDP - BD - W - T_{PI}}{(I - BI)_C}\right)^2} * 100 \geq 10\%$$
	where: L_{IA} – the level of the investment attractiveness of the country, %; GDP – gross domestic product, c. u.; BD – budget deficit volume, c. u.; W – the amount of wages of hired workers, c. u.; T_{PI} – net taxes on production and imports, c. u.; $(I\text{-}BI)_C$ – the result of the subtraction between total and budget investments of the country, c. u.
Investment intensity (investment demand)	$$L_{II} = \frac{I_I}{I_{I-1}} * 100 \geq 100\%$$
	where: L_{II} – the level of the investment intensity in the country, %; I_I – the amount of total investments in the current period, c. u.; I_{I-1} – the amount of total investments in the previous period, c. u.
Investment climate	$$R_{IC} = \frac{L_{IA}}{L_{II}} \geq 0.1$$
	where: R_{IC} – the ratio of the investment climate favourableness in the country; L_{IA} – the level of the investment attractiveness of the country, %; L_{II} – the level of the investment intensity in the country, %.

Source: the author's research on the basis of (Damodaran, 2012; Erlen & Isaak, 2015, p. 159, Valinurova, Kazakova & Iskhakova, 2012)

let us consider the procedure for calculating these components in Table 1.

So, proceeding from the fact that L.S. Valinurova, O.B. Kazakova, and E.I. Iskhakova (2012) came to the conclusion that the threshold of the level of the investment attractiveness of the country, region, industry and/or enterprise should be at least 10.0%, and B. Erlen and A.J. Isaak (2015) established that the threshold of the level of the growth rate of investments in the appropriate economic system reflecting the investment intensity should be not less than standard balanced ratio (100.0%), the threshold of the ratio of the investment climate favourableness as the ratio of the threshold of the investment attractiveness level to the threshold of the investment intensity level should be at least 0.1. The ratio less than 0.1 may indicate the low ability of the economic system to implement investment projects, the factors of which are usually connected with unregulated interests between subjects of the investment process and, consequently, high level of investment risks.

4. The character of interconnections between investment attractiveness and investment intensity

Taking into account the research studies of A. Damodaran (2012), B. Erlen and A.J. Isaak (2015), the investment intensity is characterized by the intensity not only of the allocation of investment resources in the reproduction of fixed capital but also creation of preconditions for future placements in order to capitalize the income generated by investment. In this case, the investment intensity reflects not only the dynamics of the achieved volume of investments, their sources and results, but indirectly assesses their efficiency.

Thus, based on the structuring of the evaluation of the investment intensity level, algorithms of such an evaluation can include the growth rate of funding source (R_{FS}), based on which the investment is implemented in a particular industry of the national economy. The corresponding calculation formula is as follows:

$$R_{FS} = \frac{\dfrac{FS_F}{I_I} * 100}{\dfrac{FS_{F-1}}{I_{I-1}} * 100} * 100 \geq 100\% \,, \qquad (1)$$

where FS_F – the amount of funding source, under which the investment activity is carried out in the current period, FS_{F-1} – in the previous period, c. u.; I_I – the amount of total investments in the current period, I_{I-1} – in the previous period, c. u.

Given the above, the investment intensity characterizes the dynamics of the structure of funding sources, acting as an indicator of results of investing in the economy, which determines the ability of the national investment system to carry out the real and financial investments that materialize in the newly created factors of social production and infrastructure, and increases its level of

the investment attractiveness and degree of favourable investment climate of the country.

Based on the research studies of N.M. Gulyaeva and N.K. Ryabchenko (2012), A.V. Lobunko (2010), O.P. Tishchenko (2011), the growth rate of one or another funding source reflects a current situation in the investment market, including the presence of certain types of risks.

So, the growth rate of the share of funding source at the expense of its own funds of enterprises, which is below 100.0%, suggests that the state did not create appropriate conditions that would be sufficient for the effective passing of the investment process. It leads to the emergence of a number of problems that may be related: with decreasing the economic potential (low level of resource availability, lack of free land for productive investment, scientific and technological capacity and infrastructure); with general economic conditions (low rates of development of branches of material production, large volumes of unfinished construction, high level of deterioration of fixed assets, low technological level of construction base); organizational and legal factors (low level of the state decision-making capabilities; adverse conditions of movement of goods, capital, and labour; low business quality management).

The growth rate of the share of funding source at the expense of borrowed funds from financial institutions below 100.0% means the increase of the influence on the financial market of negative factors connected with limited access to loans, their high value, the low specific weight of long-term loans, high inflation.

The growth rate of the share of funding source at the expense of foreign investors' funds below 100.0% reflects the weak state influence on foreign economic activities of business entities. As a rule, it is due to the presence of unfavourable organizational and legal conditions connected with an inefficient state policy of foreign investment involvement, low level of development of the market infrastructure and competitive environment, the unfavourable influence of privatization, insignificant export opportunities, and also the insufficient volume of foreign entrepreneurial capital.

The growth rate of the share of funding source at the expense of population funds below 100.0% indicates a lack of targeted state policy towards the involvement of the population to the investment process because of the low level of public confidence in the state authorities, low income, social deformations, etc.

Similar trends in the dynamics of funding sources at the expense of state and local budgets characterize the low degree of financial participation of the state in the investment process, first of all, in terms of ensuring the economic and social development of the country. This situation is a reflection of the impact on the investment process by various negative factors, namely: political (imperfect relations between central and regional authorities, low level of social stability), organizational

and legal (low quality of enforcement, limited awareness of the population, low efficiency of law enforcement agencies) and financial (insignificant revenue part of local budgets, opacity of their expenditures, etc.).

Thus, the investment at the expense of different funding sources affects not only the total volume of capital investments in the country but also has a huge impact on the investment attractiveness level for both national and foreign potential investors. So, an efficient investment at the expense of its own funds of enterprises increases the job creation, wages of employees and, accordingly, the revenue side of the consolidated budget, which will increase the ability of the state to provide the investment support for innovation projects. An efficient investment at the expense of financial institutions' funds facilitates the effective process of lending, which will increase the level of trust in banks by business entities, bank profitability and, accordingly, bank liquidity. An efficient investment at the expense of foreign investors' funds will promote the development of transnational corporations, which will, accordingly, strengthen foreign relations of Ukraine. An efficient investment at the expense of the population funds promotes the population to be interested in investment projects, the implementation of which may positively impact on the economic and social development of the country, which motivates individuals to find a high paying job and, accordingly, reduces the level of unemployment. Finally, an efficient investment at the expense of the state and local budgets will help reduce the level of investment risks of non-state investors, efficiently allocate and distribute the gross domestic product based on the strategic elaboration of a budget plan for the next year and, consequently, regulate the tax burden on both the population and enterprises, including those who are engaged in innovation activities.

5. Analysis of the nature of the investment climate in Ukraine

It is obvious that the investment climate in Ukraine during the last five years has turned out to be unfavourable due to a number of economic disproportions in relations between the state and business entities. This is manifested by the fact that the state tries to provide investment support not constantly but only when the investment intensity of business entities is reduced (Table 2).

So, the budget investment intensity of the state from 2012 to 2014 was at a level lower than 100%, while the corresponding level of private enterprises exceeded the threshold. In 2015, under the conditions of reduction of the investment intensity level of private enterprises to 95.78%, compared to 2014 (110.54%), and increase in the corresponding growth rate of its share in 2016 to 102.60%, the level of budget investment intensity of the state sharply increased to 202.96%, compared

to 2014 (51.43%), when in 2016 the corresponding growth rate of its share fell to 101.79%, despite exceeding the threshold. A similar situation can be observed with trends in the growth rate of the share of capital investments at the expense of local budgets. In most cases, the corresponding phenomenon can be explained by the fact that the investment support from the state causes a side effect on business entities, in particular, private enterprises. That is, during the period of economic stability of private enterprises, the state does not try to stimulate them to implement investments projects, reducing investments risks, while during the period of economic recession the state tries to provide an investment support as much as possible. In this case, private enterprises lose the ability to carry out investment activities effectively without the state interference (the impact of displacement).

A completely different situation can be traced to the investment intensity of foreign investors. Here, in conditions of stable investment environment at private enterprises, foreign investors in some sense begin to exceed their authority, trying to conclude contracts with national producers as much as possible, and then gradually oust them from Ukrainian market. It is indicated by a substantial increase in the investment intensity level of foreign investors by the end of 2014 to 140.99%, and also a slowdown in the investment intensity level of private enterprises in 2015 to 95.78%. At the same time, a similar situation often causes a lack of motivation of the population to implement investment projects, as indicated by a decline in investment intensity level of the population by 2014 to 94.98%, compared with 2013 (121.34%). All of this gradually decreases a confidence of national producers to foreign investors as indicated by reducing the investment intensity level of foreign investors by the end of 2016 to 91.32%. In addition, it reduces the ability of the population to invest, as indicated by a decline in the investment intensity level of the population in 2016 to 71.15%, when in 2015 the corresponding growth rate of its share increased to 116.47%.

At the same time, the investment intensity of financial institutions, in particular banks, during the analysed period had moderate fluctuations. These fluctuations can be equated with the phenomenon in which, in a context of diminishing relations with foreign investors, business entities prefer to strengthen relations with financial institutions (banks). This is indicated by the sharp decline in the investment intensity level of financial institutions by the end of 2014 to 64.89% and a gradual increase of the corresponding growth rate by the end of 2016 to 99.37%. In addition, the investment intensity level of financial institutions for almost the whole analysed period was at a level below the threshold. It suggests that the unregulated relationships between subjects of investment process led to a gradual decline in the financial statements of private enterprises and

Table 2

Indicators of the investment climate in Ukraine from 2012 to 2016

No	Indicator/year	2012	2013	2014	2015	2016
1	Gross domestic product, mln UAH	1459096	1522657	1586915	1988544	2385367
1.1	Net taxes on production and imports, mln UAH	-10785	2937	-5	16754	7205
1.2	The amount of wages of hired workers, mln UAH	705837	730653	734943	777646	873829
2	Budget deficit volume, mln UAH	50786	63590	72030	30898	61801
3	Total capital investments, mln UAH	293692	267728	219420	273116	359216
	at the expense of the state budget	17141	6498	2739	6920	9264
	at the expense of local budgets	9149	7219	5918	14260	26817
3.1	The share at the expense of its own funds of private enterprises, %	59.73	63.75	70.47	67.50	69.25
	The growth rate of funding source, %	101.96	106.73	110.54	95.78	102.60
3.2	The share at the expense of financial institutions' funds, %	17.06	15.27	9.91	7.59	7.55
	The growth rate of funding source, %	104.78	89.50	64.89	76.65	99.37
3.3	The share at the expense of foreign investors' funds, %	1.72	1.82	2.57	3.00	2.74
	The growth rate of funding source, %	62.00	106.22	140.99	116.60	91.32
3.4	The share at the expense of population funds, %	8.73	10.59	10.06	11.71	8.33
	The growth rate of funding source, %	115.88	121.34	94.98	116.47	71.15
3.5	The share at the expense of the state budget, %	5.84	2.43	1.25	2.53	2.58
	The growth rate of funding source, %	82.47	41.59	51.43	202.96	101.79
3.6	The share at the expense of local budgets, %	3.12	2.70	2.70	5.22	7.47
	The growth rate of funding source, %	92.00	86.56	100.03	193.59	142.98
3.7	The share at the expense of other funds, %	3.82	3.45	3.05	2.44	2.09
	The growth rate of funding source, %	87.27	90.36	88.43	80.16	85.38
4	The subtraction between total and budget investments, mln UAH	267402	254011	210763	251936	323135
5	The investment attractiveness level, %	2.67	2.86	3.70	4.62	4.46
6	The investment intensity level, %	112.99	91.16	81.96	124.47	131.53
7	The ratio of the investment climate favourableness	0.02	0.03	0.05	0.04	0.03

Source: the author's combination and calculations according to websites: State Statistics Service of Ukraine; Price of the State (2016)

living standard of the population, weakening of relations with foreign investors, and increase in tax burden by the state on the subjects of investment process in order to replenish the revenue side of the budget. All of this increased the level of bank risks of non-return of investment loans by subjects of the investment process and obtaining large losses of banks.

Also, the growth rate of the share of capital investments at the expense of other funds for the whole analysed period was below the threshold. It may indicate that the level of the investment intensity of all institutions except private enterprises, banks, foreign investors, and individuals was low and had moderate fluctuations. Such institutions may include various types of innovation institutes, including technological policies, technological parks, business incubators, and other institutions that promote the development of innovation infrastructure in the country. However, unfortunately, in Ukraine, there is an absence of a sufficient number of innovation institutions that could provide sufficient innovation infrastructure, which, accordingly, negatively affects the investment attractiveness and, consequently, investment climate.

Thus, an increase in the overall investment intensity level, if there is an appropriate imbalance in the relations between the subjects of the investment process, may negatively affect the investment climate in the country.

It is indicated by a rather low ratio of investment climate favourableness in 2012 (0.02) with the investment intensity level of 112.99%, and also gradual decrease in the corresponding ratio from 2014 to 2016 (0.05 and 0.03), with the increase of the investment intensity level for this period from 81.96% to 131.53% respectively. However, a decrease in the overall investment intensity level may also negatively affect the level of investment attractiveness of the country and, accordingly, worsen the investment climate. For example, from 2012 to 2014, the trend of increasing the investment attractiveness level in Ukraine was minor (from 2.67% to 3.70%), while the decline in investment intensity level during this period was significant (from 112.99% to 81.96% respectively).

So, a significant lack of threshold value of the investment attractiveness level is the main factor of the unfavourable investment climate in Ukraine.

In 2012, the high tax burden negatively influenced the level of investment attractiveness of Ukraine, due to which the lack of threshold value of its level was quite significant (2.67%). According to data from official Website of Price of the State (2016), due to the increase in the tax burden, the state was forced to increase the amount of subsidies as can be seen on trends of net taxes on production and imports negatively amounted to 10785 million UAH. It significantly contributed to

the increase in the budget deficit volume (up to 50786 million UAH), compared with previous periods. All of this forced the state to lower the level of budget investment intensity, as indicated by the fall in the growth rate of the share at the expense of the state budget in 2013 to 41.59%, compared with 2012 (82.47%), when in 2014 there was a slight increase to 51.43%. At the same time, the growth rate of the share at the expense of local budgets decreased in 2013 to 86.56%, compared to 2012 (92.00%), while in 2014 this indicator increased to 100.03%, exceeding the threshold. Thus, the increase in the investment climate in 2014 to 0.05 does not say about the economic and social improvement of Ukraine, since the investment intensity level has fallen to 81.96%, while the investment attractiveness level has only increased (up to 3.70%) due to the government's effective tax burden adjustment when the indicator of net taxes on production and imports reached a balanced level (-5 million UAH).

Meanwhile, despite the fact that the investment intensity of the state significantly increased in 2015, as evidenced by a significant increase in the share at the expense of the state budget (up to 202.96%) and local budgets (up to 193.59%), and in 2016 due to a significant increase in the volume of funds at the expense of the state (up to 9264 million UAH) and local budgets (up to 26817 million UAH), compared with 2015 (6920 million UAH and 14260 million UAH respectively), remained at the level above the threshold, the subtraction between total capital investments and budget funds by the end of 2016 has only risen. The corresponding situation negatively affected the investment climate in the country, reducing its ratio to 0.03, because, despite the increase of state support, which in our case only has a side effect on the activities of non-state potential investors, the level of investment risks for the relevant group of investors has significantly increased. Thus, despite a significant increase in the investment intensity level in 2016 (up to 131.53%), the investment attractiveness level dropped to 4.46%. It was especially influenced by an increase in the budget deficit and also in tax burden, despite the fact that the amount of net taxes on production and imports decreased to 7205 million, UAH compared with 2015 (16754 million UAH). All of this contributed to deteriorating the investment climate in Ukraine.

6. Conclusions

The investment climate is determined by the ratio of the supply of investment resources for potential investors (investment attractiveness) to the demand for investment resources by recipients of investments (investment intensity). Over the past five years, the investment climate in Ukraine has been unfavourable. This phenomenon was characterized by the existence of a number of economic imbalances in relations between the subjects of the investment process, namely: private enterprises, financial institutions, population, foreign investors, innovation institutes, and state. In order to improve the investment climate in Ukraine, the government should review the tax legislation, in particular, the Tax Code of Ukraine, the enactment of which abolished almost all the tax incentives for technological parks of Ukraine, national producers, and foreign investors, and also caused the stretching of the time of participation in the amortization in the calculation of income tax. Thus, it is necessary to introduce at least the abolished tax privileges. In turn, this introduction requires including the provisions on transparency of investment, profit from investment, conclusion and termination of investment contracts. It is needed in order to prevent, firstly, the absorption by transnational corporations of national producers, and secondly, – the illegal flow of funds in offshore zones for avoiding payments of taxes on investment activities.

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REFORM OF REGULATORY POLICY IN THE FIELD OF SUPERVISION OF AUDIT ACTIVITY

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Abstract. Reforming the regulatory system and supervision of audit activity in Ukraine is a basic condition for Ukraine's accession to the European Community, and the introduction of international standards in the field of audit and supervision of audit activity and quality assurance of audit services should be correlated with the standards of European and world audit practice. The dominant factor in the effective functioning of independent control is the choice of a model of supervision of the mechanism for its implementation; effectiveness of the system of monitoring the quality of audit services; effectiveness of legal and regulatory framework of audit activity. The regulation of audit activity is to coordinate direct and indirect actions aimed at the subject of audit activity with the purpose of ensuring the quality of audit services and minimizing the level of audit risk. *The purpose* of the research is: analysis of the basic models of regulation of audit activity aimed at improving the legal regulation of economic relations in general and subjects of audit activity in particular. Determination of expediency of implementation of public oversight as monitoring of the process of implementation of audit activity in the context of granting the right to conduct audit activities to individuals, implementation of standards of professional ethics and quality control of audit services, permanence of education and imposing sanctions for non-compliance by auditors with the requirements of the current legislation. *Method (methodology)*. In the process of research, general scientific and special methods of scientific knowledge are used: abstract-logical (in the disclosure of theoretical and methodological foundations of public oversight); synthesis and system analysis (substantiation of the essential characteristics of the system of public oversight); system analysis and theoretical generalization (definition of institutional prerequisites for the introduction of public regulation in audit activity); logical generalization (to substantiate approaches and proposals on improving the ways for ensuring the quality of audit and optimizing the implementation process of the public oversight body). *Results*. According to the results of the study, an attempt is made to present the author's understanding of the definition of "state regulation" and "public oversight" in the context of the functioning of subjects of audit activities. The expediency of adjusting the vector of regulatory policy regarding the implementation of international standards in the field of audit and supervision of audit activities and quality assurance of audit services is determined. Ways and directions for the implementation of the public supervision body in the audit system of Ukraine are outlined. Improvement of the financing model of the public oversight body with the purpose of minimization of corruption levers of influence is proposed. *Practical implications*. Taking into account the results of the study, it is proposed to provide in the Budget Code of Ukraine and the Law of Ukraine "On State Budget for the Current Year" a separate article on the costs of partial financing of the Public Audit Oversight Board. This, a priori, will reduce the corruption component of its activities and, accordingly, minimize corruption risks. *Value/originality*. For the first time, it is proposed to change the structural component of the financing model of the Public Audit Oversight Board and the relevant legislative proposals on clarifying and adjusting the statutes of the current legislation of Ukraine.

Key words: audit activities, state regulation, public oversight, stability, systemic risks.

JEL Classification: M40, M42, M48

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1. Introduction

In today's conditions of Ukraine's integration into the global financial space, the reform of the audit system is one of the urgent needs. Unification and standardization of the methodology for providing audit services will facilitate the entrance of Ukrainian audit entities to the global audit market and increase the level of their competitiveness.

A prerequisite for changes in the audit field is the study of foreign practices in regulating audit activity in leading countries.

In different countries of the world, its own system of organization and regulation of audit activity is introduced, but its professional regulation and principles of conduct are the same in the vast majority of market economies.

The regulation of audit activity is to coordinate direct and indirect actions aimed at the subject of audit activity with the purpose of ensuring the quality of audit services and minimizing the level of audit risk.

One of the most significant problems of the present is the identification of features of the audit regulation since the functioning of the audit activity on the basis of Ukrainian self-regulation is not sufficiently effective. Domestic auditing firms work only in the state field and have no access to the international audit market.

2. Models of regulation of audit activity

The specifics of the organization of audit activity in different countries are manifested in the degree of power interference and control over the operation of auditors (Bondar, 2016).

On the basis of content analysis conducted, three basic models of audit activity regulation are outlined:
1) state regulation;
2) self-regulation;
3) public oversight.

State regulatory policy in the field of economic activity – direction of state policy aimed at improving the legal regulation of economic relations, as well as administrative relations between regulators or other state authorities and economic entities, preventing the adoption of economically inappropriate and ineffective regulatory acts, reducing state interference in the activities of business entities, and eliminating obstacles to the development of economic activities carried out within, in the order and in the manner established by the Constitution and laws of Ukraine (Verkhovna Rada of Ukraine, 2003).

In the context of this study, "state regulation of audit activity" is interpreted as a system of measures carried out by the state on behalf of its authorized bodies and officials with a view to purposefully influencing the behaviour of auditors in relation to the systematization of activities, quality assurance and control, and the receipt of scheduled results.

The purpose of state regulation of audit activity is:
1) implementation of the state unified audit policy;
2) protection of interests of participants in the market for audit services;
3) creation of favourable conditions for the development of audit activity;
4) ensuring equal access to the market;
5) the equality of rights of participants in the market for audit services and their observance of requirements of the current legislation;
6) supervision over transparency and openness of activities; promoting integration into the world audit space.

Self-regulation of audit activity – a kind of control, which is aimed at coordinating the activities of professional auditors, monitoring the efficiency and quality of services rendered, and protecting the interests of consumers.

If to adhere to the "letter of the law", in Ukraine audit activity is carried out on the basis of self-regulation, since regulatory functions in the field of the audit are entrusted to the Audit Chamber of Ukraine.

According to requirements of the Law of Ukraine "On Auditing Activity", the Audit Chamber of Ukraine is an independent body; a non-profit organization formed on a parity basis by delegation to its members of auditors and representatives of state bodies (Verkhovna Rada of Ukraine, 1993). However, in our opinion, the self-regulation of the audit is rather dubious, because the presence in the ACU of ten representatives of public authorities, in addition to the auditors' representatives, indicates a mixed model of regulation.

In fact, the domestic audit existed only at the state level, locally from the world community, because Ukraine is not a part of the states whose audit services are recognized on the European market.

The most common type of regulation is the combination of external regulation and self-regulation, driven by the common goals of the state and professional associations regarding the professional activity of accountants and the desire to enhance the efficiency of each regulator. At the same time, both the state and professional associations of accountants develop and implement professional institutes in clearly delineated spheres of activity (Metelycja, 2013).

Taking into account the experience of the USA in the context of ineffectiveness only of the principle of self-regulation of audit activity (financial misuse and unreliability of indicators of corporate financial reporting) and the adoption of the Public Company Accounting Reform and Investor Protection Act of 2002 (Act Sarbanes-Oxley of 2002, SOx) (Spedding, 2009), whose mission is to create an independent body that is currently setting external auditing standards in the USA and regulating public accounting for the Public Company Accounting Oversight Board (PCAOB) (Moeller, 2009) – it is advisable to analyse

the implementation of public oversight in the realm of Ukrainian audit.

The current focus on introducing public oversight over audit activity has begun as a result of a series of corporate financial reporting scandals in the USA, Europe, and Japan. By 2002, the auditing community in the world was mostly self-regulating. With the adoption of the Sarbanes-Oxley Act at the international level, a unified view has been established that auditors cannot properly be self-regulated over the lack of sufficient incentives for this: a conflict of interest, present in the relationship of "auditor-client"; the quality of audit is not always recognized and not always encouraged by market participants accordingly; the basis of unregulated competition may be the price or willingness to compromise, not the quality of the audit (Dorosh, 2015).

In line with the requirements of the European Union for the protection of investors' rights, Directive 2014/56/EC identified ways to improve public oversight of auditors and audit firms and outlined their powers with an emphasis on their independence (European Parliament, Council of the European Union, 2014)

Public oversight of audit activity – monitoring of the process of implementation of audit activity in the context of providing individuals with the right to conduct audit activity, implement professional ethics standards and quality control of audit services, the permanence of education and imposing sanctions on non-compliance by auditors with the requirements of the current legislation.

The system of public oversight of audit activities exists in all Member States of the EU but varies among themselves in terms of accountability, funding, numerical composition, and ways of delegating representatives.

Taking, for example, Bulgaria, it is necessary to emphasize the state funding of the public oversight body, the Commission for Public Oversight of Statutory Auditors (CPOSA), which consists of 5 members-representatives (National Assembly of the Republic of Bulgaria, the Minister of Finance; the Bulgarian National Bank; the Financial Supervision Commission; the Institute of Certified Public Accountants of Bulgaria (ICPA)).

The Public Supervision Authority of Estonia is the Supervisory Board of Public Accountants (SBPA), of which 7 members are appointed by agreement with the Ministry of Finance (at this, two of the experts are practitioners), which is also funded at the expense of budgetary funds.

Public Oversight Body (POB) (Finland), which is identical by number with the Estonian Supervisory Board of Public Accountants (SBPA), is coordinated by the government in the context of the appointment of the Chair and Vice-Chair, and operates on a self-financing basis in the form of mandatory annual payments totalling 2,400,000 EUR. In our opinion, such a form of public oversight body is the most acceptable, since

there is no direct dependence on government influence by means of budget financing.

The French High Council for Statutory Audit is quantified from 14 people appointed by the government but operates on a self-financing basis.

Having carried out a certain monitoring of ways of delegation of authority to members of public oversight bodies and methods of their financing, it is possible to conclude that, in the vast majority of countries, the powers of members of public oversight bodies are delegated by government agencies, the domination of public funding is observed in the states of Eastern Europe, and self-financing is inherent in the states of Western Europe (Sweden, France, Finland, Germany, the Netherlands).

Directive 2014/56/EC on 16 April 2014 (European Parliament, Council of the European Union, 2014), which amends and supplements Directive 2006/43/EC European Parliament, Council of the European Union, 2006) and Regulation (EU) No 537/2014 (European Parliament, Council of the European Union, 2014) are considered to be the main regulatory legal acts of the European Union governing the conduct of audit activity in the member states of the European Community.

3. Transformation of Ukrainian legislation

In Ukraine, audit activity is at the stage of development and reform, since the evolution of audit reaches only 80 years of the last century. During this period, there was a transition from national to international audit standards; the permanent transformation of the current legislation in the context of its unification with the standards of world practice of audit activity is taking place.

In compliance with requirements of the European Union for the implementation of international standards in the field of audit and supervision of audit activity and quality assurance, in Ukraine, the Verkhovna Rada of Ukraine adopted the Law "On Audit of Financial Statements and Audit Activities" on 21 December 2017 and handed over to be signed to the President on 22 January 2018. According to this statutory instrument, the approaches to audit, the principles of regulation and quality assurance of audit services are significantly changed.

In order to comply with the requirements of Directive 2014/56/EC and Regulation (EU) No 537/2014, the definition of "public-interest entities" was introduced into circulation, which defined the enterprises-issuers whose securities are admitted to stock trading, banks, insurers, non-state pension funds, other financial institutions (except other financial institutions and non-state pension funds belonging to microenterprises and small enterprises) and enterprises belonging to large enterprises (Verkhovna Rada of Ukraine, 1999).

At the request of the EU, the classification of enterprises was launched in Ukraine with their division

into: microenterprises (book value of assets up to 350 000 euros, sales revenue – up to 700 000 euros, average number of employees – 10 people); small enterprises (book value of assets up to 4 000 000 euros, sales revenue – up to 8 000 000 euros, average number of employees – up to 50 people); medium enterprises (book value of assets up to 20 000 000 euros, sales revenue – up to 40 000 000 euros, average number of employees – up to 250 people); large enterprises (book value of assets over 20 000 000 euros, sales revenue – over 40 000 000 euros, average number of employees – more than 250 people) (Verkhovna Rada of Ukraine, 1999).

4. Public Audit Oversight Board

With the change of regulatory policy, it is envisaged to organize public oversight of audit activities, which will be coordinated by the Public Audit Oversight Board. Structurally, the Public Audit Oversight Board is composed of Audit Oversight Council and Quality Assurance Inspection. This regulatory service will function as a non-profit person of public law.

The basic competencies of the Public Audit Oversight Board include:
- supervision of subjects of audit activity;
- monitoring of the implementation of international standards on auditing;
- monitoring of the permanent educational process of auditors who carry out the mandatory audit of financial statements;
- quality control of audit services; coordination of disciplinary proceedings against auditing entities and enforcement of penalties.

The public oversight body actually oversees activities of the Audit Chamber of Ukraine, which, in turn, gains the status of a truly independent regulator, because in contrast to the previous methods of forming its composition (20 people, of which 10 persons are representatives of the audit community, 10 persons – representatives of state authorities). In accordance with the requirements of the adopted, but currently dormant, Law "On Audit of Financial Statements and Audit Activities", the total number of members of the Council of the Audit Chamber of Ukraine is 11 persons-professional auditors whose work experience is at least five years (Verkhovna Rada of Ukraine, 2017).

A feature of the Law of Ukraine "On Audit of Financial Statements and Audit Activities" (Verkhovna Rada of Ukraine, 2017) is a way of financing the Public Audit Oversight Board, according to which, under each agreement for the provision of audit services of mandatory audit of public-interest entities, subjects of audit activity are obliged to pay defined contributions, in particular:
1) fixed contribution in the amount of three minimum wages established by law on 1 January of the reporting year from each audit report prepared by the subject of audit activity based on the results of the provision of audit services for the mandatory audit to the public-interest entity;
2) contribution in the percentage of the remuneration amount under an agreement for the provision of audit services for a mandatory audit to public-interest entities, the size of which is determined by the Cabinet of Ministers of Ukraine.

It is obvious that self-financing reduces the level of government influence, but in the realities of the Ukrainian audit, financing of the Public Audit Oversight Board only by retaining contributions from auditors can lead to an increase in obligations of audit firms, which will result in an increase in the level of corruption risks.

It is advisable to introduce indirect proportional funding to the Public Audit Oversight Board, using the experience of European states.

The experience of Italy, where the financing model of the Public Audit Oversight Board is shaped by the following principles, can be useful:
1) Audit of Non-PIEs General Accounting Office of the State (RGS) carries out public oversight of audit firms that are not of special importance to the state (funded by contributions from participants);
2) Audit of PIEs Italian Securities and Exchange Commission (CONSOB) carries out public oversight of firms conducting an audit of public importance (funding is provided through government grants and contributions from participants of the market for audit services).

In our opinion, it is necessary to modify approaches to the financing policy of the Public Audit Oversight Board, in particular: to introduce indirect proportional funding at the expense of budget funds and contributions of auditors. In particular, financing of the Audit Oversight Council's activities may be carried out at the expense of the State Budget and obligatory contributions of participants the market for audit services, while the financing of the Quality Assurance Inspection – exclusively at the expense of contributions from auditors.

5. Findings

Public oversight is an objective paradigm of audit activity that contributes to the qualitative performance of auditors' tasks in assuring and minimizing the auditor's risk in carrying out audit procedures.

Based on the results of the study of methods of regulating audit activity at the macrolevel, one can conclude that it is expedient to introduce a public oversight institution for the purpose of:
- monitoring of the process of implementation of audit activity in the context, giving individuals the right to conduct audit work;
- implementation of standards of professional ethics and quality control of audit services,
- permanent education;

- imposing sanctions for auditors' non-compliance with requirements of the current legislation.

The issue of financing the Supervisory Authority is debatable since the goal of transformation of legislation in the field of the audit is its unification with the norms of world practice of audit activity and minimization of corruption risks. We remain in the position that the state represented by representative bodies, coordinates, regulates, and protects interests of society and, therefore, should partly finance supervisory authorities.

6. Conclusions

Taking into account the results of the study, it is proposed to provide in the Budget Code of Ukraine and the Law of Ukraine "On State Budget for the Current Year" a separate article on the costs of partial financing of the Public Audit Oversight Board. This, a priori, will reduce the corruption component of its activities and, accordingly, minimize corruption risks.

The proposal regarding such an amendment to the current legislative provision will result in a new wording of paragraph 13, Article 13 of the Law of Ukraine "On Audit of Financial Statements and Audit Activities" (Verkhovna Rada of Ukraine, 2017): "In order to ensure financing of activities of the Public Audit Oversight Board, under each agreement for the provision of audit services of mandatory audit of public-interest entities, subjects of audit activity are obliged to pay contributions in favour of the Public Audit Oversight Board as follows:
1) fixed contribution in the amount of three minimum wages established by law on 1 January of the reporting year from each audit report prepared by the subject of audit activity based on the results of the provision of audit services for the mandatory audit to the public-interest entity;
2) contribution in percentage of the remuneration amount (excluding value added tax) under agreement for the provision of audit services for mandatory audit to public-interest entities, the size of which is determined by the Cabinet of Ministers of Ukraine based on the estimate of the Public Audit Oversight Board, but cannot exceed two percent of the amount of such remuneration."

The following subparagraph 3 shall be appended to paragraph 13, Article 13 of the Law of Ukraine "On Audit of Financial Statements and Audit Activities": "The state acting by authorized bodies carries out indirect proportional funding of the Public Audit Oversight Board as related to the implementation of state policy in the field of supervision over audit activity in order to provide authority and perform functions by the Audit Oversight Council."

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METHOD OF STRATEGIC PLANNING AND MANAGEMENT DECISION-MAKING CONSIDERING THE LIFE CYCLE THEORY

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Abstract. *The subject of the study* is a set of theoretical and methodological aspects of development strategy formed for objects (country, region, branch, enterprise) on the basis of the life cycles theory under the external environment uncertainty. *The methodology* of strategic planning under the external environment uncertainty with the consideration of the life cycle theory includes: the definition of key criteria for assessing the product lifecycle, the definition of the limits scope for the solvable problem, the definition of parameters of models stability, the formation of models for analysis, setting the problem under uncertainty, the mechanism of step-by-step adjustment, and effectiveness assessment of strategic decisions based on strategies, the algorithm for the integrated assessment of the strategies effectiveness taking into account the uncertainty factors. Strategic planning is not characterized by temporal intervals but by a set of strategies, each of which is determined by the ways of achieving the main object objectives. For a rapid analysis of the product life cycle, the external indicators are used, such as: the growth rate of the product market, the relative growth rate of the product (compared to the growth rate of the entire market of the region or country), the firm market share, the firm relative market share (compared to the market share of leading competitor), and internal indicators, such as: the dynamics of enterprise revenue by product, the dynamics of company profits by product, the dynamics of enterprise profitability by product, the dynamics of enterprise investment. For each indicator that describes the enterprise performance, the directions of change are taken: α – growth, $const$ – constant or β – decrease. The methodology involves a certain sequence of studying the product life cycle in retrospect and at the current moment, then the modelling and development of options for short- and long-term strategies implementation are made. *Results of the survey* are to substantiate the methodology of strategic planning under conditions of external environment uncertainty with the consideration of the life cycle theory. *Practical implications*: the possibilities of using life-cycle models allow: 1. reasonably predicting sales and plan production program; 2. determining the basic strategies at different stages of development; 3. determining the sequence of stages of enterprise development; 4. ensuring harmonious interaction of organizational characteristics with the external environment factors that influence the process of organizational development. Increasing the sustainability of the organization's development can be achieved by re-establishment of dynamic changes in the plan in terms of using effective methods for forecasting with the consideration of the life cycle theory. It is necessary to take into account the interconnection between all levels of life cycles: industry, technology, enterprises, product; ensuring the competitive advantage of the organization. Using the theory of optimal solutions making in uncertain conditions under the analysis of long-term projects allows transferring qualitative factors into quantitative indicators that can be used in the future to bring investment projects to the same kind and choose the best. In conditions of increased uncertainty of the external environment, it is necessary to develop the theory of enterprise management, taking into account its life cycle, as well as the life cycle of its separate elements and processes at all levels. Combination of strategic management with the life cycles theory will increase the objectivity and effectiveness of taken management decisions. The accounting of the organization life cycles in strategic planning allows choosing an effective strategy.

Key words: life cycle, portfolio analysis, strategic areas of management, financial results, management decisions efficiency.

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1. Introduction

It is important to note a significant contribution to the development of the strategic planning theory and practice of such foreign experts as I. Ansoff, M. Weber, H.-L. Gantt, M.-H. Mescon, F.-W. Taylor, H. Fayol and others; domestic scientists-economists: O. Amosha, V. Heiets, B. Danylyshyn, M. Dolyshnyi, M. Melnikova, A. Muzychenko, O. Povagny, etc. To the theme of life cycles theory, many works of domestic and foreign authors are devoted: I. K. Adizes, L. Greiner, D. Katz, R.-F. Kahn, H. Lippitt, T. Malaya, O. Minochkina, Yu. Shambel. Most of the work focuses either on the common use of the life cycles theory and forecasting or on the application of the life cycles theory in the system of strategic planning and management. At the same time, the issue of strategic planning integrated study of the life cycles theory and the uncontrolled external conditions accounting remain insufficiently studied despite a large number of works in this area. From the point of view of practical implementation among the most actual and complicated tasks, the following can be named: 1. Application of the life cycles theory in quantitative prediction of the economic systems development. 2. Identification of factors that determine the stage of the system's lifecycle and key factors that influence the development of the system at each stage of the life cycle, management of the life cycle system. 3. Instruments for determining the stages of the development of the system life cycle. 4. Accounting for uncontrolled and controlled factors in the formation of a system development strategy based on the life cycle theory. 5. Adjustment of the life cycles of the system elements (for example, when forming an optimal market portfolio that consists of the organization strategic business units). The purpose of the research is to reason the strategic planning methodology under an undefined external environment with the consideration of the life cycle theory. The scientific novelty of the research is to improve strategic planning in conditions of undefined external environment taking into account the life cycle theory of the object that includes: the definition of key criteria for the product life cycle assessment, the definition of the scope of limits for the solvable problem, the definition of parameters of models stability, forming models for analysis, the mechanism of step-by-step adjustment and assessment of strategic decisions effectiveness on strategies. The methodology assumes a certain sequence of the product lifecycle study in retrospect and at the current moment. Then the short- and long-term strategies modelling and development of options for their implementation are made.

The life cycles theory has been applied in relation to different systems and processes: countries, regions, industries, types of activities, enterprises and organizations, technologies, strategic business units, manufactured products, etc. There are over 1.5 thousands of different types of economic life cycles of

systems. Among the most famous are Greiner Growth Phases, Joseph Kitchin inventory cycles, Jaglar's machinery and equipment investment cycles, Kuznets Cycles, Kondratiev Cycles.

The following issues are considered in the research: the theoretical aspects of strategic planning and management at the modern stage are discussed, the necessity of taking into account the stages of life cycles in strategic planning is reasoned, method of strategic planning of the life cycle stages is improved, an algorithm of strategic planning under conditions of an indefinite external environment and accounting uncontrolled factors is formulated.

Economic history and modern economic practice indicate that the rise and fall of business activity at the mega- and macro-levels are largely conditioned by two factors: scientific discoveries in the production means; great (sharp) changes in the political superstructure and economic relations of the states.

The analysis of micro-level cyclic fluctuations is carried out on the basis of life cycle product models, the organization's life cycle, the technology life cycle, etc. From the practical point of view, the applicability of the life cycles theory in the strategic planning of business entities is especially interesting.

2. Theoretical aspects of strategic planning and management at the present stage

The modern concept of strategic management assumes the governance by various economic systems (country-region-company). As a result of the evolution of the corporate planning eras, when the management concepts were influenced by changes in production and the environment in the 60s and 70s of the XX century, the basis of strategic management was formed. Currently, the methods of strategic management are used by the government, the cities and regions administration, large corporations, state enterprises, various non-profit organizations. Strategic management methods allow using and developing the competitive advantages of the economic system in unstable external environments.

With large flows of information, a high degree of external environment uncertainty or variability, there is a need to systematize information throughout the life cycle of the analysed object. The effectiveness of implementing CALS-technologies for ordering, encoding, classifying, storing, and transmitting information over life cycle stages is highly appreciated.

Comprehensive accounting and information usage allow creating the necessary base for analysis, forecasting, and planning of the company's activity, increasing the validity of strategy development, revealing false strategies, making it possible to adjust the enterprise plans and budgets in time.

The effectiveness and the possible set of strategies depend on the stage of the object life cycle. The

following can be pointed as the main life cycles stages: 1 – formation (creation, origin, emergence), 2 – development (intensive growth), 3 – stabilization (maturity), 4 – crisis (decline, aging, liquidation). For example, the enterprise features depending on the life cycle stage clearly demonstrate the difference in requirements for the strategies formation (Table 1.1). If on the first stages of the company's lifecycle flexibility and adaptation to changes are high, the company is able to modify and correct the strategy quickly, and then at the next stages, the high inertia of the existing organizational and management structure exists.

At the early stages of the company's development, there is a high probability of a bankruptcy over the internal weakness of the company in comparison with existing competitors, at the next stages, the probability of the crisis is determined by the degree of inertia to external changes. An example of the formation of

basic strategies at each stage of the life cycle is given in Table 1.2.

3. Reasons to consider life cycles stages in strategic planning

When considering the life cycles theory, one operates the following concepts: development, sustainable development, organizational development, organizational changes, systems development laws, life cycle stages, etc. There are four main approaches for managing organization's development related to the theoretical description of the enterprise operation: firm's neoclassical, institutional, evolutionary and entrepreneurial theories.

Various aspects of the enterprise activity are the objects of attention of each of the listed theories. For example, the neoclassical theory considers an enterprise as a

Table 1.1
Features of the strategies formation at different stages of the company's lifecycle

Stage Name	Entrepreneurship Stage	Collectivity Stage	Formalization and Management Stage	Stage of Structure Creation	Decline Stage
Stage Feature	Unclear goals, high creative possibilities	Informal communication and structure; high commitment	Rules formalization; stable structure; emphasis on efficiency	Structure complication; decentralization; diversified markets; uniqueness	High personnel turnover; growing conflicts
Focus of Stage Strategy	The strategy is aimed at: identifying consumer needs, survival, and concentrated growth	The strategy is aimed at: expanding the contact audience, integrated growth	The strategy is aimed at: conformity to the external environment and ongoing changes, balanced growth, image formation	The strategy is aimed at: the formation of an optimal portfolio, effective investments redistribution, coordination, social factors, differentiated growth	The strategy is aimed at: survival, resources mobilization, search for the ways and means to resist the crisis, elimination, harvesting, costs reduction

Source: systematized by the authors taking into consideration (Chandler, 2015; Chaffee, 2011; Meier, 2015)

Table 1.2
Basic strategies at different stages of the lifecycle

Lifecycle Stage	Strategies	Note
Creation and development start	Business strategies, market penetration strategy, and survival strategy	Capital attraction, production base forming, free market segments identification, competitors fighting, maximal risk
Growth	The increase of production strategy, range expanding strategy, sales and profitability growth strategy, integration strategy (market segment seizure)	Additional capital attraction, production base development, market infrastructure establishment, profitability growth, own market segment definition, average risk
Stabilization	Sustainable growth strategy, stability strategy, the strategy of competitive position keeping (maintaining), the strategy of keeping the achieved profit level, minimizing costs strategy, conservative strategies	The stable financial condition, organizational and industrial structures are formed, communications in the external environment are established
Aging	Loss-making practices eliminating strategy, over-the-counter assets eliminating strategy. Reducing production volumes strategy. Improving products, technology, business strategy. Effective market portfolio formation strategy	Fixed assets depreciation, product competitiveness deterioration, lack of financial resources
Renaissance	Cost reduction strategy. Survival strategy. Unprofitable directions elimination. Modernization of existing and creation of new production	Management strategy adjustment. Financial resources involvement, new technologies search and introduction, market positions restoration

Source: developed by the authors taking into account (Higgins, 1993; Kotler, 1991)

"black box", which converse the output resources into products; institutional theory pays much attention to operating costs savings; evolutionary theory suggests that the goal of any organization should be the development of organizational features according to the environment variables; entrepreneurial theory studies the relationship between the entrepreneur and his business.

All this speaks about the variety of views on the process of managing the enterprise sustainable development. The main task of the research in the field of life cycles building and the main approaches to the management of enterprises development studying is to identify the key factors that determine the development process.

In conditions of increased external environment uncertainty, it is necessary to develop the enterprise management theory, taking into account its life cycle, as well as the life cycle of its separate elements and processes at all levels. The combination of strategic management with the life cycles theory will increase the objectivity and effectiveness of the management decisions taken. Accounting of organization life cycles in strategic planning allows choosing an effective strategy.

There are many different growth models of the enterprise (organization) and their classifications: Lifecycle models of Adizes; Stage models of Lippitt and Schmidt phases; evolutionary models (Grainer's Evolutionary models); transformation models (Transition models of Hofer, Charan, Christensen). The listed models are mostly symbolic, they do not contain the quantitative criteria for describing the life cycle stages, and the transition to the next stage is explained by the crisis in the system. The modern approach to build organization life cycle involves such qualitative indicators as intangible assets: a strong brand, knowledge and experience of key employees, relations with clients and partners, use of advanced technologies, etc.

The products, technology, and demand of life cycle accounting allow coordinating the enterprise products range with its production capacity, new technologies and market demand under strategic planning. The modern approach to the creation of the organization life cycle involves such qualitative indicators as intangible assets: strong brand, knowledge and experience of key employees, relations with clients and partners, use of advanced technologies, etc. Interest is the ratio of the different types of life cycles duration (Table 1.3).

Analysis of the life cycles types in the industry, demand, technology, enterprise (organization), product focuses on identity problems of the practical application of different types of life cycles.

As a result, a number of situations may be considered (Rumelt, 2014):
1) Industry, technology, enterprise (organization), and product – all of them are at one stage (for example, the stages of origin or growth, maturity, decline).
2) Stages of the industry, technology, enterprise (organization), and product are different. The main

Table 1.3
Alternative life cycle theories

Type of life cycle	Characteristic	Duration
Need	The main condition for the buyer appearance	Uncertain
Demand	Specific solution for the need satisfaction problem	Very long period
Technology	Scientific and technical capabilities	Short period
Product	Product created with using special technical solutions	More short period
Product modification	The main model type	Very short period
Trade mark	Name assigned by the manufacturer to the product	Long period

Source: developed by the authors taking into account (Pearse, 1985; Steiner, 2007)

reason for the differences in the life cycle stages of the industry, demand, technology, enterprise, product lays in the duration difference of the life cycles stages and the objects under study.

Many aspects of the life cycle analysis are determined by the peculiarities of the country or industry. There are industries where the product characteristics have been already formed by demand and practically unchanged, but products output technologies are rapidly changed due to the high level of competition. Sometimes, on the contrary, the technology used to produce one type of product continues to be used for the production of other product types related to a completely different field of activity (for example, many inventions in the field of chemistry are used further in medicine, food industry, etc.) (Schendel, 2002).

Demand can be satisfied by one type of product or service throughout all life cycle, in this case, the duration of demand life cycle and product lifecycle coincide. Demand during its life cycle can also be met by several types of products or services.

Comprehensive life cycle accounting of the industry, technology, enterprise, the product will improve the efficiency of the decisions made at all levels of enterprise management, as well as provide an opportunity to form an optimal strategic portfolio for the enterprise.

4. Strategic planning methodology for life cycle stages

To create the proper strategy for a particular product selection, it is necessary previously consider the trajectory of its development that is its life cycle. To do this, it is necessary to systematize the task solutions: to determine the set of key indicators, the range of their changes, and then consider all possible situations.

For a rapid analysis of the product lifecycle, the external indicators are used: the product market growth rate, the product relative growth rate (in comparison with the growth rate of the entire market of the region or the country), the firm market share, the firm relative market share (compared with the share of leading competitor), and internal indicators: the dynamics of enterprise revenue by product, the dynamics of company profits by product, the dynamics of enterprise profitability by product, the dynamics of enterprise investment.

This is a standard list of factors used for portfolio analysis. Such a set is reasoned by its visibility, possibility of quantitative accounting over time, relative ease of getting. Other indexes for strategies adopting can be used at the qualitative level, for example, technological change, political, macroeconomic factors, etc.

For each indicator that describes the enterprise performance, the directions of change are taken: α – growth, *const* – constant or β – decrease. The methodology involves a certain sequence of studying the product life cycle in retrospect and at the current moment, then the modelling and development of options for short- and long-term strategies implementation are made.

The method of enterprise product strategic planning at the stages of the life cycle involves the following algorithm, presented in Figure 1.1.

The construction of these models can be used to select a limited number of the product key parameters of the business entity. Further development of models assumes the probability tasks for the economic entity state, taking into account uncontrolled and controlled factors.

5. Strategic planning under indefinite external environment: uncontrolled factors accounting

All factors variety is divided into related, unrelated, controlled, and uncontrolled. There are several possible situations, combinations of strategies and uncontrolled factors, in which the effect is determined. Uncontrolled factors accounting is especially important for the evaluation of innovative and risk strategies or strategies adopted for a dynamic external environment.

The strategy assessment is determined on the basis of the project effect that implements the strategy under specific conditions. The definition of strategic project

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I STAGE: TASK SETTING:
definition of key criteria for assessing the product life cycle, definition of the limits scope for the solvable problem, definition of parameters for developed models stability, forming models for analysis

II STAGE: FORMING MODELS FOR ANALYSIS:
Model 1. Improvement of the company's competitive position in the market in retrospect.
Model 2. Stable company's competitive position in the market in retrospect.
Model 3. Deterioration of the competitive position in retrospect.
Model 4. Improvement of the company's competitive position in the market at the moment.
Model 5. Stable company's competitive position in the market at the moment.
Model 6. Deterioration of the competitive position at the moment.

III STAGE: SITUATIONS AND BASE STRATEGIES FOR EVERY MODEL FORMING:
Situation 1. Growing Market Capture Strategy (Leader follower strategy in the growing market).
Situation 2. Falling Market Capture Strategy (Leader follower strategy in the falling market).
Situation 3. Competitive Position Keeping Strategy on a Growing Market (Strategy of maintaining a competitive position in a growing market).
Situation 4. Competitive Position Keeping Strategy on a Falling Market (Strategy to maintaining a competitive position on the falling market).
Situation 5. Exit Strategy from Growing Market (Forecast of foreclosure from growing market).
Situation 6. Exit Strategy from Falling Market (Forecast of foreclosure from falling market).

IV STAGE: OPTIMAL STRATEGY SELECTION

V STAGE: DEVELOPMENT OF A MECHANISM FOR OPTIMAL STRATEGY IMPLEMENTATION AND ADJUSTMENT FOR EVERY STAGE OF THE LIFE CYCLE WITH CONSIDERATION OF UNCONTROLLED FACTORS

Fig. 1.1 **The methodology of the enterprise product strategic planning at the life cycle stages (improved by the authors with taking into account (Mintzberg, 2008; Rumelt, 2014))**

effect is based on the cash flows theory. The main feature of this theory is taking into account the time factor when the most effective project is selected. The need to record the time factor is reasoned by the fact that the useful results and costs, distributed in time, have different values. Investments (in particular, capital investments) and operating costs can be distributed in time in different ways.

Usually, it is assumed that the time factor should be taken into account when analysing projects with several years duration. However, under market conditions and unstable economy (transition economies), economic processes become much more dynamic. The uncertainty factor of the analysed processes significantly increases. The performance criteria for assessing the effectiveness of long-term projects are: economic effect (net present value), profitability index, internal rate of return, investment return period.

The risk and uncertainty factors get the first place under assessing qualitative criteria. The larger the investment project in terms of scale, time, territory, the more sophisticated technologies are used in it, the more unstable situation for the project implementation, the more important role the quality factors in the projects evaluation play. The importance of selection by quantitative criteria is reduced over the lack of reliable data and the possibility to predict them. Therefore, the need for selection and ranking based on quantitative criteria for mathematical accuracy of their calculation is reduced. With high instability, the unpredictability of a number of investment project features the necessity to take into account the uncertainty factor is set in the first place. This is especially important for the instability of the transition period of the domestic economy and the uncertainty of the environmental factors influence on the process of strategy implementation.

Use of the theory of optimal decision-making under uncertainty for the analysis of long-term projects allows transferring the qualitative factors into quantitative indicators, which can be used in the future to bring investment projects to the same kind and choose the best one. Based on the above, there is a need for a comprehensive consideration of time, uncertainty, and risk factors. To solve this problem, it is necessary to develop a methodology, principles, and methods for selecting effective projects taking into account these factors.

The methodology for strategic planning under indefinite environmental conditions taking into account the temporary factor is given below. The methodology includes:

1. Justification of the need to take into account time and uncertainty factors for assessing the strategy when using a profitable approach.

2. Mechanism of step-by-step adjustment and evaluation of the strategic decisions effectiveness.

3. The algorithm of complex estimation of strategies efficiency indicators taking into account factors of uncertainty and time.

Setting a task in conditions of uncertainty implies a multivariable solution for each time interval. This situation is the most realistic, especially for the unstable economy, transition economy, as well as for innovative projects, within which the strategy is implemented. In order to account all options for task solution, development of step-by-step adjustment mechanism and strategic decisions effectiveness evaluation are necessary. The methodology of multi-step processes under uncertainty has been considered in many works (Mintzberg, 2008; Pearse, 1985; Steiner, 2007). We will use a methodology for developing a mechanism for step-by-step adjustment and evaluation of the strategic decisions effectiveness under uncertainty (Table 1.5).

The latter task setting increases the requirements for a set of output data, a choice of different values of the effect at the same ratio of controlled and uncontrolled factors at different times, at different stages.

Table 1.4

The methodology of step-by-step adjustment and evaluation of the strategic decisions effectiveness under uncertainty

Stage Features	Stage Economic Expression	Note
1. Indicators of effectiveness, by which the strategy can be evaluated, are determined	$E = \{E_1, E_2, ..., E_k\}$	Quantitative performance indicators include: additional profit, revenue, or cost decrease by using a new business strategy in the existing market; profit, capital investments profitability at strategy commercialization on a new market, in a new product.
2. Many factors that influence the selected performance indicators are formed	$F = \{F_1, F_2, ..., F_f\}$	It is chosen the principle of the decisions making optimality depending on the conditions: nothing is known about the probability of environmental factors; the probability of the environmental factors influence is known; it is necessary to exclude any risk; risk is allowed; the solution is implemented one or a small number times; the decision is realized many times, etc.
3. Horizon of calculation is determined	$T = \sum_{i=1}^{g} t_i$	The maximum horizon of calculation for the strategy implementation depends on the stability of the external environment, industry, type of strategy.

4. Calculation interval is determined	$t = \{t_1, t_2, ..., t_g\}$	The interval or the calculation stage forms the part of the calculation horizon. As a stage of calculation, year, quarter, month can be adopted. The calculation stage can be chosen based on the assumption that for this time period the impact and the set of external and internal factors will remain unchanged. If it is assumed that the influence and set of external and internal factors will remain unchanged throughout the calculation horizon, then the calculation stage equals the calculation horizon.
5. The prevailing set of F factors is divided into controlled (managed) and uncontrolled (unmanaged) factors for each stage of calculation	$X^g = \{x_1, x_2, ..., x_n\}$ – plenty of controlled factors for the g_{th} stage of calculation; $X^g = \{y_1, y_2, ..., y_m\}$ – plenty of external environment factors for the g_{th} stage of calculation	Controlled factors may be: products technological parameters, products types, output volumes, etc. The factors of external environment can be: products prices, demand volume, analogues or substitutes appearance, new competitors' emergence, etc. The influence of controlled and uncontrolled factors on performance indicators is determined for each stage of calculation.
6. Efficiency matrix for each stage is formed	$\| E_1(X^1, Y^1) \|, \| E_2(X^2, Y^2) \|, ..., \| E_g(X^g, Y^g) \|$	
7. The plenty of choosing criteria for optimal solution is formed	Principles and criteria for the optimal solution choosing in conditions of uncertainty: principles of optimism, pessimism, guaranteed result, guaranteed losses, Savage, Bayes-Laplace criteria and others. The most suitable criterion for each stage is determined.	
8. The effect at each stage is determined, and its reduction to one moment of time is carried out.		
9. Strategy evaluation is carried out on the base of the obtained effect for the entire calculation horizon.		
10. Adaptation element provides the possibility of adjustment of strategic decisions at each subsequent stage of evaluation based on the changes that took place in the previous stages.		

Source: developed by the authors taking into account (Mintzberg, 2008; Pearse, 1985; Steiner, 2007)

However, the set of task solution allows: taking into account all the diversity of strategies and environmental factors at each stage of time; determining the effect for a number of years (stages) with a variety of participants' (decision-makers) behaviour.

6. Conclusions

The growing dynamics and uncertainty of external environment require the search for new management and decision-making methods that provide the enterprise (organization) with the ability to react quickly and with minimum expenses to the changes in the external environment. Continuous, unpredictable changes are an indispensable condition of the modern business.

Ups and downs of business activity at different levels of macro- and micro-environment within the organization are conditioned with various factors that should be taken into account in the management process. It is necessary to consider laws of systems development and life cycle at all management levels. The duration and cycle stages of each economic system depend on factors that can be classified into external and internal, managed and unmanaged. An issue of unmanaged factors forecasting and effective strategies developing for managing both the system life cycle and its elements life cycle arises.

There are many models and methods for managing the enterprise development: network planning, business planning, scheduling, financial planning, operations research, etc. They allow solving managerial tasks under the condition that the factors that influence the future of the enterprise are constant or can be predicted with some

degree of probability. However, with the uncertainty of environmental factors that grows, the efficiency of these models and methods is reduced and additional methods that would allow solving tasks in conditions of uncertainty and would increase the strategic planning accuracy and validity are needed.

The application of life cycle models allow: reasonably forecast sales and plan a production program; determine the basic strategies at different stages of development; determine the sequence of stages of enterprise development; provide harmonious interaction of organizational features and factors of the external environment, which influence the process of organizational development.

The increase of organization development stability can be achieved by transforming the dynamic changes into the planned ones based on the application of effective prediction methods with taking into account the life cycle theory. In order to ensure the organization competitive advantage, it is necessary to take into account the interconnection of life cycles at all levels: industry, technology, enterprise, product.

The proposed methodology of strategic planning in the context of indefinite external environment taking into account the life cycle theory is systematized in this field and can be applied at the level of enterprises, organizations, industries, and regions in order to increase the validity of management decision-making in strategic planning.

The strategic planning methodology under conditions of indefinite external environment taking into account the life cycle theory includes: reasoning the necessity

to consider factors of time and uncertainty in strategic planning; task setting in conditions of uncertainty; mechanism of step-by-step adjustment and evaluation of strategic decisions and strategies effectiveness in time; algorithm of complex estimation of strategy effectiveness indicators with taking into account uncertainty and time factors. Strategic planning is not characterized by temporary intervals but with a set of strategies, each of which is determined by ways of achieving the main enterprise objectives.

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THE INFLUENCE OF THE ENTERPRISE LIFE CYCLE ON THE EFFICIENCY OF INVESTMENT

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Abstract. The article presents results of the study of relations between the enterprise life cycle and the efficiency of investment in the context of dynamic, rapid changes in the conditions of enterprises operation and development. It is determined that one of the main factors of success is the introduction of innovative technologies in the production process, which cannot be carried out without attracting investments. It is the investment activity of enterprises that determines the dynamics of their development, the level of competitiveness and the growth of productive resources, which affects the efficiency of their activities. It is proved that it is relevant to take into account the possible negative effects of the influence of factors divergence. The purpose of the study is to analyse possibilities of determining the impact of life cycle stages on the efficiency of investing in an enterprise. The methodological basis of the research is grounded on the general scientific methods of dialectics, observation, measurement, and formalization; methods of the system and statistical analysis. In particular, to determine the influence of internal factors on the indicators of the efficiency of investment activity of the enterprise at the stages of its life cycle, deterministic factor analysis is applied; methods of systematization and synthesis, analysis and synthesis are also used. It is determined that the construction industry plays a special role in the national economy since its development creates a synergistic effect for the development of other industries, increases the standard of living of the society through solving certain socio-economic problems. The analytical data of construction enterprises activity in Dnipropetrovsk and Odesa regions of Ukraine became the basis for the approbation of the proposed approach. The use of the life cycle model of the enterprise, which includes the stage of growth (slow and rapid growth, stability stage) and the stage of the fall (slow and rapid fall, crisis stage), is substantiated. The features of investment activity according to the given stages of the life cycle of the enterprise are considered. It is determined that the growth and fall stages have a different effect on the nature of the investment indicators, which depends on certain factors. Further research is aimed at improving the mechanism of monitoring the environment in order to determine the force of factors influence on investment activity and implementation of preventive measures. The lack of a rapid reaction of the company to changes in the environment can lead to a crisis state of management, which determines the high degree of significance of adaptation for any life cycle of the enterprise.

Key words: enterprise life cycle, investment, stages of growth and fall.

JEL Classification: D15, D25

1. Introduction

Transformational changes in the global economy of the last decade have significantly changed the economic, legal, and social environment of the manufacturing sector of any country. There are dynamic, rapidly changing unique conditions of enterprises operation and development, in which one of the main factors of success is the introduction of innovative technologies in the production process. In order to meet the current world standards, any industry has faced an urgent need for innovation and technological change that cannot be made without investment. It is the investment activity

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of enterprises that determines the dynamics of their development, the level of competitiveness and the growth of productive resources, which then affects the efficiency of their activities.

It should be noted that the economic growth of enterprises is in certain limit values of the time interval associated with the laws of cyclical functioning of the economy. The identification of the life cycle stage and the assessment of the achieved results at certain stages in order to determine the effectiveness of investment is objectively necessary for the enterprise, regardless of the scale of activity, duration of its life, size, ownership, to avoid violations of reliability and stability of its functioning. In the conditions of constant transformation of the external environment during investment, there is a problem of taking into account the possible negative consequences of the adverse effects of the said environment and the associated uncertainty and risk, which affect the reliability of the entire investment process. Therefore, the approach to the company as a dynamic system and the study of the impact of its life cycle stages on the efficiency of investment is highly relevant.

2. Review of theory and literature

Regularities and trends of the cyclical development of the enterprise, features of its state depending on the stage of the life cycle, the issue of determining the nature and evaluation of the enterprise life cycle were considered in the publications by A. Alti (2003), A. Downs (1967), B. Gerasimov, T. Konovalova, S. Spiridonov and N. Satalkina (2008), K. Cameron and R. Quinn (2001), D. Miller and P. Friesen (1984), B. Jovanovic and Glenn M. MacDonald, (1994), I. Ivashkovskaya and D. Yanhel (2007) and others.

Despite numerous scientific papers devoted to the study of the stages of a company life cycle, the theoretical foundations of this problem have not yet been fully disclosed. There are also a number of unresolved issues related to the quantification of the investments effectiveness and taking them into account in terms of economic substantiation of the investment reliability. In the current research of investment effectiveness, the stage of enterprise stability is the most frequently analysed, while due attention is not paid to the indicators of the previous stages and accounting for future stages of the cycle. In some cases, the economic substantiation of the reliability of investment is not carried out at all, while in others, the probabilistic nature of the environmental parameters is not considered. Thus, the need to determine the impact on the effectiveness of investment processes in the various stages of the company's life cycle predetermined the purpose of the study, which is to analyse the possibility of defining the impact of life cycle stages on the efficiency of investing in the enterprise.

3. Data collection (data sources and methodology)

The theoretical and methodological basis of the research was the scientific works by the leading Ukrainian and foreign scientists on the enterprise economy, assessment of stages of the life cycle of the enterprise, as well as the reliability and investment activity of the enterprise. In the process of research, the general scientific methods of dialectics, observation, measurement, and formalization were used; methods of system, statistical and graphical analysis. In particular, to determine the influence of internal factors on the efficiency indicators of the enterprise investment activity at the stages of the life cycle, deterministic factor analysis was applied; methods of systematization and synthesis, analysis and synthesis were also used. The preliminary analysis shows that the construction industry plays a special role in the national economy, since its development creates a synergistic effect for the development of other industries, increases the standard of living of society through solving certain socio-economic problems. This formed the information base for the approbation of the proposed approach, analytical data on the activity of the construction enterprises of Dnipropetrovsk and Odesa oblasts of Ukraine.

4. The theoretical and methodological basis of research

One of the main engines of growth and qualitative development of the enterprise is its investment activity. Due to efficient capital expenditures, the desired growth rates are achieved, as well as the return on investment. It is obvious that improving the current technical equipment of the company will lead to an increase in the efficiency of the production process, and investment in new products development or improving the characteristics of existing goods will strengthen the market position of the enterprise, the emergence of strong competitive advantages and, consequently, will increase the value of the entire business.

According to the results of the analysis and generalization of theoretical approaches to the definition of the enterprise life cycle, despite a significant number of scientific works devoted to the issues of the life cycle by both foreign and domestic scientists, it was revealed that today there is no a single approach to the interpretation of this category. Both the content and the choice of alternatives to the life cycle of the enterprise, as well as the specific directions of its formation, depend on the content entering this concept and criteria accepted as a basis.

Category "life cycle" is one of the key economic concepts, but the essence of this definition is interpreted by different researchers quite broadly, depending on the subject which is being explored. The generally accepted definition states that "an enterprise life cycle" is a set of stages, which the

enterprise passes during the course of its life from creation to liquidation. This is explained by the complexity and versatility of the life cycle as a phenomenon.

With regard to the research on relations between investment and the stages of an enterprise life cycle, most of the existing research in this area is focused on assessing the reliability of the enterprise as an economic system, which is determined by the diagnosis of all levels of financial and economic activity of the organization. This approach is acceptable for the enterprises at the stage of sustainable development of the life cycle trajectory. In the case when the company develops a strategic development plan and plans appropriate investments, there is a problem determining the comprehensive reliability of obtaining expected indicators assessing the economic efficiency of the future outcome. Very often, and this is noted in the literature on the analysis of the investments efficiency, there are problems with the choice of alternative investment options in comparison of their performance indicators, which are known to have different dimensions and therefore cannot be considered as an additive at different life cycle stages.

It should be noted that none of the existing models in economic science allow conducting a complete study of the enterprise life cycle, since each enterprise has its own individual pace of development, and changing the stages of the life cycle depends on a number of factors (external environment of the enterprise, branch affiliation). For our study, we offer to use the following model of the enterprise life cycle identifying: a growth stage characterized by slow and rapid growth part, a stage of stability; a stagnant phase characterized by a slow and rapid fall, and also a stage of a crisis. This choice is based on the fact that in this model, in our opinion, the basic laws of the enterprise life cycle are the most clearly traceable (Strobl & Kronenberg, 2016).

There are several disadvantages of practical application of the methodological approaches existing in the economic literature to the definition of stages of an enterprise life cycle:
- identification of the stages of the company lifecycle is carried out on the basis of one or two indicators, which determines the narrow target orientation;
- almost all methods at the final stage of calculation are based on methods of expert evaluation;
- none of the approaches consider an enterprise life cycle as a combination of a certain ratio and interaction of the enterprise;

- each of the methods and approaches has its own limitations because there are sectorial and regional features of enterprises and it is not always possible to give an accurate qualitative and quantitative description of a particular life cycle parameter.

All this led to the need for a comprehensive approach to assessing the life cycle of a construction company, which allows:
- considering an enterprise life cycle as a set of all activities of the enterprise, subject to the influence of factors of the operational environment of the enterprise;
- taking into account the ability of the company to operate at the stages of the life cycle to produce certain results;
- forming an information base for the development of appropriate evaluation tools, for example, the matrix of determining the stages of the company life cycle by the indices of changes in profitability indicators (Table 1)

As noted in (Cameron and Quinn, 2001; Ivashkovskaya and Yanhel, 2007), the change in the stages of the company life cycle is determined not by the individual values of the selected indicators, but by the growth (index) of these indicators. According to the purpose of our research, the most interesting for us is the characteristic of investment activity according to the given stages of the enterprise life cycle.

Stage of growth. One of the rationales for investing in the enterprise is associated with the conditional transition from the stage of fall to a new cycle of the life cycle. First, it is a question of updating the active elements of fixed capital (Ivashkovskaya and Yanhel, 2007). Their moral aging leads to potential costs that arise as a result of the need to introduce new developments and qualitatively other means of production. In this case, an enterprise must calculate when it will be necessary to prematurely change capital assets to their full physical deterioration. Thus, a new cycle of a company begins precisely from the moment the investment project is implemented, for example, such as the replacement of the worn equipment or investment in research work.

Innovation is often seen as the starting point of the financial cycle of the whole industry (and with it and the existing enterprises in the industry). Thus, Boyan Jovanovic and Glenn M. McDonald (1994), analysing the automotive tires industry in the USA from 1906 to 1971, using a formal mathematical model, came to the conclusion that the enterprises that had first introduced new developments in 1910–1920, significantly won in growth rates (Jovanovic and MacDonald, 1994).

Table 1

Matrix identifying the stages of the company life cycle by indexes of changes in profitability indicators

	Stage of growth			Stages of fall		
Index of change in profitability	Slow growth	Fast growth	Stability	Slow fall	Fast fall	Crisis
Operational activity	↑	↑	↑	↓	↓	↓
Investment activity	↓	↑	↑	↑	↓	↓
Financial activity	↓	↓	↑	↑	↑	↓

Source: developed by the authors

The peculiarity of this stage is also that the company has to simultaneously support the growth of the production scale and invest in the qualitative transformation of business. So A. Alti in his research notes that the sensitivity of investment to the cash flow is significantly higher for young and growing firms (Alti, 2003).

Next, the growth stage is characterized by an increase in the investment stability of the organization, increase in the number of potential investors by reducing uncertainty and increasing monitoring of risks. Increasing risk control leads to a lowering of the threshold of profitability and, therefore, requirements for the minimum efficiency of the projects under consideration. It expands the range of affordable investment projects and accelerates their implementation.

Stage of fall. Firstly, the value of the enterprise at this stage is formed entirely current (already existing assets). Secondly, enterprises in the downturn stage must have an excessive share of debt that is to be over-levered, which is equivalent to becoming bankrupt in the future. Therefore, it can be assumed that the deterioration of the enterprise development prospects will undoubtedly have a negative impact on investment policy: indirectly by reducing sources of funding and directly by concentrating investments to restore or maintain market positions. However, one should not forget that under effective management, the company will not stay on the stage for a long time and will begin to take all necessary steps to revive the business, which in turn will require additional capital investments.

It should be noted that the growth and fall stages have a different effect on the nature of certain financial indicators of investment. It depends, first of all, on the nature of the production process, the organization of management, the degree of uncertainty, prospects of development, and many other factors.

5. The approbation of the proposed approach

As a result, analysing the current economic state of the Ukrainian construction market, we selected ten companies from Dnipropetrovsk and Odesa regions that represent the small and medium business of the regions. The influence of external factors of the enterprises' direct and indirect environments on their life cycle has been studied (a detailed list of factors is given in (Prymush, 2013). To determine the degree of influence of the selected external factors on the types of activities of the enterprises under investigation, an elasticity coefficient was applied, which allowed obtaining the data sensitivity the efficiency indicators of the enterprises investment activity at the stages of the life cycle to the influence of the external environment (in the case of a change in the value of the external factor by 1%):

$$ KE = \left| \frac{\dfrac{P_{(x)t} - P_{(x)t-1}}{P_{(x)t-1}}}{\dfrac{X_t - X_{t-1}}{X_{t-1}}} \right|, \qquad (1) $$

where, KE – elasticity coefficient;

$P_{(x)t}, P_{(x)t-1}$ – profitability indicator x enterprise activity at stages of the life cycle in the periods t and t-1, %;

X_t, X_{t-1} – external factor of the environment of the enterprise operation in periods t and t-1, %;

$P_{(x)}, X > 0$.

As a result of the calculations of the influence of external factors on the performance indicators of the investment activity of the construction enterprises in the Dnipropetrovsk and Odesa regions at the stages of the life cycle, it was determined which ones of the list have the greatest influence (Table 2). When calculating for more substantiated conclusions, the overall elasticity coefficients (for 2010–2016) for each external factor for selected enterprises were calculated as a geometric average.

Table 2
The value of elasticity coefficients for the investment activity of construction enterprises of the Dnipropetrovsk region

№	The external factor of influence	Enterprise number									
		1	2	3	4	5	6	7	8	9	10
	Factors of the immediate environment	Inverse dependence									
1	Index of the number of buildings and engineering structures of unfinished construction (%, before the previous year)	0,69	0,73	0,39	1,35	0,64	0,99	0,93	0,69	1,50	0,76
2	Index of prices of manufacturers of machinery and equipment (%, before the previous year)	2,28	2,40	2,0	1,57	1,37	2,06	2,45	2,09	1,89	1,78
3	The investment index in residential construction (%, before the previous year)	1,58	1,26	1,68	1,67	1,26	1,78	1,46	1,78	1,57	1,46
	Factors of the indirect environment	Direct dependence									
4	Index of growth of the average official rate of the national currency to foreign currencies	1,38	1,0	1,32	1,65	0,86	1,48	1,10	1,42	1,75	0,96
5	The cost of long-term loans for economic entities, %	0,50	0,64	0,32	0,52	0,32	0,60	0,54	0,32	0,42	0,22

Source: calculated by the authors

The results of analysing the influence of external factors on the investment activity of construction enterprises of Dnipropetrovsk and Odesa regions at different stages of their life cycle identify the factors of the immediate functioning environment as being the most affluent; in particular:

- a significant elastic bond is observed in both regions between the indicator of the efficiency of enterprises investment activity and the prices of machinery and equipment manufacturers. Taking into account the fact that this is inverse dependence, the increase in prices will contribute to reducing the demand of construction enterprises for these funds, and as a result of the aging of non-current assets and a drop in profits from the enterprise investment activity;

- a certain connection is observed between the indicators of the efficiency of enterprises investment activity and indicators of investment in housing construction. This is determined with the fact that investment increase in fixed assets of construction enterprises leads to an increase in non-current assets, expansion of production volumes, sales of construction products and profit from investment activity of a construction company;

- significant feedback is observed between the indicator of the number of buildings and facilities under construction and the indicator of the investment activity effectiveness. This is primarily reflected in the fact that an increase in the number of uncompleted construction decreased sales of construction products and resulted in reduced investments, as the company reduces the volume of operations.

6. Conclusions

To sum up, it should be noted that the definition of the current phase of the life cycle is a complex process, as an enterprise may not be on the first helix of its development. It is likely that the company has already undergone one or more transformations in its development. This problem is levelled by conducting a dynamic analysis of the enterprise development from the initial stage – the stage of origin. In this case, you can get a comprehensive idea not only about the financial status of the subject of economic activity at each particular moment but also about the temporary evolution of the entire production process. It is worth noting that in order to model the empirical dependence, especially on a large studied group, it is practically impossible to detect fake stages of growth.

On the other hand, changes occurring in the external environment affect the life cycle of an enterprise by causing a significant inconsistency of the internal environment with external requirements. Therefore, further research will be aimed at improving the mechanism of monitoring the environment in order to determine the force of influence of the factors on investment activity and implementation of preventive measures. The lack of a rapid reaction of the company to the changes in the environment can lead to a crisis state of management, which determines the high degree of significance of adaptation for any enterprise life cycle.

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SOCIOECONOMIC SECURITY OF A REGION AS AN OBJECT IN ECONOMIC SECURITY STUDIES AT THE MESOLEVEL

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Abstract. The *purpose* of this paper is to determine the key object in economic security studies at the mesolevel of regional socioeconomic security, as well as explain its genesis, contents, causes for emergence, and topicality. *Methodology*. Research on the socioeconomic security of a region is carried out within the ontological frameworks of post-non-classical science, one of the key features of which is strongly collective nature of scientific and ontological activities, consensual nature of scientific knowledge and also methodological pluralism. The latter predetermines active use of immanent and contextual approaches. Their parallel use has enabled determining the internal essence of the notion "socioeconomic security of a region" from the standpoint of one of the key approaches to economic security studies – activity-based one. *The results* of the carried out research have revealed that the category "socioeconomic security of a region" cannot be considered as a merger of two definitions – "social security of a region" and "economic security of a region". The connection between these two definitions is of much more complex nature: socioeconomic security of a region emerges on the edge between economic security of a region as a quasi-corporation and social security of a region as an institute of interests' protection and demands' satisfaction for region's population. It is offered to consider socioeconomic security of a region as a combination of economic and social conditions, which is providing certain social guarantees for state responsibilities and for a certain level of comfort inside a region on the basis of regional authorities' support, within their level and volume of competences, for economic activities of regional business agents, making sure at the same time that production activity of these agents does not cause damages to the regional environment. Economic security forms the basis for the category "socioeconomic security of a region", while social security is its additional upper structure. *Practical implications.* Contents of the category "socioeconomic security of a region" serves as the starting point for the development of principles and means for its provision and evaluation, system building and objectification of regional economic security, all processes and mechanisms within security-providing activities of regional management, their actions taken on prevention of insecure development of events and situations, which are destroying the whole socioeconomic system of a region, thus hindering its adequate functioning. The results of studying the genesis and the contents of the notion "socioeconomic security of a region" serve as the explanatory basis for economic security studies at the mesolevel, the key features of which are consensual nature of scientific knowledge, collective ways of the research activities, as well as their contextuality. *Value/originality*. Prior to this study, economic security studies have never considered the socioeconomic security of a region as the crossroads of economic security of a region as a quasi-corporation and social security of a region as an institute protecting interests and satisfying demands of the population within a region. The offered here approach to socioeconomic security of a region sets brand new vectors in economic security research on its mesolevel.

Key words: region, economic security studies, mesolevel, socioeconomic security of region, contents, definition, approach.

JEL Classification: O18, R10

1. Introduction

A region is a multidisciplinary notion and a research object for a range of sciences, including: physical and political geography, history, biology, sociology, political science, and economics. Each of these sciences studies region in its particular aspect. A region is also a research object for one of the newest knowledge systems – economic security studies.

Economic security studies are built on the principles of hierarchy, the latter is built around the core – the

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essence of economic security of a state (region, sector, enterprise etc.). The core also includes principles and means used for this economic security maintenance and assessment, other elements of the core include: system building, functioning and objectification of the economic security system at its various levels, processes and mechanisms of security provision, prevention measures at all socioeconomic levels (state, region, enterprise).

Economic security as a subject matter became especially relevant and topical in the first half of the previous century, when economic threats started getting truly systemic and global nature, and many negative features of the market economy – uncontrollable and unregulated market relations, inequality, inconsistency of governmental policies and actions in relation to economic agents, violations of market freedoms – became especially acute. Contemporary institutionalism has contributed greatly to the expansion of views on the economic security of the state and market agents. Causes of market agents' behaviour became much clearer, as well as state actions concerning regulation of business activities (including paternalism, inter alia). Also, clearer became potential threats stemming from the behaviour of both these sides.

In Ukraine research on economic security issues started in the 1990s, in parallel to radical changes in the economic and administrative systems, both transitioning to functioning on the basis of the market economy. The first research objects in such studies were the state itself and also separate enterprises, later – also regions. Today economic security at all possible economic levels is thoroughly studied not only in Ukraine, but in all post-Soviet countries and also post-socialistic countries of Eastern and Central Europe, including Poland, Bulgaria, Slovak Republic, Czech Republic (see, e.g., Korzeniowski, 2007, 2008; Šimák, 2001; Mikolaj, J., Hofreiter, Mach, Mihók & Selinger 2004; Piocha, 2004; Tomaszewski, 2003).

Economic security studies nowadays are developing actively as never before. As a result, new objects are now in the focus of studies, for example, today especially relevant is the economic security of separate regions and also specific commodity markets (see, e.g., Tavares, 2009; Crocker & Hampson, 2011; Chappell, Mawdsley & Petrov; Miller, 2016 and others). In our observations, the most understudied object in economic security studies is socioeconomic security. It would be most feasible to study it at the mesolevel of economic security, though, of course, it can be also studied at both macro- and microlevels.

Identification of new research object for economic security studies – as the socioeconomic security of a region – is the result of research on peculiarities of a region as a socioeconomic system and its regional management. One of the key features here is the presence of two objects for regional management: not only economic activities of various subjects within a region but also the satisfaction of social needs of the local population.

Therefore, socio-economic security of a region is a relatively new object for economic security studies at their mesolevel. Thus, it requires thorough description and study, explanation of its contents, origins of this object emergence as such and its topicality for the contemporary stage of market economy development.

2. Research methodology

In any scientific system of knowledge, studies on a particular research object start with determination and description of its key features, using terminology and definitions of the categorial toolkit of this scientific system and results of the research over the behaviour of this object. Sorting these features and their detalization provide us with a certain imagination of this research object, explaining its nature of origin, contents, and peculiarities.

Description of a research object with the use of categorial toolkit of a particular scientific system forms the explanatory basis, which later will serve as the ground layer for its theoretical and methodological basis. In this regard, economic security studies at the mesolevel are no exception.

Methodological fundamentals of economic security studies are also formed by its categorial toolkit, all related notions, categories, and definitions, thus promoting unity in the understanding of key grounds. At the contemporary stage of economic security studies' development, there already is available a certain system of norms and standards concerning the scientific research of economic security at the level of various objects – the state, region, and enterprises.

Study on the socioeconomic security of a region here has been performed under the frameworks of post-non-classical ontology, the key features of which are: collective nature of research activities, consensual scientific knowledge obtained and also methodological pluralism. The latter, in its turn, preconditions the active use of both immanent and contextual approaches within this research. Parallel use of these two approaches has allowed determining the internal essence of the notion "socioeconomic security of a region" from the standpoint of one of the most widely spread approaches in economic security studies – activity-based approach.

3. Results

3.1. Preconditions for the determination of the key research object in economic security studies at the mesolevel

In economic security studies, all notions by default stem from the generic term "security". Due to its connection with all security objects and all types of security there emerge various, more complex subnotions

of security (see, for example, Figure 1.1 in (Illiashenko, 2016, p. 14): economic security of a region, food security of the whole country, information security of an enterprise, and so on.

Determining socioeconomic security of a region as the key research object in economic security studies at their mesolevel is mostly predetermined by features of the region as a complex socio-economic phenomenon. Thus, refusal to consider economic and social securities separately in the case of the region should be supported by the following provisions.

The economy is the basis of any region in any country. It is the economy that guarantees and supports region's development; therefore, it indirectly guarantees and supports the economic development of the whole country. According to the popular today approach, the region as an economic system can be viewed as a quasi-corporation, that is, a formation which is concentrating the productive forces in itself in order to set the relations between economic agents and trigger economic activities of various types.

The understanding region as an economic system of quasi-corporate type is more than simply well-grounded. This quasi-corporation performs its economic activity within the institutional environment common for the whole country, and this environment is established by the state and can be changed by the same state.

Any region has the very limited capacity to change this institutional environment or even one of its element (even improvement or more detailed specification of institutional rules is hardly ever possible by the initiative of a region). Same applies to the formation of own institutional environment, within one region only. Region simply does not have enough legal authority for such radical changes in a system. Regional authorities are obliged to follow the orders of formal institutions as it is approved in the state overall, and they have to follow institutional provisions imposed by the state in any decision a region is making.

Property of various economic subjects located on the territory of a certain region is usually predominantly private or collective, that is, non-state. Therefore, regional authorities may have a very limited influence on the decisions made by local enterprises' owners concerning the use of their property and namely, production means. In case of Ukraine and all other post-Soviet countries, this means that territorial production complexes which used to exist during the Soviet era (and belonging to the state) are simply absent in contemporary regions. Therefore, regional management has to use new, non-traditional (at least for them) methods since all previously known and so familiar methods are not working under the conditions of market economy.

Another limiting factor in terms of region's authorities and capacities when it comes to the economy is the legal order of local budgets' formation. In Ukraine, future volumes of local budgets are always hard to forecast in advance, even for a relatively short term. Another problem of local budgets is their insufficient volume and instability of inflows. The logical consequence of these problems is that it is hard for regions to guarantee social programs' availability and performance. According to L. Tulush (Tulush 2015), this state of affairs means there will be significant risks on the side of local budgets' incomes. Therefore, there will be also risks related to financing region's own performance and its socioeconomic development. Capacities of regional authorities in part of their influence on region's economy should not be limited to filling up the local budget and its further use. According to the sectoral competence (this is a legally binding sphere of particular state authorities' or self-governing authorities' responsibilities) as described in the Law of Ukraine "On Local State Administrations", competences of local state administrations (LSA) in part of region's socioeconomic development include the following: managing economic objects in state property transferred for management under LSA, organization of economic objects' accreditations, certification of products and productions according to their profile, promotion of external economic relations of the local enterprises and organizations, regardless their property form etc.

Outlined above competences of LSAs confirm they indirectly participate in economic security provision at the regional level since they have their own levers of influence on local production forces – thus, on region's economic security too. Therefore, it would make little sense to consider economic security of a region as "the state of regional economy, under which a certain its territory, seen as a whole in the interrelation of its elements, is economically independent, thus forming the opportunities for sustainable development" (the quote is translated from (Antoshkin, 2014)). Region simply cannot be truly economically independent for a range of already presented reasons. Its economy though can be to some extent self-sufficient when its territory is concentrating in itself a range of economic subjects with various types of economic activities, including those engaged in external economic relations.

It would be more expedient to consider the economic security of a region in the context of regional economy's self-sufficiency, the latter, according to (Sverdan, 2013) being manifested through stability and sustainability. These features of regional economy are manifested through the following:

Real protection of property, regardless its type and legal form;

Trustworthy guarantees and favourable conditions for entrepreneurship;

Hindering, using tools and competencies available for the regional administration, the influence of factors which could destabilize the economic situation overall (for example, prevention of economic crimes in a region);

Support, within the competences of regional administration, for region's development (for example, creating and maintaining favourable investment climate) (Sverdan, 2013).

These and other provisions allow us stating that economic security of a region has a very different status today – it becomes one of the key preconditions for the regional economy's development. This precondition is formed on the basis of system interaction between a region on one side and economic subjects from its internal and external environment on the other. This interaction is supposed to take into account interests of a region itself, of the state, of all related economic agents so that to balance the key structural elements within production relations. Only once this system of interaction is balanced enough, we can assume the economic security of a region. If we consider the provision of economic security within the protective approach – this means timely detection, observation, and taking actions so that to prevent the development of various threats, excluding them at best scenario or at least smoothing the consequences from these threats' realization.

Economic development of a region, which becomes possible under region's economic security provision, is not the self-target, actually. It is supposed to be aimed at increasing the welfare level for the local population, at the creation of most comfortable conditions for living, and all the related to this factors in combination form the social security of a region. However, we need to keep in mind here that economic security of a region is not always followed by the social security of a region.

3.2. Social security of a region

If we consider the region as a separate self-sufficient and single entity within a state than its key feature would be the satisfaction of social demands from the population (food supply, providing places for living, education, healthcare, transport, the satisfaction of cultural demands, environment's protection etc.). And this, to a greater extent, would be the logical consequence and the result from economic activities of all economic subjects operating within the same region.

Thus, economic subjects' activity in a region is the vitally necessary prerequisite for the satisfaction of social demands in the same region; however, this economic activity as such does not automatically lead to these demands' satisfaction. This is because region itself is not only the system of productive forces; it is also a socio-ethnical, socio-economic, and socio-political system. And if within a region as socio-economic system relations between various groups of people are established for and during their economic activities, concerning first of all distribution and consumption of resources – then the relations within a region as a socio-ethnical and socio-political system have a very different nature. For this reason, the social aspect of economic security provision within a region should never be ignored.

Social security (of a state or of a region) is an extremely wide and multi-aspect notion, which has been considered in literature, both Ukrainian and foreign, in very different contexts (see, for example, Altman & Kingson, 2015; Landis, 2016; Gokhale, 2010; Sindell, 2012; Matthews, 2017).

Analysis of many definitions for "social security" presented in Ukrainian scientific narrative (see (Zinchenko)) shows that the already available definitions and interpretations emphasize mostly on the protection of interests (individual, those of certain social groups, society as a whole etc.). However, there are also more popular and also wider definitions of the notion "social security of a region", for example, the one provided in (Antoshkin, 2014): the state of legal protection for rights and freedoms for a person according to the Constitution of Ukraine (Chapter 2), also covering vitally important social interests of a person and financial provision for the officially predetermined social standards and guarantees, which are supposed to help maintain sustainable development of the whole society (including prevention of the social pressure escalation etc.).

However, this definition provided by (Antoshkin, 2014) covers specifically "social security" only, while it fully ignores such important aspects as environment, social infrastructure, the comfort of residing in a region, business opportunities etc.

The core element of any region is its population, the people. The region is not merely an economic subject, while the aim of any regional economy is not simply the production of a certain volume of material assets. For the people, residing in a region, the social component of region's security is no less important than the economic one. This is why if a certain economic subject, operating inside a region, may really have a solely financial nature of all aims and interests – this is not applicable for a region as a whole, since in it, the social component is no less important, and it would be not feasible to limit the notion (and all the related actions) to the economic contents of security only.

Economic security of a region is an important precondition for its social security because the level of region's economic security predetermines (not fully but to a larger extent) the level of its social security, and this finds its manifestation in personal development of the people residing in this region and in the development of social institutes too. This logic explains why it is not appropriate to interpret economic security alone, and why it is more feasible to study socioeconomic security (of separate individuals, the population within a region and society in a country as a whole) (Yazlyuk, 2014).

Therefore, for the economic security studies at the mesolevel provision of economic and social security of a region has equal importance. Moreover, there is a strong casual relation of a closed type between these two types of region's security: economic security of

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a region forms the basis for its social security, and the latter, in its turn, promotes and contributes to the stronger economic security of the same region. Separate research on economic and social security of the same region will never provide truly valid results and conclusions, mostly because economic development of a region (which is always possible only under the conditions of region's economic security) is not the aim in itself, it is always targeted at increasing the welfare level for local population in a region and the level of comfortable living, and these two positions form, in their turn, the social security of a region. This is why separate studies on economic and social security would limit any research significantly, providing inconclusive results and revealing only part of the problems related to region's security.

3.3. Socioeconomic security of a region

As it was already stated above, the category "socioeconomic security of a region" is formed by means of combining two subcategories – "economic security of a region" and "social security of a region".

However, we have to admit that this category is also under discussions as of today, mostly due to the fact that it has no valid legal status: the notion "socioeconomic security" (of the state or of its regions) is not represented in the current legislation of Ukraine, unlike several other types of security, actually. At the same time, we also need to mention that legal recognition of certain terminology and notions, as a rule, follows once all related to this notion processes get the stable character. Moreover, for legal recognition, a vital factor is when certain objects, phenomena and/or processes simply cannot be described without the use of this particular newer notion.

It would be not correct to assume that the category "socioeconomic security of a region" is formed by means of simply merging the definitions of "social security of a region" and "economic security of a region". Relations between these two definitions are of much more complex nature. Socioeconomic security of a region emerges on the edge between economic security of a region as a quasi-corporation (speaking generally, as an economic agent or as a system of resources' and production forces' allocation) and social security of a region (again, speaking generally – as a socioeconomic system or an institute protecting the interests of local population and satisfying their demands). Economic security forms the basis for the category "socioeconomic security of a region", while social security is its upper structure. Accordingly, low economic security of a region predetermines low level of social security too, and on the opposite.

As it is persuasively demonstrated in (Zinchenko), the category "socioeconomic security of a region" shows mutual conditionality, interdependence and complementarity of the relations being formed in the course of the related subjects' interaction with the aim to provide economic and social security for a region.

Two components of socioeconomic security of a region (economic and social ones) do not contradict each other, on the opposite – they support each other and contribute to each other, thus shaping the overall state of socioeconomic security (or insecurity in some cases) of a region. Security of a region, in its turn, is a complex socio-economic phenomenon which is combining economic and social security.

Connections between the economic and social security of the same region can be both direct and inverse, it can be obvious and in some cases also much more complex, as it seems at first glance. Thus, the higher economic activity of various subjects within the same region leads to higher welfare rate for a local population, higher demand for labour force and, most probably, also to higher wages and thus lower emigration rate. On the other hand, more economic activities within a region do not necessarily mean better social infrastructure and lower social disproportions. Moreover, a higher rate of economic activities in a region may lead to significant worsening of the environmental situation in this region or even higher crimes rates in it. In its turn, the absence of threats to the social security of a region and stable social conditions overall are in themselves additional stimuli for investments' attraction into a region as well as for reinvestment of income, production expansion, more favourable business climate and stability of business operations as such.

On the opposite, a reverse relation between the social and economic security of a region usually causes the emergence of threats to the regional economy, poorer economic results for all related business agents and thus – lower inflows into the regional budget, therefore, its lower spending, higher unemployment rate, lower wages. That is lower welfare level in this region overall. In its turn, lower level of social security in a region decreases its investment attractiveness and also causes capital and human resources' outflow to other regions or abroad, lower rates of entrepreneurial activity inside the region etc. These processes together become a direct threat to the regional economy and in the process of their development they may turn into economic insecurities.

Contents and essence of the notion "socioeconomic security of a region" have been established according to the results of the descriptive analysis, which also has enabled formulating the following conclusions.

Definitions for the notion "socioeconomic security of a region" are not that numerous and differ from each other quite significantly. There is no unity of opinions on the contents of this phenomenon, however, in all definitions, the core idea remains the same. It combines all available approaches to determination of the notion "socioeconomic security of a region". This core distinctive feature is instability of the internal essence and lack of any emphases on its contents. Consequently, an attention of all related research is concentrated on separate aspects of this notion. And this, in turn, leads

to all these research studies being rather one-sided essentially.

Quite frequently the notion "socioeconomic security of a region" is identified as being exactly the same with the notion "economic security of a region". And the latter, according to (Antoshkin, 2014), is often identified from various angles – as a certain "capacity", as "combination of properties" or as "the degree of development" as applied to the regional economy. It is quite probable that this full identification of quite different notions, according to the same (Antoshkin, 2014), is predetermined by the fact that it is the economy that shapes the welfare of a region, and first of all the economy also shapes the economic independence of a region (though it is quite relative, noteworthy). And this relative economic independence of a region, in its turn, is the key precondition for this region's sustainable development.

The descriptive analysis allows us to state that socioeconomic security of a region can be considered as such its state, which can be described by certain parameters, like preconditions for regional development etc. Within the borders of the contextual approach, the definition of the notion "socioeconomic security of a region" is quite obvious. Generally speaking, each of the definitions for the notion "socioeconomic security of a region" is valid to some extent, since any of them sets and defines certain guidelines in the development, vectors and the character of actions on achieving the state of security, all being appropriate and feasible within the borders of the selected approach.

Besides revealing the essence of socioeconomic security of a region, its definition is supposed to determine the approach, within the borders of which it would be considered. The choice of a certain approach allows specifying and deepening the contents of the notion "socioeconomic security of a region", while the latter, in its turn, determines the nature of actions on the provision of this security.

In contemporary studies on economic security, there are several approaches to the investigation of economic security issues on the levels of state, region, enterprises: protective approach, harmonization approach, resource approach, activity-based approach (for more details see in (Kozachenko & Pogorelov, 2015)). Among these and other approaches, one of the most widely spread is the protective approach. It appeared among the first due to close associations between security on one side and such notions as "threat", "protection" and "protected" on the other. Today this approach is actively used in most of the studies on economic security.

Also useful could be a resource approach to studying the socioeconomic security of a region. However, this approach means that the attention would be mostly concentrated on the resource potential of a region. The very notion "region's potential" is also relatively new because the related investigations in regional research are focused primarily on separate types of potentials (economic, financial, resource, innovation, budget, market etc.). It would not be fully appropriate to determine the contents of the notion "region's potential" using the additive approach (when region's potential is the sum of its types of potentials). The basis for any region's potential is formed by resources, however, considering their use only from the standpoint of their transformation into some sort of end result would mean considering region's potential in one context only (moreover, in many cases region itself is not able to make full use of all its resources and their types).

Results from the analysis of the available definitions of the notion "socioeconomic security of a region" have formed the basis for further outlining of approaches to the contents of the notion "socioeconomic security of a region" (in a similar manner to (Pabat, 2012), but – as applied to economic security studies at the mesolevel:

Adaptive approach: combining the key essences from the definitions of the notion "economic security of a region" and "social security of a region";

Activity-based approach: the state of regional economy, which can be described either using qualitative features (resistance to external and internal threats, resulting performance of regional management, balancing of regional interests with the state ones) or using the system of quantitative (sometimes quasi-quantitative) parameters;

Environmental approach: combination of conditions, factors, and resources which together are shaping the potential of a region, its use becomes the basis for the maintenance of socioeconomic security in a region;

Protectionist approach: securing the interests of a region is maintained through regulatory actions of the state and making use of regional potential;

Qualitative approach: the capacity of a region to protect the interests of economic agents inside it and maintain social standards and social guarantees to the local population at a certain level.

After analysing the available definitions of the notion "socioeconomic security of a region" we can formulate its comprehensive contents in the following way: socioeconomic security of a region is a combination of economic and social conditions, which are supposed to provide for welfare guarantees and other responsibilities of the state concerning the level of comfortable living in a region maintained through regional authorities' policies and actions aimed at supporting the activity of economic subjects within a region and their production activities in particular (under the conditions that the latters do not harm local environment).

Research results on the genesis and contents of the notion "socioeconomic security of a region" set the fundamental principles for the explanatory basis of economic security studies at the mesolevel, the distinctive features of which are consensual nature of scientific knowledge and contextuality of the research performed.

4. Conclusions

Development of economic security studies as the scientific system of knowledge starts with the description of distinctive features of the research object, the arrangement of which provides the opportunities to explain its nature, contents, and key peculiarities. It is expedient to state that the research object of economic security studies at their mesolevel is not the economic security of a region or its social security, but rather socioeconomic security of a region. Well-grounded arguments are provided to prove this assumption valid.

Within the category "socioeconomic security of a region", a definition "social security of a region" is not simply added to the definition "economic security of a region". The connection between these two definitions is much more complex: socioeconomic security of a region emerges on the edge between economic security of a region as a quasi-corporation and social security of a region as an institute protecting interests and satisfying the demands of the population in a region. In relation to socioeconomic security of a region, economic security is the basic category, while social security is its upper structure.

The essence of the notion "socioeconomic security of a region" is revealed in the process of descriptive analysis: socioeconomic security of a region is a combination of economic and social preconditions, which together provide for certain social and other state-level guarantees along with its responsibilities for the provision of comfortable living in a region through comprehensive support by regional authorities for all economic agents within their competences of activities, aimed in particular at their production of economic commodities, which is not supposed to harm regional environment.

The contents of the notion "socioeconomic security of a region" may serve as the starting point in the related research on the assessment of socioeconomic security of a region and further use of this assessment results in the security provision activities at the regional level, in particular, during the selection of tools for socio-economic security provision at the mesolevel.

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AN INDICATION OF THE SUSTAINABLE DEVELOPMENT OF UKRAINE IN GLOBAL DIMENSIONS

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Abstract. *The urgency of the research.* In the early 90s of the last century, economists and scientists attributed Ukraine to the undisputed leaders due to the existing resource potential and predicted its rapid economic growth. Unfortunately, the predictions have not come true: over the last 25 years, Ukraine has lost its advantages on certain indicators. As for the positions, which have been saved, Ukraine should pay the unreasonably high price by the ecological and social conditions deterioration. *Target setting*. The question is how the other countries have coped with these problems. Moreover, in our opinion, the most valuable experience is the experience of post-socialist countries, which had the same problems as Ukraine had like adaptation problems to the market environment. *Recent scientific researches and issues analysis*. The most authoritative foreign researchers on the sustainable development problems are Donella H. Meadows, G. Brundtland, M. Ashby, N. Droste, K. Fiorella and others. The most authoritative researchers on the sustainable development problems in Ukraine are Mykhailo Zghurovskyi and his project performers. *Uninvestigated parts of general matters defining*. However, these researchers did not conduct the investigations of indication of the sustainable development of Ukraine in comparison with the countries of post-socialist camp. *The research objective*. The survey target is a comprehensive study of Ukraine in the global dimension of sustainable development index: the implementation of post-socialist countries ranking placement in the indices of economic, social and environmental dimension, the index of a sustainability, the index of economic measurement and index of harmonization, the components of quality of life and safety of life; the analysis of placement in these spaces in order to find patterns and distinctive features for a particular group of countries; setting of the countries' placement features in the above mentioned spaces and the comparison of groups with Ukraine. *The statement of basic materials*. The article deals with the author's research results about Ukraine's place in the sustainable development measuring global index. The valuation is performed by measuring metric indices of sustainable development in the space of three pillars (economic, environmental, and social) in the context of quality and safety of life. Conclusions. Performed the ranking of the post-socialist states' placement in the space of sustainable development index. The analysis of placement in these spaces in order to find patterns and distinctive features for a particular group of countries is made. Peculiarities of the placement in the abovementioned spaces are outlined, and the comparison of these groups with Ukraine is given.

Key words: sustainable development, quality of life, safety of life, social measurement index, economic measurement index, environmental measurement index.

JEL Classification: P27, O57

1. Introduction

In the early 90s of the last century, after the collapse of the Soviet Union, assessing the prospects for the future development of the countries, the former republics, economists and scientists (Heiets at al., 2003; Shulha, 2009; Petryshyna, 2014; Harvard University, 1998; Oxford University Press, 2000) attributed Ukraine to the undisputed leaders due to the existing resource potential and predicted its rapid economic growth. Unfortunately, the predictions have not come true: over the last 25 years, Ukraine has lost its advantages on certain indicators. As for the positions which have been saved, Ukraine should pay the unreasonably high price by the ecological and social conditions deterioration.

For example, among the countries of the former Soviet Union, Ukraine, along with Russia and Belarus, has still a negative rate of natural population growth. However, if the population decline in Belarus decreased from 41 to 11 thousand people from 2000 to 2012 (National Statistical Committee of the Republic of Belarus,

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2016), the population decline in Russia decreased from 958 to 4 thousand people (Russian Federation Federal State Statistics Service, 2016), but in Ukraine for this period of time the population decline decreased from 373 to 142 thousand people (State Statistics Service of Ukraine, 2015). And the reason for this population decline in Ukraine is a prevailing rate of mortality compared to birth.

This fact can have both objective and subjective preconditions. The objective preconditions are as follows: the country's low level of medical care and physical culture, poor quality of food and drinking water, no proper living conditions for life. The subjective preconditions are as follows: young people do not want to give birth, and not because they do not like children, but because they do not see their children's prospects. The question is how the other countries have coped with these problems. Moreover, in our opinion, the most valuable experience is the experience of post-socialist countries, which had the same problems as Ukraine had like problems of adaptation to the market environment, the formation of the political system, the establishment of private ownership, inefficient administrative management, irrational use of natural resources (use of energy-intensive technologies) and so on.

2. Research objective and methodology

The survey target is a comprehensive study of Ukraine in the global dimension of sustainable development index: the implementation of post-socialist countries ranking placement in the indices of economic, social and environmental dimension, the index of a sustainability, the index of economic measurement and index of harmonization, components of quality of life and safety of life; the analysis of the placement in these spaces in order to find patterns and distinctive features for a particular group of countries; setting of the countries' placement features in the abovementioned spaces, and the comparison of groups with Ukraine.

The assessment is carried out by the sustainability measuring metrics indices in the space of three components (economic, environmental, and social) in the context of quality and safety of life.

The abovementioned metrics is developed by the Institute for Applied Systems Analysis of the National Academy of Sciences of Ukraine and the Ministry of Education and Science of Ukraine. The methodology of evaluation and the analysis of sustainability, which is used in this study, include a model of sustainability, which is an interdisciplinary generalization of the models, which are known in the scientific, economic, and social fields of science and the technique of applying formal statistical methods and methods for expert evaluation to analyse the processes of sustainability. According to this methodology, the process of sustainability will be characterized by two main components: safety (C_{sl}) and quality (C_{ql}) of life (ICSU, 2013).

The index of sustainability is a quantitative measure of sustainability, taking into account the safety and quality of life. The quality of life component is an integrated assessment that considers together all the three dimensions of sustainability and, thus, reflects the inseparable relationship between the three spheres of society: economic, environmental, and social. The degree of sustainability harmonization reflects the balance between the economic, environmental, social, and institutional dimensions. The security of life component is an integrated assessment, which takes into account the total aggregate threats impact to the regions' sustainability, and the index of the region's vulnerability, in addition to the impact of the aggregate threats, reflects the degree of approximation of the region both to all threats in space, defined by Minkowski norm (ICSU, 2013).

3. Research result

According to the index of sustainability (Table 1), in 2007, Ukraine ranked the 72nd place among all the world countries.

The index of sustainability in the country was 1,808, which is close to the index in South Africa, Bosnia and Herzegovina, Sri Lanka, Guatemala, Tanzania.

Table 1

Indexes of sustainability, quality and safety of life in post-socialist countries for 2007

Country code for Alpha-2	Index of sustainability		Quality of life component						Index of life safety	
	Sust. Development Index value	Rank among all countries of the world	Quality of life component value	Rank among all countries of the world	environmental measurement index	economic measurement index	social measurement index	The degree of harmonization	Safety of Life Index value	Rank among all countries of the world
LT	2,397	23	1,159	21	0,676	0,683	0,649	0,978	1,238	36
BG	2,112	43	0,887	47	0,435	0,474	0,627	0,840	1,225	38
CZ	2,206	37	0,959	40	0,345	0,623	0,693	0,735	1,247	34
PL	1,949	55	0,788	59	0,306	0,425	0,634	0,711	1,162	57
HR	2,300	32	1,035	32	0,690	0,402	0,699	0,773	1,265	32
SK	2,324	28	1,038	31	0,513	0,630	0,656	0,897	1,285	26

End of Table

EE	2,531	19	1,246	16	0,659	0,820	0,679	0,900	1,285	26
LV	2,412	22	1,145	23	0,712	0,605	0,667	0,934	1,267	30
RO	1,941	57	0,815	55	0,335	0,474	0,602	0,772	1,126	70
MD	1,876	65	0,759	64	0,469	0,355	0,490	0,866	1,117	77
UA	**1,808**	**72**	**0,659**	**75**	**0,299**	**0,331**	**0,511**	**0,759**	**1,149**	**64**
GE	1,911	59	0,832	54	0,477	0,514	0,450	0,945	1,080	88
AM	2,237	35	1,050	29	0,761	0,344	0,712	0,702	1,188	48
RU	2,142	40	0,795	58	0,604	0,337	0,435	0,764	1,347	18
KG	1,703	85	0,611	83	0,392	0,351	0,315	0,911	1,092	85
AZ	1,820	69	0,621	78	0,315	0,369	0,392	0,911	1,199	44
UZ	1,516	101	0,412	104	0,119	0,279	0,316	0,655	1,104	81
KZ	1,896	60	0,699	69	0,397	0,427	0,387	0,958	1,197	45
TJ	1,555	99	0,437	101	0,177	0,288	0,291	0,793	1,118	75

Source: made by the author (Global analysis of the quality and safety of human life, 2016)

Among the group of post-socialist countries, Ukraine took the 16th place, ahead of the Kyrgyz Republic, Tajikistan, and Uzbekistan.

According to the quality of life component value in 2007, Ukraine ranked the 75th place in the world, giving the way to such countries as the Republic of Lithuania, Bulgaria, Poland, Croatia, Estonia, Latvia, Czech Republic, Slovakia, Romania by the index. The worst value was recorded in the index of economic and environmental dimensions, where Ukraine was ahead of only two countries – Uzbekistan and Tajikistan.

According to the safety of life index value in 2007, Ukraine ranked the 64th place in the world and the 13th place among the post-socialist countries, ahead of Romania, Georgia, Kyrgyzstan, Uzbekistan, and Tajikistan.

Then, in 2007, Ukraine was among five outsiders in terms of sustainability and quality of life component for all indicators except the social dimension index (Fig. 1).
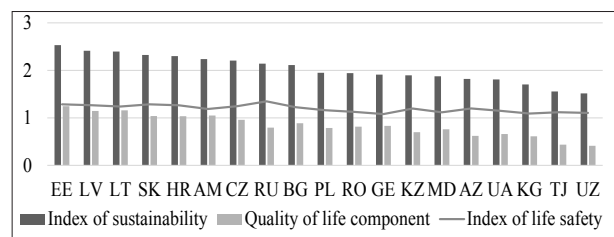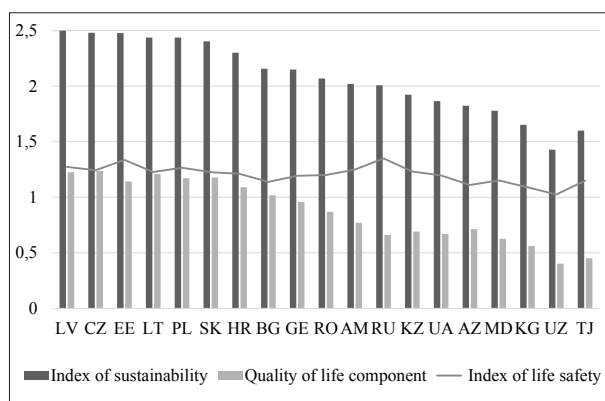

Fig. 1. Indexes of sustainability, quality, and safety of human life rated in post-socialist countries for 2007

Source: made by the author (Global analysis of the quality and safety of human life, 2016)

In 2010, Ukraine's place in the global ranking on the index of sustainability increased by three points. Among the group of post-socialist countries, Ukraine ranked just the 16th place, and like last year, it was at the top of five outsiders in all indicators except social dimension and life safety indices (Table 2).

Table 2
Indexes of sustainability, quality, and safety of life in post-socialist countries for 2010

Country code for Alpha-2	Index of sustainability		Quality of life component						Index of life safety	
	Sust. Development Index value	Rank among all countries of the world	Quality of life component value	Rank among all countries of the world	environmental measurement index	economic measurement index	social measurement index	The degree of harmonization	Safety of Life Index value	Rank among all countries of the world
LT	2,350	31	1,125	26	0,646	0,615	0,686	0,955	1,225	39
BG	2,129	45	0,932	47	0,525	0,472	0,617	0,892	1,197	46
CZ	2,425	22	1,214	21	0,709	0,669	0,725	0,967	1,211	41
PL	2,235	38	1,009	37	0,538	0,535	0,675	0,888	1,226	38
HR	2,268	34	1,000	38	0,653	0,435	0,645	0,827	1,267	29
SK	2,408	23	1,176	23	0,757	0,611	0,669	0,912	1,232	33
EE	2,392	25	1,121	27	0,553	0,703	0,686	0,896	1,271	27
LV	2,325	33	1,095	30	0,724	0,526	0,646	0,872	1,230	34
RO	2,091	50	0,992	40	0,620	0,510	0,589	0,920	1,099	84
MD	1,713	83	0,619	83	0,445	0,146	0,481	0,602	1,094	87
UA	**1,866**	**69**	**0,714**	**73**	**0,432**	**0,294**	**0,511**	**0,786**	**1,152**	**65**
GE	2,015	56	0,876	49	0,549	0,535	0,432	0,897	1,139	67
AM	2,051	52	0,860	52	0,493	0,325	0,671	0,723	1,191	48
RU	2,093	49	0,740	69	0,497	0,358	0,427	0,868	1,353	15

End of Table

KG	1,774	75	0,653	78	0,463	0,359	0,308	0,830	1,121	77
AZ	1,961	60	0,761	65	0,451	0,474	0,394	0,923	1,199	44
UZ	2,636	13	1,268	16	0,546	0,851	0,801	0,819	1,368	13
KZ	1,907	64	0,720	72	0,413	0,464	0,370	0,907	1,187	50
TJ	1,562	97	0,493	92	0,295	0,264	0,296	0,948	1,069	94

Source: made by the author (Global analysis of the quality and safety of human life, 2016)

In 2011–2012, Ukraine's position in the global dimension according to the sustainability index remained unchanged (Table 3).

Among the post-socialist countries, Ukraine climbs one step in the ranking index of environmental measurement with simultaneous fall in the unit of the rating value according to the index of the economic dimension. During this period in the overall ranking, Ukraine's position improved significantly according to the social dimension indicator, but the index value decreased. In the period of 2010–2011, Ukraine closed the top five outsiders rating among the post-socialist countries.

In 2013, according to the global rating, Ukraine lost five positions, but the sustainability index value increased from 1,836 to 1,865 (Table 4).

Thus, Ukraine was among top five outsiders according to the quality of life components, namely, the economic dimension index and the degree of harmonization (Fig. 2).

Fig. 2. Indexes of sustainability, quality, and safety of life rated in post-socialist countries for 2013

Source: grouped by the author (Global analysis of the quality and safety of human life, 2016)

From 2005 to 2013, Ukraine's position in the rating table on sustainability decreased from the 47th place in 2005 to the 74th place in 2013 (Fig. 3).

Table 3

Indexes of sustainability, quality, and safety of life in post-socialist countries for 2011–2012

Country code for Alpha-2	Index of sustainability		Quality of life component						Index of life safety	
	Sust. Development Index value	Rank among all countries of the world	Quality of life component value	Rank among all countries of the world	environmental measurement index	economic measurement index	social measurement index	The degree of harmonization	Safety of Life Index value	Rank among all countries of the world
LT	2,328	33	1,118	29	0,647	0,630	0,659	0,982	1,210	43
BG	2,101	47	0,965	44	0,527	0,503	0,642	0,892	1,136	70
CZ	2,425	22	1,206	18	0,709	0,660	0,720	0,962	1,220	38
PL	2,282	35	1,039	37	0,539	0,571	0,690	0,892	1,243	31
HR	2,244	39	1,003	39	0,654	0,437	0,647	0,828	1,241	32
SK	2,396	24	1,161	23	0,757	0,585	0,670	0,895	1,235	34
EE	2,400	23	1,131	26	0,554	0,715	0,690	0,892	1,269	28
LV	2,336	32	1,098	31	0,725	0,517	0,661	0,864	1,238	33
RO	2,149	44	1,003	39	0,621	0,508	0,610	0,912	1,145	66
MD	1,790	74	0,695	73	0,447	0,337	0,421	0,884	1,094	88
UA	**1,836**	**69**	**0,686**	**74**	**0,434**	**0,255**	**0,500**	**0,745**	**1,149**	**64**
GE	2,032	54	0,884	49	0,550	0,517	0,464	0,930	1,147	65
AM	2,029	55	0,805	58	0,481	0,490	0,423	0,937	1,224	36
RU	0,296	50	0,743	67	0,498	0,359	0,429	0,868	1,353	15
KG	1,755	77	0,660	77	0,465	0,339	0,339	0,845	1,095	87
AZ	1,913	64	0,792	62	0,452	0,470	0,449	0,980	1,121	73
UZ	1,438	103	0,390	100	0,162	0,204	0,310	0,730	1,048	100
KZ	1,962	60	0,741	68	0,415	0,466	0,403	0,936	1,221	37
TJ	1,624	89	0,473	91	0,296	0,256	0,266	0,938	1,151	62

Source: made by the author (Global analysis of the quality and safety of human life, 2016)

Table 4
Indexes of sustainability, quality, and safety of life in post-socialist countries for 2013

Country code for Alpha-2	Index of sustainability		Quality of life component						Index of life safety	
	Sust. Development Index value	Rank among all countries of the world	Quality of life component value	Rank among all countries of the world	environmental measurement index	economic measurement index	social measurement index	The degree of harmonization	Safety of Life Index value	Rank among all countries of the world
LT	2,437	29	1,209	25	0,772	0,642	0,674	0,917	1,227	42
BG	2,156	47	1,018	43	0,558	0,540	0,659	0,907	1,138	80
CZ	2,480	23	1,237	21	0,758	0,648	0,732	0,931	1,243	37
PL	2,437	29	1,171	29	0,732	0,591	0,698	0,907	1,266	33
HR	2,301	40	1,090	35	0,746	0,435	0,665	0,780	1,211	46
SK	2,403	32	1,177	27	0,792	0,547	0,678	0,845	1,226	43
EE	2,478	24	1,142	31	0,552	0,709	0,708	0,885	1,336	18
LV	2,499	21	1,225	22	0,851	0,559	0,682	0,822	1,273	30
RO	2,069	54	0,869	54	0,350	0,503	0,616	0,771	1,200	50
MD	1,778	90	0,626	91	0,278	0,346	0,442	0,805	1,152	66
UA	**1,865**	**74**	**0,669**	**85**	**0,303**	**0,299**	**0,517**	**0,721**	**1,196**	**51**
GE	2,149	49	0,957	49	0,573	0,585	0,494	0,924	1,193	53
AM	2,020	56	0,771	65	0,330	0,536	0,444	0,800	1,249	35
RU	2,008	57	0,660	86	0,283	0,357	0,447	0,778	1,349	16
KG	1,652	98	0,562	99	0,303	0,317	0,351	0,935	1,090	96
AZ	1,824	84	0,713	74	0,236	0,491	0,461	0,706	1,110	89
UZ	1,428	112	0,402	111	0,088	0,211	0,331	0,537	1,025	111
KZ	1,923	68	0,691	81	0,094	0,534	0,429	0,488	1,232	40
TJ	1,600	104	0,451	107	0,162	0,305	0,289	0,740	1,149	70

Source: grouped by the author (Global analysis of the quality and safety of human life, 2016)
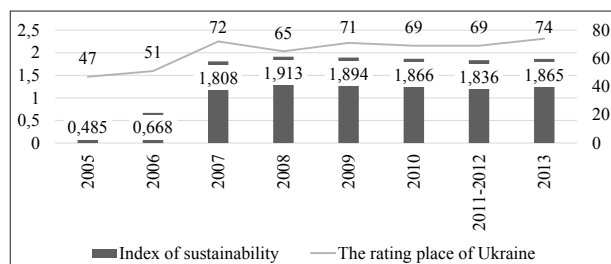
Fig. 3. Dynamics of Ukraine's rating place in the global dimension according to the index of sustainability (2005–2013)

Source: grouped by the author (Global analysis of the quality and safety of human life, 2016)

Though the value of the indicator increased to 2008, the rating fell. This situation is explained by two factors: firstly, to 2007 the calculation method of sustainability index was somewhat different, but this factor does not affect the rating of the country's place in the world; secondly, in other countries the increase of sustainability index is well ahead of the pace in Ukraine, which allows them to climb the rating table.

Ukraine has reached a rather high level according to the components of inequality between countries and people and the limit of water use compared to other post-socialist countries. According to these indicators,

the country takes the third place. Ukraine has average values according to the components of energy security and child mortality – the 7th and the 9th places in the ranking, respectively. The worst situation in the country, according to the components of quality of life, is with the indicators of corruption level and the level of global diseases. According to these indicators, Ukraine ranked the 16th and the 15th places respectively, and it is slightly ahead of the Kyrgyz Republic, Tajikistan, and Uzbekistan (Fig. 4).
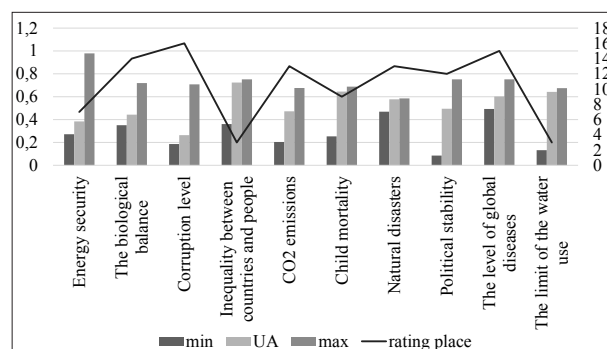

Fig. 4. The rating place of Ukraine among the post-socialist countries according to the safety of life components

Source: grouped by the author (Global analysis of the quality and safety of human life, 2016)

4. Conclusion

From the abovementioned, we can conclude the following. Ukraine, which in the late 80s had one of the best starting points for the countries of the group, was constantly losing the advantages of its economy, basic science, advanced education, quality of human capital. Thus, according to the World Data Center for Geoinformatics and Sustainability (WDC-IASA-FORESIGHT, 2016), during the years of independence, the Ukraine's economic downturn was at around 60% of the achieved production in 1991, which is comparable to the losses during the Second World War of the German, Japan, and the USSR economy. However, the economies of these countries reached the pre-war level indicators for about seven years, but the economy of Ukraine during the years of its independence fell from the 8th-10th places in Europe in 1991 to almost the last one.

The fact that worries is that Ukraine almost according to all defining indices, indicators, and sustainability indicators is significantly inferiors not only to the world leaders but to the most post-socialist countries, which were taken for comparison. During the study period, the Republic of Lithuania, Estonia, and Latvia (except 2010) kept a stable position of five post-socialist countries with the highest rating according to the index of sustainability. Instead, Ukraine (except 2013) according to the index of sustainability was one of the five outsiders of the group of countries with the Kyrgyz Republic, Tajikistan, and Uzbekistan (except 2010).

To determine the future orientations of Ukraine's development, both threats and possibilities should be considered. Ukraine's objective advantage is its favourable geographical and geopolitical position. As for the labour potential availability and use, Ukraine has significant advantages compared to other post-Soviet countries – 42 million of the highly educated population (according to the UNO the education enrolment rate in Ukraine is 94%). Being located on the shores of the Black and Azov seas, with a powerful gas and transport network in transit, Ukraine is a "Silk Road" for energy, cultural, and commercial exchange between East and West. As for its territory, Ukraine ranks the second place in Europe (over 600 thousand square kilometres), which determines the optimal size for the accelerated development of the area. The availability of the significant land resource potential (a fertile soil and its large area), an impressive diversity of soil and climatic conditions provide considerable advantages in the development of agrarian and food sectors of the country's economy. A high capacity by the bioclimatic potential for the people's life creates the necessary conditions for the growth of the quality of life social component of the country's population.

It is important for Ukraine to avoid fundamental mistakes. The risk is that much easier to prefer the successful "template", particularly a visually attractive economic development, without a united, holistic model of environmental and social spheres. Moreover, the implementation of sustainability concept does not guarantee the rapid growth of human welfare but will require hard work and consolidated efforts of politicians, managers, scientists, and all progressive people of Ukraine. Another condition for sustainability is the political will of the state's senior management to go a hard, but the only correct way. The crisis of Ukraine's national ideology and strategy of development, which is delayed, can play a positive role. This is the role of the "blank page", which gives Ukraine a chance to use the best of the acquired by the international community. This is the experience of a harmonious and sustainable development of the society, in which people's welfare, the environment, natural resources, and human capital embodied in the achievements of science, education, advanced technologies, and high moral values are the inseparable, equal, and mutually complementary categories, the ones that enrich each other.

Based on the results of the research and relying on the expert opinions of such international organizations and scientific and educational centres as the International Council for Science (ICS, 2011), UNIDO (UNIDO – United Nations Industrial Development Organization, 2001) and the world's leading universities and research universities such as Oxford University, NISTEP (National Institute of Science and Technology Policy, Japan), Institute for Critical Technology and Applied Science (Virginia Tech), Wageningen UR (Research University, the Netherlands), it should be noted that for Ukraine the solution of the defined socio-economic and environmental problems involves changing the technological structure of the country's development. These technologies include those associated with alternative energy (in the ranking of the world's countries, according to the share of renewable energy, Ukraine is among ten countries-outsiders), biotechnology, information and communication technology, the study of life and new materials. The priority areas for the development of these technologies should be the following: information and communication; electronics; the study of life; health care, medical care, and social security (Ukraine ranks the 61st place in the world according to the global diseases indicator); agriculture, forestry, fishery and food; energy and resources; environment; nanotechnology and new materials; production and industrial infrastructure; social infrastructure; social technologies.

We are deeply convinced (and this is confirmed by the results of the study) that corruption is one of the major obstacles to the economic growth and social development of Ukraine's society. Corruption is one of the most pressing social problems, a phenomenon, which is formed as a method of government officials, politicians, and public officials, established for a considerable period of time on the level of mentality. However, to solve this problem without the political

will of those who are in power is impossible. So, the immediate measures should be directed to: extensive economy liberalization (the cancellation of the most matching bodies in the economy and society, the reduction in the number of employees in these units); strengthening of responsibility for the avoiding of public reporting on profits and expenditures made by persons connected with the public service, for their close family members, or persons treated like them; tax reform and liberalization of the tax system should be carried out simultaneously with the increasing responsibility of individuals and entities for the violation of tax legislation; the transition to a civilized land market with the simultaneous solving of problems on the creation of local financial and credit system and insurance system for AIC, including land bank, small and medium farmers, agribusiness transition to higher technological modes.

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JOINT ENTERPRISES IN FOREIGN TRADE ACTIVITY OF UKRAINE

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Abstract. *The purpose* of this work is to analyse the main indicators of foreign trade in goods in general in Ukraine and in the context of joint ventures, and an analysis of changes in absolute indicators of foreign trade activity of a joint venture in the dynamics of economic activity of the joint venture in the foreign trade of Ukraine. *The methodology* of the research in this paper is based on the analysis of statistical data on the share participation of joint ventures in the foreign economic activity of Ukraine and consideration of the geographical structure of export and import of joint ventures for 2010–2016. The paper presents *results* of research on the share participation of joint entrepreneurship in the structure of foreign trade in goods both in Ukraine as a whole and in the regions, in particular, the study of the geographical and regional structure of foreign trade activity of joint entrepreneurship in the context of export and import components. A detailed study of the geographical structure of export and import trade in the countries of far and near abroad with goods currently produced by joint ventures is presented, as well as a detailed analysis of the commodity structure of export deliveries and import purchases by joint ventures in the context of food and industrial goods is given. *Practical consequences* are associated with the solution of relevant issues, first of all, the formation of a positive investment image of the country on the world stage, and results of the analysis of participation of joint ventures in foreign trade activities, the geographical, regional, and commodity structure of exports and imports seems appropriate to consider in the development of further policies on activation of foreign trade of Ukraine, including growth and expansion of their export component. *Originality*. The results of the analysis of the share participation of joint ventures in Ukraine's foreign trade activities, geographical, regional, and commodity structure of export and import of joint ventures should be taken into account in the development of further policy to intensify Ukraine's foreign trade.

Key words: joint venture, foreign economic activity, import, export, commodity turnover.

JEL Classification: F10, P13, R10

1. Introduction

The history of joint entrepreneurship in Ukraine has more than 20 years, the formation on the territory of the country dates back to the beginning of 1990. During the period of functioning in the territory of the country of joint entrepreneurship, there have been significant changes in the quantitative and qualitative composition of business structures, in the economic and legal conditions of their activity, state policy in the sphere of joint business. Many aspects of this urgent problem for Ukraine have emerged only in recent years, so the question of the creation, placement, production, and foreign economic activity of joint business requires a deep and comprehensive study.

Effective foreign trade activity of joint ventures is one of the key points of its successful operation in domestic and foreign markets, as it confirms its competitiveness and competitiveness of its products. In terms of exit from an economic crisis, such an approach

should be a priority: it allows finding new markets and segments of manufactured goods, providing an inflow of currency to the country, creates conditions for the purchase of imported raw materials and semi-finished products for the production, saving jobs, attracting highly skilled personnel. Thus, foreign trade activities can be considered as a strategic direction, a necessary condition for the successful operation and development of the enterprise.

Unfortunately, Ukraine's transition to a market economy without concrete state support was not entirely successful: instead of reducing raw material exports and increasing exports of finished products, including high-tech, on the contrary, there was a reduction in the volume and the proportion of the latter and the replacement of it with raw commodities. Therefore, analysis of dynamics of the structure of foreign trade turnover in the whole country, region is a characteristic of the situation, the export market condition, which enterprises, focused on

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the export of products, should consider obligatory. And, the more detailed this analysis is performed, the more informative it is to develop a foreign trade strategy.

In this regard, it is important, in our opinion, to study, generalize, and conduct an analysis of the existing experience of foreign trade activities of joint ventures.

2. Foreign trade activity of joint ventures

The study of the development of joint ventures in Ukraine in the dynamics indicates a steady increase in the number of these economic entities. Thus, the number of operating joint ventures at the beginning of 2016 amounted to 39 units and increased by almost 20% compared to the level of 2010 and more than 2 times compared to the level of 2000. Positive trend of the growth of the number of joint ventures created, including a high proportion of the number of operating ones, as well as a combination of the legal framework for their creation and a high level of economic development of Ukraine, were reflected in the achievement by entities of joint entrepreneurship of significant results from their foreign economic activity.
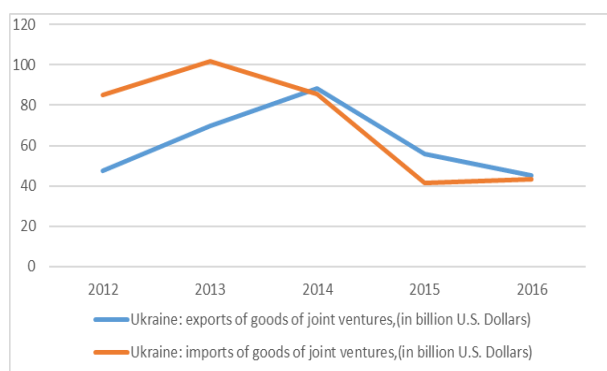
Fig. 1. Participation of joint entrepreneurship in foreign trade of Ukraine

So, results of the research on the participation of joint ventures in Ukraine's foreign trade are shown in Fig. 1, showed that the share of their foreign trade turnover at the beginning of 2017 amounted to 18.8% of the total volume of foreign trade in the region as a whole and increased compared with the level of the previous year by 1%.

3. Analysis of export activities of joint ventures

In turn, the share of export operations of the joint business in the volume of export of goods in Ukraine as a whole by the results of 2016 amounted to 15.5% and was marked with an insignificant but reduction compared to the level in 2015 and compared to the level of the last three years their activities from 2011 to 2014 inclusive. On the other hand, the share participation of joint ventures in the export deliveries of the region as a whole in 2015 is marked by pronounced growth.

Compared with the level of 2010 and starting from the first years of their creation and operation.

In imported deliveries, the share of joint ventures at the beginning of 2016 amounted to 21.6% of the total import. The analysis of dynamics of specific values of the imported component of the joint venture in the import deliveries in the region, in general, indicates the stability of its growth and the significant advance of the similar component, starting from 2010 to the present day.

On the other hand, the study of absolute indicators of foreign trade activity of joint ventures in recent years has shown that the foreign trade turnover of joint ventures in 2015 amounted to a surplus, the size of which amounted to – 301.9 million dollars, which indicates a significant predominance of the import part over the export. This trend has been traced over the past five years, starting from 2010 to the present day.

A detailed analysis of results of foreign trade activities of joint ventures for 2015 showed that the volume of foreign trade in 2015 in value terms, although it reached 87.5 million dollars, but decreased by almost 20% compared with the level of the previous year and by almost 40% compared with the level of 2011. At the same time, the volume of export supplies made by entities of joint entrepreneurship in 2015 amounted to 47.8 million dollars, the absolute value of which decreased by more than 33% compared to the level of 2014 and more than 2 times compared with the level of 2011. The results of the above-mentioned study of the results of foreign trade activities of joint ventures showed that it is precisely the advance of the growth rates of imports of goods over the growth rates of exports of goods that led to a negative balance in foreign trade in goods.

In turn, a comparative analysis of the main indicators of foreign trade in goods of Ukraine as a whole and joint ventures, in particular, shows similar problems that are related to the presence of a steady tendency to reduction of both the volume of foreign trade turnover and the volumes of export of goods, and, accordingly, the presence of a negative balance of foreign trade in goods over the past five years. As for the negative balance of foreign trade in goods, the reason for this, in our opinion, is mainly related to the presence of so-called "investment imports". It is assumed that "investment imports" in the near future will turn into export of products (works, services).

Investigation of specific indicators of joint entrepreneurship participation is considered in the foreign trade of Ukraine, the graphic representation of which is given in Fig. 2, showed that the leading position in terms of this indicator is shared by entities of the joint business, located on the territory of Kyiv and Dnipropetrovsk regions, where the share of their foreign trade transactions made respectively 45.7 and 41% of the total volume of foreign trade in the indicated zones in general. The important role in joint ventures' achieving of these regions of the indicated level of

foreign trade played the presence of these regional centres at the intersection of transport flows.

Subjects of the joint venture, located on the territory of Kharkiv and Odesa regions, occupy second positions according to the value of the investigated indicator by the share value of regional joint venture participation in the foreign trade of the specified regions. The study of results of foreign trade activities of entities of the joint business located on the territory of Ukraine indicates a significant decrease in indicators of the share participation of these entities in the implementation of foreign trade in general for joint entrepreneurship for their contribution to the implementation of foreign trade operations in general in the context of these regions.
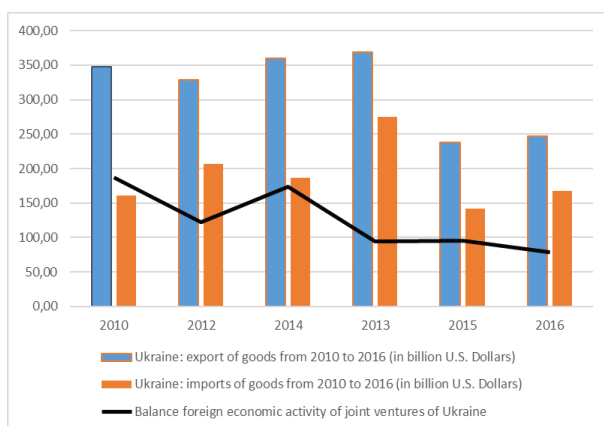
Fig. 2. Reflection of foreign economic activity of joint ventures of Ukraine

Thus, despite the high absolute values of the volume of foreign trade in export and import deliveries by joint ventures in metropolitan areas, their participation in foreign trade of regions is not so significant and amounts to only 11.9% and 2.2% of the total foreign trade turnover of these regions, respectively, a more detailed study of specific components in terms of exports and imports of joint entrepreneurship at the regional level has shown that the leading positions in export deliveries of regions are shared by entities of joint business located on the territory of Kyiv (49.2%), Dnipropetrovsk (21.6%), and Odesa (21.5%) regions. A particular attention should be paid to the fact that the share of export supplies of joint ventures operating in the above-mentioned regions amounts to 26.8% of the total volume of export operations carried out by all business entities of the specified regions and 9.6% of the total volume of exports countrywide in Ukraine. It is necessary to note rather low specific values of export operations received by joint ventures located on the territory of Zaporizhzhia (7.3%), Poltava (13.7%), and Cherkasy (14.6%) regions, the total level of export supplies of which was only 9.4% of total exports of these regions and 5.9% of exports countrywide.

4. Analysis of import activities of joint ventures

With regard to import deliveries, the leaders in this area of activity are joint ventures located in the territory of Odesa and Kyiv regions, and the share of their imported operations amounted to 65.1% and 41% of the total volume of imports in the specified regions as a whole. Subjects of joint venture, located on the territory of the city of Kyiv (22.9%) and with a significant backlog of Kyiv (17.8%), Kharkiv (17.6%) regions, according to the value of the researched indicator, are approximately at the level reached by the region as a whole (21.6%).

The study of the geographical structure of the export trade of joint ventures over the past 2016 year showed that the largest part of them belongs to countries of the near abroad, the main representative of which is Poland, Malta, the Netherlands.

Results of the analysis of the export component of joint ventures in foreign trade with foreign countries showed that the most interest for the latter is represented by partners from Brazil (6.2%) and the Baltic States (3.3%), of which almost 2% are accounted for Lithuania. Countries such as Norway (2.7%), Ireland (2.5%), Germany (2.5%), and Poland (2.5%) are also leaders in trading positions from the far-abroad countries.

The export breakdown of these enterprises is represented by the supply of potash fertilizers to the countries of the far abroad, such as Brazil (6.2%), Norway (2.6%) and others, which account for almost 11% of total exports of joint business entities. Countries of the far abroad (4.5%) are also mainly the main consumers of petroleum products sold by joint ventures for export (5.1%).

The leading position in the commodity structure of exports of goods to countries of the near abroad is the joint ventures' sale of cars (21.9%), as well as parts and accessories for cars and tractors (0.8%), the main representative of which is the United Kingdom (20.9%).

Significant positions in the commodity structure of food exports are taken by sales of joint ventures (6.4%), mainly in countries of the near abroad (6.3%). In another, the commodity structure of exports to the near-abroad countries is represented by the following items of food products: fresh or chilled beef (2.6%) and meat and offal of poultry (1.5%); dried, salted, smoked fish, and fish processed by other means (1.9%), and ready or canned fish and caviar (2.6%); milk and cream, unconcentrated, condensed and dried (5.5%) and buttermilk, yoghurt, and kefir (1.4%); butter (1.9%) and sugar (1.5%).

The range of non-food products exported by joint ventures is represented by such industrial goods as: hosiery (1.9%), furniture and their parts (1.2%); rods and profiles of aluminium (1.7%), and non-porous, non-reinforced, non-laced, without lining plates, sheets,

plastic film (1.6%); non-electric household appliances for cooking (1.4%); insulated wires, cables (1.4%) and plastic packaging (1.2%); metal structures made of ferrous metals (1.4%), and insecticides, herbicides (1.3%), as well as particleboards and fibreboards (0.8%).

The analysis of conducting import purchases by joint ventures showed that the largest part of them belongs to foreign countries (51.7%), the main representatives of which are the Republic of China and Germany, each of them in the investigated period accounted for 15.5% and 5.6% of total imports by joint ventures. It should be noted that joint ventures in 2015 also successfully imported goods from Poland and Italy. Thus, in the investigated period, from these countries, goods are imported in the amount of 445.9 million USD, their share accounted for 4.1% and 2.8% of the total volume of their imports. The share of countries such as Switzerland, the United States, and Norway is, on average, slightly less than 2% of all import revenues by joint ventures in 2015.

The main representatives of countries of the near abroad, which account for 48.3% of the goods imported by the joint ventures in the investigated period, are Estonia and Austria, with a share of 44.8% and 2.6% of total import volume coming to the joint enterprises The share participation of Moldova and Kazakhstan in import deliveries of this kind of enterprises is insignificant and ranges from 0.3% to 0.4%, respectively.

During the last five years, the quantitative and share values of imports by joint ventures, there is the presence of a steady tendency to surpass the growth rates of imports over the growth rates of exports of goods.

As for the commodity structure of imports, the bulk of import purchases is represented by deliveries to the territory of the region, mainly from the Russian Federation, crude oil, including gas condensate, and petroleum products, the share of which in the period under study amounted to about one third (24.8%) of the total volume of import of joint ventures.

Considerable positions in the commodity segment of imports of these enterprises from far-abroad countries are represented by supplies from China of equipment for the production of paper pulp, paper, and cardboard (3.6%). Medicines packaged for retail sale (13.3%), more than 90% of which are imported from far-abroad countries, occupy a high share in the structure of import of joint ventures.

Commodity structure of import of joint ventures is also represented by imports of fresh or chilled fish (1.2%) and frozen fish (0.9%) into the country, mainly from Norway. Imports of joint ventures cover a wide range of vegetables and fruits (3.1%), represented by imports of fresh citrus fruit (0.3%), apples, pears, and quinces (1.4%), apricots, cherries, peaches, plums (1.1%) etc., to the republic mainly from non-CIS countries.

For a more detailed study of the structural distribution of the product range of import supplies,

one can mention the import of such industrial goods by the joint ventures into the country as steam boilers or other steam generators (1.9%) and equipment for heat treatment of materials (1.6%); centrifuges, equipment and devices for filtering, cleaning liquids or gases (1.0%) and electric transformers (0.8%); communication equipment and parts to it (1.6%) and consoles, panels, tables for electrical equipment (0.9%); insecticides and herbicides (0.7%) and amino-aldehydes, and phenol-aldehyde resins and polyurethanes (0.4%); non-porous, non-reinforced, non-slip, non-lining slabs, sheets, plastic film (0.9%) and rolled flat products made of non-alloyed steel (0.8%), as well as articles of hygiene for adults and children (0.2%).

In our opinion, the participation of joint ventures in import operations is much broader and is determined by a number of peculiarities of the development of the Ukrainian economy at the present stage. Firstly, due to imports in our country, a significant part of the commodity resources of the retail trade is provided, the need for a wide range of consumer goods, especially foodstuffs, is met. Secondly, more and more joint ventures are entering the external market as buyers of the necessary raw materials and semi-finished products to provide production processes, as well as machinery and equipment – to maintain the current level of the growth of technology.

As a result, subjects of the joint venture are able to achieve significant results from production and trading activities, as well as an increase of employment of the country's population is possible.

5. Conclusion

Thus, the considered state of joint ventures of Ukraine and certain aspects of their foreign economic activity indicates their significant role in the economy of the region and the priority of further development and is connected with the solution of topical problems, first of all, the formation of a positive investment image of the country on the world stage, and it seems expedient to take into account the results of analysis of the participation of joint ventures in Ukraine's foreign trade activities, geographical, regional, and commodity structure of exports and imports in the development of further policy to enhance Ukraine's foreign trade, including the growth and expansion of their export component.

Foreign trade in joint ventures is characterized by a high share of exports in commodity circulation. Export orientation is important for the economic development of Ukraine. Export of joint ventures is represented by products of food (commodity grain, poultry meat products, dairy products, sugar) and non-food products (hosiery, furniture, rods and aluminium profiles, insulated wires, plastic packaging). At the same time,

the presence of raw commodity groups in exports, both at the regional and national levels, reduces the positive effect of exports, reducing the profit of enterprises and the budget-profit of exported resources. Preservation of a high share of export in the foreign trade of joint ventures of Ukraine, development and re-equipment of productions, aimed at the export of products of a high degree of processing, primarily machine building, will have a positive effect on the economy of the country, its branch structure.

An important source of economic development in Ukraine can be an effective foreign trade with countries not only in Europe but also in the Asia-Pacific region, aimed at developing the export potential of the finished product of the country.

The situation in foreign trade formed in Ukraine is characterized by the export of resources and preferential imports of finished products. At the same time, the research showed a sharp difference in the commodity structure of exports of joint ventures. One of the directions for increasing the share of export and import of joint ventures in the country's foreign trade is the development of industrial potential for the processing of agricultural products. Creation of joint ventures for deep processing of agricultural products in the country will allow compensating for a reduction in exports.

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FORMATION OF MARKETING MANAGEMENT SYSTEM OF THE ENTERPRISE

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Abstract. In order to find out the level of effectiveness of marketing management and create an effective system, it becomes evident that a more in-depth study of the management of marketing activity as a process that occurs under the influence of a set of factors, which consideration can enable to better detect and solve existing problems, is necessary. *The subject of the study* is the theoretical and methodological foundations of management of the marketing activities of an enterprise and methods for evaluating its effectiveness. *The purpose of the study* is to build a system for managing marketing activities of an enterprise. In order to achieve the purpose of the study, the following tasks are set and solved: to substantiate theoretical and methodological foundations of the formation of the management system of marketing activity of enterprise, to specify components of this system, and to identify types of links between the components of the management system of marketing activity of enterprise and the factors influencing it and its efficiency, to determine composition of indicators of efficiency of marketing management system of enterprise. *Methodology*. The paper uses the following methods and approaches to research: marketing approach, abstract-logical approach used in the study of theoretical and methodological foundations of interaction management, analysis of theoretical approaches to the formation of a management system for marketing activities of enterprise, inductive and deductive (used in determining factors influencing the formation of a management system for marketing activities of enterprise), systematization and generalization (to clarify the concept of "marketing management"), methods of science abstraction (to form a system of indicators characterizing the efficiency of enterprise marketing management). *Results*. Most approaches to the formation of marketing management systems are of a procedural nature, that is, they focus only on the implementation of basic functions of marketing management, and in order to determine the effectiveness of marketing activities of enterprise, the indicator that characterizes the ratio of costs to marketing activities of a company and financial result is used most often. Thus it is impossible to track achievements of certain processes of marketing activity of enterprise and the efficiency of the operation of relevant divisions of the enterprise. However, the consideration of approaches to the management of marketing activities of enterprise made it possible to determine the need for the formation of such a marketing management system that takes into account types of connections of system components and considers the influence of factors of the enterprise marketing environment, and the methodology for evaluating its effectiveness made it possible to determine the appropriateness of the enterprise's efforts. The practical significance and originality of the results obtained is the improvement of the management system of marketing activities of the enterprise, which allows, taking into account the influence of factors of the marketing environment, not only controlling the basic processes of marketing activity of the enterprise but also assessing the impact of these processes on the efficiency of marketing activities of the enterprise as a whole on the basis of "contributions/performance" principle.

Key words: marketing activity of enterprise, management system, factors of marketing environment, effectiveness.

JEL Classification: L21, M10, M31

1. Introduction

Rapid and permanent changes in the market environment require continuous improvement as of a system of marketing means of the enterprise, so in general of the management system of marketing activities of the enterprise. The process of managing marketing activities is aimed at creating an effective marketing complex of the enterprise: its commodity, pricing, communication policy and distribution policy. However, conducting an effective marketing policy requires the company to take a responsible attitude to the organization of all stages of the management process

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such as: planning, organization, implementation, and control of marketing activity. Such circumstances dictate the need to streamline and improve marketing activities of the enterprise not only to achieve the final result but also to ensure a qualitative process organization.

The process of managing the marketing activities of the company involves not only finding out the level of its efficiency but also determining the factors that predetermined such market positions of the enterprise. Consideration of the influence of environmental factors and fulfilment of all management functions are impossible without creating an effective system for managing the marketing activity of the enterprise with an appropriate division of tasks among structural divisions of the enterprise.

The purpose of the study is to build a system for managing the marketing activity of the enterprise. To achieve the purpose of the study, the following tasks are set and solved: to substantiate the theoretical and methodological foundations of the formation of the management system of marketing activity of the enterprise, to specify components of this system and to identify types of links between the components of the management system of marketing activity of the enterprise and factors influencing it and its efficiency, to determine composition of indicators of efficiency of the management system of marketing activity of the enterprise.

The following methods and approaches to research are used in the paper: marketing approach, abstract-logical approach used in the study of theoretical and methodological foundations of interaction management, analysis of theoretical approaches to the formation of a management system for marketing activities of enterprise, inductive and deductive (used in determining factors influencing the formation of a management system for marketing activities of enterprise), systematization and generalization (to clarify the concept of "marketing management"), methods of science abstraction (to form a system of indicators characterizing the efficiency of enterprise marketing management).

2. The essence of management of marketing activities of the enterprise

Formation of a management system requires creating the necessary level of organization and rational use of integrated support for marketing activities.

The essence and content of marketing activities reflect the objective conditions of market development, which to some extent loses chaos and falls under the regulatory influence of pre-established economic ties, where a special role is assigned to the consumer. The consumer places his or her demands on the product, its technical and economic characteristics, quantity, terms of delivery, and thus creates preconditions for the market

distribution between manufacturers. Implementation of marketing activities is an objective necessity of orientation of scientific and technical, production, and marketing activities of the enterprise, taking into account market demand, needs and requirements of consumers.

Issues of improving the management of marketing activity of the company are reflected in works of many scholars such as: P. Kotler, J.J. Lambin, M. Porter, L. Balabanova, A. Voichak, S. Harkavenko, A. Herasymchuk, V. Kardash, Ye. Krykavskyi, N. Kudenko, A. Starostina.

Marketing management – the analysis, planning, implementation, and monitoring of activities designed to establish, strengthen, and maintain profitable exchanges with target buyers in order to achieve specific tasks of the organization, such as, for example, profit-making, sales growth, increase of market share (Kotler, 1999).

According to L.V. Balabanova, marketing management is the practical implementation of a carefully thought-out integrated policy of the company in the market, which includes the organization, analysis, planning, implementation of activities aimed at achieving certain objectives of the enterprise in the market and control. Marketing management is a set of measures that regulate the position of an enterprise in the market by means of marketing functions (Balabanova, Kholod, 2006).

The essence of marketing management is to find the optimal number of customers necessary for the implementation of all volume of production produced by the company at this point. The task of marketing management is "to influence the level, time, and nature of demand in a way that helps the organization to achieve its goals" (Danko, 2001).

The very essence of marketing management is revealed when identifying the main marketing functions. Among the most important functions of marketing are the following: analysis of the environment; market research; analysis of consumer needs; product planning; pricing; sales policy; product promotion; advertising; ensuring social responsibility.

A.O. Starostina understands under marketing activity such an enterprise management system, which is aimed at studying and taking into account the demand and market requirements for a reasonable orientation of production activity of enterprises for the production of competitive types of products that meet certain technical and economic characteristics in predetermined volumes (Starostina, 2000).

Marketing activity of the enterprise is directed to establish, in sufficiently substantiated terms, considering market demands, current and, most importantly, long-term (strategic) goals, ways of achieving them, and real sources of economic resources, to determine the range and quality of products, its priorities, optimal structure of production and desired profit (Danko, 2001).

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Management of marketing activity at the enterprise is carried out in three directions: marketing mix formation, management of marketing service, internal marketing.

Consequently, marketing management system of the enterprise is a set of definite subjects, objects, tools, and methods of management that, in the process of interaction between them, are aimed at the effective management of marketing activities of the enterprise.

3. Construction of marketing management system of the enterprise

The interest of enterprises in results of their activities determines the need to increase the efficiency of all processes taking place at the enterprise, which is the result of the coordinated work of all services and divisions of the enterprise. Its organization requires the development and construction of an effective system for managing marketing activities of the enterprise, taking into account specifics of the industry, in which the company operates.

When building a management system for marketing activities, the following subsystems are identified: management (marketing management body of an enterprise) and managed (planning, organization, implementation, and control of marketing activities) (Balabanova, Kholod, 2006). Evaluation of the effectiveness of each of the divisions of the enterprise, responsible for the effectiveness of components of a managed subsystem of marketing management of the enterprise, allows determining the efficiency of the use of resources by these units.

Organizational principles of marketing management of the enterprise consist in the structuring of tasks within the overall process of managing the marketing activity of the enterprise, creation of appropriate structural units (or distribution of certain functions among existing structural units), establishment of hierarchical and functional relationships between them (Lambin, 2007; Wells, 2014).

The introduction of a marketing management system for an enterprise requires creating an effective model for its implementation (Fig. 1).

The model of management of marketing activity of the enterprise is a set of organizational structure, processes, technologies, resources, etc. necessary to create conditions that will facilitate the implementation of marketing advantages in the present and future business environment (Kudenko, 2002).

The main participants in the marketing management model are the responsible person providing the relevant services and a group of employees involved in the management process of marketing activities of the enterprise.

Implementation of the model of management of marketing activities should be carried out by the marketing department of the enterprise or a specially created body for managing marketing activities of the enterprise, which would carry out information-analytical, regulatory, advisory, and control functions for improving marketing activity of the enterprise.

The body of management of marketing activity of the enterprise should carry out general management and coordination of activity of all divisions of the enterprise.
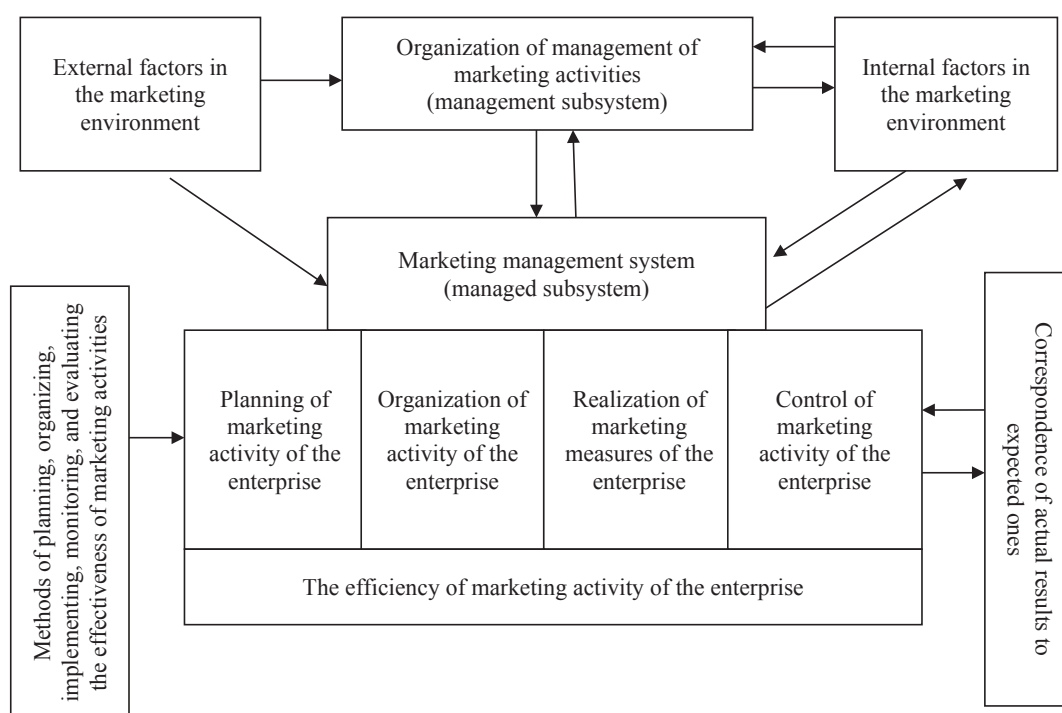

Fig. 1. Model of management of marketing activity of the enterprise

Strategic goals and tasks before the management body of marketing activities of the enterprise are put by the enterprise management, taking into account changes in factors of the internal and external environment of the enterprise, based on the corporate strategy of the enterprise.

The influence of factors of the marketing macro environment affects the level of efficiency of marketing activities of the enterprise but does not directly and immediately affect its level. The macro environment refers to indirect environments, and its factors are uncontrolled by the enterprise, therefore, there is no feedback between macro factors and marketing management system. Macroeconomic factors characterize the current operating conditions of enterprises, that is, certain threats or opportunities for the enterprise.

Factors of the micro-environment directly affect the activity of the company and the level of effectiveness of its marketing activities and feel its corresponding influence. However, factors of direct influence are poorly controlled by enterprises, and one of the tasks of the company's services is to search for means of influencing these factors and strengthening feedback.

The general corporate strategy of the enterprise is developed on the basis of the analysis of factors of the external and internal environment of the enterprise. After processing all the data received, determining the level of efficiency of marketing activity of the enterprise, finding out the problem areas in the system of managing marketing activities of the enterprise, and developing ways to increase the level of efficiency of marketing activities, the management body develops a set of specific tasks for improving the effectiveness of marketing activities for individual units of the enterprise and also controls the execution of tasks.

In general, the effectiveness – the ratio between the achieved results and the costs for it.

Of course, the results can be estimated as the growth of sales volumes; increased profitability of the enterprise. However, in this case, an attention is paid to the process of forming the adherence of the audience to certain brands and the creation of a positive image of enterprises, decision-making on cooperation with certain organizations, implemented on the basis of the rational use of interested parties, the mechanism of marketing communications in the market. Such parameters cannot be estimated by economic indicators. In connection with this, there is a need to introduce such a category as an assessment of the effectiveness of marketing activities – it is it involves assessing the marketing policy itself at the enterprise.

The efficiency of the proposed system is determined by the final level of efficiency of the marketing activity of the enterprise, which is characterized by indicators of marketing activity.

Given this, in order to determine the effectiveness of marketing activities of an enterprise, a generalized criterion is most often used in the form of the following formula (Danko, 2001):

$$E = P/S, \tag{1}$$

where P – the result of the financial activity of the enterprise;

S – the cost of their operation

The aggregate annual economic effect of marketing activities more often than others is calculated by the formula (Danko, 2001):

$$E = E_i – E_j, \tag{2}$$

where E_i – the average annual economic effect of the i-th marketing event;

Ej – expenses of the j-th article of the annual budget estimate for marketing activity (without separate expenses for the i-th event).

With the help of the cumulative economic effect and efficiency gained on its basis, the marketing activity is assessed at the level of the entire enterprise. Before that, one needs to calculate the effectiveness of individual marketing efforts. It is desirable as accurately as possible to assess the specific marketing event in accordance with functions of the unit that conducts it.

It is especially important to evaluate the effectiveness of such components of marketing activity as:
- use of distribution channels of goods;
- organization of sales promotion;
- carrying out communication policy.

In our opinion, the effectiveness of marketing activities of the enterprise can be determined only in terms of the verification of the correctness of all processes that marketing activities of the enterprise include (planning, organization, implementation, monitoring, and evaluation of the effectiveness of marketing activities).

Since all departments are interdependent and interact with each other, the effectiveness of the activity of each enterprise as a whole and the level of effectiveness of its marketing activity depends on the efficiency of each individual unit operation. The principle of "contribution/performance" communication between the management subsystem and components of a managed subsystem of management of the marketing activities of the enterprise requires, on the one hand (in the form of contributions), appropriate measures from the enterprise units to increase the effectiveness of certain aspects of marketing management and, on the other hand, the effectiveness of these efforts is assessed by the management body of the marketing activity of the enterprise and affects the further activity of these units.

The composition of indicators, by which the effectiveness of the management system of marketing activities of an enterprise is determined, changes depending on the specifics of the market and sectoral conditions of its operation (Table 1).

Table 1
Determination of the level of compliance of efforts with effectiveness in the marketing activity of the enterprise

Contributions	Effectiveness
Marketing research costs, UAH	Consideration of market needs, %
The level of organization of processes of planning and control of marketing policy, points	Responsiveness to changes in market needs, points
The level of validity of the company's pricing policy, points	Profitability of enterprise production, cop.
The level of conformity of the commodity range with consumer demand, %	Volumes of sales of commodity groups, UAH
The level of optimality of organization of sales channels, points	The effectiveness of sales on separate sales channels, cop.
The level of cost of communications policy of the enterprise, %	Increase in sales volumes after carrying out communication actions, %

The proposed system of indices of contributions and effectiveness is intended to search for a kind of "balance of expenses of the enterprise" and allows determining the expediency of the enterprise's efforts.

Effective marketing management is hard to imagine without harmonious and coherent action of all management functions, among which the system of strategic measurement – identification, development, communication, collection, and evaluation of performance indicators, directly related to the implementation of the mission of the organization and the achievement of its goals – occupies the first place (Kaplan, Norton, 2003).

According to the methodology of the strategic measurement of business performance, the sequence of obtaining an assessment of the level of effectiveness of the marketing activity of the enterprise is as follows (Artemenko, Leus, 2010):

1. Identification of criteria of marketing management system of the enterprise.

2. Determination of contributions and their impact on each criterion.

3. Ranking of contributions and results by priority (importance).

4. Determination of indicators for each contribution and result.

5. Practical application of selected indicators for the preparation and adoption of strategic management decisions.

The feature of the application of strategic measurement systems to assess the level of efficiency of a marketing activity of an enterprise is the use in the calculation of the sum of normalized weighted ratings (using a ten-point scale) is an assessment of results achieved by the company according to the relevant criterion. Namely, the normalization of indicators allows comparing indicators for each of the criteria that have different units of measurement.

Comparing the estimates calculated for each of the criteria, you can see the weaknesses in implementing the company's strategy.

Using this system of assessing the effectiveness of marketing activities of the enterprise allows seeing a picture of the coherence and validity of the efforts to improve marketing activities of the enterprise, that is, also performs an informational role in maintaining managerial decisions.

4. Conclusions

The research of approaches to management of marketing activity of the enterprise allowed proposing the following components of the system of management of marketing activity of the enterprise: the management subsystem (the body of management of marketing activity of the enterprise) and the managed subsystem (planning, organization, realization, and control of marketing activity). Determination of the nature of the influence of factors on the marketing activity of the enterprise allowed substantiating the model of interaction of the marketing management system of the enterprise with factors of its macro and micro environment and characterizing the types of links between the system of marketing management and factors of the micro environment (direct influence of factors with weak feedback) and macro environment (indirect influence of factors, feedback is absent).

Criteria of the management system of marketing activity of the enterprise are associated with its final estimation by direct and inverse relationship on the basis of "contributions/performance", which allows assessing the expediency of efforts of the enterprise to increase the efficiency of its marketing activities.

Prospects for further scientific developments in this direction are the definition and localization of the system of management of marketing activities of the enterprise as a component of strategic management.

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PROBLEMS AND PROSPECTS OF MANAGEMENT OF RURAL DEVELOPMENT

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Abstract. *The purpose* of the research is to study problems of rural development management, to analyse the effectiveness of management of the resource potential of rural areas, and to study the socio-economic priorities of their development, as well as to determine the justified ways of their solution in modern conditions. *Methodology*. The system approach to studying the development of rural areas makes it possible to consider components in the relationship between themselves and interaction with components of other systems. The state, problems, and prospects of rural development management are considered. The necessity of significant changes in the state policy of rural management is determined. It is substantiated that the current trends in the development of rural areas of Ukraine take place in the direction of narrowing the sphere of application of labour and the mismatch of professional and skilled workers' quality to the needs of employers, and the growth of unemployment. *The results showed* that the revival of rural areas depends primarily on the level of economic development of the country. Multifunctional development of the village should be carried out taking into account the integrated approach to solving the problems of the agrarian complex, villages, rural areas in general, through the combination of interests of inhabitants of rural areas, rural communities, local government, and the state, applying social and economic levers of regulation of the relevant relations in conjunction with the organizational and legal ones. *The subject of the research* is the mechanisms for managing the development of rural areas. The emphasis is made on the imperfection of the modern mechanism of the financial and economic provision of rural development management, in particular, regarding the distribution of state budget funds in this area. The impact of a clear state policy that is aimed at supporting regional development is outlined. The importance of the issue of transferring significant powers and resources to places is investigated; there must be an active position and mutual responsibility of local self-government, local business, and civil society for the development of their territory. The main problem is outlined that the financial situation of rural residents in terms of the unstable development of all spheres of the country's economy is more complicated than that of the urban population. It is emphasized that the current state of social and economic infrastructure of rural areas confirms the existence of a deep crisis. Taking into account the condition and problems of rural development and modern European traditions in this area, it is proposed to finance the management of rural development using three sources – the state budget, local budget, and rural development funds. Potential sources of the formation of local budget funds, which will be directed to ensuring issues of management of rural development and rural development funds, are determined. Specific directions for the use of funds of each of the mentioned sources are proposed. It is determined that for Ukraine, it is important to study foreign skills of formation of sustainable development of rural areas, analyse their regularities and trends of development. It is proved that the experience of countries of the European Union in the context of European integration should become especially useful for the national economy. *Practical implementation*. The emphasis is made on the fact that state regulation is the main direction of ensuring sustainable development of the Ukrainian village and a means of ensuring the equilibrium of the Ukrainian economy. *Originality*. It is outlined that one of the directions of the rural development strategy may be to strengthen initiatives of local entrepreneurs, which will be assisted by local partnerships and the state. *The urgent task* of further scientific development of this problem is to study the influence of the basic, district, and regional levels of state policy on the management of rural development.

Key words: rural areas, development management, reformation, state support, staffing.

JEL Classification: P25, Q14, R11, R58

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1. Introduction

The main purpose of changes in agriculture in Ukraine is to create an effective system of agrarian relations, increase the production of agricultural products, finally solve the food problem in the country, provide the industry with the necessary raw materials, and significantly increase the well-being of peasants.

Rural areas of Ukraine are characterized by a number of problems, most of which have not been resolved for decades. The lack of a well-formulated and effective rural development management system leads to a permanent deterioration in the quality of life of the rural population, a decrease in its overall population and working age, in particular (due to both natural reduction and active migration processes), poor state of infrastructure provision, lower incomes, and the lack of alternatives to agriculture, at the same time accompanied with low economic efficiency and the high complexity of its implementation.

Thus, the topics discussed in the article, namely, the study of problems and prospects for the management of rural development, is very **relevant**.

The purpose of the article is to study the existing problematic issues related to the management of rural areas development and to identify the main directions of its improvement. **The research objective** is to carry out a comprehensive analysis of the current state and problems of rural development, to substantiate criteria for optimizing their management, to determine the strategic priorities of their development.

Today it is necessary to state the absence of the necessary prerequisites for the effective realization of the potential of rural areas, as well as significant disadvantages and the absence of a management system for their development. Systemic, monographic, analytical, and other **methods of research** are used to study theoretical and methodological foundations of rural development management. The potential of the development of rural areas of Ukraine, as well as the state as a whole, can be disclosed and implemented only if an effective system of public administration is formed. Thus, **the scientific novelty** of the article is to improve public administration in the study of the current state of development of rural areas and the economy of Ukraine as a whole, as well as the analysis of recommendations of individual scientists regarding the fundamental changes in managerial decisions based on private-public partnership.

The complexity of reforming public administration in the development of rural areas is the need to maintain systematic, comprehensive character, and take into account all aspects of this process, since each of its components plays an important role in the implementation of strategic objectives of the new state agricultural policy.

At the same time, the effectiveness of public administration depends on the observance of value orientations. Today we can state the absence of well-formed and valid values in the management of rural development, which leads, in particular, to the squandering of state resources and low effectiveness of measures for their socio-economic development (Krupin, Zlydnyk, 2012).

Today in Ukraine, decentralization is one of the priority directions for solving problems of rural development management. In addition, the President of Ukraine signed the Law of Ukraine "On Voluntary Association of Territorial Communities", which regulates relations that arise in the process of voluntary association of villages, settlements, and cities. Thus, it is planned that this integrated approach will help in solving the main problems of the development of rural areas of Ukraine, which is based on the principles of sustainable development.

2. The role of rural areas in the national economy

Rural areas play an important role in the national economy. They provide food to the population and raw materials to the processing industry.

The effectiveness of the development of the potential of rural areas depends on their effective management. The main subject of management in the countryside is local self-government bodies. Granting them with appropriate powers and resources will solve the problems of creating a favourable living environment for peasants. Mechanisms of effective interaction between enterprises of different forms of ownership and different spheres of the economy of regions are not worked out, which reduces the manageability of the agricultural sector.

3. Problems of management of rural development

Today it is extremely difficult to imagine the economic development of Ukraine without the revival of the Ukrainian village. The tendency towards the deterioration of the socio-economic situation of rural areas leads to an increase in the imbalance in the placement of productive forces of the state, which results in the outflow of resources in large cities, which concentrate an increasing part of the financial, industrial, scientific and technical, and personnel potential. Instead, the village, with underdeveloped infrastructure and low living standards, continues to be in a depressed state. The process of reforming rural areas is slowed down, which causes a number of problems (Fig. 1). The lack of a well-formulated and effective rural development management system leads to a permanent deterioration in the quality of life of the rural population, a decrease in its overall population and working age, in particular (due to both natural

reduction and active migration processes), poor state of infrastructure provision, lower incomes, and the lack of alternatives to agriculture, while at the same time it is accompanied by low economic efficiency and the high complexity of its implementation.

4. Vectors of rural development policy

World experience and domestic practice convince that the level of development of the economy and the quality of life of the country's population can be assessed by the level of development of rural areas. This
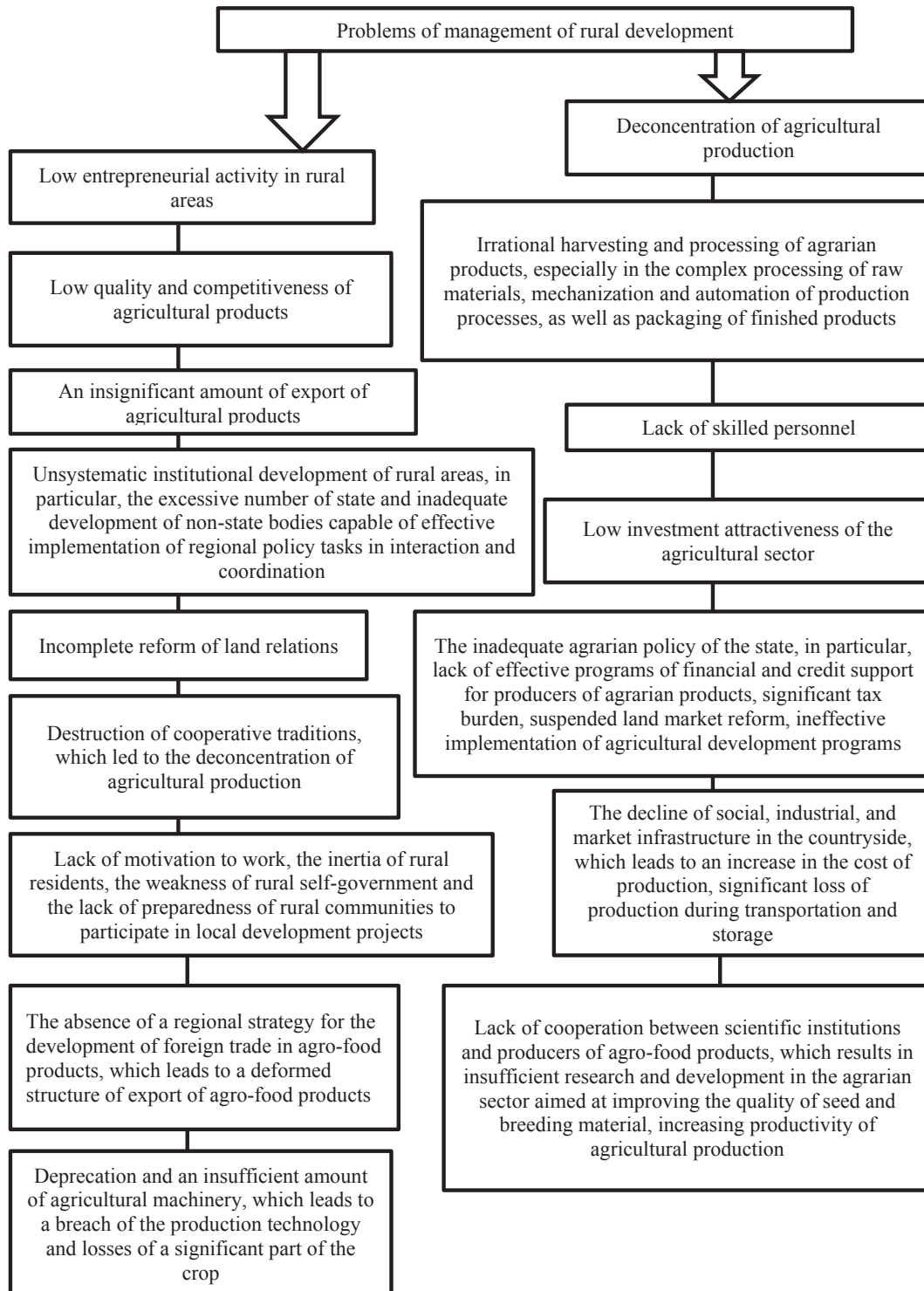
Fig. 1. Problems of management of rural development

Source: compiled by the author by research results

is explained by the fact that it is impossible to provide integrated development, to lay a solid foundation for the future without creating high standards of living for the rural population (Fig. 2). Taking this into account, the leading countries of the world are developing effective mechanisms for preserving the countryside, rural lifestyle, and rural traditions. With this purpose, the policy of socio-economic development of rural areas is constantly being improved, requiring appropriate changes to the management system, increasing expenditures for the implementation of state programs (Danylenko, 2015).
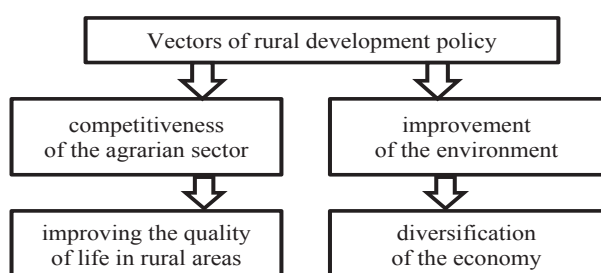
Fig. 2. Vectors of rural development policy

Source: compiled by the author by research results

The key to effective implementation of rural development policy is its human resources.

According to M. Malik, professional staff is the main condition for the implementation of the chosen strategy of sustainable development of rural areas, that is, managers must answer it. In our country, employees of state administrations responsible for economic and social development are, as a rule, specialists in relatively narrow issues of planning and management. They are busy with the solution of current problems, they do not pay enough attention to perspective issues, do not have experience of sustainable regional development in the conditions of modern market economy and development of self-government, do not have system representations and knowledge of modern methodological approaches and algorithms (Malik, 2008).

Unfortunately, today, in rural areas, traditional hierarchical structures with a rare splash of market mechanisms dominate in regional authorities. Advantages of such organizational structures consist of a clear division of functions and hierarchical co-subordination of all management units, the ordering of a system of rules and standards that determine the functioning of the governing bodies. Disadvantages are expressed in the strict conditionality of behaviour, difficulties of organizing interactions within the organization, and the inability to rapid innovations (Onyshchenko, Yurchyshyn, 2006).

Integration of plans for sustainable development of rural areas into a strategy of socio-economic development of the state has not yet been widely practiced. As a result, domestic interregional cooperation is practically absent; budget funds are not used effectively. State target programs also do not solve this task. Many Ukrainian scholars recognize that in Ukraine as a whole, the culture of planning the use of the territory has been lost (Antonov, 2010).

5. Modern state of management of rural development

The current state of management of rural areas' development requires a significant increase in the role of the Ministry of Agrarian Policy and Food of Ukraine. A significant influence on the financial provision of agrarian enterprises is also made by regional authorities for granting loans, making lease agreements, and so on.

AIC and rural development are interdependent categories. Indeed, the effective use of the resource potential is a guarantee of the well-being of the rural population. In order to improve the socio-economic situation in the countryside, the state envisaged in the budget for 2018 almost 3 billion UAH, which will be directed to the financial support of agricultural producers through full or partial VAT compensation. This program was launched in 2017 as a substitute for the preferential VAT regime for farmers. Recall that the preferential VAT payment regime for farmers existed from 1999 to 2016 (and only partially in the past 2017). In the budget of 2017, 4.77 billion UAH was put into this program, and not all companies, but only those that specialize in certain types of activities, fell under the financial support program.

The agrarian budget for 2018 is 6.3 billion UAH. Financing of credit easing program for agricultural producers has been substantially reduced (Fig. 3).
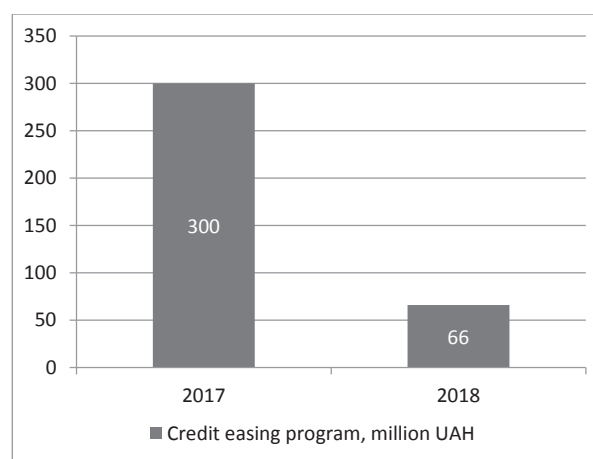

Fig. 3. Financing of credit easing program for agricultural producers, 2017–2018, million UAH

Source: compiled by the author by research results

As shown in Fig. 1, in 2018, expenditures from the state budget for this program in comparison with 2017 have decreased by 4.5 times and amount to only 66 million

UAH. Such a situation greatly reduces opportunities for farmers to attract credit resources.

Positive for the farmers in the budget of 2018 are costs to compensate for the cost of agricultural machinery. For this program, 1 billion UAH is included in the draft budget for 2018. Many agribusinesses need to upgrade their equipment. It is this program that will help to equip and modernize agricultural machinery. In addition, it is worth considering the mechanism of mortgage lending to agricultural producers.

As H.M. Kaletnik notes, mortgage lending is a promising direction and a powerful source of financial resources for agricultural production, which will be the driving force of effective management of rural development. Efficiently functioning mortgage mechanism should become a lever and a stimulating factor in the financial and economic growth of the agro-industrial complex of Ukraine while ensuring the social development of rural areas (Kaletnik, 2013).

The effectiveness of rural development management should be based on the principles of private-public partnership (Fig. 4).

Such a combination is the basis of the sustainable development of rural areas.

Management requires the definition of clear benchmarks, as regards the desired socio-economic status, so the methods (means) for achieving it. Overcoming the problems in the agricultural sector requires direct intervention by the state through financing specific targeted rural development programs.

6. Basic conditions for the development of rural areas

The rural development policy consists of three major parts: support for agricultural producers, environmental protection, and support for integrated rural development projects.

In Ukraine, in recent years, when there was a rethinking of the state regional policy on the basis of better European experience, the rural development policy has been identified as a part of the regional development policy.
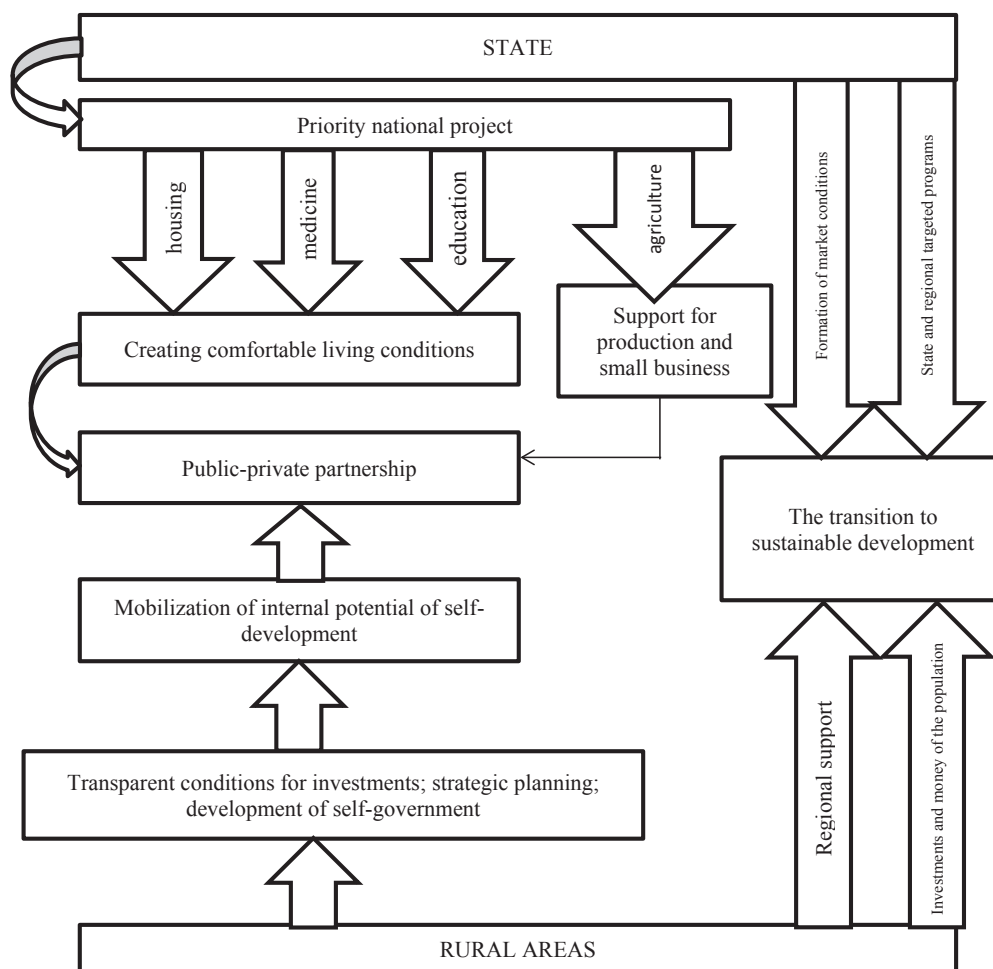

Fig. 4. Scheme of development of rural areas

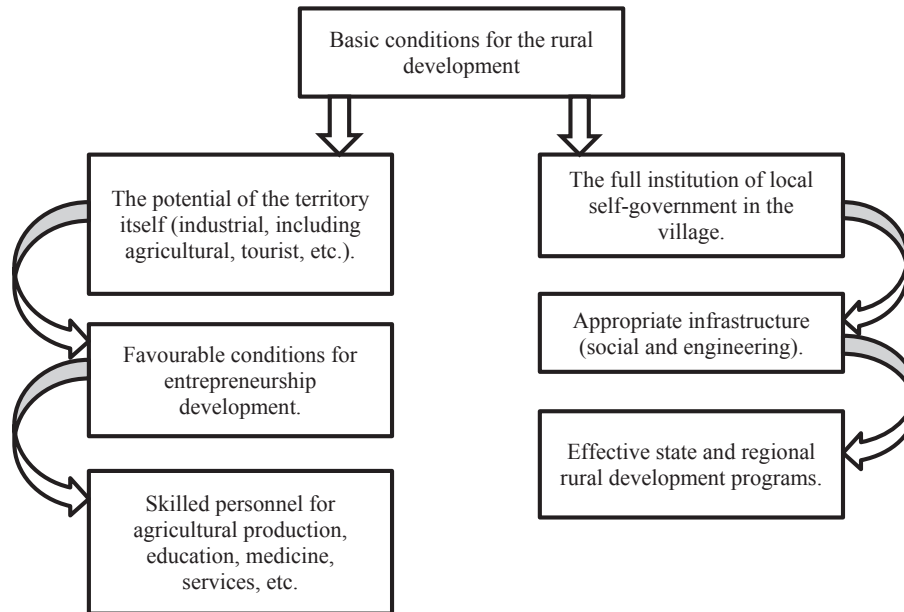*Source: compiled by the author by research results*

Fig. 5. Basic conditions for the rural development

Source: compiled by the author by research results

In addition, there are basic conditions for the development of rural areas, which are the key to their effective development (Fig. 5).

Also important is the regulation of economic needs in accordance with the capabilities of the natural environment; maximum provision of rural territories with their own resources through their most rational and integrated use. The key is the rational implementation of all the achievements of scientific and technological progress in production activity, which does not allow or minimize the depletion and degradation of resources, especially land. The development and placement of production, taking into account the natural conditions and resource capabilities of each region, their protection, and most rational use, also belong to the fundamental principles of the management of rural areas (Fig. 6).

The management of human and labour-resource potential is an integral part of the integrated management of rural areas. The level of labour supply of the rural economy depends on the number of labour resources, their location, sex and age composition. Workable rural areas have the opportunity to develop and diversify their economies more intensively (Kyrylenko, 2003).

7. Principles of management of rural development

We note that the subsystem of management and organization of rural areas is formed by: village and settlement councils, rural communities, bodies of management of objects of production and social and economic activity, representations of public socio-economic, social, and environmental organizations,
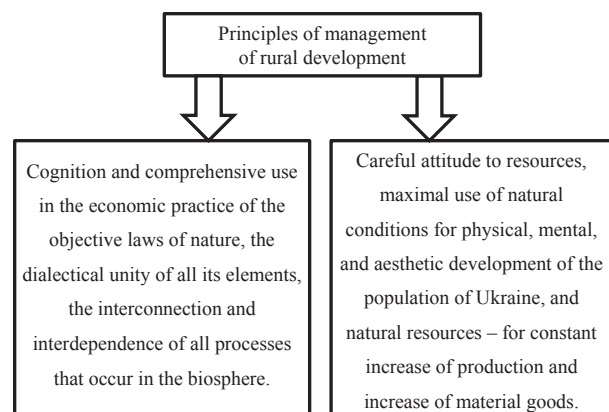

Fig. 6. Sources of funding for rural development

Source: compiled by the author by research results

Fig. 7. Principles of management of rural development

Source: compiled by the author by research results

associations, and foundations. The centres of the organization of rural territories are villages and settlements (with their rural and settlement councils), population centres that are subject to them, separate agricultural settlements. Direct administrative influence on the development of rural areas is carried out by the raion and regional bodies of local self-government and, on a national scale, state authorities, which are based on clear principles (Fig. 7) (Syniavska, 2012).

8. Conclusions

The state and prospects for the development of rural areas depend primarily on the level of economic development of the country. Rural areas are an extremely complex object of administrative influence.

In the management of rural areas, one must take into account that the achievement of a high standard of living of the population is the main goal of the economic development of rural areas. Therefore, the key to effective management of the development of rural areas and the agro-industrial complex is the professional staffing, the need to intensify innovation activities, the rational introduction of scientific and technological progress in production activities, the effectiveness of state and regional rural development programs.

The prospect of further development of the revival of rural areas should be the study of the development of agrarian and non-agrarian activities, capable of creating the necessary financial base for serious socio-economic transformations in the village in order to ensure adequate living conditions of the population.

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THEORETICAL AND LEGAL PERSPECTIVE ON CERTAIN TYPES OF LEGAL LIABILITY IN CRYPTOCURRENCY RELATIONS

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Abstract. *The aim of this article* is to study the theoretical, methodological, and legal possibilities of application of certain types of legal responsibility to the relations, which are connected with cryptocurrency (bitcoin). Some types of liability in the field of cryptocurrency relations make the *subject of the study. Methodology*. The research is based on a comparison of legal regulation of the sphere of cryptocurrency in Ukraine and in foreign countries. Advantages and disadvantages of different modes of cryptocurrency turnover are determined: from direct prohibition to granting the status of the official payment system. It is made on the basis of the analysis of peculiarities of the circulation of virtual money in Australia, Germany, the Netherlands, New Zealand, Singapore, Indonesia, China, the Russian Federation, Bolivia, Ecuador, Thailand, Vietnam, the USA, Japan, Spain, and some other countries. On the basis of the comparative legal study of certain provisions of the civil, administrative, tort, and criminal legislation of Ukraine, the possibilities and limits of the application of certain types of legal responsibility to violations in the field of cryptocurrency are determined. *The results* of the comparative legal study have shown that, unlike most foreign countries, in Ukraine, there is no legislative consolidation of the legal status of the virtual currency. In this regard, today in the national legislation, there are no direct rules that would predict the occurrence of administrative, criminal or civil liability for the offenses in the field of cryptocurrency relations. *Practical impact*. Since guarantees of compulsory restoration or protection of violated law play an important role in the legal regulation of any social relations, the proper legislative regulation of public relations in the sphere of crypto currency circulation is an urgent problem today, including with the help of establishing liability for the offenses in this field. *Correlation/Authenticity*. Comparative and legal research of legal regulation of the sphere of crypto currency gives us a better understanding of the most promising directions of development of administrative, criminal, and civil liability in this field.

Key words: cryptocurrency, legal liability, transaction, licensing, Bitcoins, crypto exchange, crypto market.

JEL Classification: D23, D45

1. Problem statement

Nowadays, the majority of crypto-asset operations are outside the legal field, which is good to some extent, because no one interferes with them. On the other hand, there are risks, of course. In particular, state financial monitoring and control is impossible. This is really undesirable because not all operations related to crypto-assets activities are positive. There is a danger of using cryptocurrencies in transactions that are beyond the law. And it is necessary to create protection against such actions. Participants of the crypto market wait from the state not regulation, which is perceived by the IT sector as an unwanted interference but defying legal status. Under such conditions, legal aspects of certain types of

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legal liability for violations in the field of cryptocurrency become of particular relevance.

2. Analysis of recent research and publications

The study of the phenomenon of cryptocurrency (Bitcoin) is revealed in the works of such scholars as: Aiganym E. Seitim (Aiganym E. Seitim. (2016), O. S. Badzym (Badzym, Drevush), Yu. V. Hava (Hava), B. V. Derevianko (Derevianko, 2017), A. R. Drevush (Badzym, Drevush), I. M. Doronin (Doronin), L. L. Neskorodzhena (Neskorodzhena, 2017), O. Poplavskyi (Poplavskyi, 2016), N. Pantielieieva (Pantielieieva, 2015). Evidently, most of the researches on this problem relate to scientific works of specialists in economics, although the attention of lawyers has recently been attracted.

The authors consider theoretical and legal possibilities of applying certain types of legal liability, in particular, civil, administrative, and criminal liability to relations involving cryptocurrency (Bitcoin). Besides, specific features of such a phenomenon as cryptocurrency (Bitcoin) from the perspective of jurisprudence are identified to draw the attention of, first of all, scientists and scholars to possible further scientific research as for the introduction of this phenomenon in modern Ukrainian legislation.

3. The main material

It is important that cryptocurrency, in terms of national legislation, is not money. In November 2014, the National Bank explained that it considered "virtual currency" Bitcoin as money surrogate, which was not provided with real value and cannot be used by individuals and legal entities on the territory of Ukraine as a means of payment, as this was contrary to the norms of Ukrainian legislation.

However, the clarification of the NBU does not provide for responsibility for the use of cryptocurrency and, therefore, it is sooner a certain warning than the norm. Considering disputes over virtual transactions, courts have agreed that cryptocurrency is neither a thing nor property rights and does not possess any material features at all.

Throughout the world, the relation to the system of virtual money is significantly different. Some countries encourage them in every way (Australia, Germany, the Netherlands, New Zealand, Singapore), some of them set serious limits for digital money (Indonesia, China, Russia). At present, direct bans are installed only in Bolivia, Ecuador, Thailand, and Vietnam. Most governments have opted for neutrality avoiding any decisions regarding the virtual currency.

In some countries, for example in Japan, cryptocurrency is recognized as a financial asset. Meanwhile, electronic money is not considered to be legal tender, but a means of exchange. In Canada,

on the contrary, you can even get a digital salary. Obtained by mining, cryptocurrency is subject to income tax.

In 2014, Spain recognized Bitcoin as an official payment system. This initiative came from the tax inspectorate of the country, which analysed the use of cryptocurrency in the country and concluded that this process should be legalized and taxed.

Such statistics lead to the conclusion that the recognition of digital currency depends largely on the level of state development. States with a weak economy are not ready to introduce such payment systems. On the contrary, highly developed countries still strive to regulate electronic payments by controlling and taxing them (Misnik, 2017).

At the same time, some scholars attribute to the main advantages of cryptocurrency:
1) low cost of transfers, which is especially relevant for micro-transmissions and micro-insurance;
2) relative rate of money flow between different users and countries;
3) simplicity and flexibility for the user with a simultaneous security system;
4) public registration of transactions and pseudonymity of accounts ensure both transparency of the system and its secrecy;
5) impossibility to confiscate funds;
6) independence of capital movement from banking system operation;
7) fewer bureaucratic obstacles (Poplavskyi, 2016).

For example, a scientist, B. V. Derevianko, in his studies of cryptocurrency relations distinguishes risks of transactions with cryptocurrency (Bitcoins) of citizens and business entities of Ukraine.

The scientist identifies:
- technological risks (consist of possible voluntary or enforced refusal of human civilization from modern computers and/or Internet technologies);
- legal risks (one-way refusal and change of services for the placement of a wallet, violation of contract terms, etc.);
- economic and legal risks (possibility of falling demand for cryptocurrency due to increased demand for real goods, the economic crisis, world war or because of state prohibition and the emergence of a new cryptocurrency) (Derevianko, 2017).

In our opinion, the most widespread offenses in cryptocurrency relations are:
- blocking addresses of electronic wallets and electronic exchanges dealing with Bitcoins or another cryptocurrency;
- impossibility to withdraw honestly earned Bitcoins from an e-wallet;
- withdrawal of money from the account on the site and their absence in the e-wallet (violation of transactions);
- the absence of agreement of the user with the proposed terms of an affiliation contract in creating an e-wallet or registration on the electronic exchange;

- thefts of cryptocurrency due to a cyberattack on a crypto-exchange, etc.

It is important to consider theoretical and legal possibilities of applying certain types of legal liability, in particular civil, administrative, and criminal liability to relations involving cryptocurrency (Bitcoin).

In the legal regulation of any social relations, guarantees of enforced restoration or protection of the violated law, in particular, the institute of civil liability, play a significant role.

Issues of civil liability include defining the amount of liability, and grounds for bringing to civil liability, as well as release, considering the fault of the victim (debtor), etc. (Kuznetsova, 2013). In civil law, the imposition of property sanctions on offenders is an inevitable consequence of a civil offense commission and the result of failure or improper performance of civil rights and obligations assumed.

The collection of property sanctions for the commission of an offense is considered one of the most effective means for the proper fulfilment of their subjective rights and obligations by participants of civil legal relations, so that civil liability guarantees protection of subjective rights and obligations of parties to civil legal relations, as well as stability of property turnover (Bodnar, 2014; Bodnar, 2007; Odnostoronnia vidmova u dohovirnykh zoboviazanniakh).

According to Kuznetsova, violation of rights of parties to civil legal relations necessitates the restoration of the violated law, comprising civil liability applying. Accordingly, the basis for such a liability is the very violation of subjective civil law (Borisova, 2004). Moreover, Shevchenko emphasizes that it is a civil law that is characterized by the restoration of subjective civil rights of persons protected by law and carried out on various principles and with the help of civil liability (Shevchenko, 2012).

According to Maidanyk, features of civil liability are: a) compensatory nature; b) state condemnation and coercion; c) property nature; direct responsibility of the offender to the victim; sanctions; the possibility of voluntary compensation for damage by the offender without judicial or other state bodies' intervention (Maidanyk, 2013).

Civilised literature reveals that for the onset of contractual liability, at least two reasons are required: existence of a contractual obligation, formally valid and such that does not violate the law in principle, as well as violation of this obligation, that is its non-execution or its inappropriate execution due to quantity, quality, the term (Biriukov, Zaika, 2014; Zaika, Timush, Loviak, 2014).

It is difficult to disagree with the thesis but to define the contract as one of the grounds of responsibility is not entirely correct. In this context, non-contractual liability is meant. Thus, Lovik notes that non-contractual obligations arising as a result of a violation of property

and personal non-property rights of the subject are intended to ensure the most complete restoration of violated rights at the expense of the perpetrator of damage or at the expense of other persons subject to such a refund by law (Loviak, 2014).

Features of civil liability are: it is always the responsibility of one person to another; it is always property liability; the overall size of responsibility must coincide with the size of injury or damage caused (Pushkin, Samoilenko, Shishka et al. 1996).

Therefore, civil liability is characterized by the imposition on offenders certain measures that are property sanctions. Thus, civil liability can be defined as a measure of legal influence, which is imposed on a person for an offense committed by him/her (Gribanov, 1973).

Thus, in the perspective of the issue under consideration, the possibility of civil liability should be noted. Mostly, it will concern cases of compensation for damage arising from contravention of the contractual basis for services to create and maintain e-wallets, crypto-exchanges activity. Thus, for example, an agreement on the use of the service *PingBlockchain.com*, where section 7 "Warranties and responsibilities of the parties" states:

7.1. The Service provides its services on "as is" basis as they are described on pages of the Service site and does not offer any additional warranties.

7.2. The Service guarantees fulfilment of obligations to the User only within the limits transferred by the User to the Service for the transaction.

7.3. The service will do its utmost but does not guarantee that its services will be available 24 hours a day. The Service shall not be liable for damages, loss of profit, and other expenses of the User arising in connection with the impossibility of access to the site and services of the Service (Uhoda pro vykorystannia servisu).

Therefore, the content of this electronic document neither reflect nor establish the terms of transaction validity, provided for in the Civil Code of Ukraine (hereinafter – the CC of Ukraine). Thus, Article 203 of the CC of Ukraine clearly states:

- the content of transaction cannot contradict the CC of Ukraine, other acts of civil law, as well as the interests of the state and society, its moral principles;
- performing the transaction person must possess necessary civil legal capacity;
- the expression of the will of transaction participant must be free and consistent with his internal will;
- the transaction should be carried out as provided for by law;
- the transaction should be aimed at relevant legal consequences, which are caused by them (Tsyvilnyi kodeks Ukrainy).

The institution of moral harm should not be excluded. For example, for months, a person has been saving

money on an e-wallet, and one day all disappears somewhere. Does it make the person suffer morally or mentally? The human factor says "yes", but from a legal point of view, this fact needs proof.

In the relations under consideration, the complexity of civil liability implementation will be in the following. First, claims must be proved in the court, and second, evidence. How should the relevant evidence base for a court inquiry be collected, if everything is presented only electronically? Although civil law contains positions on an electronic signature (Loviak, 2014), the electronic form of transaction, but cryptocurrency relations have their features, which, unfortunately, are not yet adequately reflected in civil law.

On November 10, 2014, the official website of the National Bank provided information that cryptocurrencies, in particular, Bitcoin, were a monetary surrogate, to be precise, document[s] in the form of banknotes that were different from the monetary unit of Ukraine, issued not by the National Bank of Ukraine and made in order to make payments in economic turnover, in addition to currency values. This is the definition of Article 1 of the Law of Ukraine "On the National Bank of Ukraine" of May 19, 1999, No. 679-XIV. In accordance with the second part of Article 32 of the Law, on the territory of Ukraine, the use of money surrogates as a means of payment is prohibited. Therefore, in contractual relations cryptocurrency as the price of the contract (and this is an essential condition) cannot be applied. Although, according to the literal interpretation of Article 32, the issue and circulation of cryptocurrency as a money surrogate, in contrast to the issue and circulation of monetary units, are not prohibited in Ukraine until such cryptocurrency is offered/accepted by the customers for settlements.

Under civil law relations, the possibility of legal inheritance of cryptocurrency or its use in credit relations or in relation to collateral cannot be confirmed confidently. Although the civil law does not prohibit including cryptocurrency into a will or lay as property rights, and even pay with cryptocurrency for contractual obligations or services. We support the opinion of some scholars that while the state has not decided on the status of cryptocurrency, they must be treated as goods. Currently, in Ukraine, large deals with cryptocurrencies are being conducted using the Barter Agreement, for example, the well-known agreement on "selling" an apartment for Bitcoin was, in fact, an "exchange". The Barter Agreement stipulates that each party undertakes to transfer goods to another party in exchange for other goods (Rudenko, Sadovnichy).

The next type of legal responsibility is administrative. Let us draws attention to provisions of the Article 155-1 "Violation of the procedure for payments" of the Code of Ukraine on Administrative Offenses (hereinafter – the CAO).

Thus, violation of the established by law procedure for conducting payments in trade, public catering and services leads to a fine imposed on persons, who carry out payment transactions, from two to five tax-free minimum incomes of citizens and on officials from five to ten non-taxable minimum incomes of citizens (Kodeks Ukrainy pro administratyvni pravoporushennia).

Individuals such as business entities or legal entities (their subsidiaries, affiliates other separate units), which carry out transactions in payments in cash and (or) in non-cash form (using payment cards, payment checks, tokens, etc.) when selling goods (services rendered) in trade, catering and services, as well as authorized banks and business entities that execute foreign currency purchase and sale transactions, should be applied registrars of payment transactions. Registrar of payment operations is a device or software and hardware with implemented fiscal functions and which is designed to record payment transactions when selling goods (services), operations on purchase and sale of foreign currency and (or) registration number of sold goods (services). Registrars of payment transactions include electronic cash registers, electronic cash register recorder, computer-cash systems, electronic taximeter, vending machine, etc. (Kodeks Ukrainy pro administratyvni pravoporushennia. Naukovo-praktychnyi komentar).

The leading legal point of this norm is consideration of services. After all, relations in cryptocurrency are service. For example, so-called programs, applications (Bitcoin faucets) provide an opportunity to accumulate free "Satoshi" for further profits. The abovementioned norm concerns business entities. Information resources for providing services in cryptocurrency are not business entities, although they provide services as for goods in the form of virtual money.

Sequentially, according to Article 2 of the Law of Ukraine "On Application of Registrars of Payment Transactions in Trade, Catering and Services", the payment transaction is the receipt of cash, payment cards, payment checks, tokens, etc. from the purchaser at the place of sale of goods (services), the repayment of cash for goods returned by the consumer (service not provided), and in the case of using a bank payment card, execution of corresponding payment transaction document for payment in cashless form for goods (services) by the bank of the purchaser or, in case of return of goods (refusal of service), registration of payment transaction documents for the transfer of funds to purchaser's bank (Pro zastosuvannia reiestratoriv rozrakhunkovykh operatsii u sferi torhivli, hromadskoho kharchuvannia ta posluh).

The norms provided for by Article 164-2 "Violation of financial legislation" and Article 166-5 "Violation of Banking Legislation, Legislation Regulating the Transfer of Funds in Ukraine, Regulatory Legal Acts of the National Bank of Ukraine or Conducting Risky

Operations that Threaten Interests of Depositors or Other Lenders of Bank" of the CAO are both theoretical and applied.

For example, Article 164-2 of the CAO provides for the norm that the Concealment in the accounting of currency and other income, unproductive costs and losses, absence of accounting or keeping it with violation of the established procedure, inserting false data to the financial statements, failure to provide financial statements, late or poorly conducted inventory of cash and property, late submission for the consideration or approval of the annual financial plan of the enterprise of the state economy sector and the report on its implementation, obstruction of carrying out audits and inspections by officials of the state financial control body, failure to take measures of compensation for losses from shortages, embezzlement, theft and mismanagement by perpetrators entail imposition of a fine of eight up to fifteen non-taxable minimum incomes of citizens (Kodeks Ukrainy pro administratyvni pravoporushennia).

Therefore, the cryptocurrency market may facilitate income concealment, as bidding on crypto-exchange can be anonymous.

Consequently, the norm of Article 166-5 of the CAO uses the notion of "performing risky operations". Risk management is a process, by which a bank identifies risks, evaluates their scope, monitors, and controls risk positions, as well as considers the relations between different risk categories. The set of actions on risk management aims at ensuring achievement of such objectives as: risks must be clear and reasonable for the bank and its administration; risks must be within tolerance levels established by the supervisory board; risk-taking decisions must be consistent with the strategic objectives of the bank; risk-taking decisions must be specific and precise; expected profit should offset the risk taken; distribution of capital should correspond to the scope of the risks that the bank is exposed to; incentives to achieve high performance should be consistent with the level of tolerance to risk (Kodeks Ukrainy pro administratyvni pravoporushennia. Naukovo-praktychnyi komentar).

Unfortunately, risks apply only to banking institutions and the National Bank, in particular. Thus, it is appropriate to note that certain rules of administrative legislation contain conditional provisions for the regulation of cryptocurrencies in Ukraine. Some rules of the CAO operate with such terms as "service", "risk", "non-cash form of payment", which are inherent in activities in cryptocurrency relations. It is decisive that these terms apply to accredited business entities, while they are not applicable to e-services for the provision of services in the crypto market.

Positions of administrative liability are complicated by the lack of licenses to engage in such activities.

Administrative liability application is complicated by the lack of such activity licenses. The regulator of such activity could be the National Bank of Ukraine or another specially authorized body. Under such conditions, it would be possible to apply administrative measures to business entities providing financial services in the market of cryptocurrencies without a license or providing financial services in the market of cryptocurrencies in Ukraine.

Inspection of legislative provisions of the CC of Ukraine indicates that it does not contain a direct norm that would strengthen the possibility of criminal liability for violations in cryptocurrencies. Noticeably, Article 200 "Illegal Actions with Transfer Documents, Payment Cards and Other Means of Access to Bank Accounts, Equipment for Their Production" of the CC of Ukraine considers payment documents.

The term "other means of access to bank accounts..." is used in criminal law. Other means of access to bank accounts should be considered as *any other*, but documents for transfer and payment cards, *documents or items*, using which, with the knowledge and consent of bank employees, a person can access a particular bank account and carry out operations with funds that are located on such account. In particular, this other means is a bank identification card (ID card), which is an identifier in the form of a plastic or other type of card containing details specified by the bank, which identify the client and his accounts in the bank (Kryminalnyi kodeks Ukrainy: Naukovo-praktychnyi komentar).

For the issue under consideration, provisions of Article 190 "Fraud" and Article 222 "Fraud with Financial Resources" of the CC of Ukraine can be relevant. The subject of fraud is characterized by the possibility to be both a stranger's property and the right to such property. The right to property can be provided for by various documents, such as securities, a power of attorney to dispose of property, debt obligations, wills, etc. The objective side of fraud is seizure of property or acquisition of property rights by deception or abuse of trust. Due to fraudulent acts, the victim (an owner, a possessor, a person, who is in charge of property or under whose protection property is located) voluntarily transfers property or the right to property to an offender. The direct involvement of the victim in the transfer of property and the voluntary nature of his/her actions are mandatory indications of fraud that distinguishes it from the theft of property and other crimes against property (Kryminalnyi kodeks Ukrainy: Naukovo-praktychnyi komentar).

Cryptocurrency fraud is a serious problem for such a developed country as the United States, whose bank regulators have drawn attention to the increase of these crimes. Having discovered that unregulated virtual currency sphere is very popular among online fraudsters, the New York State Department of Financial Services concluded that this kind of fraud was threatening US national security (Shapochka, 2014).

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The provision of Article 225 "Cheating of Purchasers and Customers" of the CC of Ukraine is worthy of attention, as it covers the concept of "another deception". "Another deception" is the use of any of the abovementioned methods, by means of which an offender receives from the purchaser or the customer a higher monetary amount that should have been paid for the goods or service in accordance with the established prices or tariffs. Another deception is, in particular, the sale of goods at a price that is higher than established (this way is also called "exceeding established retail prices"), selling of spoiled goods, lower grade goods at a higher price, exceeding the established prices and tariffs for household and communal services provided to the people, etc. The obligatory feature of this crime is the deceptive nature of related actions i.e. they are committed to making an impression of the rightness of offender's actions on the purchaser or the customer (Kryminalnyi kodeks Ukrainy: Naukovo-praktychnyi komentar).

In relations with cryptocurrency (Bitcoin), for example, the rate of the electronic money of e-wallet for cryptocurrency transaction to a bank card is often absent or do not correspond to provisions stated by the electronic resource.

From the perspective of national security, provisions of Article 209 "Legalization (Laundering) of Proceeds of Crime" and Article 209-1 "Intentional Violation of Requirements of the Legislation on Prevention and Counteraction to Legalization (Laundering) of Proceeds of Crime or Terrorist Financing" of the CC of Ukraine are of particular interest. The main direct object of the crime is established, in order to counteract involvement of "dirty" funds in economics, the order of economic activity, as well as the procedure for civil legal transactions in respect of personal and another similar usage of property not related to economic activity. An additional object is the interests of justice, normal functioning of the financial system, principles of fair competition.

In this case, currency may be in cash or in non-cash form (on a bank account and their turnover is governed by the law of obligations), be both national and foreign currency.

The Letter of the NBU dated December 8, 2014, No. 29-208/72889 states that transaction of Bitcoin for US dollars or other foreign currency has signs of the so-called financial pyramids functioning and may indicate a potential involvement in the implementation of dubious transactions in accordance with the law on counteraction to legalization (laundering) of proceeds of crime and terrorist financing. Countering the crimes of Article 209 and Article 209-1 of the CC of Ukraine is the practice of licensing, which is very common in the United States, Japan. Considering the issue, the European Union is going to adopt the relevant amendments to Directive (EU) 2015/849 "On Prevention of the Use of Financial System for the Purposes of Money Laundering or Terrorist Financing" (Plyta).

In such positions, we can conclude that the implementation of criminal liability in the field of crypt-exchange relations also depends on licensing activities in Ukraine. The existence of a license minimizes violations in this area will allow every consumer of services in the field of cryptography to have open information about the issuer, the order of issue and operations on cryptocurrency (bitcoin or its various analogues). Therefore, implementation of criminal liability in cryptocurrency relations also depends on licensing activities in Ukraine. The presence of a license minimizes violations in this sphere, will allow every consumer of services in cryptocurrency to have open information about the issuer, the order of issue and operations on cryptocurrency (Bitcoin or its analogues).

4. Conclusions

An overview of certain provisions of Ukrainian legislation on the possibility of applying certain types of legal liability to violations in cryptocurrency enabled to conclude:

1. In the Civil Code of Ukraine, the CAO and the CC of Ukraine, currently no direct norms clearly establish the list of unlawful actions or offenses, for which it would be possible to bring offenders to one or another form of legal liability.

2. In relations under consideration, the complexity of civil liability implementation is in the following aspects:
- the possibility of its occurrence in contractual and non-contractual obligations without civil-law regulation of specific violations of the latter;
- the need to prove their claims in court since other forms of protection of rights in this respect are absent or ineffective;
- the complexity of collecting relevant evidence base to recourse to court since all transactions with cryptocurrency are carried out electronically.

3. Some rules of the CAO operate with terms, such as "service", "risk", "non-cash forms of payment", which are inherent activities in cryptocurrency relations. An important feature is that these terms apply to accredited business entities, which is not true of electronic services in cryptocurrency market. Positions of administrative liability are complicated by the absence of licenses on such activities by providers of services in cryptocurrency.

4. Criminal liability in cryptocurrency may come for fraudulent actions or legalization (laundering) of proceeds of crime. We can also conclude that the realization of criminal responsibility (correct qualification of criminal offenses) in cryptocurrency relations also depends on licensing activities in Ukraine. If cryptocurrency market actors do not have licenses, any slight sale of Bitcoin to those, who plan to use it in criminal intent, is not sufficient grounds for a charge of the legalization (laundering) of proceeds of crime, even if the criminal intent is apparent in the sale of cryptocurrency.

Future scientific research in this sphere can include the possibility of arising and implementation of material liability. Labour relations are developing quickly; in the future, freelance workers could receive wages in cryptocurrency or compensate to the enterprise for damage taking into account the cost of Bitcoin.

Our statements and ideas in no way put the end to cryptocurrency relations study. The issues outlined need further research, while scientific achievements need implementation in the social and legal being.

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